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PHARMACEUTICAL ABSTRACTS

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ABSTRACTORS

CONTENTS

Chemistry:
Analytical (*Continued*) 430

Pharmacognosy:
Vegetable Drugs 438

Pharmacy:
Galenical 439
Pharmacopœias and Formularies 440
Non-Official Formulas . . 440
Dispensing 441
Pharmaceutical History . . . 443
Pharmaceutical Economics . 443
Miscellaneous 444

Pharmacology, Toxicology and Therapeutics:
Pharmacology 446
Toxicology 452
Therapeutics 456

New Remedies:
Synthetics 463
Specialties 465

Bacteriology 466

Botany 469

Chemistry:
General and Physical 470
Inorganic 471

Organic:
Alkaloids 471

CHEMISTRY

ANALYTICAL (*Continued*)

Carbon Monoxide in Medicinal Oxygen—Detection of. A method previously described was based on the reduction of palladium chloride by carbon monoxide and subsequent formation of molybdenum blue but it was found that this test responds to hydrogen. This fact necessitated modification since some medicinal oxygen may contain several tenths per cent. The method devised: A liter sample of oxygen to which 50 cc. of nitrogen have been added is treated in a closed system with an alkaline solution of hydrosulfite which removes most of the oxygen. Nitrogen is added to the residual gas until the volume is 100 cc. This is then tested by the hemoglobin method. A sample of carbon monoxide-free oxygen treated in the same manner serves as a standard. The method is more rapid than methods hitherto available and is sensitive to about 5 parts per million.—FREDERICK K. BELL and JOHN C. KRANTZ, JR. *Jour. A. Ph. A.*, 29 (1940), 232. (Z. M. C.)

Carbonates—Warder's Method for the Titration of. A critical survey of Warder's method and of the literature pertaining to it shows that titration of carbonate to bicarbonate must be performed in a closed system to avoid loss or gain of carbon dioxide. A titration procedure which is essentially identical with that of Tillmans and Heublin is described in detail so as to assure acceptable results. Its accuracy and precision have been tested on a carbon dioxide tension of approximately 0.0003 atmosphere so as to render the solution reasonably stable in contact with air. The relative average deviation of the titration of carbonate to bicarbonate has been found approximately equal to 1.5 parts per thousand. The determination of the titratable base can be performed with a precision of 0.5 part per thousand. Calculations based on these figures show that in the application of Warder's method to the determination of hydroxide, carbonate and bicarbonate in the presence of one another the precision becomes poor whenever the mass of the constituent determined is less than one-tenth of the mass of the major component. Traces of carbonate in hydroxide may be determined by the use of a refined titration technique, but it would be hopeless to attempt with Warder's method the determination of traces of hydroxide in carbonate, traces of carbonate in bicarbonate or traces of bicarbonate in carbonate.—A. A. BENEDETTI-PICHLER, M. CEFOLA and B. WALDMAN. *Ind. Eng. Chem. Anal. Ed.*, 11 (1939), 327–332. (E. G. V.)

Chemical Research in Colleges—Survey of. The status of chemical research in America is under investigation by the National Research Council in Washington. A growing card index file on equipment, personnel and investigation subjects of various laboratories will be useful for war mobilization of research and for a peace time national center of information by which duplication of research may be avoided.—ANON. *Science News Letter*, 36 (1939), 408; through *Squibb Abstract Bull.*, 13 (1940), A-16. (F. J. S.)

Chlorine in Industrial Gases—Detection of. The Department of Scientific and Industrial Research (England), in coöperation with the Association of British Chemical Manufacturers, has been issuing a series of leaflets dealing with the detection of toxic gases in industry. The latest deals with chlorine. Owing to the low permissible concentration of this gas, in the order of one part per million, a test of a high degree of sensitivity is required. The only one of sufficient delicacy is the reaction between chlorine and a dilute solution of *o*-tolidine, which gives a yellow compound. The test is carried out in a standard pump and bubbling apparatus described and illustrated in the leaflet. The reagent consists of 1 Gm. of purified *o*-tolidine dissolved in 100 cc. of concentrated hydrochloric acid, the volume being then made up to 1 liter with distilled water. The comparison color is derived from a 0.1% solution of potassium dichromate.—ANON. *Australasian J. Pharm.*, 21 (1940), 108. (A. C. DeD.)

Chlorobutanol—Determination of. A collaborative study was made of the previously described method (*Pharm. Abs.*, 6 (1940), 9) for the assay of chlorobutanol and of its determination in solution with some modifications of the details of the distillation (technique described in detail in *J. Assoc. Official Agr. Chem.*, 22 (1939), 95). For the chlorobutanol crystals the recovery averaged 99.5%; for the solution, 98%. A majority of the collaborators reported no difficulty with the method which is recommended for adoption as tentative.—FRANK C. SINTON. *J. Assoc. Official Agr. Chem.*, 22 (1939), 730–732. (A. P.-C.)

Chloroform—Determination of, in Mixtures. A study of the present tentative A. O. A. C. method showed that: (1) use of the present alkali reagent is satisfactory; (2) the use of 0.1 Gm. (instead of 1 Gm.) calcium carbonate is satisfactory; (3) carborundum chips are very useful to prevent "bumping" during distillation; (4) the method may be relied upon to show at least 98% recovery of the chloroform present in the sample; (5) as much as 5% of the chloroform present may be lost on pipetting a sample of heavy syrup; (6) by use of special apparatus recovery might be increased and more concordant results obtained.—JOHN R. MATCHETT. *J. Assoc. Official Agr. Chem.*, 22 (1939), 761–764. (A. P.-C.)

Cobalt—Determination of, in Animal Tissues. Gently boil the sample (10 Gm. of dry tissue) with a mixture of 20 cc. of water and 10 cc. of nitric acid until the volume is reduced to 15 cc. Cool slightly and add 20 cc. of sulfuric acid. Allow the first vigorous reaction to subside, add a few cc. of nitric acid and boil until brown fumes cease and further charring begins. Repeat the addition of nitric acid and boiling until no more charring takes place and white fumes appear and the cooled digest is colorless. Evaporate the sulfuric acid and ignite the residue in a muffle furnace for five minutes at 500° C. Dissolve the residue on a steam bath with constant boiling hydrochloric acid. Remove the iron by shaking the solution with ether and the copper by treatment with hydrogen sulfide. Remove the hydrogen sulfide by heating, add a few drops of nitric acid and evaporate to dryness on the steam bath. Transfer the residue with water to a small beaker and evaporate to 7 to 8 cc. Add 1 Gm. of sodium acetate and a drop of phenolphthalein indicator. Warm and make alkaline with 30% potassium hydroxide solution and then faintly acid with hydrochloric acid. Add 1 cc. of 0.1% solution of nitroso-R-salt and boil the solution for one half minute. Add to the boiling solution dropwise, with stirring, 1.5 cc. of nitric acid and boil for a further half minute. Cool for thirty minutes away from direct sunlight, dilute to 10 cc. and compare the color with that of a standard cobalt solution developed in the same manner. Amounts of cobalt solution as small as 0.00000005 Gm. may be determined. One hundred times the quantity of copper and 1000 times the quantity of iron do not interfere with the determination of 0.000001 Gm. of cobalt.—K. J. MCNAUGHT. *Analyst*, 64 (1939), 23. (G. L. W.)

Drugs—Contribution to the Examination of. VIII. The following changes in the supplement to the pharmacopœia are recommended: *Oleic Acid.*—

For the determination of acid number the following procedure is recommended: "Weigh exactly 3 Gm. of the acid and dissolve in 25 cc. 0.5*N* potassium hydroxide. For the back titration 3.3–5.2 cc. of 0.5*N* hydrochloric acid must be used so that the neutralization of 3 Gm. of the acid requires 19.8–21.7 cc. 0.5*N* potassium hydroxide indicating an acid number of 186–203." *Extract of Cannabis Indica* is "dark green, insoluble in water, soluble in alcohol and collodion to yield a green color." *Manganese Lactate.*—"The aqueous solution (1 + 19) after the addition of diluted sulfuric acid and heated with potassium permanganate solution yields an acetaldehyde odor and the red color disappears." *Manganese Dioxide.*—Determination of content: "Weigh exactly about 0.2 Gm. of the finely divided substance and treat in a flask provided with a ground glass stopper, with 3.0 Gm. potassium iodide, 3 Gm. sodium phosphate, 10 cc. water and 10 cc. phosphoric acid. Allow the mixture to stand in the closed flask for 1 hour with frequent shaking and then dilute with about 50 cc. water and titrate with 0.1*N* sodium thiosulfate adding toward the end of the titration about 10 cc. starch as indicator." At least 35 cc. 0.1*N* sodium thiosulfate are used indicating a content of not less than 76%. (1 cc. of 0.1*N* $Na_2S_2O_3$ = 0.0043465 Gm. MnO_2.) *Sodium Bisulfite.*—A complete monograph is proposed. For testing milk it was found that a guaiac solution should be freshly prepared as the 5% alcoholic solution and treated with equal parts of acetone and this mixture activated with some drops of hydrogen peroxide solution.—KONRAD SCHULZE and ARMIN MELLE. *Deut. Apoth. Ztg.*, 54 (1939), 797–799. (H. M. B.)

Elixir of Phenobarbital—Assay of. Twenty-seven variations of the official formula were prepared and studied and the following formula proposed: Phenobarbital 4 Gm., tincture of sweet orange peel 30 cc. (or oil of orange 0.2 cc.), solution of amaranth 10.0 cc., alcohol 125 cc., glycerin 450 cc., syrup 150 cc., water *q. s.* to make 1000 cc. Dissolve the phenobarbital in the alcohol; add the tincture of sweet orange peel or the oil of orange, the glycerin, the syrup, the solution of amaranth and sufficient water to make the product measure 1000 cc. Mix well and filter, if necessary, to make the product clear. The following modified method is proposed: Transfer exactly 25 cc. of the elixir to a separator, make acid with hydrochloric acid, add 30 cc. of chloroform and extract. Separate the chloroformic extract into a second separator and saturate the aqueous layer in the first separator with sodium chloride. Completely extract this aqueous layer with successive portions of chlorform and combine the chloroformic extracts in the second separator. Place a pledget of cotton in the stem of the second separator and wash the chloroformic extracts with 20 cc. of water. Separate the chloroform into a tared beaker and wash the aqueous layer with 30 cc. of chloroform. Combine this last chloroformic washing with that in the beaker. Place on a water bath to drive off the chloroform and dry the residue in the oven at a temperature not exceeding 100° C. to constant weight. The weight of the residue is taken as phenobarbital.—REPT. AMER. PHARM. ASSOC. LAB. *Bull. Natl. Formulary Committee*, 8 (1940), 142–148. (H. M. B.)

Emulsions of Cod Liver Oil—Analysis of. A description is given of the development of a method (technique described in detail in *J. Assoc. Official Agr. Chem.*, 22 (1939), 96) of a method for determining cod liver oil in emulsions, which consists essentially in mixing an amount of sample containing about 2 Gm. of oil with about 10 Gm. of finely powdered calcium carbonate, extracting with successive portions of chloroform until the last portion extracts not more than 1 mg., evaporating the extract in a tared beaker on a steam bath and allowing to remain on the bath for about 10 minutes after the odor of chloroform has disappeared, and drying at 100° C. to constant weight (weighings to be made at 5-minute intervals). Collaborative study of the method gave recoveries of 99.5 to 100.2%. Adoption of the method as tentative is recommended.—W. F. KUNKE. *J. Assoc. Official Agr. Chem.*, 22 (1939), 739–742. (A. P.-C.)

Ephedrine Jelly—Assay of. The following assay method is proposed: Weigh accurately in a small tared beaker, 5–10 Gm. of the sample. Transfer to a small separator, rinsing the beaker several times with 5-cc. portions of water until the jelly is completely transferred to a separator. Make the jelly solution alkaline with ammonium hydroxide and add 5 cc. in excess. Complete the assay as directed under the assay of ephedrine spray beginning with the words "Extract the now alkaline solution with 30 cc. of washed ether." Each cc. of 0.02*N* sulfuric acid is equivalent to 0.0033 Gm. ephedrine and 0.00428 Gm. ephedrine sulfate.—CHARLES O. WILSON. *Bull. Natl. Formulary Committee*, 8 (1940), 137. (H. M. B.)

Ethyl Chloride. Ethyl chloride is produced by chlorinating benzene in the gas phase at 400° to 700° C. within small catalyst zones with use of a crystalline carbon, *e. g.*, lustrous or graphitic carbon or graphite as catalyst. This may be in the form of a thin coating on carriers of good thermal conductivity, *e. g.*, wire net, which is folded or rolled to fit into the reaction chamber, or on the chamber wall itself. The carriers and walls may be of metals such as platinum, silver or nichrome. The coating may be effected by painting on a layer of tar oil, together with graphite powder if desired, and burning at 400° to 500° C. If the ethane contains higher hydrocarbons, lustrous carbon is formed during the reaction at above 400° C. and previous coating is unnecessary. The reaction gases are washed to remove hydrochloric acid and the ethyl chloride is dried and liquified. Some ethylidene and ethylene chlorides are also formed.—WALTER FLEMMING, KARL DACHLAUER and ERWIN SCHNITZLER, assignors to I. G. FARBENINDUSTRIE A.-G. U. S. pat. 2,162,532, June 13, 1939. (A. P.-C.)

Extract of Ergot—Aqueous, New Monograph for. The modified Hampshire-Page method of assay was used with non-concordant results.—REPT. AMER. PHARM. ASSOC. LAB. *Bull. Natl. Formulary Committee*, 8 (1939), 40–45. (H. M. B.)

Ferric Oxide. A monograph covering yellow and red ferric oxides is offered.—REPT. AMER. PHARM. ASSOC. LAB. *Bull. Natl. Formulary Committee*, 8 (1940), 160–161. (H. M. B.)

Glycerite of Bismuth—Assay of. The claim that the following assay method is as satisfactory and much shorter than the one previously proposed by the laboratory is substantiated: Accurately measure 50 cc. of the glycerite in a volumetric flask and quantitatively transfer it with distilled water to a 500-cc. volumetric flask; fill the flask to the mark with distilled water and mix well. Transfer 25 cc. of the solution to a beaker, dilute to about 150 cc. with distilled water, add nitric acid until the precipitate which forms redissolves, then add 2 cc. in excess. Heat the solution to boiling and slowly add 50 cc. of *M*/5 diammonium hydrogen phosphate, also heated to boiling. Digest the solution on a steam bath until the supernatant liquid is clear. Decant through an ignited tared Gooch crucible, washing the precipitate in the beaker 3 times with 50-cc. portions of hot distilled water. Transfer the precipitate from the beaker to the crucible with distilled water, wash, dry and ignite the crucible to dull

redness for 30 minutes. Cool and weigh as bismuth phosphate, $BiPO_4$.—REPT. AMER. PHARM. ASSOC. LAB. *Bull. Natl. Formulary Committee*, 8 (1940), 154–156. (H. M. B.)

Guaiacol—Determination of. A collaborative study of the Viebock and Schwappach method, as modified by Clark (*J. Assoc. Official Agr. Chem.*, 15 (1932), 136–140), for the determination of alkloxyl groups, for the estimation of guaiacol carbonate and guaiacol gave satisfactory results, and its adoption as tentative is recommended.—KENNETH L. MILSTEAD. *J. Assoc. Official Agr. Chem.*, 22 (1939), 721–722. (A. P.-C.)

Hexylresorcinol—Determination of, in Pharmaceutical Preparations. Assay by the previously described method (*Pharm. Abs.*, 6 (1940), 12) of the same olive oil solution of hexylresorcinol after aging for about 1 year gave a 96.3% recovery. Investigation indicated that the use of hydrazine in the method may be unnecessary.—MORRIS L. YAKOWITZ. *J. Assoc. Official Agr. Chem.*, 22 (1939), 719. (A. P.-C.)

Hydrocyanic Acid—Determination of, by the Picric Acid Method and the KWSZ Photometer. A procedure (technique described in detail) is proposed for the determination of small quantities of hydrocyanic acid in individual clover plants. It consists essentially in autolyzing 10 Gm. of fresh clover leaves in a 500-cc. short-necked Kjeldahl flask by allowing to stand several days at room temperature with 5 cc. of toluene, steam-distilling 80 to 90 cc. into 5 cc. of 2% potassium hydroxide solution, making to 100 cc., adding a 20-cc. (or smaller) aliquot to 10 cc. of aqueous alkaline picrate solution (25 Gm. of sodium carbonate and 5 Gm. of picric acid per liter), heating in boiling water for exactly 5 minutes, placing in one absorption cell of the KWSZ photometer and placing in the other cell a blank prepared by heating 10 cc. of the alkaline picrate solution with 20 cc. of water or of 0.1% potassium hydroxide solution, balancing the instrument against the blank (using a 10% aqueous solution of copper sulfate as a light filter), reading the transmission of the unknown in the other cell, and converting the % transmission into weight of hydrocyanic acid by means of a curve previously prepared from standards. The method can measure amounts of 0.01 to 0.20 mg. of hydrocyanic acid. A comparison with the alkaline titration method gave results averaging 8% higher by the picrate method. The various steps of the procedure, especially the conditions of autolysis and distillation, need further study, particularly if the method is applied to plants other than white clover.—J. T. SULLIVAN. *J. Assoc. Official Agr. Chem.*, 22 (1939), 781–784. (A. P.-C.)

Hypophosphites—Determination of, in Pharmaceutical Preparations. A collaborative study of the application of the Bruening bromine oxidation method (*Jour. A. Ph. A.*, 25 (1936), 19–27) to the determination of hypophosphites in Syrup Ammonium Hypophosphites, Syrup Hypophosphites and Syrup Hypophosphites Comp. gave results in good agreement with the calculated theoretical. Investigation of the reducing action of the non-hypophosphite ingredients of these syrups showed no reducing action by glycerol and sodium citrate, and slight reducing action by sucrose and quinine and strychnine; the effect of these ingredients on the bromine reagent is so small, however, that it falls within the limits of experimental accuracy. Results of assays of syrups made 7 months after compounding were as close to the theoretical figure as those obtained from assay of the freshly prepared syrups, indicating no oxidation of the hypophosphites had occurred. In the Bruening assay, standard bromide-bromate solution (3 Gm. potassium bromate and 12 Gm. potassium bromide per liter) can be used instead of decinormal bromine solution.—HENRY R. BOND. *J. Assoc. Official Agr. Chem.*, 22 (1939), 712–715. (A. P.-C.)

Iodine and Iodide in Iodine Solutions—Assays for. The author points out that the thiosulfate titration is satisfactory but the method for iodide is not. It requires from three to five hours, it is difficult to get a white residue and results are too high. If the residue is dried for two hours at 110° C. in an oven, results are better. In the mild tincture the deliquescent nature of the sodium iodide make good checks nearly impossible. The British Pharmacopœia determines the iodide by means of potassium iodate solution but has the objection of requiring two samples. It is possible to make both assays on one sample. Iodine is determined by $N/10$ sodium arsenite. When iodine is decolorized the solution is made acid enough so that at the end of the titration it is at least $3N$. After being acidified it is titrated with $M/20$ potassium iodate until iodine color is removed from chloroform which is added just before end-point is reached. This method is more rapid and more accurate than the U. S. P. XI method. Details of experimental work are reported, reactions discussed, precautions stated.—BERL S. ALSTODT. *Jour. A. Ph. A.*, 29 (1940), 227. (Z. M. C.)

Iodine—Determination of, in Sodium Tetraiodophenolphthalein. Free iodine is lost during the fusion process in the U. S. P. XI process for iodine in soluble iodophthalein and further the fusion mass contains undecomposed material; this amounts to as much as 1% and 3% iodine, respectively. The permanganate-silver nitrate method given is simple, rapid and suitable for routine analysis. Weigh accurately approximately 0.2 Gm. of sodium tetraiodophenolphthalein or tetraiodophenolphthalein into a 500-cc. Erlenmeyer flask and add 15 cc. of 5% sodium hydroxide solution. Place the flask on a steam bath, and when the sample is completely dissolved, add 25 cc. of a saturated solution of potassium permanganate. Wash down the sides of the flask and let the solution digest on a steam bath for about 45 minutes, swirling the solution in the flask at about 5- or 10-minute intervals. Remove the flask from the steam bath, cool under tap to room temperature and add 75 cc. of distilled water and 10 cc. of dilute sulfuric acid. Add slowly from a buret a concentrated solution of sodium bisulfate until the solution in the flask becomes colorless. Finally add 2 cc. of glacial acetic acid, one cube of ammonium carbonate, and 1 cc. of a 0.5% solution (in 70% ethyl alcohol) of diiodofluorescein indicator. Titrate the solution in diffuse light with $0.1N$ silver nitrate until the color changes from a brownish red to a bluish red color. In case eosin indicator is used, add 20 drops of a 0.1% solution (in 70% ethyl alcohol) of the dye and titrate to the appearance of a pink color.—A. Q. BUTLER and R. A. BURDETT. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 237–239. (E. G. V.)

Iodine in Thyroid—Determination of. Hunter's method for thyroid iodine (*J. Biol. Chem.*, 7 (1909), 1321) was found to give higher iodine values than Jensen's modification of Hunter's method (*Bull Fed. int. pharm.*, 13 (1932), 73; 19 (1938), 25). Hunter's phosphoric acid method, the modification of U. S. P. XI, a phosphoric acid-sodium hydroxide method, Jensen's sulfuric acid method, an acetic acid method, and a citric acid method were compared. By the phosphoric acid method (Hunter), a dessicated thyroid sample analyzed 0.2410% I, by the acetic acid method, evaporating to 175 cc., 0.2329% I, evaporating to 200 cc. 0.2335% I, evaporating to 250 cc. then adding 50 cc. water and again evaporating to 250 cc., 0.2345% I. The citric acid method gave 0.2336% I. The high results

with Hunter's method were partly due to the content of chlorate in the chlorinated lime used. The effect of chlorate was not fully evident in blank determinations. It could be prevented by adding enough alkali before titration to bring the p_H around 2.2. Reduction in the amount of hypochlorite was not found satisfactory. In analyzing pure KI solutions the amount of hypochlorite could successfully be much reduced, but many gland samples gave low and unreproducable results if there was too little hypochlorite. Even with the modification for eliminating the chlorate effect, Hunter's method required blank determinations. This was not necessary in Jensen's method where no phosphoric acid was used. In Jensen's method, if, during the evaporation, too much sulfuric acid was present, iodate might be lost. If in the titration by this method the reaction was insufficiently acid, iodine was freed too slowly. If citric acid rather than acetic acid was added (to about p_H 2.2) the reaction between iodide and iodate was satisfactory and reaction between chlorate and iodide was not too rapid. The modifications rendered either the phosphoric acid-NaOH or the Jensen method satisfactory. *Modified Hunter Method.*—One Gm. dried, defatted thyroid is mixed in a 50-cc. nickel dish with about 15 Gm. of the nitrate fusion mixture (23.5 Gm. potassium nitrate + 33.0 Gm. anhydrous sodium carbonate, + 43.5 Gm. potassium carbonate), then covered with 5.0 Gm. of the fusion mixture. The covered dish is heated 20 minutes over the burner, so that the mass begins to glow after 10 minutes and begins to melt at the end of the heating. After cooling the dish is placed in a beaker and the content dissolved in 150 cc. boiling water. The solution is filtered into a 500-cc. Erlenmeyer flask. Beaker, dish and filter are washed 3 times, each time with 15 cc. of boiling water. After cooling, about 0.02 Gm. talcum and 50 cc. of fresh sodium hypochlorite reagent solution are added, and, carefully, 60 cc.of a cooled mixture of 1 volume concentrated phosphoric acid and 1 volume water. The solution is evaporated to a volume of 175–200 cc. After cooling, 10 cc. concentrated NaOH solution are added, and after cooling again, 2 cc. of KI reagent solution are added. Let stand $1^1/_2$ minutes and titrate the free iodine with 0.02*N* sodium thiosulfate to starch indicator color change. A blank determination should be made. One cc. of 0.02*N* sodium thiosulfate ~0.0004321 Gm. I. *Modified Jensen Method.*—After fusion and solution as above, and adding the talcum and hypochlorite, there is carefully added 35 cc. of a cooled mixture of 1 volume sulfuric acid and 3 volumes water. The solution is evaporated to a volume of 175–200 cc. After cooling, 1 drop of phenolphthalein indicator solution is added and neutralization carefully made with NaOH reagent solution (about 10–15 cc. needed). Then one adds a solution of 10 Gm. citric acid in 15 Gm. water and 2 cc. of KI reagent solution, and titration is conducted as above. No blank determination is necessary.—F. REIMERS. *Dansk. Tids. Farm.*, 13 (1939), 327. (C. S. L.)

Iodine Number—Rapid Method for the Determination of. The use of mercuric acetate cuts the time absorption of iodine, by fats and oils, down to 1–3 minutes. Experiments were conducted using the same procedure as that prescribed by the official method (*Ind. Eng. Chem.*, 18 (1926), 1346) except that various amounts of mercuric acetate, dissolved in glacial acetic acid, were added directly after the addition of the Wijs solution (ICl in glacial acetic acid) and the absorption determined at different contact intervals. Best results were obtained by using 250 mg. of mercuric acetate (10 cc. of a 2.5% solution in glacial acetic acid) and allowing 3 minutes for absorption.—H. D. HOFFMAN and C. E. GREEN. *Oil & Soap*, 16 (1939), 293; through *Squibb Abstract Bull.*, 13 (1940), A-66. (F. J. S.)

Iodine Ointment—Assay of. A collaborative study was made of the present tentative A. O. A. C. method for iodine, and of the previously proposed (*Pharm. Abs.*, 6 (1940), 14) method for organically combined iodine, using a freshly prepared ointment and one that was 4 years old. Results for iodine by the tentative method were satisfactory, and adoption of the method as official is recommended. Good agreement was obtained for organically combined iodine in the freshly prepared ointment, but not in the older sample.—WM. F. REINDOLLAR. *J. Assoc. Official Agr. Chem.*, 22 (1939), 722–723. (A. P.-C.)

Mandelic Acid—Determination of. Two qualitative tests for mandelic acid and a method for its quantitative determination in tablets and liquid preparations were developed and subjected to collaborative study. Addition of a little 10% ferric chloride solution to a 2.5% solution of mandelic acid produces a bright yellow color (general test for hydroxyacids, and not specific for mandelic acid). To 5 cc. of aqueous 5% mandelic acid solution add 5 cc. of sulfuric acid, agitate, add 10 cc. of sulfuric acid so as to form 2 layers; a purple color slowly forms at the interface if the test tube is allowed to stand a few minutes, and a strong odor of benzaldehyde is noticed on shaking. The quantitative determination is based on extracting from acid solution with a 2+1 chloroform-ether mixture (seven 20-cc. portions usually suffice), evaporating at not over 40° C. with the aid of a fan, dissolving in carbon dioxide-free water and titrating with decinormal sodium hydroxide using phenolphthalein as indicator. The collaborative study gave satisfactory results and adoption of the tests and method as tentative is recommended.—H. G. UNDERWOOD. *J. Assoc. Official Agr. Chem.*, 22 (1939), 757–761. (A. P.-C.)

Methanol in Hamamelis Water—Test for. No substances are present to interfere with the Schiff Test. The following directions are recommended: "Two cc. of the water diluted to 6 cc. with distilled water meet the requirements of the test for methanol as given under Spiritus Frumenti, U. S. P. XI, page 355, starting with the words in the first line: "Place 5 cc.".—REPT. AMER. PHARM. ASSOC. LAB. *Bull. Natl. Formulary Committee*, 8 (1939), 61–62. (H. M. B.)

Metrazole—Microidentification of, in Mixed Aqueous Solutions. Small amounts (1.0, 0.5, 0.1 and 0.05 mg.) of metrazole were added to 100-cc. samples of body fluids (and washings). Twenty-five grams of ammonium sulfate, C. P., were dissolved in each sample and the solution was made faintly ammonical to litmus paper. The solution was then extracted with ethyl acetate in the special extraction device, and the solvent was filtered and evaporated to dryness on a steam bath. The residue was taken up by washing repeatedly with small portions of chloroform (total volume about 3 cc.) and transferred to a microseparatory tube by means of a medicine dropper. A 0.25-cc. portion of 5% potassium hydroxide was added to the tube, which then was shaken about 6 minutes in a blood pipet shaker, centrifuged and the alkali layer was removed to a second tube by means of a Wright pipet. This alkali extraction was repeated once. Then the chloroform solution was extracted with 0.5 cc. of 0.5*N* hydrochloric acid by shaking 2 minutes, centrifuging and transferring the acid layer to a third tube. The acid extraction wax repeated once with 0.25 cc. of 0.5*N* hydrochloric acid, and the chloroform solution was filtered and evaporated to dryness on the steam bath. The residue was taken up in one drop of 0.1*N* hydrochloric acid and trans-

ferred to a microscope slide and one drop of cupric chloride reagent (5% solution in 0.5*N* hydrochloric acid) was added to it.—V. E. STEWARD. *Ind. Eng. Chem.*, 11 (1939), 345–346. (E. G. V.)

Microchemical Technique—Types of Apparatus Suitable for. The recent introduction of quantitative microanalysis has prompted the author to design several pieces of laboratory apparatus for carrying out such work. A useful container for micro amounts of reagents is made by drawing a capillary on the open end of a piece of sealed glass tubing. A large cork borer heated by a microburner is used to evaporate solvents from small amounts of crystalline solutes. The above piece of apparatus is useful in solubility test. A side-arm test tube of wide utility is described and pictured. The author has outlined a procedure whereby this tube may be used, by proper manipulation and the use of attachments, as a reaction vessel, dropping funnel and crystallizing vessel in micro or semi-micro work. Directions are given for making an improved suction funnel. This funnel removes the necessity of pouring a liquid over the lip of a vessel and hence has an advantage over the Buchner type. A microdistillation flask was constructed from glass tubing so that its contents could be placed under reduced pressure, heated, condensed and collected with a minimum of operations and spillage. A microburner delivering a hot pin point flame was easily made from an ordinary nasal atomizer. The two inlet tubes of the atomizer were connected with gas and oxygen supplies, the latter being controlled by a needle-valve from an old suction-type automobile windshield wiper.—GEORGE F. WRIGHT. *Can. J. Research*, Sec. B, 17 (1939), 302–307. (W. T. S.)

N. F. Pastes—Adaptation of Assay Methods for. Assay methods for four N. F. pastes are proposed. Determination of active ingredients was not difficult after separation from the bases and this separation was not difficult. In getting residue of bismuth oxide from the paste, the ignition has to be carried out with care in order to prevent fusion and formation of metallic bismuth. The assays proposed are for pastes of bismuth, zinc oxide, zinc oxide with salicylic acid and hard paste of zinc oxide.—WM. B. BAKER and D. I. KUTZLY. *Jour. A. Ph. A.*, 29 (1940), 224. (Z. M. C.)

Nicotinic Acid Amide and Nicotinic Acid. Methods cited in the literature for preparation of nicotinic acid amide were compared and a method was devised for preparation *via* the ester from nicotinic acid (80% yield of ester). The ester was converted to the amide by treatment with ammonia (90% yield). Pure nicotinic acid amide had m. p. 130–132° C. Preparations melting lower than 130° C. contained free nicotinic acid. The amide was purified free from nicotinic acid by treatment in acetone solution with calcium silicate. The acid precipitated as the calcium salt. The ester was prepared by a slight modification of Camp's method (*Arch. Pharm.*, 240 (1902), 354). *Method (ester).*—Twenty Gm. nicotinic acid, 40 Gm. absolute alcohol and 40 cc. concentrated H_2SO_4 were mixed and warmed on boiling water bath for 3 hours. After cooling in ice, the mixture was slowly poured onto 2 volumes ice, sodium carbonate was added to weakly basic reaction. Then the solution was shaken out with four 100-cc. portions of ether. The solution was dried over anhydrous potassium carbonate and the ether evaporated (yield 80%). Content of ester 92–93%. *Method (amide).*—To 187 Gm. of the ester was added 300 cc. concentrated ammonia water at 0° C. The flask, loosely stoppered, was placed in ice box and allowed to stand $3^1/_2$ days, twice daily saturating with ammonia. Needle crystals formed and were separated in the cold, washed with ether, dried at 40–50° C. First fraction: 72 Gm., m. p. 130° C. The mother liquor was again saturated with ammonia and set in the ice box 2 days. The then separated second fraction weighed 32 Gm., m. p. 130° C. Evaporating the mother liquor in a vacuum at about 50° C. to dryness a third fraction was obtained, 27 Gm., impure, m. p. 121° C. (11% nicotinic acid). This was dissolved in acetone and 2 Gm. calcium silicate added, allowed to stand with occasional stirring until next day, filtered and evaporated on the water bath to small volume. On cooling in ice a white powder separated and was dried, m. p. 127.5° C. (nicotinic acid, 1.2%). Hence the majority of the nicotinic acid had been separated as calcium salt. Yield from fractions 1 and 2, 73.5%, in all, 91%. Hydrolysis of the amide in acidic and basic solutions on autoclaving 20 minutes at 120° C. was studied. There was no hydrolysis of a 10% solution in water, in 0.1*N* HCl, or in 0.001*N* NaOH. In more acidic or alkaline media hydrolysis increased with the acidity or alkalinity. Acid and base constants of the amide were determined electrometrically. The base constant was $10^{-10.9}$. The acid constant was $10^{-12.9}$. Purity rubrics for nicotinic acid amide (Nicotinamidum) and for nicotinic acid (Acidum Nicotinicum) were issued (Danish Apothecaries Society Control Laboratory Standards). The standards for the acid were based on those of the Council on Pharmacy and Chemistry of the A. M. A. For the amide a m. p. of 129–131° C. was required. Standards for free base and free acid allowed, and tests for ammonia, chloride, nitrate and nitropyridylpyrazol were cited. Ash not over 0.001 Gm. A formula for tablet preparation is cited: 200 Gm. nicotinic acid amide are powdered and mixed with 70 Gm. potato starch. This is granulated with about 30 cc. of a 10% gelatin solution and dried at room temperature. It is mixed with 25 Gm. talcum and 5 Gm. powdered agar and punched, making 1000 tablets containing 0.20 Gm. each of nicotinic acid amide. Examinations of 3 commercial specimens of the amide showed one free from nicotinic acid, m. p. 129.5–130° C.; another contained 1.3% free nicotinic acid, m. p. 127–127.5° C.; the third contained 4.1% nicotinic acid and melted at 124.5–125° C.—V. H. MIKKELSEN. *Arch. Pharm. Chemi*, 46 (1939), 479, 530. (C. S. L.)

Nicotinic Acid—Melting Point of. So many discrepancies were observed in reports about melting points an investigation was undertaken. It is believed the true melting point is between 235.5° and 236.6° C. In determining the melting point, care must be taken to heat not faster than $^1/_2$° per minute or high values are obtained.—REIDAR GORDING and LEO A. FLEXSER. *Jour. A. Ph. A.*, 29 (1940), 230. (Z. M. C.)

Nitrogen—Experimental Study on the Stability of Nessler's Reaction and Its Application in the Photometric Determination of. In the determination of ammonia by means of Nessler's reagent clear solutions are not obtained in the presence of electrolytes. The unstable turbidity formed prevents an exact photometric determination of ammonia. There exists, however, a stable color zone for a concentration of 0.1*N* NaOH provided that the concentration of the electrolyte is not higher than 0.1*N* and that the determination is carried out within one hour. The turbidity may be avoided also by using a protective colloid, such as specially purified Senegal gum. By this method, the details of which are given, it is possible to determine ammonia quantitatively in biological material.—LEON GILLO. *Bull. soc. chim. biol.*, 21 (1939), 1117; through *Squibb Abstract Bull.*, 13 (1940), A-18. (F. J. S.)

Nitroglycerin—Determination of, in Medicinal Mixtures. The previously described method

(*Pharm. Abs.*, 6 (1940), 17), appeared to be satisfactory, but when submitted to collaborators the results showed shortages of about 30%. Attempts to modify the method to obtain better recovery were unsuccessful.—OMER C. KENWORTHY. *J. Assoc. Official Agr. Chem.*, 22 (1939), 719–720. (A. P.-C.)

Nitroglycerin in Concentrated Triturations—Determination of. Experience over a period of years led to the belief that complaints about percentage of nitroglycerin in triturations supplied to manufacturing pharmacists were caused by the assay methods used by purchasers. The object of the paper is to present data showing that methods suitable for $^1/_{100}$-grain tablets are not accurate for a 10% trituration and to propose a more practical method for assay of concentrated triturations. U. S. P. XI gives methods of assay for the spirit and for tablets but none for concentrated mixtures There are few references in the literature. Methods reported are briefly discussed. The method found most satisfactory by the author consists of extraction with pure dry ether in a Wiley apparatus, evaporating the ether at room temperature and weighing the dried extract. Details of experimental work are given.—GEORGE F. HUTCHISON. *Jour. A. Ph. A.*, 29 (1940), 217. (Z. M. C.)

Ointment of Mercuric Nitrate (Citrine Ointment)—Assay of. Minor changes were made in the directions of the previously described method (*Pharm. Abs.*, 6 (1940), 17) (modified technique described in detail in *J. Assoc. Official Agr. Chem.*, 22 (1939), 96–97) with a view to improving its accuracy. Collaborative study of the revised method showed an average recovery of 99.7% of the mercury, and it is recommended that the method be adopted as official.—H. O. MORAW. *J. Assoc. Official Agr. Chem.*, 22 (1939), 743–748. (A. P.-C.)

Ointment of Mild Mercurous Chloride—Assay of. The following volumetric method which is applicable to the determination of the mercury ion only and not for the chloride ion is found to be a suitable substitute for the gravimetric method: Weigh 10 Gm. of the ointment into a 250-cc. wide-mouth Erlenmeyer flask, add 15 cc. of hydrochloric acid and 25 cc. of bromine water, heat on a steam bath for 15 minutes with occasional vigorous shaking. After the aqueous layer has completely separated from the ointment base, chill in cold water and when the base has solidified at the surface, puncture it with a stirring rod and transfer the aqueous layer to a 200-cc. volumetric flask, filtering through cotton. Digest the base again with 10 cc. of hydrochloric acid, 10 cc. water and 5 cc. bromine water, cooling and separating as before. Repeat this procedure twice more, filtering the acid aqueous extracts into the 200-cc. volumetric flask. Dilute to volume and mix thoroughly. Transfer a 50-cc. aliquot of this solution to the 250-cc. glass-stoppered Erlenmeyer flask and boil gently to remove the bromine. Cool, dilute to about 50 cc. and make alkaline with 10% NaOH adding 15 cc. in excess. Add 2 cc. of 40% formaldehyde and let stand for 30 minutes with occasional agitation. Make acid with acetic acid, adding 2–3 cc. in excess, and add 40 cc. of 0.1*N* iodine. Shake vigorously to dissolve the mercury. Titrate the excess 0.1*N* iodine with 0.1*N* sodium thiosulfate using starch paste as indicator. One cc. 0.1*N* iodine = 0.0116 Gm. HgCl. Three recommended changes to a previously proposed method are offered.—REPT. AMER. PHARM. ASSOC. LAB. *Bull. Natl. Formulary Committee*, 8 (1940), 157–160. (H. M. B.)

Optical Rotatory Power on Chemical Constitution—Studies on the Dependence of. XVII. Nitro- and Carboxy-Aryl Derivatives of Stereoisomeric Methylene Camphors. The present communication is a continuation of XII, XV and XVI and describes the optical rotatory dispersion of the condensation products of oxymethylene camphors (*l-*, *d-*, *dl-*) with nitroanilines (*o*, *m*, *p-*) and aminobenzoic acids (*o-*, *m-*, *p-*).—BAWA KARTAR SINGH and TARA PROSAD BARAT. *J. Indian Chem. Soc.*, 17 (1940), 1. (F. J. S.)

Oxygen in Organic Substances—New Method for the Direct Determination of. The new semimicro method for the direct determination of oxygen in organic substances consists in thermically decomposing the organic substance in oxygen-free nitrogen atmosphere, converting the total oxygen into CO and determining the latter after oxidation with CO_2. The results obtained with this method were very good in a great number of determinations. The error to be expected is +0.2%.—MAX SCHUTZE. *Z. anal. Chem.*, 118 (1939), 245; through *Squibb Abstract Bull.*, 13 (1940), A-64. (F. J. S.)

Passiflora Incarnata—Chemical Studies on a Physiologically Active Substance in. The use of *P. incarnata* depends on its supposed sedative action. The present investigation was undertaken to establish the chemical nature of the active substance if possible. Details of experimental work are reported. A physiologically active substance was isolated in the form of a mercury derivative and an empirical formula is proposed. It is not yet possible to identify the structure.—G. H. RUGGY and C. S. SMITH. *Jour. A. Ph. A.*, 29 (1940), 207. (Z. M. C.)

Pepsin Preparations—Assay of. A new procedure is described which is stated to be shorter than a previously proposed one in that the digestion of the egg albumin is brought about in a measuring tube rather than a bottle.—REPT. AM. PHARM. ASSOC. LAB. *Bull. Natl. Formulary Committee*, 8 (1940), 156–157. (H. M. B.)

Permanganate and Cerimetric Methods in Pharmaceutical Assays. Though potassium permanganate has been the most generally accepted oxidant in volumetric analysis for fifty years, its supremacy has been seriously challenged during the past decade by ceric salts. It appeared desirable to compare cerimetric methods with methods of the U. S. P. The merits and limitations of ceric sulfate, potassium permanganate and potassium dichromate, the disadvantages of cerimetric methods, the disadvantages of potassium permanganate, the advantages and disadvantages of potassium dichromate are enumerated. The following chemicals, which are typical of the U. S. P. XI assays, were assayed by each of the three oxidizing solutions where possible: ferrous ammonium sulfate, sodium perborate, U. S. P., solution of hydrogen peroxide U. S. P., calcium bromide, U. S. P., calcium chloride, U. S. P., and calcium gluconate, U. S. P. The Volhard method was used for calcium bromide and calcium chloride. Results are tabulated and discussed. The author concludes that, though ceric ammonium sulfate can be substituted for potassium permanganate as an oxidant in pharmaceutical assays, the cost is such that general substitution is not warranted. The Volhard method appears preferable to the U. S. P. methods for calcium bromide and calcium chloride.—GEORGE F. HUTCHISON. *Jour. A. Ph. A.*, 29 (1940), 217. (Z. M. C.)

Phenolphthalein and Acetylsalicylic Acid Mixtures—Analysis of. The technic of the previously described method (*Pharm. Abs.*, 6 (1940), 7) was improved (described in detail in *J. Assoc. Official Agr. Chem.*, 22 (1939), 95–96). Collaborative study of the improved method gave 96.4 to 100.6% (average 98.7%) recoveries of acetylsalicylic acid and 96.2 to 103.2% (average 101.0%) recoveries of phenolphthalein. Its adoption as tentative is recommended.—GEO. M. JOHNSON. *J. Assoc. Official Agr. Chem.*, 22 (1939), 732–734. (A. P.-C.)

Phosgene—Simple Method for Demonstrating. The following provides a simple method for preparing phosgene so that its characteristic smell can be demonstrated to those interested in poison gases. Phosgene is formed by the oxidation of chloroform. Place 1 dram of chloroform, 10 grains potassium dichromate and $^1/_2$ dram sulfuric acid in a test tube, cork and put aside for 24 hours. The characteristic musty-hay smell of phosgene will develop.—ANON. *Australasian J. Pharm.*, 21 (1940), 109.
(A. C. DeD.)

Pimento—Analysis of Ground. Analysis of 9 samples of the ground dried fruit of *Capsicum annuum* gave the following results: water 6.79 to 13.07% nonvolatile oil 9.35 to 12.80%, volatile oil 0.16 to 0.39%, ash 5.80 to 6.99%, carbohydrates (reducing matter in water-soluble extract) 8.70 to 14.40%, proteins (nitrogen × 6.25) 14.88 to 16.65%, crude fiber 20.65 to 24.50%. The ash had the following composition: water-soluble 80.05 to 83.75%, water-insoluble 16.25 to 19.95%, alkalinity of the ash (as potassium carbonate) 57.65 to 66.80%, sulfates (SO_3) 2.95 to 3.48%, phosphates (P_2O_5) 15.80 to 16.83%, silica 4.11 to 5.60%, ferric oxide + alumina 17.92 to 20.94%, lime 4.68 to 6.07%, magnesia 7.65 to 8.82%, potash 33.28 to 35.87%, manganese trace. The nonvolatile oil was a deep red, viscous liquid with sharp taste, exhibiting no fluorescence under filtered ultraviolet light, possessing considerable drying properties, and having the following characteristics: refractive index at 20° C. 1.4812 to 1.4836, iodine value 131.9 to 141.6, acid value 15.85 to 25.95, saponification value 184 to 195, ester value 164.40 to 173.25.—MME. DUMAS. *Ann. fals.*, (1939), 247–250. (A. P.-C.)

Qualitative Separations on a Micro Scale. Analysis of the Tellurium and Copper Groups of A. A. Noyes and W. C. Bray. The scheme provides for the isolation, estimation and confirmation of 10 micrograms of any member of the groups in the presence of 500 micrograms of any other member. The essential features of the scheme of Noyes and Bray are retained. Rhodium is precipitated by titanous chloride as metallic rhodium, redissolved and confirmed by the red coloration obtained with stannous chloride. Molybdenum is identified by the blue coloration of the residue of the ether extract, the red coloration produced by potassium thiocyanate and the precipitation of the black sulfide. The presence of other elements of the two groups is confirmed by slide tests. Examples show the applicability of the procedure.—R. S. ALSTODT and A. A. BENEDETTI-PICHLER. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 294–297. (E. G. V.)

Refractive Index of Crystalline Medicinal Substances in the Japanese Pharmacopœia V Determined by the Immersion Method. A table is given of the refractive index of the more important crystalline medicinal substances in the Japanese Pharmacopœia V, most of which are official in the United States.—ATUSI WATANABE. *J. Pharm. Soc. Japan*, 59 (1939), 131–141 (*in* German, 30–32).
(N. L.)

Streptocide (4 - Sulfonamido - 2, 4- Diamidoazobenzene)—Reactions for the Identification of. Streptocide can be identified by means of stannous chloride: to 1 cc. of the solution to be analyzed, add 3 to 4 drops of reagent and 3 to 4 drops of 3% hydrogen peroxide solution; on heating, a cherry-red coloration is produced in presence of streptocide. Other tests for its identification are: sublimation; reduction by metallic zinc in acid medium; formation of crystals with acetic anhydride; and crystallization with 36% hydrochloric acid.—S. E. BOURKAT. *Farmatsevtitchnii J.*, 11 (1938), 26–29; through *Chimie & Industrie*, 42 (1939), 102.
(A. P.-C.)

Strontium—Determination of, in the Presence of Calcium. A synthetic mixture of strontium chloride with calcium chloride and calcium sulfate was extracted with methanol, filtered and made up to exactly 250 cc. with distilled water. The extract contained strontium chloride and calcium chloride, since calcium sulfate is insoluble. Calcium sulfate was added to the synthetic mixture because in the analysis for which this method was desired calcium sulfate was present. Fifty cc. of the extract were pipeted into a 250-cc. beaker and warmed to 50° C. on a steam hot plate, and 10 cc. were added slowly to freshly prepared ammonium carbonate solution. This converted the strontium chloride and the calcium chloride into the corresponding insoluble carbonates which were left on a hot plate for ten minutes and then allowed to cool. The mixed carbonates were filtered into a Gooch crucible, then dissolved in dilute nitric acid. This gave an aqueous solution of the mixed nitrates which was evaporated to dryness on a steam hot plate. After cooling, 25 cc. of anhydrous acetone were added and left in contact with the mixed nitrates for one hour with occasional agitation. The acetone dissolved all the calcium nitrate and left the strontium nitrate, quantitatively. The strontium nitrate was transferred to a weighed Gooch crucible, washed with more acetone, dried in an oven and weighed.—R. N. SHREVE, C. H. WATKINS and J. C. BROWNING. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 215.
(E. G. V.)

Sulfanilamide—Determination of. Two methods were developed for the determination of sulfanilamide. (1) *Bromination Method.*—Place a portion of the sample containing 0.1 to 0.3 Gm. of sulfanilamide in a 500-cc. glass-stoppered iodine-absorption flask, add about 25 cc. of water and sufficient decinormal or half normal bromide-bromate solution to ensure a 10 to 50% excess of bromine; add rapidly 10 cc. of hydrochloric acid and immediately stopper, swirl the flask, place in the dark for about 5 minutes, remove the stopper just sufficiently to introduce quickly 10 cc. of 10% potassium iodide solution (avoid escape of bromine vapors), stopper, shake thoroughly, remove the stopper, rinse it and the neck of the flask, add about 150 cc. of water and titrate with decinormal sodium thiosulfate using starch indicator; 1 cc. of decinormal bromide-bromate solution = 0.004305 Gm. of sulfanilamide. (2) *Hydrolysis Method.*—Place on a 9-cm. folded filter paper in a funnel a portion of the sample containing about 0.5 Gm. of sulfanilamide; wash the soluble portion with a fine stream of acetone into a 250-cc. flask using a total of about 25 cc. of acetone (test for complete extraction), remove the acetone by immersing the flask in water at about 70° C.; remove from the bath, add 10 to 12 cc. of 75% (by volume) of sulfuric acid, reflux for 30 minutes, dilute to about 100 cc., add excess of 50% alkali, distil, collect the ammonia in excess of decinormal sulfuric acid and titrate with decinormal sodium hydroxide using methyl red indicator; 1 cc. of decinormal acid = 0.01722 Gm. sulfanilamide. Attempts to develop a method based on reaction with hypobromous acid and formation of a relatively stable sulfondibromamide were unsuccessful. In a collaborative study, the bromination method consistently gave somewhat high results, and investigation of several factors that might be conducive to the production of such excesses disclosed no points whereby the method could be modified to give quantitative yields. The results of a collaborative study of the hydrolysis method were more satisfactory; they were slightly high, but the average appeared to be within the analytical error for a determination of this nature. The method is recommended for adoption as tentative.—EDWARD M. HOSHALL.

J. Assoc. Official Agr. Chem., 22 (1939), 748–757. (A. P.-C.)

Sulfanilamide—Methods for Assaying. The methods of Schulek and Baodezaar, Marshall and Werner for determining sulfanilamide are reviewed. The first method is based on the reaction of sulfanilamide with bromine. Marshall's methods consists of colormetrically determining a dye produced by diazotized sulfanilamide while Werner's assay depends upon the reaction between sulfanilamide and Ehrlich's reagent (*p*-dimethylaminobenzaldehyde) to produce a compound the amount of which may be colormetrically estimated. The two latter methods are not applicable to those derivatives of sulfanilamide lacking a free primary amine group. The amount of porphyrins in the urine is also an index of the sulfanilamide concentration of the body.—A. F. CALDWELL. *J. Malaya Branch, B. M. A.*, 3 (1939), No. 1, 47–51; through *Chinese Med. J.*, 56 (1939), 485. (W. T. S.)

Sulfate—Factors Influencing the Quantitative Determination of, as Barium Sulfate. A study has been made of the influences of various factors upon the weight of barium sulfate precipitated from solution both in the presence and in the absence of potassium nitrate. Evidence indicates the possible existence of a complex ion or complex-compound form of sulfate in potassium nitrate solutions which retards precipitation under certain conditions. Barium sulfate precipitated from molar potassium nitrate solution carries down potassium nitrate within the precipitate at the time of precipitation. The precipitation is incomplete, however, and if the solution is allowed to stand at room temperature precipitation continues slowly for days with continued contamination of the precipitate. If the solution is kept hot (80° to 90° C.), the slow precipitation observed at lower temperature does not occur. If potassium nitrate is not added until after precipitation, the precipitation of barium sulfate is not contaminated. Barium sulfate precipitates, formed in the presence of nitrate, are more sensitive to variations in conditions of precipitation and treatment than are the precipitates formed in the absence of nitrate. Information as to the nature and extent of the contamination of barium sulfate precipitates formed in the presence of nitrates indicates that the contamination is distributed throughout the precipitated material. Under most conditions the presence of potassium nitrate produces high results. The overweight may be as much as 320 parts per 1000 above the value required by theory. Conditions have been defined within which barium sulfate may be determined quantitatively to a precision of 2 parts per 1000 in the presence of nitrate in amounts equivalent to that of sulfate present. The effect of ignition upon precipitates contaminated with potassium nitrate has been studied and losses in weight have been found to increase with increased contamination. The extent of contamination of precipitates has been studied while the contaminants are in their original, unignited form.—H. A. FALES and W. S. THOMPSON. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 206–213. (E. G. V.)

Sympetrum—Constituents of. Samples of *Sympetrum darwinianum* Selys and *Sympetrum frequens* Selys were extracted with ether, 95% ethyl alcohol and chloroform. Fatty and waxy-like substances were isolated, together with cholesterol, taurin and a crystalline substance which melted at 85.5°.—AKIRA OGATA, SIRO HIRANO and TAKEO SATO. *J. Pharm. Soc. Japan*, 59 (1939), 110–113 (in German, 50). (N. L.)

Synthetic Drugs—Microchemical Methods for the Identification of. A collaborative study of microchemical tests for the identification of diallylbarbituric acid (addition to the dry powder of lead acetate in solution in triethanolamine, addition of barium hydroxide to the dry powder), mandelic acid (addition of lead acetate or nitric acid solution to a 1% aqueous solution of the drug), and sulfanilamide (addition of benzaldehyde to the dry powder or of sodium nitrite solution to a saturated solution of the drug in decinormal hydrochloric acid) gave satisfactory results, and adoption of the tests as tentative is recommended.—IRWIN S. SHUPE. *J. Assoc. Official Agr. Chem.*, 22 (1939), 709–712. (A. P.-C.)

Technical and Scientific Events and Developments for 1939. A review dealing with (*a*) chemistry in the service of national resources, (*b*) sterilization and disinfection, (*c*) chemo-therapeutic agents, (*d*) vitamins, (*e*) hormones, (*f*) snake venom preparations and (*g*) new specialities with various uses. Fifty-six references are given.—KONRAD SCHULZE. *Deut. Apoth. Ztg.*, 55 (1940), 84–85, 90–94, 100–102. (H. M. B.)

Terpinol Hydrate and Codeine—Analysis of. The previously described method (*Pharm. Abs.*, 6 (1940), 11) was modified by providing spontaneous evaporation of the alcohol-chloroform, instead of evaporation in a slow current of air. Collaborative study of the modified method gave better results than the previous year, and its adoption as tentative is recommended.—JONAS CAROL. *J. Assoc. Official Agr. Chem.*, 22 (1939), 736–738. (A. P.-C.)

Tetraphenylarsonium Chloride as an Analytical Reagent. Determination of Mercury, Tin, Cadmium and Zinc. Mercuric ion (0.5 to 100 mg.) can be quantitatively precipitated as $[C_6H_5)As]_2HgCl_4$ by tetraphenylarsonium ion in a 1.0 to 2.5*M* sodium chloride solution in a volume of 30 to 120 cc. The determination cannot be made gravimetrically, but only by titrating potentiometrically the excess reagent with iodine. Free acid, 0.2 to 1.0*M*, except nitric acid, does not interfere. The precipitate does not form in alkaline solution. Tin (0.80 to 84.0 mg.) in a volume of 30 to 120 cc. can be determined quantitatively by precipitation as $[(C_6H_5)_4As]_2SnCl_6$ with an excess of standard tetraphenylarsonium chloride and the subsequent potentiometric titration of the excess with iodine, or by the direct potentiometric titration of the dissolved precipitate. The precipitate should be formed in a solution 0.4 to 2.0*M* in hydrochloric acid and 1.5 to 3.0*M* in sodium chloride, depending upon the quantity of precipitate, and allowed to stand 30 to 60 minutes before filtering. Cadmium and zinc may be qunatitatively determined by precipitation with an excess of tetraphenylarsonium chloride in 3.0 to 3.5*M* sodium chloride solution, and the subsequent potentiometric titration of the excess with iodine. The precipitates are somewhat more soluble than those of mercury and tin formed under similar conditions.—H. H. WILLARD and G. M. SMITH. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 269–274. (E. G. V.)

Theobromine—Determination of, in Theobromine Calcium Tablets. A collaborative comparison of the previously described (*J. Assoc. Official Agr. Chem.*, 21 (1938), 555–557) proposed acidimetric method and of the present tentative A. O. A. C. iodometric method showed that the iodometric method gives varying results, while the acidimetric method gives consistent results in the hands of different analysts. It is therefore recommended that the latter method replace the present tentative method.—P. S. JORGENSEN. *J. Assoc. Official Agr. Chem.*, 22 (1939), 729–730. (A. P.-C.)

Vitamin B_1 Content of Chinese Plant Beriberi Remedies. A number of Chinese plant remedies for beriberi have been analyzed for vitamin B_1.

Most of the seeds, especially that of plantain, contain significant quantities of the vitamin. The values for mulberry leaf, loquat leaf and carpenter weed are also high. The vitamin B_1 content of barks and stems is low. Roots contain a moderate amount.—E. F. YANG and B. E. READ. *Chinese J. Physiology*, 15 (1940), No. 1, 9–18. (F. J. S.)

Zinc—Rapid Potentiometric Determination of. The volumetric determination of zinc, by adding an excess of potassium ferrocyanide and back titrating the excess potentiometrically with ceric sulfate, using a platinum-tungsten electrode pair, can be carried out with a precision equivalent to methods employing external or internal indicators. The actual titration can be done with much greater speed than can be attained using indicators. The 15-minute period required to allow the solution to come to equilibrium, after the addition of excess ferrocyanide, is of no disadvantage where a large number of samples are to be titrated, since the first ones treated with ferrocyanide will be ready for titration when the excess reagent has been added to all the samples. Potassium permanganate is a satisfactory oxidizing agent for ferrocyanide where the zinc concentration is not in excess of 20 to 30 mg. per 100 cc. Above this concentration, the system behaves erratically. Hydrochloric acid decreases the inflection potential sufficiently, with both ceric sulfate and potassium permanganate, to make the end-point difficult to obtain. The titration should be carried out at room temperature. Addition of potassium ferrocyanide to a hot zinc solution should be avoided because of decomposition of ferrocyanide at even moderately high temperatures.—D. G. STURGES. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 267–268. (E. G. V.)

PHARMACOGNOSY

VEGETABLE DRUGS

Bearberry Leaves—Substitution of, by Mountain Cranberry Leaves. Comparative investigations of the arbutin and tannic acid content of bearberry leaves of Spanish and Tyrol origin and of mountain cranberry leaves from the Tyrol and from commerce were undertaken. The Spanish bearberry leaves have an arbutin content of 10–11%, while the Tyrol bearberry leaves have 8–9%. The cranberry leaves have an arbutin content of 5.5–5.7%. The tannic acid content of the cranberry is one-third to one-fourth that of the bearberry. The small tannic acid content of the cranberry leaves (2.5%–5% in contrast to 10–15% for the bearberry) is an advantage. Clinical experiments indicate also that the cranberry can be well substituted for the bearberry, but the dosage must be increased about 30%. It is recommended that the formerly official Folia Vitis Idææ be again included in the pharmacopœia. The morphology and anatomy of the leaves are described. —E. LINDPAINTER. *Arch. Pharm.*, 277 (1939), 416–422. (L. K.)

Drug Mixtures—Contribution to the Knowledge of. Preliminary Studies with the Counting Procedure for the Quantitative Determination of Herb Mixtures. The standard mixture consisted of 50 parts of senna leaves, 25 parts linden flowers and 15 parts of fennel seed. The first two ingredients were powdered sufficiently to pass through a I sieve but not through a II. The fennel seed was chopped to pass through a II sieve and freed of small particles by placing on a III sieve. The powders were mixed well and the fennel particles then counted as described in the first paper of the series. This standard value obtained as the result of 5 sets of countings (400 fields each) was 30 ± 3 per 16 fields. While the values vary widely in separate fields and the totals for 16 fields also vary, the average of the values for 16 fields remains fairly constant. In order to test the procedure, two test samples were prepared, one containing 20% added linden flowers and the other 20% senna leaves. The mean value for the fennel count was 21 in the first case and 22 in the second. The differences in counts on the standard and on the adulterated samples are shown to be sufficient to allow the detection of added material. Representative data is tabulated.—G. OEHM and ZD. BLAZEK. *Arch. pharm.*, 276 (1938), 94–107. (M. F. W. D.)

Herb Mixtures—Contribution to the Study of. May Herb Mixtures Be Quantitatively Studied? Since the chemical determination of herbs has not been worked out or in many cases can not be used, the possibilities of the characterization of herb mixtures and the detection of adulteration are discussed. A counting procedure has been developed. A fifteen-Gm. sample of the material is poured from the balance pan onto a black glass plate and then carefully spread with the fingers, being careful not to mix the tea. The herb is then carefully pressed beneath a glass plate (11 cm. x 11 cm.) on which is centered a square 8 cm. x 8 cm., further divided into squares 2 cm. on a side. The plate is fixed by means of a movable ring about 9 cm. in diameter. By pressing the plate carefully, the individual components are well separated and may then be easily counted. If a sample of more than 15 Gm. is used, the excess acts as a cussion and prevents the smooth spreading of particles in a thin layer. To avoid recounting the particles in any one field, they may be marked with a dot of ink on the glass plate. The size of the particle is not taken into consideration; any particle whether large or small is counted as one. The entire field of 16 squares is counted and 25 such countings have been found to give an index value which agrees well with the average of a much larger number of counts. The average value for 16 fields obtained from 25 countings (a total of 400 fields) forms the basis for standardization of the tea and for the detection of adulteration. After a counting (16 fields), the material is added to the original total sample which is most conveniently taken as 100 Gm., the whole well mixed, and another 15 Gm.-sample taken for counting. The degree of fineness of the drug is important and must be specified when the index value is stated. The weight of sample used in a counting must also be stated. The index value (or sieve number) is therefore a characteristic of an herb mixture and is the key to a practical determination of its general quality.—G. OEHM and ZD. BLAZEK. *Arch. Pharm.*, 276 (1938), 83–93. (M. F. W. D.)

Ipecacuanha. The history, collection, preparation and studies of the cultivation of ipecac in India are discussed. The pharmacognosy of this drug is also reviewed.—S. N. BAL. *Indian J. Pharm.*, 2 (1940), 9–19. (N. L.)

Medicinal Plants of Madeira. A classification and description of 50 plants medically used by the population of Madeira.—VICENTE DE GOUVEIA. *Arq. Inst. Farmacol. e Terap. Exp. Coimbra*, 3 (1934–1935), 9–37; through *Biol. Abstracts*, 14 (1940), 9331. (F. J. S.)

Papaya and Papain. A review of the commercial aspect and pharmacognosy of the papaya tree and its active principle, papain, are given. Studies in the cultivation of the tree in India are also discussed.—S. N. BAL. *Indian J. Pharm.*, 2 (1940), 98–110. (N. L.)

Pomegranate Peel Oils—Ultraviolet Absorption Spectrum of.—HORST BÖHME. *Arch. Pharm.*, 277 (1939), 61–63. (L. K.)

Portuguese Digitalis—Biological Value of. Great variability was found in the potency of *D. purpurea*

var. *genuina*, *D. p.* var. *tomentosa* and *D. thapsi*, taken from different regions, at different times, and according to the age of the plant powder when used. The experiments were done on *Rana esculenta* (*R. fusca*, the usual test animal, being rare in Portugal) and by Focke's method.—FELICIANO GUIMARAES. *Arq. Inst. Farmacol. e Terap. Exp. Coimbra*, 3 (1934-1935), 51-70; through *Biol. Abstracts*, 14 (1940), 9332. (F. J. S.)

Rhizoma Sanguinariæ—Pharmacognosy of. A description of the characteristics of the pulverized drug and of the cross-sectional anatomy is accompanied by 5 photographic reproductions of sections of *Sanguinaria canadensis*.—F. SCHLEMMER and L. BECK. *Arch. Pharm.*, 277 (1939), 355-359. (L. K.)

Serenoa Serrulata (Saw Palmetto)—Pharmacognostical Study of. A method of commercial collection of the berries, based on knowledge obtained by visiting the localities where the commercial supplies are collected is given. An accurate study of the histology of fruit and seed is presented. Drawings and descriptions of transverse sections of the fruit and seed and of the powdered fruit and seed are included. Some changes should be made in the N. F. VI monograph and such a reworded and changed monograph is submitted.—B. V. CHRISTENSEN and R. C. STOKES. *Jour. A. Ph. A.*, 29 (1940), 199. (Z. M. C.)

Solanaceæ Family—New Medicinal Plant of the. The seed of *pao-shen-tze-*, a Chinese medicinal plant of the *Solanaceæ* order, has been shown to contain one or more alkaloids. Pharmacologically, these alkaloids are equal to scopolamine or hyoscine and have been found to be most useful clinically.—S. K. LIU, S. C. TAN and F. T. CHANG. *Nat. Med. J.*, (1939), 689; through *Chinese Med. J.*, 56 (1939), 493. (W. T. S.)

PHARMACY

GALENICAL

Extract of Glycyrrhiza. Comparisons were made of various methods of determining the content of glycyrrhizic acid in crude glycyrrhiza extracts and the methods tested were: Fuchs' method (*Scientia Pharm.*, 8 (1937), 55), Eder and Sach's method (*Pharm. Acta Helv.*, 4 (1929), 23), Astruc and Pichard's method (French Phar. method: *J. Pharm chim.*, 18 (1918), 289), the method of the Netherlands Phar., Linz's method (*Arch. Pharm.*, 254 (1916), 204), Peyer's method (*Pharm. Monatshefte*, 6 (1925), 7), Cederberg's method (*Svensk Farm. Tids.*, 31 (1927), 361), and Lehmann's method (*Deut. Apoth. Ztg.*, 49 (1934), 1425). Of the nine methods, Fuchs' method was found most useful, together with his taste test. A table cites values found by the nine methods on three commercial specimens of crude licorice extract. Determinations of water content, ash, water soluble portion and content of gums and pectins were also cited. Preparation of extract of glycyrrhiza by the methods of the Dan. Phar., Swedish Phar., B. P., and U. S. P. were considered. Preparation of licorice extract solutions containing various salts were studied, especially as regards precipitation from solution. The p_H of the solutions was determined. The effect of adding various amounts of ammonia water was studied. The H ion concentration was of considerable importance as regards tendency to precipitation. Stabilizers such as syrup or glycerin were considered. It was concluded that a satisfactory licorice extract preparation could be made with glycerin as stabilizer and the following satisfactory formula was cited: Aromatic, 10 Gm., Concentrated Spirit, 50 Gm., Sol. Extract Glycyrrhiza (2 + 1), 300 Gm. and Glycerin, 640 Gm. The aromatic could be one of the following three mixtures: (1) Oil of Fennel, 2.5 Gm., Oil of Anise, 10 Gm., Benzaldehyde, 0.5 Gm., Concentrated Spirit, 87 Gm. (2) Oil of Orange (Portugal), 20 Gm., Oil of Lemon, 5 Gm., Oil of Coriander, 2 Gm., Oil of Anise, 0.5 Gm., Concentrated Spirit, 72.5 Gm. (3) Oil of Peppermint, 5 Gm., and Concentrated Spirit, 95 Gm. Of these, formulas (1) and (3) were best.—C. J. T. MADSEN. *Arch. Pharm. Chemi.*, 47 (1940), 115. (C. S. L.)

Ferrous Salts—Stability of, in Hematopoietic Preparations. It was observed that a solution of ferrous sulfate is not only cheaper and more readily available, but is also more stable than that of a citrated ferrous chloride. The slight increase in acidity found in the case of elixir of ferrous sulfate as compared with a citrated ferrous chloride elixir might further help in the absorption and retention of iron in the body. As ferrous sulfate is effective in lower doses, any such stabilized solution may be advocated in cases suffering from iron deficiency anemias.—U. P. BASU. *Indian J. Pharm.*, 2 (1940), 86-89. (N. L.)

Glucose Solutions for Intravenous Use—Improved Process for Preparing. Cameron outlines certain refinements which facilitate the preparation, preservation and distribution of intravenous glucose solutions in a large hospital.—JOHN CAMERON. *Chinese Med. J.*, 56 (1939), 485. (W. T. S.)

Gynecological Ovules—Preservation and Stabilization of. The water and half the gelatin used in preparing the ovule paste are replaced by glycerol.—MME. L. LIBIEZ. Belg. pat. 431,930, Feb. 28, 1939. (A. P.-C.)

Methylatropine Bromide Solution—Stability of. The method of determining the extent of decomposition of the methylatropine bromide solution is as follows: a 10-cc. sample of the solution is treated with 10 drops of dilute hydrochloric acid, or if the solution is buffered, with enough hydrochloric acid to produce a red color with methyl orange indicator, and then an additional 10 drops of dilute acid added. The solution is extracted 3 times with 15-cc. portions of chloroform-isopropyl alcohol mixture (3 volumes and 1 volume), the extractive filtered, the solvent evaporated on a water bath, the residue dissolved in a little warm water and the solution titrated with 0.1*N* NaOH (phenolphthalein). Each cc. of 0.1*N* NaOH corresponds to 0.03841 Gm. of decomposed methylatropine bromide. Using the above method, the decomposition of methylatropine bromide solution after sterilization and after storage for one-half year was studied. The tabulated results indicate that solutions of methylatropine bromide as well as of atropine, undergo only slight change on warming, since the tropic acid formed in the initial hydrolysis raises the acidity and retards the further change. Studies with solutions of varying strengths indicate that the amount of tropic acid which must be formed to stop hydrolysis is the same in all cases. In very dilute solutions therefore, a higher percentage of methylatropine is decomposed. The addition of sufficient hydrochloric acid to produce a 0.001 or a 0.0001*N* solution of acid, produces a very stable preparation which may be heated in an autoclave or stored for long periods without decomposition. In more strongly acid solutions, however, the decomposition is hastened.—F. REIMERS. *Arch. pharm.*, 276 (1938), 78-82. (M. F. W. D.)

Pharmaceutical Products—Obtaining Stable Concentrated Solutions of Difficultly Soluble. A mixture of urethanes with water and with water-soluble alcohols or esters is used as solvent.—CHEMISCHE FABRIK SCHURHOLZ. Belg. pat. 432,209, Feb. 28, 1939. (A. P.-C.)

Sulfanilamide—Stable Therapeutic Solutions of. Sulfanilamide is used with water, an aliphatic ether alcohol such as triethylene glycol, and with a small proportion of an alkali metal formaldehydesulfoxylate or alkali formaldehyde bisulfite.—WALTER G. CHRISTIANSEN, assignor to E. R. SQUIBB & SONS. U. S. pat. 2,161,407, June 6, 1939. (A. P.-C.)

Tablet—Rapidly-Disintegrating. Tablets capable of rapid disintegration in water are produced by mixing a tablet-base material with an aqueous lather of a foam-producing substantially inert substance, rapidly drying the mixture to free it from excess moisture, coarsely grinding the dried porous mass, and pressing it into tablet form. Examples are given of the use of gelatin with sodium chloride and with quinine dichlorohydrate, hexamethylenetetramine with guaiaci-saponin, and mercury oxycyanide, sodium bicarbonate and sodium chloride with syrup and egg albumin.—BERNARD RAPP and FRIEDRICH K. RUSSOW, assignors to MERCK & Co. U. S. pat. 2,163,629, June 27, 1939. (A. P.-C.)

Tincture of Quillaja—Directions for Preparation of. To avoid cloudiness in the finished product, it is recommended that the filter be washed with a mixture of 2 volumes of alcohol and 1 volume of water instead of washing the filter with water alone as in the present N. F. directions.—C. L. COX. *Bull. Natl. Formulary Committee*, 8 (1940), 138. (H. M. B.)

PHARMACOPŒIAS AND FORMULARIES

British Pharmacopœia—Discussion on.—ANON. *Pharm. J.*, 144 (1940), 185. (W. B. B.)

Dakin's Solution. A discussion of the German and Swiss Pharmacopœal formulas.—HEINO IHBE. *Deut. Apoth. Ztg.*, 55 (1940), 150–151. (H. M. B.)

Jugoslavian Pharmacopœia (1933). Commentary.—F. BENZINGER. *Deut. Apoth. Ztg.*, 54 (1940), 916–917. (H. M. B.)

Pharmacopœia—Next (British). Report of the Pharmacy and Pharmacognosy Committee. A preliminary report of the sub-committee on Pharmacy and Pharmacognosy, concerning the monographs on crude drugs. The sub-committee has reviewed 82 monographs; these monographs have now been entirely re-written in order to present a more complete account of the microscopy of the drugs as they occur in commerce than has been given in previous pharmacopœias, and to indicate in sufficient detail the diagnostic microscopic structures of the powders. In order to show the general scope of the proposed monographs and the manner in which the information is presented, the four complete monographs are included in the Report: Belladonnæ Folium, Belladonnæ Radix, Cinchona and Nux Vomica. The sub-committee on extracts, liquid extracts and tinctures have reviewed the improvements and advances which have been made in manufacturing processes. They recommend that the general principles followed in formulating these galenicals in the current pharmacopœia should be continued. The sub-committee on waters, solutions, infusions, spirits and syrups recommend some important changes on, for instance, the following preparations: Infusum Buchu Recens, Infusum Caryophylli Conc., Infusum Gent. Co. Conc., Liquor Adrenalinæ, Hydrochloridi, Liquor Arsenicalis, Liquor Cresolis Saponatus, Liquor Iodi Mitis. The sub-committee on ointments and miscellaneous galenicals recommend that 73 monographs of the B. P. should remain unchanged. They also recommended a number of formulas from the B. P. C. 1934 should be included. Other monographs discussed are Carbo Activatus, Sodii Morrhuas, Tablets, Acidum Tannicum, Bismuthi Carbonas, Calcii Lactas, Glycerinum, Iodoform, Pyroxylinum, Spiritus Methylatus Industrialis, Sulphur Præcipitatum.—ANON. *Pharm. J.*, 143 (1939), 545; 144 (1940), 22, 36. (W. B. B.)

Thiamin Chloride—Elixir of. The following formula of the New Jersey Formulary is recommended: Thiamin chloride 50 mg., syrup 125 cc., sherry wine *q. s. ad* 500 cc.—Prescott R. Loveland. *Bull. Natl. Formulary Committee*, 8 (1940), 137–138. (H. M. B.)

Tincture of Nux Vomica in German Pharmacopœia VI—Testing and Activity of. The German Pharmacopœia determines the total alkaloids in nux vomica and its extract and tincture gravimetrically using as the average molecular weight 364.2 equivalent to a total alkaloidal content of 50% strychnine and 50% water-free brucine. However M. states that the ratio is 44% strychnine and 56% brucine and the molecular weight is more correctly 367.6%. On standing, the tincture shows a loss of total alkaloids due to the decomposition of brucine by oxidation. The strychnine content does not change so that the longer the tincture is stored, the smaller is the total alkaloid content but the medicinal activity is the same. It is established that the brucine is so much less active than the strychnine that one can neglect it in considering the preparations of nux vomica. The therapeutic activity of tincture as a tonic, stomachic and stimulant is unreliable because of the variable composition in the alkaloids.—Walter Meyer. *Deut. Apoth. Ztg.*, 54 (1940), 913–916. (H. M. B.)

NON-OFFICIAL FORMULAS

Chocolate and Chocolate Syrup. Five formulas containing cocoa and 1% gelatin are proposed yielding syrups superior to the N. F. VI product.—REPT. AMER. PHARM. ASSOC. LAB. *Bull. Natl. Formulary Committee*, 8 (1939), 46–47. (H. M. B.)

Coconut Oil Soap Solutions. The Brit. Pharm. Codex solution of coconut oil soap becomes cloudy; filtration yields only temporary clarity, and this at the expense of the soap content. The difficulty is due to the use of NaOH in the Codex formula. The following formula gives a solution that remains sufficiently clear to filter bright, without undue loss of soap: Coconut oil 5 lb., KOH 1 lb., oil of lavender *q. s.*, distilled water to 18 pints. Melt the oil, add 35 oz. of KOH solution (containing 1 lb. KOH), mix thoroughly, keep warm for a week, add the rest of the distilled water, dissolve by heating without boiling and place the warm solution in separators. When the separation is completed 24 hours later, draw off the clear soap solution, filter through white filter paper, add the preservative and bottle the solution for storage.—CHARLES SPAIN. *Chem. Products*, 3 (1940), 31; through *Chem. Abstr.*, 34 (1940), 2138. (F. J. S.)

Cosmetic Manual. Deodorants. Deodorants are divided into those which act by absorbing, or in some way neutralizing, the odor of perspiration and the antiperspirant which tends to stop or lessen the flow of perspiration; and they are available as liquids, powders, pastes or creams. The constituents and methods of compounding are discussed and the following types are offered: powders (8 formulas), liquids (7), creams (2) and pastes (7).—JOSEPH KALISH. *Drug and Cosmetic Ind.*, 46 (1940), 410–411, 419. (H. M. B.)

Phenosalil—Study of the Composition and Bactericidal Properties of. A formula recommended as satisfactory contains: phenol 50 Gm., salicylic acid 2 Gm., benzoic acid 5 Gm., thymol 5 Gm., essence of pepper 2 Gm., essence of bergamot 5 Gm., glycerin and alcohol 1:1, *q. s.*, to 100 cc. Mix in the order listed.—A. J. BAUDONI and T. SATRIANO DE

DAURAT. *Rev. Centro. Estud. Farm. Bioquim.*, 3 (1938), 122; through *Noticias farm.*, 5 (1939), 137. (G. S. G.)

Quinine Iodobismuthate—Preparation of an Injectable Solution of. Ten grams. of quinine iodobismuthate were dissolved in a mixture of 290 cc. ethylene glycol and 10 cc. 50% KI solution. The resulting solution was not very viscous, could be sterilized below 60° and was easily injectable.—ANTONIO MOSSINI. *Ateneo parmense*, 11 (1939), 386; through *Chem. Abstr.*, 34 (1940), 2135. (F. J. S.)

DISPENSING

Acid Numbers of the Official Tinctures of the Pharm. Hung. IV. II. On storage for 12 months, the acid numbers generally decreased, probably owing to the solution of alkalies from the green-glass containers. The numerical results are tabulated.—ISTVAN NOVÁK. *Magyar Gyógyszerésztud. Társaság. Értesítője*, 16 (1940), 11; through *Chem. Abstr.*, 34 (1940), 2134. (F. J. S.)

Antihygroscopic Agents—Preparation of Biological Compositions Containing. Substantially non-hygroscopic products (which may be used as powders, for pilling, etc.) are obtained from hygroscopic solid materials of animal origin (for example, bile salts, liver concentrates, beef extract) by incorporating 5–15% of a mono- and/or di-glyceride of a higher fatty acid (for example, mono- or di-stearin), or an aqueous paste thereof, with the moist hygroscopic material or concentrate, and then drying the mixed product.—ARMOUR & Co. Brit. pat. 505, 362; through *J. Soc. Chem. Ind.*, 58 (1939), 886. (E. G. V.)

Astringent Drugs—Study of the Extraction of. The study had these objectives: determination of method, apparatus and menstruum best suited for the extraction of tannins; study of the possibility of preparing full-strength astringent fluidextracts without collection of weak percolates; to show proportion of tannin lost in the astringent galenicals over stated periods of time. Most of the experimental work was done on krameria, it being representative of the astringent group. Experimental work is reported in detail. It was found that it is not possible to extract tannin completely and efficiently by ordinary percolation methods without collecting weak percolates. Increasing the length of drug column increased efficiency of extraction when the N. F. VI process was employed. Approximately 90% of the tannin can be removed without collection and evaporation of weak percolates. A modified diacolation procedure is used. This seems preferable to the N. F. VI process with conical percolator, but has no advantages over a long cylindrical tube as percolator. As much as 12.5% of tanin was lost over a period of four and one-half months.—H. F. LEFEVRE and C. O. LEE. *Jour. A. Ph. A.*, 29 (1940), 236. (Z. M. C.)

Barbiturates—Injectable Solutions of. The solutions in water of phenobarbital sodium are unstable; lowering of the p_H improves the stability only moderately. A useful solution is prepared from phenobarbital 10 Gm., propylene glycol 40 cc. and water 100 cc. The product is stable after sterilization in steam for 15 minutes.—HAYDEE N. BERASAIN and HECTOR VITALI. *Rev. farm. (Buenos Aires)*, 81 (1939), 463. (A. E. M.)

Calcium Gluconate—Solutions of. It is slightly soluble in water and the aqueous solution is hypotonic for intravenous injection. Its solubility is augmented by the addition of sodium chloride, citrate, glycerophosphate, etc. A solution with sodium benzoate and urotropin 2 Gm. each to 100 cc. of gluconate and 1000 cc. of water is satisfactory. Ampuls should be carefully washed and sterilized.—C. H. L. *Rev. quím. farm. (Rio de Janeiro)*, 3 (1939), 206. (G. S. G.)

Colloidal Clays. Some Pharmaceutical Uses of Bentonite. One of the most important of the colloidal clays is bentonite (mineral soap or soap clay), a refractory clay of volcanic origin obtained at Fort Benton in the Missouri Valley and in California. It consists of hydrous silicates of aluminum, magnesium and calcium; small amounts of iron are also present. The analysis corresponds to the formula $(Mg.Ca)O.Al_2O_3.5SiO_2.nH_2O$. In contact with water bentonite swells, forming a gelatinous viscous mass, and in weak concentration it gives a stable colloidal solution. As the properties of bentonite are not changed up to a temperature of 400° C., it can be sterilized by heat. It does not contain any poisonous ingredient. Substances which are insoluble in water can easily be suspended by means of this colloidal clay. In the preparation of simple aqueous gels the bentonite is sprinkled on the surface of the water, and after a few minutes the medicaments are mixed; alternately, the product may be triturated in a mortar, the water being added gradually and the paste frequently removed with a flexible spatula from the sides of the mortar. Several formulas, using bentonite for suspending purposes, are given as examples.—ANON. *Pharm. J.*, 143 (1939), 528. (W. B. B.)

Dental-Pharmaceutical Preparations—Latest Developments in.—Adley B. Nichols. *Ann. Dentistry*, 6 (1939), 134; through *Squibb Abstr. Bull.*, 13 (1940), A-5. (F. J. S.)

Dispensing—Art of. I. The author reviews the general requirements for the efficient management of a modern dispensary and the routine which should be followed from the time a prescription is received by the pharmacist until he hands the medicine to the patient.—ANON. *Indian J. Pharm.*, 2 (1940), 42–49. (N. L.)

Dispensing—Art of. II. Mixtures. Definitions and brief descriptions of the various liquid forms of medication are given. The dispensing of liquid medicines is discussed and the properties and methods of preparing aromatic waters are reviewed.—ANON. *Indian J. Pharm.*, 2 (1940), 90–97. (N. L.)

Emulsions. A discussion of types of emulsions and of emulsifying agents.—F. SCHOLLICK. *Oil and Colour Trades J.*, 95 (1939), 647, 649–651; through *Chem. Abstr.*, 33 (1939), 3022. (E. G. V.)

Glycol as an Injectable Solvent in Pharmaceutical Practice. Glycol was shown to be efficacious as an injectable solvent especially in the case of camphor and folliculin. The necessity of previously testing the behavior of such solutions was stressed.—ANTONIO MOSSINI. *Ateneo parmense*, 11 (1939), 242; through *Chem. Abstr.*, 34 (1940), 2135. (F. J. S.)

Hydrogenated Oil as an Ointment Base. III. Potassium Iodide Ointment. Report is made of an extensive study of this ointment prepared with different bases. The N. F. V ointment with benzoinated lard soon turned yellow from free iodine in spite of the presence of sodium thiosulfate. This was due to rancidity of lard. One test for rancidity is to shake melted fat with potassium iodide. The N. F. VI ointment overcomes the difficulty by using lanolin and petrolatum; but the former may be allergic to some skins and petrolatum is non-absorbent. Hydrogenated oils used were described in a previous paper. None of the six ointments deteriorated as rapidly as lard. Emulsified ointment of potassium iodide using tri-ethanolamine-stearic acid emulsifier was more stable than mixtures using the same ointment base. Using hydrogenated cot-

tonseed oils of different manufacturers indicated no distinct relationship between the iodine value and melting point and the tendency to deterioration. There is a definite relationship between tendency to deterioration and iodine value of the same oil hydrogenated to different iodine values. Hydrogenated sesame oil was found to be definitely superior to hydrogenated cottonseed oil of the same melting point as a base for potassium iodide ointment.—GEORGE W. FIERO. *Jour. A. Ph. A.*, 29 (1940), 187. (Z. M. C.)

Hydrophile Ointment Bases. A study of the paper discussed the problem of making an absorption base comparable to the commercial products. The literature is briefly reviewed. In the experimental work 44 different bases were made, using varying proportions of the following: cholesterol, white petrolatum, anhydrous lanolin, white wax, paraffin, ceresin, cetyl, oleic acid, yellow wax, liquid petrolatum, lecithin, cetaceum, glyceryl monostearate, sodium oleate, glycerin, sodium lauryl sulfonate, cholesterol esters, oxycholesterol and water. The following formula was best: cholesterol, 5.0 Gm.; anhydrous wool fat, 20.0 Gm.; liquid petrolatum, 45.0 Gm.; cetaceum, 25.0 Gm. and white wax 5.0 Gm. Discussion covers procedure, emulsification and stability, properties of water-holding bases, pharmaceutical application of absorption bases and stability of absorption base ointments. Observation led to the conclusion that ointments prepared with these bases containing fairly large amounts of water are sensitive to temperature changes. Hence they are much less suited for stock ointments than for those for extemporaneous use.—G. W. JOHNSTON and C. O. LEE. *Jour. A. Ph. A.*, 29 (1940), 236. (Z. M. C.)

Percolator "Nera" with a Dropping Tap—New Type of. The dropping tap has an opening of continuously decreasing size. It gives drops as prescribed by the pharmacopœias at a rate that can be kept constant for 4 days. The structure of the tap is shown by figures.—IMRE NÉMEDY and JÁNOS RAGETTLI. *Magyar Gyógyszerésztud. Társaság. Értesítője*, 16 (1940), 52; through *Chem. Abstr.*, 34 (1940), 2134. (F. J. S.)

Incompatibilities in Prescriptions. III. The Use of Inert Powders in Capsules to Prevent Liquefaction Due to Formation of a Eutectic Mixture. Though the custom of adding an inert powder is rather common, no systematic study had been reported. So an investigation was carried out to determine relative efficiency and the best methods of selecting and using such powders to overcome liquefaction. Seven different prescriptions were tried. Eight different powders were tried: heavy magnesium oxide, light magnesium oxide, talc, lactose, magnesium carbonate, corn starch, wheat starch and potato starch. Various procedures were tried and results of all these experiments are given in eleven tabulations. Light fluffy powders were most efficient, probably because they hold apart the particles of the substance which tend to liquefy on contact. Capsules are more difficult to fill. Magnesium carbonate and light magnesium oxide were best but in some cases when the oxide was used contents of capsules became cement-like in hardness. As to procedure each incompatible ingredient should be mixed with a portion of the inert powder. Heavy trituration hastens liquefaction as does tight packing in the capsule. Exposure of filled capsule to the air usually has little effect. Usually two grains magnesium carbonate or light magnesium oxide per capsule stabilized capsules for a period of two weeks. —WILLIAM J. HUSA and CHARLES H. BECKER. *J. A. Ph. A.*, 29 (1940), 78. (Z. M. C.)

Pongamia and Psoralea—Pharmacy of. (Solubility of Their Active Principles in Ordinary Oils.) The oil obtained from the seeds of *Pongamia glabra* (also known as Karanja), a small tree common to the coastal regions of India, has been used in Hindu medicine from the very early times for skin diseases, rheumatism and whooping cough. Extraction of the non-glyceride portion of the oil of pongamia with hot alcohol yields a crystalline, bitter compound known as karanjin. Clinical experiments indicate that karanjin itself is responsible for the curative property of oil of pongamia in leucoderma. The fruits of *Psoralea corylifolia* (known in Hindu as babachi)—an herbaceous weed very common on the plains of India—have a pleasant, aromatic odor and a bitter taste. The fruits have been used as an anthelmintic, diuretic and diaphoretic in febrile conditions, but are most extensively used as a cure for leucoderma. The oleresinous extract of the entire fruit, however, has been found to be undesirable for therapeutic use in leucoderma in view of its stickiness. The seeds of *Psoralea corylifolia* have been found to yield an essential oil, a terpenoid oil, a fixed oil and two crystalline principles called psoralen and isopsoralen. Clinical tests have also indicated that a mixture of these two principles have anthelmintic and antidermatitic properties. In order to provide efficient preparations of these therapeutic principles, the authors have investigated the possibilities of dispensing these substances dissolved in an oil. It was found that both karanjin and the psoralen-isopsoralen mixture are more soluble in cocoanut oil than in either arachis or sesame oils.—S. RANGASWAMI and T. R. SESHADRI. *Indian J. Pharm.*, 2 (1940), 83–85. (N. L.)

Salicylates in Alkaline Solutions—Oxidation of. Purpose of the research reported was to isolate and study the structure of the brown oxidation product which forms rapidly after a solution is made. Oxidation reactions of salicylates have been characterized but none of the products is similar to that under consideration. Until a chemical name can be applied the product will be referred to as "sodium salicylate-brown," a trisodium salt of an organic radical and the acid form will be termed "acid salicylate-brown." Experimental work is reported in detail. Air and hydrogen peroxide were used as oxidizing agents. Slightly acidic, strongly alkaline and mildly alkaline solutions of sodium salicylate were used. It was concluded that the brown product is an intermediate product because it is further oxidized to colorless compounds: oxalates and carbonates. Three methods are given for its preparation. The brown product has the formula $C_{12}H_8O_6$ and contains three hydroxyl groups which are easily methylated and form metallic salts with alkalies. When made from 2,5-dihydroxyquinone a dehydro compound results having the formula $C_{12}H_6O_6$ and the same chemical and physical properties. A new method is given for the preparation of 2,5-disodoxyquinone and 2,5-dihydroxyquinone. The sodium compound is a general intermediate product in the oxidation of phenolic compounds under certain conditions. A rapid method is given for the preparation of pure sodium peroxide octahydrate.—E. A. BRECHT and C. H. ROGERS. *Jour. A. Ph. A.*, 29 (1940), 178. (Z. M. C.)

Suppositories—Preparation of. If suppositories are to be moulded, the powder must be very finely pulverized (Sieve No. 6) and moulding must be done at as low a temperature as possible (28° C.). Cacao butter should not be heated any longer than necessary. Studies were conducted on the effects of admixture of yellow wax or spermaceti with cacao butter upon the m. p. of the mixture. If cacao butter was melted with yellow wax, up to 3% admixture of wax lowered the m. p. of cacao butter; over 5.66% admixture of wax raised the m. p. above 37° C. In order to raise the m. p. of cacao butter, more than

3% wax must be added, but if over 5% is added the m. p. will be above body temperature. If cacao butter was melted with spermaceti, up to 18% admixture of spermaceti lowered the m. p. of thec acao butter; 20% spermaceti in the mixture gave practically the same m. p. as pure cacao butter; over 28% of spermaceti in the mixture raised the m. p. above 37° C. The accuracy of weight of suppositories made by various technics was compared. Moulded suppositories had an average weight error of 0.65%; while for pressed suppositories the average weight error was 0.73%. The greatest weight deviations of molded or pressed suppositories were 3%. For hand-rolled suppositories the average weight error was 6% and the maximum deviations were as high as 27%. Moulding or pressing were more accurate methods of controling dosage in suppositories than was hand rolling.—A. JERMSTAD and B. FRETHEIM. *Arch. Pharm. Chemi*, 47 (1940), 239. (C. S. L.)

PHARMACEUTICAL HISTORY

Apothecaries in the Province of Saxony—History of.—SIEGMUND A. WOLF. *Deut. Apoth. Ztg.*, 54 (1940), 617–618. (H. M. B.)

"Apothecary to the White Angels" in Troppau (Sudetengau)—from the Chronicles of the. Historical.—GUSTAV HANNEL. *Deut. Apoth. Ztg.*, 54 (1940), 918–919. (H. M. B.)

Derris as an Insecticide—History of the Use of. A review of the literature with 109 references.—R. C. ROARK. *U. S. Dept. Agric., Bur. Entomol. Plant Quarantine*, E-468 (Feb. 1939), 79 pp.; through *Chem. Abstr.*, 33 (1939), 3056. (E. G. V.)

Dresden Apothecaries—Trip Through the Oldest. Descriptive.—WALTHER HOEFER. *Deut. Apoth. Ztg.*, 54 (1940), 582–584. (H. M. B.)

Europe—Historical Observations During a Recent Chemical Trip to. Among the institutions described is the apothecary shop where Scheele lived and worked.—C. A. BROWNE. *J. Chem. Educ.*, 17 (1940), 53–63. (E. G. V.)

German Apothecaries in Old Denmark—Their Names and Influence. Historical.—BRUNO ROEMISCH. *Deut. Apoth. Ztg.*, 54 (1940), 906–908. (H. M. B.)

German Apothecaries in Old Norway—Their Names and Their Influence. Historical.—BRUNO ROEMISCH. *Deut. Apoth. Ztg.*, 55 (1940), 127–128. (H. M. B.)

Gold Therapy—History of. Recorded use of gold compounds in medicine dates from Paracelsus in 16th century who recommended it as an antisyphilitic and antitubercular. Desultory experiments were made until the time of Koch, who in 1890 tested the therapy of the double cyanide of gold and potassium, on cultures of tuberculosis bacilli. In 1892 Calmette tried gold chloride as an antidote for cobra venom. Difficulty of developing an organic compound occurs because of the very slight affinity of gold and carbon. In 1916 Feld and Spiess made the first organic compound of gold, 4-amino-2-auro-mercaptobenzoyl-1-sodium carbonate. It was used for tuberculosis. In 1924 Moligarrd proposed thiosulfate of gold and sodium, known since 1843. In 1926 Fournier proposed oil suspensions of gold salts. In 1927 Lumiere and Perrin presented Allocrisin, a gold and sulfur compound. Gold salts are now combined with calcium or magnesium adjuvants to reduce toxicity and augment tolerance.—JOSE SEVILLA. *Rev. Col. Farm. Nat.*, (1938), No. 3; through *Rev. quím. farm.*, 4 (1939), 7. (G. S. G.)

Pharmacy in Elsasz—Historical Influence of.—C. MEYER. *Deut. Apoth. Ztg.*, 54 (1940), 919–921. (H. M. B.)

Sanitary Regulation in the Philippines—History of. From the time of the Conquest cities were located in the most healthful spots possible and sanitation commensurate with the knowledge of the times was established. The new period of hygiene begins with 1805 when vaccination was made compulsory, and the Governor set the example with his own family. Popular education in sanitation and prevention developed from then. In 1780 laws relating to marriage of minor children were promulgated following a similar law in Spain. In 1833 regulations were issued concerning the disposal of carcasses of animals dying from plague, and orders for the slaughter of diseased live stock. The years 1812 and 1827 saw laws for the conservation and improvement of crops; 1850 saw decrees for the purification and filtration of the water of Pasig River, sand and charcoal being used. In 1840 regulations were made to impound all stray dogs to prevent the spread of rabies. Efforts to combat cholera date from 1582. There were two methods for public welfare, earlier by decree, later by public education. Seventy per cent of the work of public sanitation is achieved by education.—JOSE P. BANTUG. *Rev. Filipina Med. Farm.*, 30 (1939), 101. (G. S. G.)

PHARMACEUTICAL ECONOMICS

Chemistry and the Medical Technician. Opportunities for women are discussed, together with a description of the analyses carried out.—C. CORBETT. *J. Chem. Educ.*, 16 (1939), 471–475. (E. G. V.)

Clinical Chemistry. The training, present opportunities, and the future of the clinical chemist are discussed.—M. SAMSON. *J. Chem. Educ.*, 15 (1938), 510–515. (E. G. V.)

Drug Royalties. A Breach of Ethics. In an editorial it was stated that the unrestricted practice of patenting drugs for profit is fundamentally unethical. Moreover, this should not be done even in the name of some university laboratory or medical foundation. It was thought that personal gain should be sacrificed for the good of patients who are deprived of needed medicines because of their cost being augmented by the payment of royalties. The writer commends the practice of patenting drugs to insure the manufacture of only a potent and a standardized product. Unfortunately not all proceeds from patents on drugs go for additional research as is often claimed. He believes that all practicing physicians should set an example in this matter by passing resolutions in their medical societies not to patent for profit.—ANON. *Southern Med. J.*, 33 (1940), 443. (W. T. S.)

Industrial Wastes. A group of papers on the subject, including water pollution, atmospheric pollution, legal aspects, utilization, problems in the fermentation industry, equipment manufactures, viewpoint, problems of a chemical company, biological processes for treating, etc.—ANON. *Ind. Eng. Chem.*, 31 (1939), 1311–1381. (E. G. V.)

Organic Chemical Industry—Rise of, in the United States. An address.—C. M. A. STINE. *Chemistry and Industry*, 59 (1940), 55–61; *Ind. Eng. Chem.*, 32 (1940), 137–144. (E. G. V.)

Quinine Industry—Position and Problems in. Modern methods of preparation are outlined and a plea is made for rationalization of the industry, particularly with regard to the unnecessarily high standards set by some pharmacopœias and to the unwarranted claims of many quinine preparations; of more than 100 commercial quinine (I) salts more than half of them possess no practical or therapeutic advantage. Methods for determination of alkaloids in the extracted bark and of quinol (II) are given and it is stated that II is always present in

commercial quinine. Its removal (as bisulfate) is technically difficult and it is the cause of errors in Commelin's method for determination of I and cinchonidine (III). This method has been modified and improved. Observations on the properties of I-II and I-III mixtures are given; the III content can be calculated from results obtained in the ammonia test (the ammonia demand of which is almost a linear function of II + III) and the II determination.—R. C. VETTER. *Festschr. E. C. Barell*, (1936), 541–555; through *J. Soc. Chem. Ind.*, 58 ((1939), 1292. (E. G. V.)

Quinine Preparations—Quality of, in Indian Dispensaries. A study has shown that about 50% of the liquid and solid quinine and cinchona preparations used in Indian hospitals are substandard when assayed by B. P. methods. Samples from Java, Europe and India were tested. The authors find this condition very deplorable, especially in view of the fact that the mass of Indian people are malaria-ridden. They attribute the condition to the backward state of the profession of pharmacy in India.—INDU BHUSAN, B. MUKERJI and R. N. CHOPRA. *Indian Med. Gaz.*, 74 (1939), 609. (W. T. S.)

Quinine Tablets—Note on the Manufacture and Retail Sale of, in the Rural Areas of the United Provinces. The magnitude of the rural malaria problem, as judged by the available though crude statistics, in a vast province such as the United Provinces of Agra and Oudh has been discussed. The potential demand for the cinchona products has been calculated and the discrepancy between this and their known consumption from all available sources indicated. The methods by which an attempt was made to increase the consumption of the cinchona products have been discussed. It has been shown that under the existing handicaps imposed by the world prices of cinchona products and Indian rural conditions, the line of action open to workers in this field should be, first, to cheapen the manufacturing cost of tablet making (since it is principally in the tablet form that cinchona products can be utilized in rural areas for mass distribution); second, to improve the quality and composition of tablets so as to make them at once more effective and attractive; and third, to offer sufficient incentive by way of commission of sales agents. One of the ways of reducing the cost of tablet making is to employ modern power-driven machinery and to carry out this manufacture on scientific lines. Following the introduction of such machinery the conversion charges from powders, into tablets have been reduced from Rs. 12 to Rs. 4 per lb. for quinine sulfate, and from Rs. 3 to Rs. 2 per lb. for cinchona febrifuge. The standardization of alkaloidal contents in each tablet, improvement in the composition of tablets and general finish are also possible with the use of the machinery. The manufacturing processes and the machinery used at each stage in the conversion of quinine and cinchona powders into their respective tablets are described in detail. The scheme of sale of quinine sulfate tablets in rural areas in one anna-greased paper treatment packets on a commission basis as it operates in the United Provinces is explained and the nature of the attempts to enlarge this agency pointed out. The capital and running expenses of a factory such as exists in the United Provinces are detailed and the business basis of the scheme outlined.—A. C. BANERJEA. *J. Malaria Inst. India*, 2 (1939), 377. (A. C. DeD.).

MISCELLANEOUS

Adhesive Tape. *2,164,359*—A backing such as one of cellulose acetate or regenerated cellulose is provided with an adhesive coating including halogenated rubber plasticized by a tack-producing plasticizer such as castor oil or dibutyl phthalate which is compatible to the backing and in proportion to render the adhesive normally tacky, pressure-sensitive and cohesive. *2,164,360*—This covers a transparent wound dressing of material such as celluloid coated with a mixture containing chlorinated rubber and a plasticizer.—CLAUSS B. STRAUCH, assignor to MINNESOTA MINING & MANUFACTURING Co. U. S. pats. 2,164,359 and 2,164,360, July 4, 1939. (A. P.-C.)

Atomizer—Improved Type. A description is given of an atomizer in which all parts in contact with the medicament are made of glass. The atomizer is for general use and its rubber bulb is so attached that it may serve as a container for the liquid medicament.—ANON. *Indian Med. Gaz.*, 74 (1939), 654. (W. T. S.)

Body Deodorants. The formulating of a body deodorant is discussed.—I. R. HOLLENBERG. *Progressive Perfumery & Cosmetics*, (1939), 155–156, 162–163; through *Chem. Abstr.*, 34 (1940), 2138. (F. J. S.)

Coal Tar and Natural Dyes for Use in Drugs and Cosmetics. Dyes permitted by the Federal Food, Drug and Cosmetic Act are discussed. The chemical structures of indigo, Tyrian purple, henna (2-hydroxy-1,4-naphthoquinone), cochineal, Indian yellow (euxanthone), dyes derived from flowers, etc., are discussed and the significance of their similarity to those of the coal tar dyes is pointed out.—J. W. ORELUP. *Progressive Perfumery & Cosmetics*, (1939), 177; through *Chem. Abstr.*, 34 (1940), 2138. (F. J. S.)

Cosmetic Creams—Preparation of. The composition and preparation of creams are discussed with special reference to the use of the so-called oxidized fatty oils prepared by heating the oil on a sand bath at 150° C. while passing a current of air over it for 72 hours.—LAWRENCE S. MALOWAN. *Drug and Cosmetic Ind.*, 46 (1940), 416–417. (H. M. B.)

Cosmetic Materials—Absorption of, by the Skin. Suitable for use in cosmetics that are not to be absorbed are petrolatum, mineral oils, some waxes and gums, kaolin, talcum, etc. In a cosmetic intended to be absorbed by the skin the ingredients should be similar in nature to those present in the skin and have a melting point not much higher than body temperature. Examples are animal and vegetable oils, lecithin, cholesterol and their derivatives.—ERNST OHLSSON. *Progressive Perfumery & Cosmetics*, (1939), 122; through *Chem. Abstr.*, 34 (1940), 2138. (F. J. S.)

Cosmetics. Fertile Field for Chemical Research. There is need for information on practically everything used in every type of cosmetic product now in use. Research is also needed on the phenomenon of absorption by the skin, the relationship between systemic conditions and the success of cosmetic treatments, idiosyncrasies and tolerances for substances used in cosmetics, use of vitamins and hormones, safe hair colorings, problems of hair waving, etc.—F. E. WALL. *J. Chem. Educ.*, 17 (1940), 77–80. (E. G. V.)

Detergents—Chemistry of. A review of recent work and theories.—K. VENKATARAMAN. *Current Sci.*, 8 (1939), 281–288; through *J. Soc. Chem. Ind.*, 58 (1939), 963. (E. G. V.)

Disinfectant, Insecticidal, Fungicidal, Vermin-Destroying and Therapeutic Substance—Preparation of. Mixtures of salol and thymol (for example 1:3) which have been melted together are claimed. The product may be dissolved in a solvent, for example, terpineol, and a soap or sulfonated oil or fat may be added to aid dispersion in water.—T. L.

SHEPHERD. Brit. pat. 508,407; through *J. Soc. Chem. Ind.*, 58 (1939), 1006. (E. G. V.)

Disinfecting and Like Agents—Manufacture and Use of. Soaps or soap substitutes (alkyl sulfates or sulfonates, etc.), alkaline-reacting salts or cleansing agents, and, if desired, solid or organic liquid diluents (mono- or poly-hydric alcohols), and other disinfectants (aromatic amines) are incorporated with compounds X.R.CO.NHR′, where R = alkylene less than C_8, R′ = alkyl not less than C_6, aryl, or alicyclic residue, X = quaternary ammonium group. The use of $NHMe_2Cl.CH_2.CO.NH.C_{12}H_{25}$ and the quaternary compound from methylenephenylchloride and piperidinoacetdodecylamide with sodium silicate, sodium phosphate, calcium carbonate, etc., is described.—F. B. DEHN. Brit. pat. 505,429; through *J. Soc. Chem. Ind.*, 58 (1939), 1006. (E. G. V.)

Emulsification Technique. The preparation of technical emulsions, factors which cover their stability, and various types of emulsifying agents are discussed.—W. MEYER. *Farben-Chem.*, 5 (1939), 157–161; through *J. Soc. Chem. Ind.*, 58 (1939), 694. (E. G. V.)

Hair Dye. A urea derivative is incorporated with an organic dye.—WOLF KRITCHEVSKY, assignor to RIT PRODUCTS CORP. U. S. pat. 2,163,043, June 20, 1939. (A. P.-C.)

Hair Dyes. Dyes which color gray hair red-blond to brown comprise triacetyl compounds of the general formula $1,2,4\text{-}(CH_3OCO)_3RX$, where *R* stands for benzene or naphthalene residues and *X* stands for hydrogen, methyl, ethyl or hydroxyethyl.—ERICH LEHMANN, assignor to WINTHROP CHEMICAL CO. U. S. pat. 2,162,458, June 13, 1939. (A. P.-C.)

Hair Rinsing Compositions. Compositions for treating the hair contain phthalic acid, potassium acid phthalate, furoic acid and a water-soluble acid coal-tar coloring matter.—RUSSELL R. FREW, assignor to GOLDEN GLINT CO. U. S. pat. 2,167,502, July 25, 1939. (A. P.-C.)

Hercules Products. Some 24 products are listed, together with their uses in such industries as disinfectant, insecticide, essential oil, adhesive, etc.—HERCULES POWDER CO. *Ind. Eng. Chem.*, 31 (1939), No. 10, 43–49. (E. G. V.)

Honey a Substitute for Glycerin in Tooth Paste. Cameron found that honey, at one-sixth the cost of glycerin, is an excellent substitute for this product in certain dental preparations. A formula of a typical tooth paste containing honey is given.—JOHN CAMERON. *Chinese Med. J.*, 56 (1939), 484. (W. T. S.)

Insecticidal and Fungicidal Compositions. A phosphorus sulfide (such as phosphorus pentasulfide) is used (suitably with elemental sulfur and an alkaline earth metal carbonate) and use of sulfides such as those of aluminum, magnesium, calcium and zinc is also described.—RAYMOND F. BACON and ISAAC BENCOWITZ, assignors to TEXAS GULF SULPHUR CO. U. S. pat. 2,165,206, July 11, 1939. (A. P.-C.)

Insecticidal Compositions. A nitro-substituted phenyl benzyl ether, such as *p*-nitrobenzyl-*p*-*tert*-butylphenyl ether or the benzyl ether of 2,6-dinitro-4-*tert*-octylphenol, is used with various other materials.—WM. F. HESTER, assignor to RÖHM & HAAS CO. U. S. pat. 2,159,025, May 23, 1939. (A. P.-C.)

Insecticide. An aqueous emulsion of phenol-free oils contains salts or dinitrophenols or dinitrocresols. The product is in the form of a paste that is dissolved in water for use.—I. G. FARBENINDUSTRIE A.-G. Belg. pat. 423,528, March 31, 1939. (A. P.-C.)

Insecticide. An insecticide is formed from wine dregs, capsicum, African bitter gourd juice, nicotine and strong alkali soap.—GUISEPPE PROETTO. U. S. pat. 2,159,953, May 23, 1939. (A. P.-C.)

Insecticides. Terpene ethers are used as insecticides alone or together with diluents, emulsifiers or other insecticides. Methyl, ethyl, propyl, butyl and amyl, and other ethers of α-terpineol, borneol and fenchyl alcohols may be used. Additive ethers may be formed by coupling alcohols at the double bonds of unsaturated terpenes, *e. g.*, α-pinene, nopinene, dipentene, terpinene, phellandrene or sylvestrene. An additive ether of methanol with terpinoline or of ethylene glycol with turpentine may be used.—FRIAR M. THOMPSON, JR., assignor to HERCULES POWDER CO. U. S. pat. 2,160,579, May 30, 1939. (A. P.-C.)

Insecticides—Resistance to. Effect of Knock-Down and Light Doses on the Resistance of Houseflies to Pyrethrum Sprays. Experiments described show that houseflies which had been knocked down (paralyzed) by means of sprays of ether, acetone, or kerosene with a low content of pyrethrin (for example, 0.5 mg./cc.) were more resistant than normal active flies to kerosene sprays with a high pyrethrin content (2 or 4 mg./cc.).—E. R. McGOVRAN, W. N. SULLIVAN and G. L. PHILLIPS. *Soap*, 15 (1939, 88–90; through *J. Soc. Chem. Ind.*, 58 (1939), 1002. (E. G. V.)

Insecticides—Testing Liquid Contact, in the Laboratory. An immersion method is described. The importance of stabilizing test conditions is emphasized. Data for a derris preparation are recorded and discussed. The starvation rate of insects is a measure of resistance to insecticides.—H. J. CRAUFURD-BENSON. *Bull. Entom. Res.*, 29 (1938), 41–56; through *J. Soc. Chem. Ind.*, 58 (1939), 761. (E. G. V.)

Mold Elimination. Twenty-one chemicals were tested and most of them were ineffective under the severe condition encountered. The most promising fungicides are thymol, cinnamon oil, α-nitronaphthalene and Phenox. Seasonal protection of most materials is possible with these chemicals and concentrations are recommended for their use. Longer protection may come by combining these or more potent chemicals with a suitable binding varnish which will hold an effective concentration of the fungicide on the surface of the material to be protected.—O. W. RICHARDS and K. J. HAWLEY. *J. Chem. Educ.*, 16 (1939), 6–10. (E. G. V.)

Parasiticidal Compositions. A mineral oil used as a parasiticidal material has dispersed in it an oil-jelling agent such as a polymerization product of isobutene in a quantity sufficient to produce incipient jelling.—WM. B. PARKER, assignor to CALIFORNIA SPRAY-CHEMICAL CORP. U. S. pat. 2,163,560, June 20, 1939. (A. P.-C.)

Parasiticide. A mixture of Paris green, calcium arsenate, an alkaline earth hydroxide and water is dried and at a point in the process between the start and about 50% dehydration the mixture is heated to 150° to 250° F. for 1.5 to 3.5 hours.—RALPH N. CHIPMAN and FRANK J. SEIBERT, assignors to CHIPMAN CHEMICAL CO. U. S. pat. 2,164,568, July 4, 1939. (A. P.-C.)

Parasiticide. A sulfurized nicotine is used, having a sulfur content of about 17% and in which the sulfur and nicotine have combined in substantially equimolecular proportions (suitably formed from nicotine and sulfur at 110° to 225° C. with iodine as a catalyst).—EUCLID W. BOUSQUET, assignor to E. I. DU PONT DE NEMOURS & CO. U. S. pat. 2,165,030, July 4, 1939. (A. P.-C.)

Shampoo Compositions. A viscous hair shampoo composition is prepared comprising an aqueous solution of at least 5% of lauryl monoethanolamine sulfoacetate or like lower-molecular-weight sulfo fatty acid ester of a higher-molecular-weight alcohol, the hydrogen of the sulfonic group of which is replaced by the radical of an organic nitrogenous base, with monoethanolamine sulfate as a thickening agent (the composition being stable against crystallization on being undercooled).—FRANK J. CAHN and MORRIS B. KATZMAN. U. S. pat. 2,166,127, July 18, 1939. (A. P.-C.)

Shaving Cream—Brushless. A nonvanishing brushless shaving cream comprises a plastic emulsion of oleaginous and aqueous materials together with a minor proportion (suitably about 0.1 to 5%) of a phosphatide such as lecithin.—WOLF KRITCHEVSKY, assignor to RIT PRODUCTS CORP. U. S. pat. 2,164,717, July 4, 1939. (A. P.-C.)

Skin Creams of the Water-in-Oil Type. The author briefly discusses some points concerning water-in-oil creams. He comments that it is remarkable that a mixture of anhydrous lanolin and soft paraffin is able to absorb more water than is lanolin itself Various objections have been raised to the use of lanolin in cosmetic creams. One which probably has no real basis in fact is a popular belief that lanolin encourages the growth of hair. Another is due to the odor of lanolin, which is not easy to cover and which some individuals find to be highly objectionable. On the other hand, the incorporation of a small proportion (about 3%) of lanolin in skin creams is advantageous, an indication of the presence in lanolin of a substance possessing water-absorbing powers in a much higher degree than either cholesterol or oxycholesterol. However, the use of cholesterol or oxycholesterol is to be preferred at times because of the inevitable presence in the creams of high proportions of paraffin hydrocarbons. About 0.7% of oxycholesterol suffices to produce stable creams containing about 30% water, the balance consisting of a suitable lipoid mixture, in which soft paraffin should figure in addition to animal or vegetable oils or fats. Rose Water sometimes affects stability of creams, a phenomenon which needs investigation.—H. S. REDGROVE. *Pharm. J.*, 144 (1940), 20. (W. B. B.)

Soap Perfuming in Relation to the Odor-Carrying Alcohol Group. A review of the source and properties of a number of primary, secondary and tertiary perfumery alcohols and their use for soap perfumes.—T. RUEMELE. *Deut. Parfüm.-Ztg.*, 25 (1939), 141–142; through *J. Soc. Chem. Ind.*, 58 (1939), 855. (E. G. V.)

Soap—Value of Pumice in. Pumice for soap should be devoid quartz crystals. The amount of soap and sodium carbonate vary from 1% to 10%; for marble use 5%, tile 2%, woodwork 15–20% combined soap and alkali.—ANON. *Seifen., Öl. und Fett. Industrie*, 22 (1936), 284; through *Am. Perfumer*, 39 (1939), No. 3, 45–46. (G. W. F.)

Spray Compositions for Control of Parasites. A composition suitable for use with water in spraying plants contains about 98% of a hydrocarbon oil together with about 2% of an emulsifier composed of sulfonated naphthenic acid with about twice as much free naphthenic acid and a small proportion of propyl, butyl or amyl acetate.—FRANK F. LINDSTAEDT. U. S. pat. 2,158,371, May 16, 1939. (A. P.-C.)

Washing and Cleansing Agents—Evaluation of. The requirements of these products are discussed from the standpoint of the consumer and the industries.—WALTER MEIER. *Riechstoff-Ind. u. Kosmetik*, 14 (1939), 200–201. (H. M. B.)

PHARMACOLOGY, TOXICOLOGY AND THERAPEUTICS

PHARMACOLOGY

Adrenaline and Ephedrine—Effect of p_H on the Activity of. A comparative study has been made upon the action of adrenaline and ephedrine on frog's blood vessels perfused with Ringer's solution at varying p_H levels. The action of adrenaline is more marked at a p_H around 6 than at a p_H above 8, while the action of ephedrine is intensified by an increase of the p_H in the perfusate. The addition of frog's serum to the perfusing Ringer's solution sensitizes adrenaline activity and desensitizes the action of ephedrine. The effect of adrenaline repeatedly tested is fairly constant when acid Ringer's solution with p_H around 6 is perfused or when serum is added to the alkaline Ringer's solution. The action of repeated doses of ephedrine is not diminished when alkaline Ringer solution is perfused.—C. PAK. *Chinese J. Physiol.*, 14 (1939), No. 3, 291–302. (F. J. S.)

Adrenaline—Inhibition of the Oxidation of. The oxidation of adrenaline was studied in the presence of the following inhibitors: divalent copper, trivalent iron, divalent manganese and divalent cobalt ions, glycine, guanidine carbonate, synthalin B, phenylurea, phenylalanine, hydroquinone, dimethylaminophenol, *l*-ascorbic acid, barbituric acid, barbital, chloretone, mercaptoacetic acid, α-mercaptopropionic acid, cysteine hydrochloride, *l*-cystine and sodium sulfite. Inhibition was effective at concentrations as low as 1 part per million. A reciprocal inhibition which had previously been predicted was found in mixtures of cuprous chloride and ferric chloride and of ferrous chloride and cupric sulfate.—E. BAUR and M. OBRECHT. *Z. Physik. Chem.* (B), 41 (1938), 167–178; through *Chimie & Industrie*, 42 (1939), 106. (A. P.-C.)

Aminonaphthoic Acid Esters—Local Anesthetic Action of Some. Report is made of pharmacological work on a series of esters of aminonaphthoic acids. Twenty-two of them have been examined for local anesthetic action, relative toxicity and irritant action as compared with cocaine and procaine. Most of them compare favorably with cocaine.—L. W. ROWE. *Jour. A. Ph. A.*, 29 (1940), 241. (Z. M. C.)

Amphetamine—Volatile, Circulatory Effects of. Effects on the circulation of volatile amphetamine (benzedrine inhaler), in larger than therapeutic doses were studied in 10 individuals with normal hearts and 57 patients with various forms of heart disease. No significant effect on pulse or blood pressure was observed. Heart disease *per se* is not a contraindication to the use of benzedrine inhaler in therapeutic doses, although it may precipitate an attack of angina pectoris and should be used with caution.—C. M. PETERS and J. M. FAULKNER. *Am. J. Med. Sci.*, 198 (1939), 104–107. (B. H.)

Analeptics—Mode of Action and Application of Some New. Cycliton (Roche) (3,5-dimethylisoxazole-4-carboxyldiethylamide) is easily soluble in water, alcohol, ether, glycerol and olive oil. It stimulates respiration on intravenous or subcutaneous injection. The effect on the circulation is negligible.—H. EITEL. *Munch. med. Wochschr.*, 85 (1938), 720–722; through *Chem. Abstr.*, 33 (1939), 3454. (E. G. V.)

Anesthetic Compounds in the Naphthalene Series. I. Esters of 1-Amino-4-Naphthoic Acid. Some alkyl and alkylaminoalkyl esters of 1-amino-4-naphthoic acid were synthesized and studied. All of them exhibited local anesthetic action; the most interesting were the diethylaminoethyl, 1-diethylamino-2, 2-dimethylpropyl, diethylamino-isopropyl

and 1-diethylamino-2,3-dimethylisopropyl esters. The local anesthetic effect of all these esters was greater than that of cocaine, and their toxicity was intermediate between those of cocaine and novocaine.—S. I. SERGHIEVSKAÏA and V. V. NESVADBA. *J. Obchtch. Khim.*, 8 (1938), 934–936; through *Chimie & Industrie*, 42 (1939), 123. (A. P.-C.)

Anesthetics—Explosions and Fire Hazards of Combustible.—G. W. JONES. *U. S. Bur. Mines, Rept. Invest.* 3443, (1939); through *J. Soc. Chem. Ind.*, 58 (1939), 776. (E. G. V.)

Antimony Sodium Thioglycollate and Antimony Thioglycollamide—Pharmacological Action of. I. Toxicity. The toxicity of antimony sodium thioglycollate (S.A.T.) and antimony thiolgycollamide (T.A.T.) was compared with tartar emetic. S.A.T., like tartar emetic, was found to be more soluble and stable than T.A.T. and was more compatible with blood than tartar emetic, or T.A.T. S.A.T. and T.A.T. are very irritant, but less so than tartar emetic, and cannot be adopted for subcutaneous or intramuscular injection. A comparison of the lethal dose (LD_{50}) showed that S.A.T. and T.A.T. are slightly less toxic than tartar emetic by subcutaneous and intravenous injection. Antimony in the form of S.A.T. is slightly less toxic than T.A.T. On repeated dosage T.A.T. was better tolerated than S.A.T. by subcutaneous and intravenous injection. In dogs, by intravenous injection, S.A.T. was tolerated about twice as well as tartar emetic. Tartar emetic was very much more depressant than S.A.T. or T.A.T. in its effect upon the circulation. The chronic toxic effects by repeated injections were much less pronounced with S.A.T. and T.A.T. than with tartar emetic. Antimony sodium thioglycollate has the advantage over tartar emetic and antimony thioglycollamide in having a higher content of antimony with a relatively lower toxicity.—C. PAK and B. E. READ. *Chinese J. Physiol.*, 14 (1939), No. 3, 375–388. (F. J. S.)

Atropine—Quantitative Determination of the Action of, on the Enucleated Eye of Rana Esculenta. Influence of Salifying Acid. The eye was removed from the socket in diffused light, immersed in the "physiological" solution and protected from direct light during the time of the determinations. The first measurements were taken half-an-hour after enucleation and measurements were taken at ten-minute intervals thereafter; the eye being removed from the liquid just long enough to take transversal (a) and longitudinal (b) measurements of the diameters of the pupil with the aid of an ocular micrometer lens. The pupillar surface (S) was calculated as $S = \pi \times \frac{ab}{4}$, and the per cent of variation in the pupillar surface, plus or minus, was determined from the starting value. The authors found that Ringer's solution caused a miosis, and that a 4.47% glucose solution produced only a slight miosis. Regardless of the solution used, a blank was run in each case. The mydriatic action of atropine on the enucleated eye of the frog was found to be a function of the alkaloidal concentration. This action was found to pass through a maximum as the concentration was increased, and that it varied considerably according to the acid which salified the alkaloid, not only quantitatively but also qualitatively. The maximum activity for the sulfate is about twice as high as that obtained with the phenylpropionate and that of the citrate, the latter salt giving, under certain conditions, a miosis instead of a mydriasis. A study of the corresponding sodium salts indicated that the differences in the actions of the alkaloidal salts cannot be attributed to the independent actions of the salifying acids.—J. REGNIER and A. QUEVAUVILLER. *Bull. sci. pharmacol.*, 46 (1939), 257–268. (S. W. G.)

Barbiturates—Effect of, on Cat's Small Intestine. Like other barbiturates, sodium pentobarbital causes a loss in the general tonus and a decrease in the height of the muscular contractions of segments of excised small intestine of the cat, rabbit and rat. Sodium evipal has an action on the excised rabbit's intestine which is similar to the effect produced by pentobarbital. Though sodium thioethamyl usually causes a decrease in the general tonus with a decrease in the height of the rhythmical contractions. Sodium thiopentobarbital (pentothal sodium) causes an increase as frequently as a decrease in the general tonus than the other tissues studied. Since the same excised loops of intestine behave differently to pentobarbital and thiopentobarbital, the tonus decreasing with the former and increasing with the latter, the sulfur in the thio derivative may be responsible for the increase in general tonus of the gut by the latter drug.—G. M. GRUBER, JR. and C. M. GRUBER. *Arch. intern. pharmacodynamie*, 63 (1939), 243. (W. H. H.)

Benzedrine Sulfate and the Duration of Resistance to Acute Anoxemia. The authors report their experiments upon dogs and guinea pigs, demonstrating that benzedrine lengthens the duration of resistance to an acute anoxemia suddenly imposed. The experiments were carried out either in a suboxygen atmosphere or in a bell with decreased barometer. Their results are convincing. Elsewhere the authors have shown that they were able to attenuate, with this medication, the post-anoxemia coma.—L. BINET and V. Strumza. *Soc. Med. Hospitaux*, (Oct. 20, 1939); through *Presse méd.*, 78 (1939), 1445. (W. H. H.)

Bile—Effect of Therapeutic Agents on the Volume and Constituents of. Bilron and Dechacid (conjugated bile acid preparations) proved superior as stimulants to the flow of bile containing increased amounts of biliary constituents. Decholin and Ketochol (oxidized unconjugated preparations) increased the aqueous fraction of bile but resulted in an absolute decrease in natural bile acid output. Linseed oil in the diet increased the output of cholesterol and biliary lipoids as well as the volume of the bile. Salicylic acid increased bile volume output; calomel, ammonium chloride, urea, calcium gluconate, mucin and chondroitin were without significant effect on bile secretions or its constituents. Sulfanilamide, administered orally in doses of one or two grains per Kg., had no effect on hepatic secretory function and did not interfere with the choleretic properties of ox-bile salts.—C. R. SCHMIDT, J. M. BEAZELL, A. J. ATKINSON and A. C. IVY. *Am. J. Digestive Diseases Nutrition*, 5 (1938), 613–617; through *Chem. Abstr.*, 33 (1939), 2209. (F. J. S.)

Bismuth—Pharmacology of. Its Effect on the Reactions of the Vegetative Nervous System. The intravenous injection of 0.1–1 mg. of bismuth tartrate produces a noticeable increase in the excitability of the sympathetic nerve endings of the nictitating membrane of the cat, and increases its reaction to adrenaline. Only a slight effect in dilute solution was observed on the surviving vessels of isolated organs. A depressor effect was noted on the isolated heart of warm-blooded animals, and the injection of 2–4 mg., or repeated small doses, produces momentary stoppage of the heart which is not checked by preliminary atropinization. Dilute solutions have a depressing action on the isolated intestine. Mixed with calomel, bismuth has a synergistic action on the secretory function of the small intestine.—I. A. STOROZHEV. *Arch. sci. biol.* (U. S. S. R.), 46 (1937), 41–42; through *Chem. Abstr.*, 33 (1939), 6442. (F. J. S.)

Caffeine—Influence of, on Autonomic Nervous System. The action of caffeine on the autonomic

nerves of dogs and rabbits was investigated. Sensitization was observed in the dog's vagus after doses of 20 to 50 mg. per Kg., and in the renal splanchnic at 13 to 25 mg. per Kg. Sensitization of the rabbit's vagus was not well marked at any stage of action. In the dog's vagus paralysis took place in one instance after injection of 15 mg. per Kg., in a second with 37.5 mg. per Kg., in three cases at about 60 mg. per Kg., while in eight animals complete paralysis failed with doses of 80 mg. per Kg. or more The splanchnic function was suppressed by caffeine at about 35 to 40 mg. per Kg. In two dogs under evipan the pressor splanchnic was active up to caffeine dosage of 65 mg. per Kg. The lytic action is reversible. Convulsions were caused by caffeine in varying doses according to rate of injection, but the susceptibility of the animals differed appreciably.—D. T. BARRY. *Arch. intern. pharmacodynamie*, 63 (1939), 129. (W. H. H.)

Cardiazol—Effect of, upon the Pupil and Eye-Grounds Produced by Convulsive Crisis. Mydriasis at the beginning of the crisis, by excitation of the sympathetic, is replaced at the end by a miosis due to a parasympathetic excitation. Light retinal vasoconstriction without retinal hypertension does not modifiy the veins.—M. BARGUES, M. CORCELLE and M. BERTHON. *Soc. Med. Psychol.*, (May 22, 1939); through *Presse méd.*, 79–80 (1939), 1466. (W. H. H.)

Cobra Venom—Effect of, on Mental Efficiency. Quantitative experiments were made with injections of cobra venom, morphine and other analgesics in order to determine their influence on mental efficiency of twenty normal human subjects. Three series of mental arithmetical problems of increasing difficulty were successively presented to each subject for solution before and after administration of the drugs. In such tests it was found that morphine, codeine, dilaudid and heroine markedly depressed mental performance. Cobra venom, on the other hand, definitely stimulated mental performance, as measured by the same tests. A statistical analysis of the data established the validity of the results obtained beyond any reasonable doubt.—D. I. MACHT and M. B. MACHT. *Arch. intern pharmacodynamie*, 63 (1939), 179. (W. H. H.)

Cobra Venom—Glycemia in the Guinea Pig and Rabbit under the Influence of. The action of serpents venoms upon larger animals and man is very complex. During the course of experimental work with the view of clarifying the intimate mechanism of intoxication by corbra venom, the authors have recognized an important symptom: an important augmentation of the content of glucose in the blood. The experiments have been carried out on two species of animals, the guinea pig and rabbit, very closely related from the zoölogical point of view but which often differ with respect to the inoculation of cobra venom. In spite of these differences in behavior, the guinea pig and the rabbit have presented the same modification, a strong hyperglycemia. The study of this phenomena which presents advantageous characteristics, from the experimental point of view to be easily measureable, permits a better understanding of the complex process of the devenomation, even of combating the same with the chances of success.—G. BERTRAND and R. VLADESCO. *Acad. des Sci.*, (Oct. 16, 1939); through *Presse méd.*, 83–84 (1939), 1505. (W. H. H.)

Cobra Venom—Liberation of Adenyl Compounds from Perfused Organs by. A study of the effect of corbra venom in causing functional changes in the heart of the rabbit and cat and in liberating adenyl compounds from perfused organs of these species.—C. H. KELLEWAY and E. R. TRETHEWIE. *Australian J. Exp. Biol. Med. Sci.*, 18 (1940), 63–88. (W. T. S.)

Congo Red Absorption, Distribution and Sojourn of, in Blood. On intravenous injection in animals, Congo red disappears from the blood stream at a constant rate, with only traces remaining after 24–72 hours. From the blood, most of it is distributed to those organs possessing large amounts of extracellular tissue fluid, and is presumably loosely bound in tissue fluid.—A. P. RICHARDSON. *Am. J. Med. Sci.*, 198 (1939), 82–87. (B. H.)

Cratægus Oxyacantha in Hypertension. The published work on *Cratægus oxyacantha* is briefly reviewed. The pharmacology of cratægus is summarized and its resemblance in action to digitalis is discussed. The effect of tincture of cratægus in massive doses on cardiac failure, if there is any, is slight. Ten cases of hypertension are reviewed and the result of treatment with one drachm of tincture of cratægus three times daily is shown to be that of a uniform lowering of the systolic and diastolic blood pressure.—J. D. P. GRAHAM. *Brit. Med. J.*, 4114 (1939), 951. (W. H. H.)

Curarin from Calabash Curare. II. Contrary to preceding observations calabash curarin I is a quaternary ammonium base; the formula of its hydrochloride corresponds to $C_{20}H_{23}ON_2Cl$. From the secondary alkaloids which accompany curarin I there was isolated calabash curarin II, which also is a quaternary base. Its hydrochloride contains two hydrogen atoms more than curarin I. The physiological effect of curarin II is ten times weaker than that of curarin I. Curarin II is probably a dihydrobase of curarin I.—H. WIELAND and H. J. PISTOR. *Liebig's Ann. Chem.*, 536 (1938), 68–77; through *Chimie & Industrie*, 42 (1939), 102. (A. P.-C.)

Cysteamine and Mercaptothiazoline—Pharmacology of. Cysteamine hydrochloride and mercaptothiazoline were synthesized by Gabriel's method. The fatal doses in mice on subcutaneous injection are 0.9 Gm. and 0.45 Gm., respectively, per Kg. body-weight. Smaller doses increase the rate and depth of breathing in cats; larger doses arrest respiration. Blood pressure is lowered by splanchnic vasodilatation. Cysteamine constricts the skin and muscle vessels, increases the force of contraction of the rabbit's heart and dilates the coronary arteries; the thiazoline has the reverse effects. Cysteamine produces diastolic, the thiazoline systolic, arrest of the frog heart. The former increases, the latter lowers, blood sugar. Bile secretion is diminished by both substances. They increase the motility of the gut and of the urinary bladder. Medium concentrations inhibit the activity of isolated smooth muscles and it is paralyzed by large doses of cysteamine; mercaptothiazoline produces a contracture.—J. V. SUPNIEWSKI and M. SERAFIN-GAJEWSKA. *Acta Biol. Exptl.*, 12 (1938), 142–154; through *Chimie & Industrie*, 42 (1939), 116. (A. P.-C.)

Daphnia Methods. Suggested tentative techniques are described for approximate assays for cannabis (marijuana), approximate bioassay for vitamin E and tocopherols, bioassay for aphrodisiacs and irritants, and bioassay for toxic substances, using daphnia as a biological reagent.—ARNO VIEHOEVER. *J. Assoc. Official Agr. Chem.*, 22 (1939), 715–718. (A. P.-C.)

Desoxycorticosterone—Effect of, on Plasma Volume in Intestinal Obstruction. The marked fall in plasma volume observed in dogs subjected to continuous distention of the small intestine is at least partly prevented by the intravenous administration of desoxycorticosterone.—JACOB FINE, FELIX FUCHS and JEROME MARK. *Proc. Soc. Exptl. Biol. Med.*, 43 (1940), 514. (A. E. M.)

Digitalis Assay—Use of Dogs for. Using the International leaf powder as a standard, four unknown tinctures of digitalis were assayed (according to the method of de Lind van Wijngaarden) using cats and also dogs as the test animals. From the data obtained the authors concluded that dogs can replace cats in the assay without loss of accuracy, and moreover dogs are cheaper and more easily obtainable in India the country in which the report originated.—J. C. DAVID and R. KRISHNASWAMI. *Indian J. Med. Research*, 27(1939), 279–283. (W. T. S.)

Digitalis—Biological Methods of. After having reviewed the most important biological methods for the standardization of digitalis the authors critically considered their value. The authors contributed to the Knaffl-Lenz method on the guinea pig by showing the advantages of this method and the constancy of the results.—R. MARRI and F. CIAPPI. *Biochim. terap. sper.*, 26 (1939), 203. (A. C. DeD.)

α-Dinitrophenol—Cholagogue Action of. Since many authors reported the action of dinitrophenol action upon the hepatic parenchyma in the treatment of obesity the authors studied the effects of non-toxic doses upon the organ. Nineteen dogs were prepared in a manner to record and measure the quantity of bile produced. The doses of dinitrophenol employed varied from 0.001 mg. per Kg. body weight of animal to 0.010 mg. It was found that dinitrophenol produced a cholagogue action. The secretion of bile is more rapidly and abundantly produced when dinitrophenol is administered orally. Both intravenous and sometimes intramuscular injections are less rapid. The cholagogue action of dinitrophenol is absolutely independent of its action upon the temperature and respiration. On the contrary it is influenced by the general state of nutrition of the animal.—E. CZARNECKI and M. RUBINSZTEJN. *Polska Gazeta Lekarska*, 18 (1939), 307; through *Presse méd.*, 67 (1939), 135. (W. H. H.)

Ergotoxine—Sympathicotropic Action of. Exposure of isolated rabbit intestine to one part in one million solutions of adrenaline results in an inhibitory effect which is neutralized by one part in one million or ten million solutions of ergotoxine phosphate.—I. A. STOROZHEV. *Arch. sci. biol.*, (U. S. S. R.), 46 (1937), 46; through *Chem. Abstr.*, 33 (1939), 6442. (F. J. S.)

Estrone. Like the male hormones, progesterone is able to counteract some characteristic effects produced by estrone in the male reproductive organs. In male castrated mice this action is mainly directed toward the connective tissue formation around the amp. duct. def. These are the paradoxical effects which are least readily affected by testosterone. Other paradoxical effects, not localized in the epithelium, but in the muscular and connective tissue of the seminal vesicle, were also inhibited by progesterone (experiments on rats). Practically the combination of testosterone and progesterone completely suppresses all the paradoxical effects produced by estrone in castrated mice. Progesterone (in the amount administered) did not exert a perceptible influence on the antimasculine effect of estrone. There are only few facts which allow to assume a testosterone-like effect of progesterone on the seminal vesicles.—S. E. DE JONGH, A. QUERIDO and L. A. M. STOLTE. *Arch. intern. pharmacodynamie*, 62 (1939), 390. (W. H. H.)

Formosanine—Pharmacologic Study of. Injected into veins, in doses of 1–12 mg. per Kg., formosanine lowers the arterial pressure. It exercises upon the vessels of the foot a marked dilating action. It possesses first an exciting respiratory power which, already in the dose of 2 mg. per Kg., shows an acceleration of the respiratory movements also an augmentation of the amplitude. In a dose of 39 mg. per Kg., formosanine does not appear to augment the hypertension pain produced by a mean dose of adrenaline, but it diminishes the bradycardia reflex which accompanies this hypertension. In a concentration of 1:20,000 to 1:100,000 formosanine manifests, upon the isolated guinea-pig intestine, an inhibitory action. In a dilution of 1:50,000 it diminishes the motor intestinal effects of acetylcholine but does not modify the intestinal inhibiting action of adrenaline. Upon the isolated large intestine of the rabbit, the action of formosanine is weakly motor in a concentration of 1:100,000, clearly inhibitory in dilutions of 1:25,000 to 1:12,500. In concentrations of 1:100,000 to 1:50,000 formosanine excites the isolated rabbit uterus but, as with higher concentrations, it does not diminish the motor effect of adrenaline as in the case where the preparation has been submitted to two washings between the formosaninization and the application of adrenaline. In the concentration of 1:50,000, formosanine, which does not appear to have a direct action upon the isolated seminal vesicle of the guinea pig, suppresses almost totally the motor effects of adrenaline and acetylcholine, normally shown upon this preparation.—RAYMOND-HAMET. *Arch. intern. pharmacodynamie*, 63 (1939), 336. (W. H. H.)

Gelsemicine—Action of, on the Acid-Base Balance in Rabbits. Following the intravenous injection of lethal or just sublethal doses or gelsemicine in rabbits, there occurs an acidosis characterized by CO_2 excess and some accumulation of fixed acids. The acidosis is due to respiratory failure as a result of gelsemicine intoxication. The acidosis is abolished by artificial respiration.—HENRY M. LEE and K. K. CHEN. *Chinese J. Physiol.*, 14 (1939), No. 4, 489–496. (F. J. S.)

Gelsemicine—Mode of Action of. The work is summerized as follows: (1) When gelsemicine in the form of the hydrochloride is injected intravenously in mammals, there is a latent period before toxic symptoms appear. This is particularly pronounced in rabbits. (2) Vomiting occurs uniformly in pigeons but occasionally in cats following the intravenous injection of gelsemicine. The median emetic dose in pigeons is 0.108 ± 0.0154 mg. per Kg. In cats doses as big as the LD_{50} which is 0.176 ± 0.027 mg. per Kg. only rarely induce emesis. (3) Gelsemicine apparently depresses the motor neurons of the brain and spinal cord resulting in generalized muscular weakness. (4) The respiratory failure after the administration of fatal doses of gelsemicine is not due to the paralysis of the center, but is attributable to that of the spinal motor neurons innervating the respiratory muscles. (5) Gelsemicine has no action upon the vagus. The mydriasis, intestinal relaxation and uterine contraction following gelsemicine rather suggest an action upon the sympathetic nervous system.—K. K. CHEN and T. Q. CHOU. *Chinese J. Physiol.*, 14 (1939), No. 3, 319–328. (F. J. S.)

Globin Insulinate, Etc. Quick and prolonged lowering of the blood sugar is effected by insulin combined with globin (suitably in dilute acid solution with precipitation of the product by adding disodium phosphate or other weak base). Cresol may be used as a solution stabilizer, and a zinc salt may be added for activation and stabilization.—LASZLO REINER, assignor to BURROUGHS WELLCOME & CO. (U. S. A.) INC. U. S. pat. 2,161,198, June 6, 1939. (A. P.-C.)

Glucuronic Acid—Detoxication of Phenylacetic Acid by, in Humans. The 24 hours elimination in the urine of normal persons varied between 350 and 650 mg. Ingestion of 5 Gm. of phenylacetic acid pro-

duced an average increase of 535 mg., an amount which corresponds to a detoxication by glucuronic acid of 7.5% of the phenylacetic acid ingested.—HARRY WAGREICH, HENRY KAMIN and BENJAMIN HARROW. *Proc. Soc. Exptl. Biol. Med.*, 43 (1940), 468. (A. E. M.)

Gonadotropic Activity of Extracts of Anterior Pituitary—Measure of. The authors report that the gonadotropic activity of anterior pituitary extracts has been effected by three specific methods (1) Determination of the percentage of estrus found in a certain number of hypophysectomized rats. (2) Measure of the growth of the comb of an immature cock; easy technique but results are not precise. (3) Augmentation of testicle weight of the immature cock; method more precise but more burdensome.—R. COHEN and P. ARDOINT. *Acad. Sci.*, (Sept. 18, 1939); through *Presse med.*, 78 (1939), 1445. (W. H. H.)

Herba Equiseti—Usefulness of, as a Diuretic. There is no justification for the widespread view that all drugs containing saponins can be designated as diuretics. Drugs belonging to the classification of Herba Equiseti contain no organic component possessing a specific diuretic action.—KURT BREITWIESER. *Arch. pharm.*, 277 (1939), 53–61. (L. K.)

Hydrastine as an Antagonist to Sodium Pentobarbital. Experiments carried out on rabbits indicate that hydrastine has no value as an analeptic but it does have an apparent depression of the cortical function as shown by a loss of placement reactions. It stimulates the spinal cord like strychnine and prolongs the sleep produced by pentobarbital; hence it may have a mixed action.—HELEN M. KIPPLE and JAMES M. DILLE. *Pharm. Arch*, 11 (1940), 21–23. (H. M. B.)

Hypertension of the Central Branch of the Vagus and the Ortho and Parasympathicolytic Drugs. The hypertension due to the excitement of the central branch of the vagus is not provoked by the concomitant stopping of the respiratory movements or by the excitement of the cervical sympatieus; and it is not inhibited by *ortho*sympathicolytic drugs (933F, caffeine) or *para*sympathicolytic ones (atropine).—U. LOMBROSO and V. MARTINI. *Biochim. terap. sper.*, 26 (1939), 193. (A. C. DeD.)

Hyperthyroidism—Effect of, on the Action of Adrenaline and Ephedrine. The activity of adrenaline and ephedrine after excessive thyroid treatment has been tested on the rabbit's ear vessels and on the pupils of mice and rabbits, with and without urethane anesthesia. The action of adrenaline is sensitized by an excess of thyroid hormone, and this phenomenon is more definitely demonstrable on the mydriatic action in the non-anesthetized animal. The action of ephedrine is not sensitized by an excess of thyroid hormone but may be slightly diminished. Hyperthyroidism fails to sensitize adrenaline activity after denervation. The action of adrenaline and ephedrine are not altered after α-dinitrophenol treatment. Similarity in the mechanism of the sensitizing effect of hyperthyroidism on the adrenergic nerves with that of cocaine and denervation is discussed.—C. PAK. *Chinese J. Physiol.*, 14 (1939), No. 3, 231–248. (F. J. S.)

Innervation of Small Intestine—Pharamacological Approach to. The vagus nerves of rabbits and rats were cut between the stomach and diaphragm. The splanchnic nerves of rabbits were cut just below the diaphragm, and in some rabbits both the vagus and splanchnic nerves were cut. One or more branches of the mesenteric nerves of rabbits, cats, monkeys and guinea pigs were cut. From three days to three months were allowed for nerve degeneration before the test experiment was performed. None of these operations altered the responses of the intestine to acetylcholine, pilocarpine, physostigmine, nicotine, barium chloride or potassium chloride. Splanchnic nerve degeneration slightly sensitized the intestine to epinephrine but had no apparent influence on the response of the intestinal wall or blood vessels to electrical stimulation of the mesenteric nerves. Mesenteric nerve degeneration markedly sensitized the smooth muscle of the intestinal wall and of the intestinal vessels to the action of epinephrine. It is concluded that the vagus fibers are preganglionic down to the wall of the intestine, where they end on the myenteric ganglia. The sympathetic fibers of the splanchnic nerves are preganglionic but the sympathetic fibers of the mesenteric nerves are postganglionic.—M. E. DRAKE, F. S. MODERN, R. J. F. RENSHAW and C. H. THIENES. *Arch. intern. pharmacodynamie*, 63 (1939), 224. (W. H. H.)

Lactation-Stimulating Product. Mixtures of cystine, cysteine, glutathione, homocystine or methionine with *iso*-leucine and, if desired, an edible oil are claimed.—A. HERSCHEL. Brit. pat. 507,825; through *J. Soc. Chem. Ind.*, 58 (1939), 997. (E. G. V.)

Lead Anemia—Mechanism of Development of. IV. The Physiochemical Nature of the Splenic and Liver Substances which Decrease Erythrocytes. After injection with lead acetate, the spleen and liver seem to contain some specific chemical substances which are able to decrease the number of erythrocytes. The author attempted to determine the physiochemical nature of these substances which were obtained from the splenic and hepatic veins after injection of the lead. The anemic action of the splenic substance disappeared after heating for one hour at 100°. The substance was soluble in water, but did not dissolve in ether and alcohol; it was adsorbed easily by animal charcoal or kaolin. Its action was also retained after ultraviolet radiation for three hours.—S. KIN. *J. Med. Coll. Keijo*, 9 (1939), 101–107. (F. S. M.)

Nitro Derivatives—Influence of, on Carotid Sinus Chemoreceptors. Intracarotid injection of small doses of dinitro-phenol 1-2-4, dinitro-*ortho*-cresol 1-2-4 and *para*nitro-phenol produces an immediate intense but transient stimulation of respiration. The respiratory stimulation is absent if the carotid sinus of the injected side is denervated. Therefore the stimulating action of this type is not a direct central effect but is reflexly induced through excitation of the carotid sinus chemoreceptors. The stimulating effect of these nitro derivatives upon the carotid sinus chemoreceptors appears to be a specific action of the drugs examined. It seems that there exists a relationship between the stimulating effect on the chemoreceptors of the carotid body and the metabolic action of the examined nitro derivatives.—T. C. R. SHEN and W. H. HAUSS. *Arch. intern. pharmacodynamie*, 63 (1939), 251. (W. H. H.)

Octyl Nitrite, Etc., for Use as Vasodilators. Details are given of the preparation of octyl nitrite and general mention is made of the similar production and use of other alkyl nitrites of the general formula $C_nH_{2n}+1ONO$ in which n is not less than 6 nor greater than 12, such nitrites producing a much more prolonged effect than that of amyl nitrite, even in smaller doses.—JOHN C. KRANTZ, JR., assignor to HYNSON, WESTCOTT & DUNNING, INC. U. S. pat. 2,161,358, June 6, 1939. (A. P.-C.)

Oils of Matricaria Chamomilla L. and M. Discoidea L.—Comparative Pharmacological Tests of. Genuine oil of *Matricaria chamomilla* L. inhibits inflammation, but oil of *M. discoidea* L. does not. Although discoidea is said to have valuable carminative, antispasmodic and anthelmintic properties,

it cannot displace genuine chamomilla in all cases, inasmuch as it is lacking in the most essential and most effective component of the genuine chamomilla—the inflammation-inhibiting principle of the ethereal oil.—R. JARETZKY and F. NEUWALD. *Arch. pharm.*, 277 (1939), 50–53. (L. K.)

Passiflora Incarnata—Pharmacological Study of the Active Principle of. A chemical study of the active principle was reported previously. It was isolated in a relatively pure form as a mercury derivative. In the pharmacological study a fluidextract and the active principle were used. Experiments included general systemic action, action on the cardiovascular system, organic volume changes, action on the respiratory system of the dog and action on isolated organs. No sedative action was found. The active substance caused a lowering of blood pressure and contraction of smooth muscle of the gut and uterus. The activity of the substance was unaffected by vagotomy, atropine, nicotine or pituitrin. It probably exerts its characteristic activity by direct action on smooth muscle.—GEORGE H. RUGGY and CLAYTON S. SMITH. *Jour. A. Ph. A.*, 29 (1940), 245. (Z. M. C.)

β-(2-Piperidyl)-Ethanol—Local Anesthetics from. A series of substituted benzoic esters of β-(2-piperidyl)-ethanol hydrochloride has been prepared and their local anesthetic properties determined. The methods are briefly given.—L. A. WALTER and R. J. FOSBINDER. *J. Am. Chem. Soc.*, 61 (1939), 1713. (E. B. S.)

Polycyclic Aromatic Hydrocarbons. XXIII. The 5-methyl, 5-ethyl, 5-*n*-propyl and 5-isopropyl derivatives of 1:2-benzanthracene have carcinogenic properties and it seemed of interest to determine to what extent the length of carbon chain could be increased without loss of activity.—J. W. COOK and A. M. ROBINSON. *J. Chem. Soc.*, (1940), 303–304. (W. T. S.)

Progesterone—Antitumorigenic Action of. The quantity of progesterone necessary to suppress completely the tumorigenic action of estradiol benzoate is more than 150 times greater than that of the latter. According to Courrier and Cohen-Solal (1937) the estrogenic action of estradiol also is suppressed by a quantity of progesterone 200 to 400 times greater than that of estradiol. The authors support the hypothesis that the development of uterine fibromyomas in women is due to a disturbance of the normal balance between follicular and luteal hormones and of their normal timing, and that progesterone may prove useful as a therapeutic agent against fibromyoma.—A. LIPSCHÜTZ, R. MURILLO and L. VARGAS. *Lancet*, 237 (1939), 420. (W. H. H.)

Rauwolfia Heterophylla—Direct and Indirect Effects of, upon the Intestine. The authors have reported that the extract of *Rauwolfia heterophylla* produced an apparent inversion of the essential intestinal effect of adrenaline. This inversion resulted from the subtotal abolition of the primary inhibitor effect of this amine and the almost immediate appearance of a considerable reënforcement from the secondary motor effect.—RAYMOND-HAMET and P. PORTIER. *Acad. dis. Sci.*, (Oct. 16, 1939); through *Presse méd.*, 83–84 (1939), 1505. (W. H. H.)

Soaps—Pharmacology of. III. The Irritant Action of Sodium Alkyl Sulfates on Human Skin. Skin tests have been made on sodium alkyl sulfates similar to those made on soaps. It was found that the pure sodium alkyl sulfates are less irritating to human skin than the pure sodium or potassium salts of the saturated fatty acids from C-8 to C-18. Sodium lauryl sulfate is the most frequent cause of skin irritation of the series studied, followed closely by myristyl sulfate. Sodium chloride and sodium sulfate enhance the irritant action of these soaps to a marked degree and sodium carbonate causes even greater increase.—BYRON E. EMERY and LEROY D. EDWARDS. *Jour. A. Ph. A.*, 29 (1940), 254. (Z. M. C.)

Testosterone—Antitumorigenic Action of. When the monobenzoate ester of estradiol was given to castrated guinea pigs simultaneously with testosterone propionate (up to the proportion of 1:13), uterine and extrauterine fibroids developed in the usual manner as with similar quantities of the ester of estradiol alone. When the proportion of estradiol to testosterone was raised to 1:22 or more, no fibroids of appreciable size developed, only some fibrous reaction or tumoral seed being produced, which seems to be characteristic of a diminished tumoral sensibility. The objection can be raised that the individual variations, so far as the tumoral reaction is concerned, are so great that the apparent inhibiting action of testosterone may be due to an experimental hazard; but the inhibiting action of testosterone against the stimulating action of estradiol is revealed also by the following experimental findings: though the uterine weight is maintained by testosterone alone in a castrated animal on a normal level, the male hormone will suppress the increase of the uterine weight due to estradiol, especially when the hormones are given in a proportion of more than 1:22; and the atypical growth of the endometrium and its glands due to estradiol is partly inhibited by testosterone.—A. LIPSCHÜTZ, L. VARGAS and O. RUZ. *Lancet*, 237 (1939), 867. (W. H. H.)

Testosterone Propionate and Folliculin—Biological Antagonism between, in Animal Experiments. One mg. of testosterone propionate is capable of neutralizing the biological action of 50 units of folliculin.—ALBERTO G. PERALTA RAMOS. *Deut. Med. Wochschr.*, 65 (1939), 1127–1128. (L. K.)

Uterine Sedative Action of Viburnums. III. Authentic *Viburnum prunifolium* has been found to produce similar sedative effects on isolated and *in situ* uterine studies on animals and humans. Adulterants present in the commercial products are inert and reports of the lack of activity of viburnum in the literature may be due to the use of adulterated drug.—JAMES C. MUNCH. *Pharm. Arch.*, 11 (1940), 33–37. (H. M. B.)

Veritol—Effects of, on Circulation in Man. Intramuscular injection in man of 0.02 Gm. of verito (Knoll), β-*p*-hydroxyphenylisopropylmethylamine increases the blood volume (measured with the Congo red method) up to 54% of the original value. There is no significant change in the hematocrit readings. Arterial and venous blood pressures are increased; the pulse rate is either unchanged or slightly lowered. Veritol is useful in treatment of vasomotor collapse.—T. SCHONDORF. *Munch. med. Wochschr.*, 83 (1938), 333–353; through *Chem. Abstr.*, 33 (1939), 3454. (E. G. V.)

Viper Venom—Explanation of Anomalous Behavior of, in Clotting Blood. Chowhan gives this explanation for the fact that viper venom prevents clotting of blood in some cases and produces clotting in others. Exceedingly small doses act as a coagulant while large doses, as in the case of a snake bite, produce hemorrhage in all serous cavities. When the venom first enters the circulation its concentration is low and it therefore produces a clot. Later the concentration rises and the clot is digested which allows for excess hemorrhage.—J. S. CHOWHAN. *Indian Med. Gaz.*, 74 (1939), 650. (W. T. S.)

TOXICOLOGY

Acetone—Toxicity of, and Influence on Respiration. Inhalation of acetone by rabbits produces an immediate apnea followed by a progressive diminution in the respiratory amplitude as the toxic action increases. Tracheal inhalation or intravenous or subcutaneous administration disturbs respiratory rhythm, the effect being similar to those produced by chloroform.—L. DI PRISCO. *Boll. soc. ital. biol sper.*, 13 (1938), 122–124; through *Chem. Abstr.*, 33 (1939), 3453. (F. J. S.)

African Arrow Poison—Chemical and Biological Researches for the Identification of an. The author has studied the characteristics of an african arrow poison by a series of chemical and biological researches and has identified it as *K*-Strophanthin.—R. MARRI. *Biochim. terap. sper.*, 26 (1939), 56. (A. C. DeD).

Arsenic—Effect of, on the Animal Organism and Its Passage Through the Tissues in Intoxication. In chronic poisoning by small doses of arsenic, the proportion of this element does not exceed, at the end of 6 months, 1 to 2 mg. per Kg. in the muscles and 3 mg. in the liver and kidneys. In the case of acute poisoning, on the other hand, it can reach 12 mg. in the muscles, 108 mg. in the liver and 60 mg. in the kidneys. In both cases the arsenic is present in the tissues in the form of difficultly soluble compounds.—A. I. STENBERG. *Voprosy Pitaniya*, 7 (1938), 64–83; through *Chimie & Industrie*, 42 (1939), 101. (A. P.-C.)

Bactericidal Substance—Toxicity for Dogs of a, Derived from Soil Bacillus. A protein-free preparation of the bactericidal substance described by Dubos was injected intravenously into dogs. Seven of the 8 animals which received 0.4 mg./Kg. or more daily died as a result of the injections and in 6 of them death occurred before the course of 10 injections was completed. All animals receiving 0.3 mg./Kg. or more showed well-marked acute or chronic changes in the liver, spleen, kidneys, heart and lungs. Doses of 0.2 mg./Kg., or less, caused only minor evidence of toxicity.—COLIN M. MACLEOD, GEORGE S. MIRICK and EDWARD C. CURNEN. *Proc. Soc. Exptl. Biol. Med.*, 43 (1940), 461. (A. E. M.)

Basophilic Aggregation Test for Lead Absorption and Lead Poisoning. A short booklet giving in concise form the technique and interpretation of results of the basophilic aggregation test.—ANON. *Ohio Dept. of Health, Adult Hyg. Div.*, (1940), 7. (F. S. M.)

Benzene Poisoning—Diagnosis and Therapy of Chronic. No decrease in vitamin C content was observed in the 24-hour urine of benzene workers. Those showing symptoms of benzene poisoning had a decreased vitamin C content in the blood, which was more pronounced the more definite were the symptoms. Treatment with vitamin C preparations greatly improved the condition of an affected worker. Rabbits treated with vitamin C showed greater resistance to benzene vapor than did normally fed animals.—G. BORMANN. *Arch. Gewerbepath. Gewerbehyg.*, 8 (1937), 194–205; through *Chem. Abstr.*, 33 (1939), 6470. (F. J. S.)

Benzine and Benzene—Effects of, on the Human Organism. A brief description of the patho-biological significance of these common industrial chemicals and discussion of the manner in which they interfere with body chemical functions.—W. KRETSCHMER. *Umschau.*, 43 (1939), 233–234; through *Chem. Abstr.*, 33 (1939), 6471. (F. J. S.)

Benzol—New Studies upon the Toxicity of. After having reviewed the work of Dautrebande upon the physiologic, pharmacodynamic and toxic action of benzol, the authors report new experiments which they have carried out in this work in order to study whether the commercial crystallizable benzol used by Dautrebande in his experiments should be considered as pure benzol. By fractional distillation they have found that this commercial benzol was rather impure. In the first part of their study the authors criticized the various methods of benzol dosage utilized; because such impurities as toluene and xylene have not been previously removed. The result of the experimental research reported by the authors, following a clear identification of each experimental condition, showed that commercial benzol possessed a greater toxicity than did chemically pure benzol when tested upon spontaneous motility of the isolated organs as well as the peripheral vasomotor system of the dog. The greater toxicity of commercially pure benzol is not due to the presence of thiophene in the crude product; thiophene proper does not possess a toxic action nor does it have a synergistic toxic action with pure benzol. The toxicity has been attributed to compounds other than thiophene which accompany pure benzol in the crude commercial product. The proof is furnished by experiment, upon isolated organs and upon the animal *in toto*, with various fractions of distillations from pure commercial benzol, which contains these various compounds. They found that the portion distilling over between 80.4–81.2° C., from the commercial benzol, was more toxic than that obtained from the same fraction of pure benzol.—P. ANGENOT and R. CHARLIER. *Arch. Maladies professionnelles*, 2 (1939), 348; through *Presse méd.*, 81–82 (1939), 162. (W. H. H.)

Caffeine—Rendering Non-Poisonous Drugs and Foods or Other Aqueous Extracts of Such Substances that Contain. Adenine is either mixed with the extract or incorporated with the dry substances.—H. A. G. COFFEE CO., LTD. Brit. pat. 505,131; through *J. Soc. Chem. Ind.*, 58 (1939), 887. (E. G. V.)

Cardiac Poisons—Recent Progress in the Knowledge of the Chemical Structure of. Recent work on the structure of compounds of the digitalis, strophanthus and toad venom groups is reviewed.—E. GHIGI. *Ann. chim. farm.*, Dec. (1938), 7–36; through *Chem. Abstr.*, 33 (1939), 3386. (F. J. S.)

Chemical Examiner—Report of, to the Government of Madras (India) for the Year 1938. A total of 467 cases of poisoning and 2485 articles were examined as compared to 426 cases and 2427 articles in 1937. In cases of poisoning datura headed the list with oleander and opium a close second. Poisoning by organic substances was twice as frequent as those by inorganic compounds with mercury leading in the latter group. Details are given of several interesting cases involving cyanide, chloroform, potassium dichromate and uncooked *Manihot utilissima* (jungle potato). **Report of the Chemical Examiner to the Government, Punjab (India), for the Year 1938.** This year, 495 cases were examined which show an increase of 224 cases over the previous year. Exhibits examined decreased from 11,905 to 11,715. The number of "stain cases" increased while human and cattle poisoning decreased. The percentage of detection rose in all cases. Opium, datura and arsenic lead the list in human poisoning while in the case of cattle poisoning arsenic and strychnine were largely used. Cases of human and animal poisoning were enumerated as to their geographic origin. Seventy-two drug samples were examined. Of 23 samples of drinking water examined 18 were found fit. **Report of the Chemical Examiner to the Government, United Provinces and Central Provinces (India), for the Year 1938.** Poison-

ing was detected in 67% of the total 427 cases examined which attested to the efficiency of the work. In several cases unidentifiable organic substances were detected which indicates the need for research on indigenous toxic plants. The list of poisons in this report is very similar to those in the reports above.—*Indian Med. Gaz.*, 75 (1940), 122–124. (W. T. S.)

Clams and Mussels—Possible Occurrence of Toxic Material in. Toxicity is determined by extracting with acid methyl alcohol, evaporating, extracting the residue with chloroform, drying the extract and dissolving in water. The solution is injected in varying amounts into the peritoneal cavity of 20-Gm. mice, and the dose is found which will kill in 10–20 minutes. The siphon portion of the butter clam is markedly more toxic than the remainder. Since British Columbia clams are canned only during the autumn and winter months, and the siphons are discarded, there is no danger in consuming this commodity.—L. I. PUGSLEY. *Progr. Rept. Fish. Res. Bd. Canada*, 40 (1939). 11–13; through *J. Soc. Chem. Ind.*, 58 (1939), 987. (E. G. V.)

Collective Protection. A discussion of the treatment of air for poison gas shelters.—L. MARICQ. *J. pharm. Belg.*, 21 (1939), 731–736. (S. W. G.)

Congo Red—Toxicity and Systemic Actions of. The intravenous fatal dose of Congo red in pigeons, rats, rabbits and cats varies from 150 to 250 mg. per Kg. for over 60% of the animals. The small doses used in therapeutic and diagnostic practices indicate a wide margin of safety in the use of the dye intravenously. The toxic symptoms are characterized by general depression and collapse. The dye is less toxic in dextrose than in saline solutions. The cause of death is direct cardiac depression. It acts directly on smooth muscle.—A. P. RICHARDSON and J. R. DILLON. *Am. J. Med. Sci.*, 198 (1939), 73–82. (B. H.)

Cresols—Contribution to the Study of Occupational Poisoning by. Cresol poisoning is similar to, but less serious, than that by phenols. Examination of workers using cresol in the manufacture of artificial resin revealed headaches, tremors, vomiting and some affection of the kidney with moderate hypertension. More than the normal amount of phenol was found in the urine. In France, only the chronic dermatosis caused by cresol is on the list of notifiable diseases.—A. CORCOS. *E. Vigot Freres, Paris*, (1939); through *Rass. med. indust.*, 11 (1940), 55. (F. S. M.)

Cyclopropane—Note on the U. S. P. XI (Supplement II) Monograph on. A rather extensive study of the standards of purity for cyclopropane has been made. In its preparation several unsaturated gases might be formed and as much 2% of unsaturated compounds have been found. The one usually considered to be present is propylene. Allene or methyl acetylene might be present. Experimental details are reported. The question arising is whether the standard for unsaturated impurity should be altered or whether manufacturers should be forced to provide a more uniform product. It can be made with less than frequently occurs. Whether it can be done regularly is a manufacturer's problem. The danger from 2.5% of propylene does not seem great. Cardiac deaths under cyclopropane properly administered apparently have not been recorded though the purest cyclopropane will produce irregularities. Allene is more undesirable than propylene because of the lung damage it may produce and it too produces cardiac irregularities in anesthetic concentrations. The definition should be altered to read "cyclopropane contains not less than 98% of CH_2—CH_2—CH_2."—G. H. W. LUCAS and V. E. HENDERSON. *Jour. A. Ph. A.*, 29 (1940), 213. (Z. M. C.)

Derris Malaccensis, Var. Sarawakensis—Variation in Toxic Content of Roots of. The proportion of ethyl ether extract in the roots decreased after 23 month's growth; 20% of the extract is rotenone.—C. D. V. GEORGI and G. L. TEIK. *Malay. Agric. J.*, 27 (1939), 134–140; through *J. Soc. Chem. Ind.*, 58 (1939), 1277. (E. G. V.)

Detoxication Procedures. Procedures for neutralizing and eliminating toxic substances used in warfare.—M. PIERART. *J. pharm. Belg.*, 21 (1939), 954–960. (S. W. G.)

Dinitrotoluene—Toxicology of, and Pathology in Exposed Workers. The principle toxic effect of dinitrotoluene results from the inhalation of its vapors. The rate of absorption in workers who are chronic alcoholics is greatly increased. The principle effect is on the nervous system and the blood. The author reviews his experience with this chemical in powder mills.—COURTOIS-SUFFIT. *Arch. Maladies professionelles*, 1 (1939), 294–297; through *Chem. Abstr.*, 33 (1939), 6471. (F. J. S.)

Glycerin—Toxic Action of, upon New and Tubercular Guinea Pigs. The author continued the studies upon the toxicity of glycerin, and found that glycerin is less toxic for the guinea pig than for the rabbit and that the loss of toxicity of glycerin by dilution is constant in the guinea pig.—J. SOLOMIDES. *Soc. de Biol.*, (Nov. 18, 1939); through *Presse méd.*, 90–91 (1939), 1596. (W. H. H.)

Glycosal—Accidental Intoxication from. The observation reported concerned the massive absorption of 75 Gm. of glycosal (glyceric ester of salicylic acid), producing death in about six hours, with considerable perspiration, agitation, delirium, nausea, dyspnea, cyanosis, acetonurea and albuminurea. The prescriptions in central Europe are written in Latin. The dispenser used Glycosal instead of Glycosæ (glucose). The penalty for such an error is a prison term of three to four months, however the civil responsibility for the death is handled through other courts.—TESAR. *Cas. lek. cesk.*, 78 (1939), 271; through *Presse méd.*, 81–82 (1939), 168. (W. H. H.)

Health Hazards in Chemical Industries. While it may be safest to assume that all chemicals may be potentially dangerous unless definitely known to be otherwise, it is stated that any chemical material, however toxic, can be handled with a reasonable degree of safety if its toxicity is known and the indicated protective measures are followed. The author discusses the hazards of toxic substances, their portals of entry into the body, the chemical and physical state in which the elements act and the organs generally affected. A program for measuring the known hazards and for evaluating the unknown qualities of new chemicals is described. The latter usually involves lengthy experimentation, usually with animals, to determine acute and chronic effects. A list of protective measures for the use of toxic materials is included.—H. F. SMYTH. *The Chemist*, 16 (1939), 187–194. (F. S. M.)

Hypnotics—Toxicology of. A method is described by means of which any of 31 hypnotics can be identified in small quantities of blood, urine or gastric juice in cases of poisoning by soporifics. The material, after appropriate treatment, is extracted with ether and separated into 2 classifications as follows: (1) barbituric acid derivatives and both hydantoins which are extracted by ether from an acid medium; and (2) the remaining hypnotics, which are extractable by ether from basic solutions. Purification of the extract is achieved by absorbing

the impurities on charcoal and $CaCO_3$ or by oxidation with permanganate. Finally, the residue of the ether extract is obtained by microsublimation. Identification of the microsublimate is first based on physical constants, *i. e.*, sublimation temperature, micromelting point determination, crystal shapes, optical rotation and refractive index of the melted product with the aid of powdered glass. Finally, chemical reactions with $KMnO_4$, halogen and sulfur are used to establish the identification.—ROBERT FISCHER. *Arch. pharm.*, 277 (1939), 305–321. (L. K.)

Industrial Dermatitis from Plants Containing Rotenone. Replacing the arsenicals previously used in France is an important new group of insecticides derived from plants containing rotenone, and including such substances as derris. A violent dermatitis of the genital region with a rhinitis with anosmia and irritation of the tongue and lips developed after two to three days in workers preparing these substances. Further trouble was prevented by improvement in ventilation, the provision of respirators and close attention to personal cleanliness.—J. RACOUCHOT. *Arch Maladies professionalles*, 2 (1939), 149. (F. S. M.)

Lead Arsenate—Effect of Yeast on the Incidence of Cirrhosis Produced by. In a series of rabbits given lead arsenate and yeast, the frequency of the areas of hepatic necrosis and the incidence of cirrhosis were considerably reduced compared to those not given yeast. There seems to be no connection between hepatic glycogen content and the incidence of cirrhosis.—W. C. VON GLAHN and F. B. FLINN. *Am. J. Path.*, 15 (1939), 771–781. (F. S. M.)

Lead Poisoning. I. Depending upon the rate of absorption of the lead in the body, its storage in the tissue, its mobilization and elimination from the body there are produced the clinical pictures known as acute, latent and chronic plumbism. The severity of the resulting toxicity depends on the lead present in th blood stream (not the total lead but the serum or pathological lead); the degree of acidosis (p_H); and such pathological conditions which interfere with its elimination from the body. The degree of severity of the symptoms, rather than the kind, indicates the type of plumbism.—R. L. HOUTZ. *Penna. Dept. of Labor and Industry, Safe Practice Bulletin*, No. 52 (February 1940). (F. S. M.)

Mercury Compounds—Organic, Affections Due to. Organic mercury compounds such as are used for seed-dressings may, by constant handling, produce (*a*) affections of skin and upper respiratory tract due to the mechanical action of the dust, (*b*) affections of the central nervous system due to absorption, coupled with local damage to the organs in which the compounds are decomposed and mercury is deposited.—F. KOELSCH. *Arch. Gewerbepath. Gewerbehyg.*, 8 (1937), 113–116; through *Chem. Abstr.*, 33 (1939), 6471. (F. J. S.)

Mint—Occupational Dermatitis Due to. The mint grown in Florida (*Mentha citrata*) differs from the native mint (*Mentha vera*) in that the former seems to cause a dermatitis. This is a report of two cases of occupational origin. Both patients were bartenders and had been for years, but first had trouble with the mint when working in Florida. Of 18 subjects tested with the leaf, five were positive; 7 positive reactions resulted from a test with an ether-soluble fraction.—W. M. SAMS. *Arch. Dermatol. Syphilol.*, 41 (1940), 503–505. (F. S. M.)

Naphthalene Poisoning. The poisonous hydrocarbon, naphthalene, is sold widely in the trade and is used occasionally as an internal remedy. The authors reviewed a number of cases of poisoning by naphthalene with emphasis on the symptoms thereof and the physicochemical process by which it works. One fatal case which was encountered is fully described with the autopsy findings completely reported. Certain features of the case, not previously reported in naphthalene poisoning, were hyperthermia, hemiphegia and marked anemia. A possible pathogenesis of these features is offered.—N. R. KONAR, H. K. ROY and M. N. DE. *Indian Med. Gaz.*, 74 (1939), 773. (W. T. S.)

Olfactive Methods of Detection and Formation of Detectors. The apparatus is described and illustrated, and the limits of perception of the various toxic substances are discussed.—H. SNEESSENS. *J. pharm. Belg.*, 21 (1939), 977–983. (S. W. G.)

Pharmacist—Occupational Diseases of the. Occurrence of occupational diseases is rare among pharamcists, only 31 out of 8803 claims being reported for six years in Ohio. Of these, fifteen were females, chiefly employed at soda fountains. Of the 31 cases, twenty-two were for dermatitis, cleaning solution accounting for nine; various other chemicals for nine; two for impetigo and epidermophytosis, probably from handling money; one from handling labels and wrapping paper and one due to irritation from a starched apron. Two cases of constitutional poisoning occurred in women from filling capsules with dinitrophenol. Tenosynovitis of the wrist joint occurred in a wrapper and pre-patellar bursitis in a man who was trimming windows. Three cases of chronic, low-grade carbon monoxide poisoning were reported in clerks checking stock in the basement of a drug store. Most of the afflictions of this trade fall in the partly occupational group.—E. R. HAYHURST. *The Merck Report*, July, 1939. (F. S. M.)

Picrotoxin—Use of, in the Treatment of Barbiturate Poisoning. Two cases of barbituric poisoning are reported in which the doses were not very massive, but in which there was a considerable lapse of time before treatment was started. The first case was not seen for twelve hours after taking 36 grains of phenobarbital. The usual supportive measures were carried out, and three different proprietary stimulants were administered, as well as ergotamine tartrate and pituitary solution. One blood transfusion was given. The patient also received a total of 99 mg. of picrotoxin in fractional doses. On a few occasions the supply of picrotoxin was exhausted, and other stimulants were given, but the patient responded only to picrotoxin. The second case did not receive a treatment until 20 hours after taking 125 grains of veronal. A total of 109 mg. of picrotoxin were given in fractional doses, and a definite awakening effect was obtained. Picrotoxin tended to shorten the period of coma, and presumably lessened the danger of bronchopneumonia.—C. W. EISELE and H. W. BROSIN. *Illinois Med. J.*, 77 (1940), 49; through *Abbott Abstract Service*, (1940), No. 669. (F. J. S.)

Platycodon Grandiflorum A. Dc.—Chemistry of the Roots of. IV. Hemolytic Action and Toxic Properties of the Roots. Hemolytic action was found in platycodin, the saponin of the roots, but not in platycodigenin, its sapogenin. The action was stronger in the wild plants, the violet-flowering plants and the unrinded roots. The poisonous properties for fish were parallel to the hemolytic power. **V. Isolation of Platycodin and Its Properties.** The fat-free powder of the roots was extracted with hot 85% alcohol. The extract was evaporated and the protein removed with lead acetate. When the solution was acidified with hydrochloric acid and kept for 15 minutes at 75–80°, a precipitate was obtained which was reprecipitated from absolute alcohol. Platycodin, white powder, melting point 230–231°, specific rotation at 29.5° + 22.50°. It

showed the reactions for saponin. **VI. Colloid-Chemical Studies on Platycodin.** When platycodin was agitated in warm water or when its alcoholic solution was diluted with water and then heated, a viscous colloidal solution was obtained. It was changed into gel by cooling. It was proved to be a negative colloid by cataphoresis. The gold number was 16. Liesegang's phenomena were observed.—IV., V., M. TUZIMOTO; VI., M. TUZIMOTO, R. SENZYU and T. MATUMOTO. *J. Agr. Chem. Soc. Japan*, 15 (1939), 61–70; through *Chem. Abstr.*, 33 (1939), 6448. (F. J. S.)

Poisons of War—Organization for Detection of. A discussion of the administrative and technical organization, including materials, for identification of poisonous substances.—P. DEGAND. *J. pharm. Belg.*, 21 (1939), 895–902. (S. W. G.)

Ricinus Seed Poisoning—Clinical and Pathological Aspect of. The syndrome occurring in poisoning with seeds of the ricinus tree resembles in its chief features that of serous inflammation. The toxic dose was found to be higher than that previously described. Clinical, histological and serological findings show that the injury of the vessel walls and the tissue "albuminuria" are foremost. In contrast to serous inflammation, there is a considerable rise in leukocytes which points to an injury of the reticuloendothelial system.—HERMAN MÖSCHL. *Zeit. Klin. Med.*, 133 (1938), 78–90. (L. K.)

Snake Venoms. The activity of the neurotoxin of cobra venom is governed, among other things, by the presence of a sulfurous atomic group. By oxidizing neurotoxin in presence of a catalyst (heavy metal), or by treating it with bisulfite, the toxic action may be destroyed. On the other hand, in neurotoxin that has been incompletely purified, cysteine inactivates a secondary constituent without affecting the neurotoxin proper.—F. MICHEEL. *Angew. Chem.*, 51 (1938), 769; through *Chimie & Industrie*, 42 (1939), 105. (A. P.-C.)

Sodium Hyposulfite—Action of, upon Experimental Lead Coproporphyrinurea in Rabbits. The authors have demonstrated the following points. Coproporphyrinurea is constant in experimental lead intoxications; it appears forty-eight hours after the injection of the toxin; it is abundant and persistent. Sodium hyposulfite causes the disappearance of the already existing coproporphyrinurea which decreases the duration of the intoxication; sodium hyposulfite prevents the appearance of coprophyrinurea.—L. BINET, L. PEREL and GLOTZ. *Soc. de Biol.*, (Oct. 31, 1939); through *Presse méd.*, 79–80 (1939), 1464. (W. H. H.)

Solvents—Toxicology of Some Organic, Used for Medicinal Purposes. The toxic character of glycerol is due to its action as a strong dehydrating agent. In contrast to its high degree of acute toxicity, is its relative non-toxicity in almost sublethal doses in chronic toxicity experiments. The latter fact is due to its rapid excretion. Furthermore, it does not injure the organs but may, at most, cause disturbances of water balance. These findings show that it is practically harmless for humans. It cannot lead to dangerous side actions provided it is used in concentrations not exceeding 30%. Of the series comprising ethylene glycol; 1,2- and 1,3-propylene glycol; 2,3- and 1,4-butylene glycol, diethylene glycol, diethylene glycol monomethylether and dioxane, the least toxic is 1,2-propylene glycol. It has an unusually low acute toxicity, and in its chronic use, huge doses must be taken before mild symptoms of toxicity appear. Similarly favorable toxicologic properties are shown also by the methyl ether of diethylene glycol. Although its toxicity is similar to that of ethylene glycol, it is tolerated much better in chronic doses and does not cause as much kidney damage. Toxicology of *N*-methylacetamide, *N*-ethylacetamide and benzyl acetate shows that in general they are more toxic than the members of the glycol series. Inasmuch as they are used almost exclusively intramuscularly, the dosage is thereby so limited that it is hardly possible to inject toxic quantities. For these compounds as for the glycols, it is important to see that they are used only in pure, unadulterated form. Thirty-nine references.—JOSEF SCHOLZ. *Arch. pharm.*, 277 (1939), 145–163. (L. K.)

Sulfanilamide—Fatal Granulocytopenia Following. Nine fatal cases due to sulfanilamide were studied. In two of them the bone marrow was also examined. Doses ranged from 58 Gm. in 33 days to 24.3 Gm. in 7 days, for diseases including rheumatism, erysipelas, penile ulcer and both chronic and acute gonorrhea. Even larger doses were used over a longer period for chronic infectious arthritis. The average of these doses was 50 Gm. in 27 days. The efficacy of sulfanilamide preparations should be demonstrable in 4 to 7 days; if there is no improvement the drug should be discontinued.—H. A. SCHEKET and A. E. PRICE. *J. Am. Med. Assoc.*, 112 (1939), 823. (G. S. G.)

Sulfanilamide—Toxic Symptoms of. Of the 42 different toxic symptoms of sulfanilamide therapy, reported by 48 different physicians, the author classified them in this manner. The mild toxic symptoms as headache, nausea and lassitude, while the most common, may be identified and controlled. Marked dyspnea, sharp cyanosis, severe abdominal pain, fever and skin eruptions constitute the symptoms necessitating a dose reduction or discontinuance of the drug. Not only stoppage of the drug but blood transfusions and oxygen are indicated in the most severe symptoms as acute hemolytic anemia, neutropenia and jaundice. Intravenous methylene blue was used to control methemoglobinemia. The mechanism by which these symptoms are produced is suggested.—GILBERT J. LEVY. *Southern Med. J.*, 33 (1940), 212. (W. T. S.)

Sulfathiazole and Certain of Its Derivatives—Acute Toxicity, Absorption and Excretion of. The toxicity of sulfathiazole for mice is one-third greater than that of sulfanilamide, and about half that of sulfapyridine, sulfathiazole methyl and sulfathiazole phenyl. Sulfathiazole is absorbed more readily and also excreted more rapidly than sulfapyridine. Because of its rate of excretion it is probable that doses of sulfathiazole spaced at intervals of 4 hours will maintain adequate concentrations of the drug in the blood of patients.—PERRIN H. LONG, JAMES W. HAVILAND and LYDIA B. EDWARDS. *Proc. Soc. Exptl. Biol. Med.*, 43 (1940), 328. (A. E. M.)

Thiocyanates—Fatal Toxic Manifestations of. A woman received potassium thiocyanate for hypertension, 135 grains (9 Gm.) were given over 15 days, and the blood cyanate level was carefully watched. The patient became psychotic and died nine days after the onset of psychosis, and 8 days after the discontinuance of the thiocyanate, with blood cyanates at a supposedly non-toxic level. Death was apparently due to an idiosyncrasy to the drug.—CURTIS F. GARVIN. *J. Am. Med. Assoc.*, 112 (1939), 1125. (G. S. G.)

Thiocyanates—Toxic Manifestations of. Thiocyanates are widely distributed in the blood and body tissues. A safe level in the blood is 8 to 14 mg. per 100 cc. The maintenance dose for hypertension is 0.3 Gm. per week to 1 Gm. a day depending on the patient's rate of excretion. There is a relation between cardiac pain and the administration of cyanates. Analysis of the records of 47 unselected cases of hypertension over a long period,

seems to indicate that no patient who previously experienced angina, suffered it to a greater degree during the administration of thiocyanate; though some few have developed it as a result of the hypertensive action of the drug. Mechanism of death is uncertain; it may be ischemia of the central nervous system with subsequent thrombosis, or vascular collapse, or acute poisoning of the cells of the brain and cord. The drug should not be used without blood cyanate determinations.—MAURICE H. WALD. *J. Am. Med. Assoc.*, 112 (1939), 1120. (G. S. G.)

Vitamin C Treatment in Lead Poisoning. Experiments showed that vitamin C reacts with lead ions to form a poorly ionized and less toxic substance. Therefore persons exposed to lead hazards should include in their diets foods rich in this vitamin.—H. N. HOLMES, J. E. AMBERG and K. CAMPBELL. *Science*, 89 (1939), 322; through *Chinese Med. J.*, 57 (1940), 196. (W. T. S.)

THERAPEUTICS

Addison's Disease. A discussion of the etiology, clinical aspects, diagnoses and treatment of the disease.—W. A. SODEMAN. *Am. J. Med. Sci.*, 198 (1939), 118–131. (B. H.)

Alkali Treatment of Menstrual and Climacteric Depression. Excellent results were achieved in 60 cases of menstrual and climacteric depression by general alkali treatment.—M. WESSELING. *Deut. Med. Wochschr.*, 65 (1939), 1203–1204. (L. K.)

Alum-Precipitated Insulin—Clinical Study of. A review of 12 cases of diabetes treated with alum-precipitated insulin. The results of the treatment are discussed.—L. ROSENTHAL, S. M. FIALKA and J. KAMLET. *Am. J. Med. Sci.*, 198 (1939), 98–104. (B. H.)

Aluminum Hydroxide—Colloidal. A dry pulverized antacid medicinal material consists essentially of partially dehydrated aluminum hydroxide precipitated in the presence of a water-soluble protective organic colloid such as gum acacia and having a relatively small amount of such colloid adhering to it and which is capable, when mixed with water, of reverting to a gelatinous state similar to that of freshly precipitated aluminum hydroxide and possesses marked acid-adsorbing power.—HAROLD W. JONES, assignor to COLUMBUS PHARMACAL CO. U. S. pat. 2,166,868, July 18, 1939. (A. P.-C.)

***p*-Aminobenzenesulfonamide Maltoside.** A water-soluble therapeutic compound is obtained by the reaction of *p*-aminobenzenesulfonamide and maltose in methanol solution in the presence of ammonium chloride as a catalyst in very small proportion (larger amounts of ammonium chloride cause the production of a product relatively insoluble in water, which may be converted into a soluble product by a process involving heating with water containing a small proportion of hydrochloric acid and then neutralizing the hydrochloric acid with sodium hydroxide).—HARRY KLINGEL and WM. C. MACLENNAN, assignors to WINTHROP CHEMICAL CO. U. S. pat. 2,167,719, Aug. 1, 1939. (A. P.-C.)

Antigonadotrophic Activity—Production of, in Man. Antigonadotrophic activity was demonstrable in the serum of nine patients with undescended testes who were injected intramuscularly, either daily or twice weekly, for twelve weeks with an extract of the serum of pregnant mares. The antigonadotrophic activity (*a*) developed after four to six weeks' treatment and subsequently in most cases rose rapidly; (*b*) was not proportional to the amount of extract injected; (*c*) usually decreased at the end of treatment, but was still present for three months or more—in two patients, however, activity increased for about three weeks after injections were discontinued; (*d*) was greater in patients who received twice-weekly injections of extract. The previous observation of Rowlands (1938) on the specificity of a similar antiserum, raised in rabbits, was confirmed. The human antiserum did not inhibit, in immature rats, the action of extracts of either human pituitary gland or urine of pregnancy. No improvement in the position of the testes of the patients was observed during treatment with this extract, but in three of six patients subsequently treated with extract of urine of pregnancy descent of the testes was successfully obtained.—I. W. ROWLANDS and A. W. SPENCE. *Brit. Med. J.*, 4114 (1939), 947. (W. H. H.)

Atebrin—Clinical Study of Action of, in Mental Patients. Mental disturbances have been noted in malarial patients receiving atebrin. The writer was interested in determining whether atebrin was responsible for these symptoms or whether it precipitates a pre-existing disposition to mental disturbances. A third possibility being that the psychotic symptoms are due to the malaria itself. His approach consisted of studying 12 schizophrenic, 6 maniac-depressive and 6 deliriod patients, each of whom was given daily doses of 0.1 Gm. of atebrin by injection. The injections were continued in each case until definite toxic symptoms were produced. The reactions of each group to the drug are recorded in the article. The conclusions are mostly negative but these appear significant. (1) The schizophrenics withstood larger quantities of atebrin than the other groups. Body temperature of 8 of the schizophrenic group rose to 103° F. (2) Atebrin is well tolerated; the physical signs of toxicity being gastrodisturbances, fall in blood pressure and leukopenia. (3) Severe damage to liver, kidney and blood cells have been rarely reported. (4) Nystagmus and ataxia are probably due to atebrin itself. (5) Mental patients do not tolerate atebrin in large doses and the disturbances produced by this drug generally occur in patients who are idiosyncratic to it.—M. V. GOVINDASWAMY. *Indian Med. Gaz.*, 75 (1940), 22. (W. T. S.)

Bismuth Therapy—Effect of, on Latent Plumbism. The cases of a painter and a smelter worker are presented. Signs and symptoms of lead poisoning in both patients followed the administration of bismuth in the treatment of a syphilitic infection. It is suggested that bismuth may replace the lead stored in the bones and bring on the mobilization of lead, with the development of such symptoms as cramps and a lead line. Prophylactic treatment of lead poisoning in those exposed to the influence of the metal may decrease the incidence of untoward reactions following bismuth therapy.—E. EPSTEIN. *Arch. Dermatol. Syphilol.*, 41 (1940), 38–41. (F. S. M.)

Bronchial Asthma—Treatment of. A discussion.—WALTER HEINEN. *Deut. Med. Wochschr.*, 65 (Feb. 1939), 260–261. (L. K.)

Burns and Scalds in Children—Treatment of. Various coagulants used in the treatment of burns and scalds are evaluated. The clinical stages and the appropriate treatment of each stage are described under primary shock, secondary shock, toxemia, sepsis and healing. The routine treatment is described in detail for children with burns and scalds. This includes a special ward kept at a constant temperature of 75° F. and fitted with electric cages to supply artificial heat to the patient. No bed clothes are allowed to touch the child. No coverings are placed over the coagulum. After the application of gentian violet to the cleansed area, tannic acid and silver nitrate are used together as coagulants. Local as well as general treatment must

be given early. In the last five years this treatment has reduced the case mortality from about 19% to about 7% and the incidence of toxemia and of sepsis from about 33% to about 15% and about 6%, respectively.—W. M. DENNISON. *Lancet*, 237 (1939), 1107. (W. H. H.)

Burns—Treatment of. An attempt to avoid shock and infection caused by burns is described by J. D. Devine (*Med. J. Aust.*, 26 (1939), 924). He uses a mixture containing a 1% aqueous solution of gentian violet and brilliant green with a 0.1% solution of neutral acriflavine. It is stated that the mixture is stable and therefore can be kept ready for use in factories. The solution is swabbed over the burnt area to which no dressing is applied, resulting in a pliable coagulum after only one or two applications. —ANON. *Practitioner*, 143 (1939), 453; through *Pharm. J.*, 144 (1940), 57. (W. B. B.)

Calcium Gluconate Composition Suitable for Therapeutic Use. *2,168,878*—By catalytic hydrogenation of calcium 5-ketogluconate, there is obtained a mixture of calcium *l*-idonate and calcium *d*-gluconate, readily soluble in water. *2,168,879*—An oversaturated solution of calcium gluconate is stabilized by adding to it calcium *l*-idonate or the calcium aldonate mixture resulting from the hydrogenation of calcium 5-keto-gluconate.—RICHARD PASTERNACK and ELLIS V. BROWN, assignors to CHARLES PFIZER AND CO. U. S. pats. 2,168,878 and 2,168,879, Aug. 8, 1939. (A. P.-C.)

Carcinogenic and Anti-Cancer Agents—Recently Discovered. A review with bibliography.—J. R. SAMPEY. *J. Chem. Educ.*, 16 (1939), 461–466. (E. G. V.)

Cardiazol and Gold Salts. The author injected 10 cgm. of a gold compound in oil weekly during a month, or the same per year, and found it efficacious in dementia præcox. In conjunction with cardiazol it is estimated that the number of total remissions is eighty-three per cent.—M. HYVERT. *Soc. Med. Psychol.*, (May 22, 1939); through *Presse méd.*, 79–80 (1939), 1466. (W. H. H.)

Cardiazol Therapy—Cardiac Contraindications Due to. The contraindications are hypertension, dilatation of the cardiac cavities, myocardiac injuries characterized by given electrocardiographic responses: lengthening of the PR tracing beyond 18 ctm. per second, and definite variations in the Q, R, S and T waves.—M. GERAUDEL. *Soc. Med. Psychol.*, (May 22, 1939); through *Presse méd.*, 79–80 (1939), 1466. (W. H. H.)

Cardiazol Therapy—Prevention of Fear in. General anesthesia can be induced as a preliminary to cardiazol therapy without interfering with the production of a typical convulsion and necessitating at most a slight increase in the convulsant dose. It makes cardiazol therapy more agreeable for the patient by abolishing the sensations of fear. Cyclopropane is in many ways the more desireable anesthetic, but nitrous-oxide anesthesia, because of the simplicity of its administration may be more practicable.—W. L. NEUSTATTER and H. FREEMAN. *Lancet*, 273 (1939), 1071. (W. H. H.)

Cerebrospinal Fever—Treatment of, with Sulfonamide Compounds. A brief review of the virtues of sulfanilamide and sulfapyridine.—ANON. *Pharm. J.*, 144 (1940), 173. (W. B. B.)

Chaulmoogryl and Hydnocarpyl Alcohols—Some Carboxylic Acid Esters of. The alcohols were prepared by the Bouveault-Blanc reduction with sodium and alcohol of the esters of the mixed chaulmoogra acids, and as the free alcohols are too irritating for animal experiments they were converted into the esters of a series of aliphatic and aromatic carboxylic acids by treatment either of the separate alcohols or their mixture with the chloride or anhydride of the acid at room or moderately high temperature in the absence of air or in an inert gas. The esters of the higher acids can also be obtained by heating a mixture of the alcohol and acid under atmospheric or reduced pressure in nitrogen at a high temperature. A number of substituted cinnamic and substituted cinnamic acid esters were prepared because of the beneficial effect sometime observed in the treatment of tuberculosis with chaulmoogra oil and with cinnamic acid; none of these esters, however, has as yet given promising results in experimental guinea-pig tuberculosis. In rat leprosy transferred to mice, however, the above esters have a beneficial effect.—K. BURSCHKIES. *Ber.*, 71 (1938), 1855–1859; through *Chimie & Industrie*, 42 (1939), 104. (A. P.-C.)

Circulatory System Disturbances—Therapeutic Composition for the Treatment of. Colloidal iodine and sodium cacodylate are used together (suitably in aqueous solution) for intravenous or intramuscular injection.—OSCAR A. STRAUSS. U. S. pat. 2,168,657, Aug. 8, 1939. (A. P.-C.)

Cod Liver Oil Dressings. A brief survey is given of the views of various authors on the mode of action of cod liver oil dressings. Cod liver oil has a definite bactericidal power. Irradiation of cod liver oil with ultraviolet rays greatly enhances this power. The bactericidal action of an oil is closely related to its content of peroxides. The merits of cod liver oil dressings are emphasized, and a clinical trial of irradiated oil is advocated.—M. LICHTENSTEIN. *Lancet*, 237 (1939), 1023. (W. H. H.)

4,4′-Diamidino Stilbene Successfully Used in a Case of Leishmania Infantum. A relapsed case of Mediterranean visceral leishmaniasis was satisfactorily treated with intravenous injections of 1.7 mg. per Kg. of 4,4′-diamidino stilbene. This case is adequately described and supports the belief that this drug is becoming a valuable chemotherapeutic agent.—S. ADLER and M. RACHMILEWITZ. *Ann. Trop. Med. Paras.*, 33 (1939), 327. (W. T. S.)

Dilantin Kapseals—New Hydantoinate Preparation. Sodium diphenyl hydantoinate, Dilantin or Epanutin, as it is known in England, is a new synthetic which has been introduced as a successful substitute for bromides and phenobarbital in controlling epileptic seizures.—ANON. *Indian Med. Gaz.*, 74 (1939), 718. (W. T. S.)

Emulsions—Therapeutic and Cosmetic. A base for the manufacture of therapeutic and cosmetic compositions such as salves and emulsions comprises a fatty alcohol (such as tetradecyl, cetyl or octadecyl alcohol) together with water and a resin alcohol which binds the water present and produces a homogeneous compatible mass.—WALTHER SCHRAUTH and KURT STICKDORN, assignors to DEUTSCHE HYDRIERWERKE A. G. U. S. pat. 2,164,723, July 4, 1939. (A. P.-C.)

Estrogens in the Treatment of Atrophic Arthritis. There have been a number of reports of success in the treatment of hypertrophic arthritis in the menopause with estrogenic substances, and the experience of the authors has been similar. Twenty-three cases are reported; seventeen of these were atrophic arthritis and six were of the mixed variety. Larger doses of estrogen were used over periods ranging from one week to three months. The total dosage varied from 50,000 to 850,000 International Units. Single doses varied from 10,000 to 100,000 International Units. The initial dose was usually 10,000 I. U. repeated every day; as soon as improvement occurred, the interval was lengthened to a week. If no improvement occurred, the dose was gradually increased to 100,000 I. U., and if this did not cause improvement after two or three doses, treatment was abandoned. Twelve patients were distinctly

improved. Seven failed to improve and one became worse. Twelve control patients with atrophic arthritis but without menstrual disturbances did not benefit from treatment.—A. COHEN, A. W. DUBBS and A. MYERS, *New Engl. J. Med.*, 222 (1940), 140; through *Abbott Abstract Service*, (1940), No. 660. (F. J. S.)

Estrone—Effect of, on Peripheral Vascular Spasm. Vasomotor instability is well known to occur in the early stages of thromboangiitis obliterans, and many constitutional factors may play a part in producing vascular spasm. One of the authors has investigated the antagonistic effect of estrogens on the vascular spasm of chronic ergot poisoning in rats, and found that estrone was able to prevent necrosis of the tail in female rats poisoned with ergot, but not in males. Other studies have shown that the acetylcholine content of the uterus is increased following the administration of estrone. Clinical studies were made on 16 patients with arterial insufficiency who received, toward the end of the study, a course of estrone in oil, 4000 I. U. twice weekly for 4 weeks, followed by 4000 I. U. weekly for 12 weeks. The usual care of the skin and abstention from tobacco were required as well. Eleven patients improved and were able to return to work. Three members of this group relapsed after 3 years, but they were again partially controlled by renewed treatment.—L. G. HERRMANN and E. J. MCGRATH. *Arch. Surgery*, 40 (1940), 334; through *Abbott Abstract Service*, (1940), No. 659. (F. J. S.)

Ethylenediamine Mandelates. Ethylenediamine mono- and di-mandelates are prepared and are suitable for use (if desired conjointly with ethylenediamine hydrochloride or nitrate) in the treatment of infections such as pyelitis.—FRANK B. FISK, assignor to PITMAN-MOORE CO. U. S. pat. 2,165,470, July 11, 1939. (A. P.-C.)

Gentian Violet—Successful Use of, to Treat Oxyuriasis. A high percentage of boys and girls living in an institution were found infected with *Enterobius vermicularis*. Some 90% of these were cured by $^1/_2$ to 1 grain doses of coated gentian violet after prophylaxsis, purgation and other medication had failed. Except for vomiting, little untoward reaction to the drug was observed.—JOSEPH S. D'ANTONI and WILLY SAWITZ. *Am. J. Trop. Med.*, 20 (1940), 377–385. (W. T. S.)

Gold Keratinate—Therapeutic. Wool, hair, horn, etc., is hydrolyzed by heating with dilute hydrochloric acid and the hydrolyzate is treated with alkali until weakly acid and filtered. The filtrate is treated with an aqueous solution of a gold salt, such as the chloride, and filtered. The filtrate is stirred with an organic solvent miscible with water, such as alcohol, to precipitate sodium-gold-keratinate which is separated and purified by redissolving in water and reprecipitating with alcohol. The products are used in therapy.—ADOLF FELDT, KARL SCHÖLLKOPF and ADOLF SCHMITZ. U. S. pat. 2,166,133, July 18, 1939. (A. P.-C.)

Hormones—Female, Clinical Use of. The four hormones (gonadotropic, anterior-pituitary-like, folliculin and corpus luteum) are obtained from mare's serum, pregnancy urine, and the latter two from the designated organs, respectively. Endocrine therapy is primarily that of substitution, or related functions. Successful use of folliculin is maintained in non-malignant breast tumor, and the distresses of the menopause. Gonadotropic factors are useful in menstrual aberrations, and corpus luteum is useful in threatened sterility due to endometrial dysfunction. Vulvular pruritis is known to respond to injections of estrin.—E. B. *Reforma Medica*, 25 (1939), 154. (G. S. G.)

Hydroxyalkylammonium Polysulfides. Compounds suitable in treating skin diseases are produced by bringing a mixture of a hydroxyalkylamine such as trihydroxyethylamine and sulfur into contact in the presence of hydrogen sulfide (suitably at 60° to 80° C.) to make a product such as triethanolammonium polysulfide. Various examples with details are given.—ANDREAS VON ANTROPOFF and JOHANNES FRIEDRICHSEN, assignors to CARL BLANK K. G. U. S. pat. 2,167,319, July 25, 1939. (A. P.-C.)

"Hypoloid" Stibophen Issued Under the Fouadin Patent. This preparation is a sterile isotonic solution for intramuscular injection, containing 6.3% sodium antimony biscatechol-3:5-disulfonate (equivalent to 1% *w/v* of Sb_2O_3). It is issued as "Hypoloid" Stibophen by license relative to the English patent 376,346 the objective substance of which is Fouadin (Stibophen). Each package contains a graduated dosage for a single course of treatment and may be bought in two sizes, for adults and children, respectively.—*J. Trop. Med. Hyg.*, 43 (1940), 118. (W. T. S.)

Isoquinoline Compounds—Therapeutic. Isoquinoline compounds containing a hydroaromatic radical in 1-position and derivatives thereof hydrogenated in the pyridine ring are formed by ring closure with acid condensing agents, such as phosphorus oxychloride, of condensation products of 1-aryl-2-aminoethanes or their 1-oxy-, -hydroxy-, -methoxy- or other 1-ether derivatives with a hydroaromatic acid, derivative or aldehyde and, if necessary, hydrogenation or dehydrogenation of the isoquinoline compound so obtained. The products have therapeutic properties.—MAX BOCKMÜHL and HANS HERMANN, assignors to WINTHROP CHEMICAL CO. U. S. pat. 2,168,929, Aug. 8, 1939. (A. P.-C.)

Laxative Auxiliary Food Flakes—Manufacture of. Psyllium seeds are prepared for physiological consumption by tempering them to a predetermined moisture content, passing them through flaking rolls, and drying the flakes at a temperature less than that at which the tendency to form a gelatinous material is impaired. A laxative compound (phenolphthalein) and flavoring materials may be incorporated.—T. W. HALLIDAY. U. S. pat. 2,075,846; through *J. Soc. Chem. Ind.*, 58 (1939), 887. (E. G. V.)

Lösz—Properties of, and Its Use in Therapeutics. A discussion.—HERMANN JUNG. *Deut. Med. Wochschr.*, 65 (1939), 1164–1165. (L. K.)

Malaria—Production of Medicaments for the Treatment of. Mixtures of *n*-aliphatic acids, $(CH_2)_{5-10}(CO_2H)_2$, are converted into halogenohydrins and thence into dialkyl-ω-hydroxylalkyl- and -ω-chloroalkyl-amines; the last named are condensed with aromatic or heterocyclic amines. The mixtures thus obtained are claimed to be more active than the individual compounds. The preparation from mixed suberic and azelaic acids (from nitric acid oxidation of castor oil) of a mixture of 6-methoxy-8-ω-diethylamino-octyl-, boiling point 206°/0.5 mm., and -nonyl-aminoquinoline, boiling point 218°/0.3 mm. is described.—W. G. CHRISTIANSEN and S. E. HARRIS. U. S. pat. 2,076,706; through *J. Soc. Chem. Ind.*, 58 (1939), 996. (E. G. V.)

Malaria—Treatment of, by Ascoli's Method. This method involves the intravenous injection daily of adrenaline, first 1 cc. of a 1:100,000 solution, increasing by 10 till 1:10,000 is reached and continued for 20 days, in addition to the routine therapy with quinine. Fresh preparations are essential. Fever is reduced after the first few injections. No relapse has been reported in more than a

year. The mechanism of action is due to the contraction of the spleen provoked by adrenaline, together with the expulsion of the organisms in the blood by quinine.—DONATO BOCCIA and TIBURCIO B. DIMATTEO. *Rev. sud-americana endocrinol. inmunol. quimioterap.*, 22 (1939), 80. (G. S. G.)

M. & B. 693—Hematuria During Treatment with. In 109 cases of pneumonia in Melanesian natives treated with M. & B. 693 hematuria was found thirteen times. The hematuria was as a rule associated with characteristic crystals in the urine which were identified as a conjugated derivative of M. & B. 693. The suggestion is made that the hematuria is mechanical rather than toxic. In a case without hematuria small calculi were found obstructing both ureters. Fluids and alkalis should be given liberally when treatment with M. & B. 693 is adopted to prevent the deposition of crystals.—T. C. BACKHOUSE. *Lancet*, 237 (1939), 736. (W. H. H.)

M. & B. 693 in the Saliva. M. & B. 693 has been found present in the saliva of patients receiving therapeutic doses. The view that this is not merely a mechanical lodging of particles is supported by some experiments.—B. W. FICKLING, P. PINCUS and B. BOYD-COOPER. *Lancet*, 237 (1939), 1310. (W. H. H.)

M. & B. 693—Pneumonia Treated with. This report summarizes observations on 342 cases of pneumonia (254 lobar and 88 "atypical") treated with M. & B. 693 in various Norwegian hospitals between October 1938, and May 1939. Excluding those in which the patient died within twenty-four hours of admission, the fatality rate is 5.8%, while if these are included the rate is 8.3%. For the lobar pneumonias the case mortality is 4.3%, and for lobar pneumonias in persons under fifty years of age (193 cases) it is only 1.6%. Of the 78 patients with lobar pneumonia admitted after the fifth day 9 died, whereas the 171 admitted earlier in their illness included only 2 deaths. The commonest complications were pleural effusion (clinically demonstrable in 18 cases) and otitis (9 cases); empyema developed in 4 patients. Pneumococci from the sputum were typed in 144 cases, and 64% were found to belong to types I–III and VII. Of 27 patients with a type III infection 1 died. The average dose of M. & B. 693 administered to 284 patients of more than ten years of age was 22 Gm. Excluding fatal cases, a rapid effect was produced in all cases treated except five in which the temperature and course of the disease seem to have been unaffected by the drug. In 47 cases there was a renewed rise in temperature without any demonstrable complication, but this secondary rise seldom went above 100.4° F. The toxic effects included nausea, vomiting and cyanosis. Vomiting made treatment difficult in 6% of the cases. Drug fever was diagnosed in 4 patients; in three of these and in four others there was a rash. In 11 cases leucopenia was found and in 1 case agranulocytosis, followed by recovery. Hematuria developed in 2 cases and diarrhea in 2.—O. RÖMCKE and E. VOGT. *Lancet*, 237 (1939), 778. (W. H. H.)

Meningitis Epidemica—Treatment of, in Children with Peroral Doses of Prontosil. A review.—THERESA HOPPE. *Deut. Med. Wochschr.*, 65 (1939), 1194–1196. (L. K.)

Meningococcus Meningitis—Treatment of, with Uliron. A report of two cases.—HANS-HERMANN MEYER. *Deut. Med. Wochschr.*, 65 (1939), 1084–1086. (L. K.)

Novocaine—Infiltration of, in Sprains. The author has made hundreds of infiltrations with remarkable results. Using a well-regulated technique and a uniform product, he has observed very few failures. The author evacuates the intra-articular blood which usually is abundant. The injection of novocaine produces a resorption of the edema and by the hasty withdrawl of the needle, the accumulated blood in the cellular tissue runs out, in part, through the puncture opening.—A. PREVES. *Soc. Chirurgiens de Paris*, (June 18, 1939); through *Presse méd.*, 78 (1939), 1446. (W. H. H.)

Novurit—Increase of Effects of, by Means of Urea. Ingestion of 50 Gm. urea before injection of novurit caused secretion of 3.3 liters urine, as compared to 2.0 liters with novurit alone.—I. SIMONOVITS. *Orvosi Hetilap*, 82 (1938), 1216–1218; through *Chem. Abstr.*, 33 (1939), 2211. (F. J. S.)

Oriel's Substance P—Use of, in Asthma. Oriel's Substance P found in the urine of allergics, in the moment of allergic paroxysm, is useful for hay fever, bronchial asthma, urticaria and also for spasmodic manifestations. It has an unidentified chemical composition and physical characteristics, but may be considered a proteose. It is an antigen capable of provoking a reaction in a sensitized organism. Urine is collected at the paroxysmal stage, freed of albumin, extracted with ether and precipitated with distilled water. Dilutions of 1:1000 are used intradermally, from $^1/_{20}$ cc. increasing by $^1/_{20}$ cc. to 1 cc. There is prompt response, and 10 to 15 injections are usually sufficient. It is found efficacious in cases of severe asthma failing to respond to epinephrine.—DONATO BOCCIA. *Rev. sud-americana endocrinol. inmunol. quimioterap.*, 22 (1939), 26. (G. S. G.)

Phenylcinchoninic Acid—Treatment of Asthma by. A case of asthmatic attack and nervous disease was treated by the author at the hospital using phenylcinchoninic acid (atophan). It was not very well tolerated by the oral route, thus lithium cinchonimate was employed rectally in a dose of 400 to 500 mg.—then intravenously very slowly, 1 cc. of solution per minute. The reason for this sedative action is believed to be that phenylcinchoninic acid forms with the organic cholesterine a compound analogous to morphine. This union between atophan and cholesterine explains the analgesic action in the case where 2 cgm. of camphor has an action comparable to 1 cgm. of morphine.—LOEPER. *Soc. Med. des Hopitaux*, (Nov. 17, 1939); through *Presse méd.*, 85–86 (1939), 1525. (W. H. H.)

Picrotoxin as an Agent in the Convulsion Treatment of Psychosis. The author reviews the indications for convulsion treatment in psychosis and describes the use of two convulsant agents used by him. One of these was picrotoxin, which was used in twenty-two cases. Picrotoxin Solution, Abbott, was given intravenously, each cc. containing 3 mg. of the drug. The dose necessary to produce a convulsion was found to vary from one patient to another, but was fairly constant for the individual at different times. In treating a new case, the initial dose was 4 cc.; if this failed to evoke convulsions, the dose was increased on subsequent occasions in steps of 0.5 cc. Sub-convulsive doses of picrotoxin did not induce the apprehension seen with certain sympathomimetic amines, and the patients stated the convulsions themselves were less unpleasant than those produced by certain other agents. The onset of the paroxysm was gradual. It was observed to begin with pallor succeeded by prolonged intermittent twitching and followed in less than an hour by a typical major convulsion.—J. S. HORSLEY. *Med. Press and Circular*, 203 (1940), 70; through *Abbott Abstract Service*, (1940), No. 667. (F. J. S.)

Potassium Iodide and Ipecacuanha as Expectorants. The investigation was carried out under satisfactory conditions; the period of observation

was sufficiently long, and the doses of the drugs were adequate. The results do not support the view commonly held that ipecacuanha and potassium iodide produce a copious and more fluid sputum. If alterations of 10% and under are ignored, only four out of seventeen patients produced more sputum when treated with potassium iodide. On a mixture of ipecacuanha and potassium iodide, increased expectoration was absent in nearly all of the patients. It may be argued that decreased expectoration was due to diminished frequency of the cough, which in turn was due to some beneficial action on the bronchial mucosa brought about by the expectorants. This cannot be refuted on the data obtained in this investigation, for the frequency of coughing was not noted. Against this view, however, is the absence of qualitative changes in the sputa consistent with any action of the drugs on the bronchial mucosa. It must also be emphasized that, although the decrease in expectoration was often substantial, the output of sputum was still considerable in most of the patients at the end of the investigation. In view of the clinical features, the course of the disease, and especially the absence of any sudden and sustained improvement attributable to drug therapy, it is most probable that expectoration gradually diminished with the increasing benefit derived from general measures, including rest in bed, nursing, protection from cold, and freedom from anxiety, and that the output of sputum was unchanged by the drugs.—S. ALSTEAD. *Lancet*, 237 (1939), 932. (W. H. H.)

Prolactin—Effect of, on Lactation of Nursing Women. Two preparations of prolactin, one from ox pituitary and the other from sheep, have been administered to forty-three women selected as deficient in milk secretion at different stages of the period of lactation. The response has been very encouraging. In the dosage described, the extracts appear to have no systemic or local ill effect. Glucose-tolerance tests have not shown any departure from those of control lactating women. Depression of the gonadotropic function has not been observed. The quality of milk secreted after administration of the extracts is essentially the same as that of control samples.—M. KENNY and E. KING. *Lancet*, 237 (1939), 828. (W. H. H.)

Purine Derivatives—Constitution of Medicinally Used, in the Soluble State. A discussion of therapeutic effects in relationship to physicochemical properties of the medicinal agent. Special emphasis is placed on solvents.—W. PAUL. *Arch. pharm.*, 277 (1939), 105–116. (L. K.)

Quinidine Sulfate Therapy (of Heart Disease)—Résumé of.—E. E. HAMMONDS. *J. Michigan State Med. Soc.*, 38 (1939), 49–50; through *Chem. Abstr.*, 33 (1939), 2214. (F. J. S.)

Quinoline Compounds as Sources of Medicinal Preparations. VII. Methods of preparation and the chemical and antimalarial properties of 6-methoxy-8-(diethylaminoalkylamino)quinolines and their homologs with one hydrogen on the α-carbon atom in the side-chain substituted by a methyl group were studied. The results show again that with increasing length of the side chain the chemotherapeutic index gradually increases to a maximum ($n = 4$) and then slowly drops, while substitution in the alkyl increases considerably both the biological action and toxicity with a corresponding reduction of the index. The substitution of dimethylamino for diethylamino in the side chain lowers the index. An amino group produces an even greater negative effect. When chlorine is substituted for methoxy in position 6 the index is greatly reduced. The replacement of the methoxyl by hydroxyl produced in the diethylaminopropyl derivative a considerable increase in the index.—O. IÐU. MAGHIDSON and M. D. BOYCHEV. *J. Obchtch. Khim.*, 8 (1938), 899–915; through *Chimie & Industrie*, 42 (1939), 123. (A. P.-C.)

Quinolinic Acid—Antipellagric Properties of. Quinolinic acid is curative for human pellagra. The concentration of co-enzymes I and II in the blood increased following the administration of quinolinic acid. Studies are in progress to ascertain the comparative usefulness of quinolinic acid and other therapeutic agents specific for pellagra.—R. W. VILTER and T. D. SPIES. *Lancet*, 237 (1939), 423. (W. H. H.)

Salicylic Acid in Acute Rheumatism—Mechanism of the Action of. Salicylic acid in acute rheumatism shifts the acid-base equilibrium to the acidic side; this results in functional changes in the reticulo-endothelial tissue and the formation of unfavorable conditions for the development of septic infections.—D. A. SOKOLINSKII. *Klin. Med.* (U. S. S. R.), 16 (1938), 75–77; through *Chem. Abstr.*, 33 (1939), 6446. (F. J. S.)

Schizophrenia—Treatment of, by the New Methods of Sakel. A discussion.—H. ROGGENBAU. *Deut. med. Wochschr.*, 65 (1939), 1297–1299. (L. K.)

Skin—Therapeutic Preparation for. Therapeutic preparations having analgesic and vasoconstrictive properties are made by mixing an ethyl alcohol-soluble phenol-CH_2O resin, ethyl alcohol and a medicinal agent in such proportions that the preparation leaves on drying a substantially dry film in which the medicinal agent is incorporated. The condensation of carbolic acid and formaldehyde may be carried out in presence of a catalyst (for example, ammonia) and is arrested before the resin becomes insoluble in ethyl alcohol. A mixture of resin, ethyl alcohol and coal tar is specifically claimed.—R. BEUTNER. Brit. pat. 505,972; through *J. Soc. Chem. Ind.*, 58 (1939), 884. (E. G. V.)

Sodium Ascorbate—Synthetic, Antiscorbutic Activity of. The minimum curative dose of the sodium salt of *iso*-ascorbic acid is 20 to 25 mg., so 1 Gm. of the salt contains 40 to 50 biological units or 2 to 2.5 human doses. *Iso*-ascorbic acid is therefore about 20 times less active than ascorbic acid.—E. M. BAMDAS, B. A. LAVROV, V. M. RODIONOV and N. S. IAROUSSOVA. *Voprosy Pitaniya*, 7 (1938), No. 2, 6–9; through *Chimie & Industrie*, 42 (1939), 119. (A. P.-C.)

Sodium Salicylate—Elective Method of Administration of. Salicylate treatment is generally administered by the gastric route and sometimes intravenously, the rectal route being excepted. Therapeutic doses of salicylates when administered orally between 5 and 25 Gm. provoked nausea, vomiting, diarrhea and sometimes salicylate intoxication. After having reviewed the pharmacological action of salicylates and the toxic doses by the digestive route, the author decided to study salicylate treatment by the rectal route. The method was that of Bullrich (Buenos-Aires). The solution employed is an isotonic solution of sodium salicylate (23.20 Gm. in 1 liter of water) given drop by drop rectally (50 drops per minute, or 2 cc.). The drops are allowed to flow for a period of two hours. In this manner, one-half liter equals 11.60 Gm. This dose is well tolerated by the ill. The author employed this method upon a very large scale and has obtained excellent results.—L. VELASQUEZ. *Med. Espanola*, 2 (1939), 1; through *Presse méd.*, 81–82 (1939), 165. (W. H. H.)

Sodium Salts—Intravenous Injection of, in Sciatica. Intravenous injections of sodium salicylate and sodium iodide rapidly cured twenty cases of primary sciatica but produced no permanent result in twelve cases of secondary sciatica. This selective

action is probably due to the specific effect of sodium salicylate on "rheumatic" conditions and, it is suggested, may be of diagnostic value.—H. B. SUTTON. *Lancet*, 237 (1939), 1168. (W. H. H.)

Sphagnum Moss as a Surgical Dressing. Sphagnum was introduced as a surgical dressing in the latter stages of the World War. Upon request the writer states that reports on its use from surgeons and ward sisters were unanimously favorable. These reports coupled with the writer's personal experiences causes him to commend this product as a surgical dressing. Moreover its use liberates cotton for the manufacture of munitions essential to the conduct of a war.—HENRY WADE. *J. Trop. Med. Hyg.*, 43 (1940), 46–47. (W. T. S.)

Stibophen Issued to Meet Demands for Fouadin. Burroughs Wellcome and Company, to meet the demand for the English product, announce the manufacture and issue of Stibophen by license under Patents, etc., Emergency Act, 1939, relative to the English Patent no. 37346, the objective of which is Fouadin (Stibophen). This is a trivalent antimony compound of sodium pyrocatecholdisulfonate.—*J. Trop. Med. Hyg.*, 43 (1940), 76. (W. T. S.)

Sulfamethylthiazole—Use of, in Typhoid Fever. A Preliminary Report. General clinical improvement was noted in 4 typhoid fever patients who received 1 to 2 Gm. doses of sulfamethylthiazole. This and the lack of toxicity of the drug warrants its continued use in this disease.—T. O. WEILBAECHER, JR., EMMA S. MOSS, HENRY M. TAYLOR and HOMER DUPUY. *Southern Med. J.*, 33 (1940), 645–648. (W. T. S.)

Sulfanilamide—Meningitis Treated with. Eleven patients acutely ill with meningitis of *Streptococcus hemolyticus*, were treated with serums, transfusions and drugs. Their ages ranged from 4 weeks to 51 years. Only one patient, a boy with an abscessed left forearm recovered. The abscess was incised and drained. A second group of 12 patients had a similar history of cases and conditions. All were given sulfanilamide in initial and maintenance doses, and three were given meningococcus antitoxin. Two died and ten recovered. Sulfanilamide is considered an effective remedy for meningitis from *beta* hemolytic streptococcus; but it is equally important to drain any localized area of infection.—JOHN A. TOOMEY and E. ROBBINS KIMBALL. *J. Am. Med. Assoc.*, 112 (1939), 2586. (G. S. G.)

Sulfanilamide—Odor Observed in Patient Receiving. The author has observed a distinctive odor which may be detected in the vicinity of patients receiving large doses of sulfanilamide. This is described as a fairly pleasant, sharp, fruity odor somewhat like that of acetone but distinctly different from it and usually stronger. The cause of this odor has not yet been determined, and the facts which have been published concerning the fate of sulfanilamide in the body and its pharmacological actions do not seem to offer any reasonable explanation. According to Hartmann, the action of sulfanilamide on the acid-base balance is to produce a carbon dioxide-deficit type of alkalosis, for which the body compensates by increased excretion of base in the urine; no acetonemia has been described, and the drug does not seem to affect the metabolism of diabetics unfavorably. Detection of the odor serves to arouse suspicion that the drug has been used, though it may not be stated in the history.—S. LIEBOWITZ. *New York State J. Med.*, 40 (1940), 363; through *Abbott Abstract Service*, (1940), No. 673. (F. J. S.)

Sulfanilamide—Rectal Administration of. Seeking a method other than parenteral injection whereby sulfanilamide could be administered to patients who could not take the drug orally, the authors experimented with rectal instillation. They found that a 1% solution of sulfanilamide is readily absorbed from the normal or pathologic colon in man. The solid drug in the form of a suppository was less well absorbed. If a moderate sized retention enema of 1% sulfanilamide solution can be retained as long as 30 minutes it is possible for enough to be absorbed to reach a concentration of 2.5 mg. per 100 cc. of the free drug in the blood. The 1% solution was bacteriostatic to Flexner and Duval-Sonne strains of dysentery bacilli, and experimental infections with these organisms have been successfully treated in mice. The solution had no local effect in gonorrhea, but benefited anorectal lymphogranuloma inguinale. No irritation from the solution was seen with the sigmoidoscope.—A. W. M. MARINO, R. TURELL, A. M. BUDA and I. SKIR. *Medical Times*, 68 (1940), 110; through *Abbott Abstract Service*, (1940), No. 670. (F. J. S.)

Sulfanilamide—Use of, for Lymphogranuloma Inguinale. When the treatment of lymphogranuloma inguinale is undertaken with sulfanilamide, the experience of the authors convinces them that the best results are obtained by rapidly attaining a high blood level of the drug. They believe that a minimum of 24 Gm. of the drug should be given in the first four days. This, of course, means that the patient should be hospitalized so that any reaction to the large dose can be observed and treated promptly. The authors find that sulfanilamide exerts a profound influence on the disease: "The scar tissue became more elastic. The perirectal infiltration and exudate disappeared. The raw surfaces healed. The resistance to the examining finger diminished and the strictures were easily dilatable. In addition to this favorable effect on the stricures, the patients' general health improved noticeably." Several illustrative case histories are included.—A. W. M. MARINO, A. M. BUDA, R. TURELL and L. NERB. *Am. J. Surgery*, 46 (1939), 343; through *Abbott Abstract Service*, (1940), No. 672. (F. J. S.)

Sulfanilamide—Value of, in Otogenous Infections. Danger exists in the use of sulfanilamide in the upper respiratory tract in that it may obscure the clinical picture. It is useful in otitic complications such as meningitis, sinus thrombosis and brain abscess; but it should be cautiously used in otitis media and not at all in the suppurative form. It is contraindicated in mastoiditis. Six cases are reported in which the use of sulfanilamide masked the true clinical picture of mastoid involvement.—JACOB L. MAYBAUM. *J. Am. Med. Assoc.*, 112 (1939), 2589. (G. S. G.)

Sulfapyridine in the Treatment of Pneumonia. The author's record shows that the fatality rate for type II pneumococcus pneumonia was exceptionally low in Ruchill Fever Hospital during the winter of 1938–1939. This fall can be attributed either to a sudden change in the severity of the disease or to the new treatment introduced. While they are of the opinion that the former explanation is partially true, the completely unexpected recovery of a number of critically ill patients has convinced them that much of the benefit came from the introduction of sulfapyridine. The fact that only forty per cent of their cases were over forty years undoubtedly operated in favor of the low fatality rate. On the other hand, bacteræmia was present in forty per cent which indicates a moderately severe form of the disease. They are of the opinion, therefore, that sulfapyridine is of considerable value in the treatment of type II pneumococcus pneumonia. Three disadvantages remain to be studied—namely the definite lag in recovery, the delay in resolution of the

consolidation and the gastric upset that sometimes necessitates the stoppage of the treatment.—T. ANDERSON, E. D. COOPER, J. G. CAIRNS and D. R. BROWN. *Lancet*, 237 (1939), 776. (W. H. H.)

Sulfapyridine—Treatment of Pneumonia by, in Infancy and Childhood. Pneumonia patients, except empyemia cases, were allocated to one of two groups, control and sulfapyridine, but with no distinction between croupous and bronchopneumonia. Treatment was instituted as soon as blood and throat specimens were taken on admission. The children received 1 gr. (0.06 Gm.) per pound body weight every 24 hours with sodium carbonate administered in equal doses at the same time. Medication continued until the patient had been afebrile for five days. The drug was powdered and suspended in a half ounce of water for oral administration, and followed by a liberal amount of fluid to promote absorption. The sulfapyridine level of the blood was determined daily by a photoelectric colorimeter on capillary blood from finger or ear. Chest specimens were obtained by a swab deep in the orthopharynx. Observations were made on 70 patients, half of them receiving sulfapyridine; the two groups proved suitable for comparison. Sulfapyridine apparently shortened the course of pneumonia by approximately three to four days. The series was too small to evaluate the effect of the drug in preventing complications. There were variations in response, some were unaffected, some relapsing on withdrawal of the drug. Optimum dosage needs further study, but indications are of 4 mg. per 100 cc. as an adequate level of free sulfapyridine in the blood. Vomiting and cyanosis were present in about half of the sulfapyridine group, but not serious. Manifestations also appeared in the control group. The study is only preliminary but the low toxicity of doses employed warrants further study.—ARMINE T. WILSON. *J. Am. Med. Assoc.*, 112 (1939), 1435. (G. S. G.)

Sulfapyridine—Value of, in Therapy of Pneumococcic Pneumonia. The author discusses two series of sixty pneumonia patients each in which sulfapyridine was used. In the first group an initial dose of 2 Gm. was given followed in four hours by a second dose of 2 Gm. with subsequent doses of 1 Gm. every four hours until the temperature returned to normal. In the second series an initial dose of 4 Gm. was given followed by 1 Gm. doses every four hours. Although very good results were obtained with both series the patients must be observed for untoward symptoms, the most common of which are nausea and vomiting.—I. F. VOLINI. *Merck Report*, 48 (1939), No. 4, 10–12. (S. W. G.)

Sulfonamide Derivatives—Process for the Preparation of. Products are prepared having the general formula $R.SO_2.NH.X$ in which R is heterocyclic aromatic nucleus with an amino group bound to the nucleus and X is an acid radical.—SCHERING A.G. Belg. pat. 432,439, Feb. 28, 1939. (A. P.-C.)

Testosterone Acetate—Influence of, on Blood of Man. The authors have noted that the injections of testosterone acetate produced in man a precocious augmentation and duration of monocytes and in a less constant manner an augmentation of the number of red blood corpuscles.—ALBEAUX-FERNET and LEFEBRU. *Soc. Franc. D'Hematologie*, (July 5, 1939); through *Presse méd.*, 73 (1939), 1354. (W. H. H.)

Testosterone Propionate in Chronic Mastitis. Of 24 patients with painful breasts and chronic mastitis treated with intramuscular injections of sterile olive oil (as a control), pain was relieved in 13, whether they had lumps in the breast or not. No further treatment was given to 8 of these 13 who had no lumps. The remaining 16 patients were treated with testosterone propionate injected intramuscularly in doses of 25 mg., 50 mg. and 100 mg., usually twice a week for several months. In 14 patients pain was relieved. In 12 patients treated there were lumps in the breast; in 3 the lumps disappeared, but in two of these spontaneous disappearance could not be excluded, and in one 2925 mg. in five months were required, resulting in hypertrophy of the clitoris and extreme atrophy of the endometrium. In 5 patients there was some reduction in the size of the nodules. In 2 patients who were not improved fresh nodules appeared in the breast during treatment. Menstruation was suppressed in 7 patients receiving the larger doses. Increased growth of hair developed in 5 of the younger patients, in 4 with comparatively small doses, but this was not observed in older patients receiving larger doses. It is emphasized that because of this complication and the undesirability of prolonged atrophy of the endometrium, testosterone propionate should be used with caution in women.—A. W. SPENCE. *Lancet*, 237 (1939), 820. (W. H. H.)

Therapeutics in Wartime. A general summary is given of first-aid measures and general and special treatments of wartime casualties, especially those caused by poison gases.—G. P. WEIL. *J. pharm. Belg.*, 21 (1939), 851–860. (S. W. G.)

α-Tocopherol (Vitamin E)—Study of. Injections of α-tocopherol (vitamin E) was temporarily effective in relieving neuromuscular symptoms, as anorexia, insomnia, etc., in 14 individuals with malnutrition, but no clinical evidence of pellagra, beriberi or riboflavin deficiency.—TOM D. SPIES and RICHARD W. VILTER. *Southern Med. J.*, 33 (1940), 663–664. (W. T. S.)

Tribromometaxylenol—Therapeutic Properties of. The authors have interpreted the study of the therapeutic applications of tribromometaxylenol and presented their observations of renal tuberculosis treated with success by this compound. Under its influence they have observed improvement of the general state, the rapid disappearance of cystitis and bacilli in urine. The cure of the disease without recurrence for many years was obtained.—DUBOC and G. BLANCHON. *Soc. de Therap.*, (June 14, 1939); through *Presse méd.*, 83–84 (1939), 1506. (W. H. H.)

Uliron and Albucid in the Treatment of Gonorrhea in Pregnant Women. A discussion.—H. KLAPDOHR. *Deut. Med. Wochschr.*, 65 (1939), 1163–1164. (L. K.)

Urea—Symmetrical Aromatic, for Treating Gout or Other Rheumatic Affections. 2-Aminonaphthalene-3-carboxy-6,8-disulfonic acid is treated with *p*-nitrobenzoyl chloride and the reaction product is reduced. The resulting product is again treated with *p*-nitrobenzoyl chloride and again reduced. The *p*-aminobenzoylaminobenzoyl derivative thus obtained is treated with phosgene. The product, in the form of its sodium salt, is suitable for intramuscular injection.—ALBERT COULTHARD, assignor to IMPERIAL CHEMICAL INDUSTRIES, LTD. U. S. pat. 2,164,229, June 27, 1939. (A. P.-C.)

Urinary Infections—Treatment of. The clinical phases of urinary infection have been briefly discussed. The etiology and pathogenesis are of utmost importance in the rational selection of treatment. If one relies on medical therapy alone, his results will be far less satisfactory than those of the clinician who thinks first in terms of potential accessory etiologic factors, and notably obstruction, and secondarily considers chemotherapy. The choice between mandelic acid and sulfanilamide should rest first upon specific bacteriologic indication and secondly upon renal function and tolerance

of the patient for the drug. With intelligent chemotherapy, about two-thirds of the common urinary tract infections can be cured. In the remainder, instrumental or surgical treatment must be combined with medicinal therapy.—M. F. CAMPBELL. *Bull. N. Y. Acad. Med.*, (1939), 609. (A. C. DeD.)

Vitamin B_1 and Nicotinic Acid—Treatment of Multiple Sclerosis with. The etiology of multiple sclerosis still remains obscure, but recently developed treatments are often directed toward improving the circulation in the central nervous system. Nicotinic acid in sufficiently large doses produces intense flushing of the skin, and the author has demonstrated on cats that the vessels of the pia mater dilate as well. Five cases of long-standing multiple sclerosis which had proved refractory to conventional treatment were given nicotinic acid and vitamin B_1 by injection. The technique, as finally worked out, consisted of injecting 10 cc. of a solution containing 12 mg. of nicotinic acid and 3.32 mg. of vitamin B_1 in each cc. The injection was made intramuscularly, and the solution was warmed to 110° F. before injection, since the flushing reaction seemed to be promoted by this warming. The injections were given 2 to 3 times weekly. Though no complete remissions were obtained, all showed definite improvement.—M. T. MOORE. *Arch. Int. Med.*, 65 (1940), 1; through *Abbott Abstract Service*, (1940), No. 663. (F. J. S.)

Vitamin B_1 Deficiency and Rheumatism. Rheumatism in the high altitudes of the Alps is attributed to vitamin B_1 deficiency, which is manifested mainly in activity of the nervous system. Abnormal labor due to the lack of vitamin B_1 also reported. Parenteral administration of vitamin B_1 has been 100% successful in treatment of the disease.—A. NEMECEK. *Munch. med. Wochschr.*, 85 (1938), 1147–1149; through *Chem. Abstr.*, 33 (1939), 3430. (F. J. S.)

Vitamin B_1—Herpes Zoster and. Vitamin B_1 because of its antineuritic properties is suggested for numerous diseases with neuritic symptoms. There are records of but two cases of herpes treated with crystalline thiamin chloride. Sixteen cases of herpes zoster were treated with crystalline thiamin chloride in doses of 2000 International Units, administered subcutaneously. Injections were given every second or third day. The ages ranged from 9 to 20, and from 40 to 80 years. Results were indifferent, treatment with vitamin B_1 was no more beneficial than with the usual less expensive methods.—HERBERT RATTNER and HARVEY C. ROLL. *J. Am. Med. Assoc.*, 112 (1939), 2585. (G. S. G.)

Vitamin B_1—Therapeutic Use of. A discussion.—KURT WACHHOLDER. *Deut. Med. Wochschr.*, 65 (1939), 1299–1305. (L. K.)

Vitamin B_6—Relief of Hypochromic Anemia in Dogs with Synthetic. Synthetic vitamin B_6 relieves the hypochromic microcytic anemia produced in dogs deficient in this factor. An adequate supply of the non-adsorbable fraction of the vitamin B complex is necessary for the complete disappearance of this anemia.—HARRY J. BORSON and STACY R. METTIER. *Proc. Soc. Exptl. Biol. Med.*, 43 (1940), 429. (A. E. M.)

Vitamin C Acid in the Treatment of Hemoptysis. The author found that the hemostatic action of vitamin C acid is indisputable in the course of hemoptysis. This action is produced when the acid is ingested and likewise when a large dose is injected intravenously (500 mg. per day). The action is as follows: immediate hemostatic action upon the hemoptysis; an action of longer duration and more general manner upon the evolution of the hemoptic process.—L. SENDON. *Med. Espanola*, (Nov. 1938), 37; through *Presse méd.*, 73 (1939), 149. (W. H. H.)

Vitamin C Treatment of Chronic Benzene Poisoning among Photoengravers. Four photoengravers had slight changes in the blood picture. While still working, they were treated with vitamin C and the blood findings improved. The author recommends that in the supervision of workers ascorbic acid in urine be determined as well as making blood examinations and that where the concentration in the urine is low that vitamin C be given both prophylactically and therapeutically, along with other remedies.—J. HAGEN. *Arch. Gewerbepath. Gewerbehyg*, 9 (1939), 698–704. (F. S. M.)

Vitamins D_2 and D_3 in Infantile Rickets. The course of healing in twelve infants and children with active rickets was studied by serial radiography of the wrists and by estimation of the plasma-phosphatase, six patients being given vitamin D_2 and six vitamin D_3 in amounts equivalent to 2000 I. U. daily. The results revealed no significant difference between the therapeutic effects of these two vitamins on rachitic infants and children.—N. MORRIS and M. M. STEVENSON. *Lancet*, 237 (1939), 876. (W. H. H.)

Waters—Natural Healing, Magic and Science of. Spa waters in general and those of Saratoga in particular are discussed.—O. BAUDISCH. *J. Chem. Educ.*, 16 (1939), 440–448. (E. G. V.)

Yeast in Nourishment and Therapy. A review. In addition to vitamin B, yeast contains large quantities of S, which is essential in the treatment of pellagra, and an antianemic principle. Thirteen references.—H. MULLER. *Schweiz med. Wochschr.*, 68 (1938), 1349–1352; through *Chem. Abstr.*, 33 (1939), 3430. (F. J. S.)

NEW REMEDIES

SYNTHETICS

Asafœtin (Hageda, A. G., Berlin) contains in each tablet, sulfur (in the form of an organic compound) equivalent to 3 Gm. of fresh garlic. The characteristic odor of the crude drug is not apparent—the preparation being odorless and tasteless. It is indicated in the treatment of dyspepsia, flatulence, diarrhea, etc.—*Pharm. Zentralhalle*, 80 (1939), 566. (N. L.)

Calgluchin (Sandoz, A. G., Basel) is quinine-calcium-Sandoz, used in grippe and pneumonia.—*Pharm. Weekblad*, 76 (1939), 784. (E. H. W.)

Chinfortan (Chem.-pharmaz. A. G. Bad Homburg, Frankfort a. M.) is a sterile solution containing solvochin and sulfanilamide. It is intended for injection and is recommended in the treatment of pneumonia.—*Pharm. Zentralhalle*, 80 (1939), 524. (N. L.)

Combex (Parke, Davis and Co., London and Sydney) contains in each capsule 1 mg. (333 International Units) of vitamin B_1 and 150 grams (60 Sherman Units) of vitamin B_2. The following recognized components of the B complex—B_3, B_4, B_5, B_6 and nicotinic acid (the pellagra-preventive factor)—are also present. It is used for the prophylaxis against general vitamin B deficiency. The dose is 2 to 6 capsules daily. It is marketed in bottles of 25 and 100.—*Australasian J. Pharm.*, 21 (1940), 360. (A. C. DeD.)

Cortenil (Bayer, I. G. Farbenindustrie A.-G., Leverkusen a. Rh.) is a synthetically prepared suprarenal cortex hormone. It is marketed in the form of ampuls, each containing the equivalent of 5 mg. desoxycorticosterone acetate. It is intended for the treatment of Addison's disease, muscular

weakness, diphtheria, pneumonia, tuberculosis, grippe, etc.—*Pharm. Zentralhalle*, 80 (1939), 525. (N. L.)

Dépot-Insuline (I. G. Bayer & Co.) contains the insulin complex in suspension and not in solution. The tissue fluids gradually bring the insulin into solution after injection, after which resorption follows. The blood sugar value therefore undergoes no sudden changes whereby the patient tolerates the injection better and feels more comfortable.—*Pharm. Weekblad*, 76 (1939), 784. (E. H. W.)

Depropanex (Sharp & Dohme, Philadelphia, Pa.) is a saline solution of a chemically-derived, protein-free nitrogenous fraction obtained from an acid-alcohol treatment of beef pancreas. It is used in the treatment of intermittent claudication; to promote ureteral relaxation and dilatation for the relief of renal colic due to stone, stricture, kink and spasm; in post-cystoscopic colic; to facilitate the passage of the catheter beyond ureteral stone; instrument removal in calculi in lower ureter; and dilatation of organic ureteral stricture. Depropanex should be injected intramuscularly in doses between 2 cc. and 3 cc. every other day, depending on the severity of the condition and the response of the patient. It is supplied in packages containing one 10-cc. vial.—*Amer. Professional Pharmacist*, 6 (1940), 383. (F. J. S.)

D. O. C. A. (Desoxycorticosterone Acetate) (N. V. Organon, Oss) is a synthetically obtained compound possessing the action of cortin. It is obtainable in bottles containing 5 cc. (5 mg. per cc.) and in ampuls containing a solution of 2 mg. per cc.—*Pharm. Weekblad*, 76 (1939), 784. (E. H. W.)

Eufemyl Dragées (Temmler-Werke, Berlin) contain in each dragée, 0.1 Gm. desiccated mammary substance. It is indicated in the treatment of dysmenorrhea, etc.—*Pharm. Zentralhalle*, 80 (1939), 567. (N. L.)

Gestyl Organon (Organon Laboratories, London) is the gonadotrophic hormone from the serum of pregnant mares, issued as a sterile powder mixed with sodium chloride in capsules containing 40 R. U. with a twin ampul of solvent consisting of sterile 0.3% aqueous solution of tricresol. It is used in cases of menstrual disorder and sterility. It is given as deep intramuscular injection. It is supplied in boxes of 3, 6 and 12 twin capsules.—*Australasian J. Pharm.*, 21 (1940), 360. (A. C. DeD.)

Glycine Hydrochloride Compound (Schieffelin & Co., 16 Cooper Square, New York) contains in each capsule glycine hydrochloride (0.19 Gm.) which is sufficient to liberate, in solution, hydrochloric acid equivalent to 10 mms. of dilute hydrochloric acid U. S. P. It is used in the treatment of those cases in which hydrochloric acid therapy is required (dyspepsia with low gastric acidity, pernicious anemia of which achylia gastrica is a characteristic feature, diarrheas attended with marked putrefactive processes, certain allergic symptoms, etc.). It is supplied in bottles of 20, 100, 500 and 1000 capsules.—*Amer. Professional Pharmacist*, 6 (1940), 314. (F. J. S.)

Iriconvall (H. Köhler, Berlin) is a pure convallaria preparation made from the fresh plant by a special process. It is recommended as a cardiac tonic.—*Pharm. Zentralhalle*, 80 (1939), 567. (N. L.)

Neo-Hombreol-Propionaatzalf (N. V. Organon, Oss). This ointment contains testosterone propionate as the active constituent. Cutaneous application of this preparation seems to have met with success since it may be applied to the patient to replace the usual ampuls intended for intramuscular injection. Each tube contains 50 mg. of testosterone propionate (T. P.). The skin is cleaned with alcohol or soap and water, and the ointment rubbed in until it is all absorbed; application being made on the skin of the chest, abdomen or thighs. The hands used to make the application are not cleaned for two hours to insure the absorption of the ointment constituents upon them. One-half tube is applied daily at the beginning of the treatment and after 2 to 3 weeks somewhat less. The tubes contain 25 Gm. of ointment. There are also tubes of a concentrated ointment on the market containing 2 Gm.—*Pharm. Weekblad*, 76 (1939), 1137. (E. H. W.)

Nicotinamide (Abbott Laboratories, North Chicago, Ill.) is the amide of pyridine-3-carboxylic acid, a derivative of nicotinic acid. It is indicated for the treatment of pellagra and chronic gastrointestinal disease which may seriously interfere with the ability of the intestine to absorb nicotinic acid from food. In the latter cases, the ampul solution, administered parenterally, is recommended. Nicotinamide supplies the nicotinic acid effect without producing the cutaneous flushing abdominal or cerebral symptoms often following the administration of nicotinic acid. It is supplied in ampuls, each 2 cc., containing 100 mg. of nicotinamide, in boxes of 6 and 25; in 50-mg. tablets in bottles of 25 and 100; and the elixir, 50 mg. to each fluiddram, in bottles of 4 and 12 fluidounces.—*Amer. Professional Pharmacist*, 6 (1940), 385. (F. J. S.)

Nipectin (Eli Lilly and Co. Ltd., Basingstoke, Eng.) is a nickel-pectin compound (0.15% of nickel). It is used orally in diarrhea and dysentery. It is administered in cereal, soup, milk, etc.; 1 to 4 tablespoons three times daily, or up to every three hours. It is marketed in 4-oz. (avoird.) package.—*Australasian J. Pharm.*, 21 (1940), 360. (A. C. DeD.)

Oreton-F Toplicators (Schering Corporation, Bloomfield, N. J.) are hermetically-sealed pliofilm envelopes, each containing 4 mg. of crystalline testosterone (male sex hormone) in 2 Gm. ointment base. They are indicated in the milder cases of testicular deficiency that do not require intensive therapy. They are supplied in boxes of 25 toplicators.—*Amer. Professional Pharmacist*, 6 (1940), 181. (F. J. S.)

Praequine (Pharmaceutical Specialties (May and Baker Ltd.), Dagenham, England) is the salt of a synthetic quinoline derivative (8-diethylamino-isopentyl-amino-6-methoxy quinoline). It is used as a malaria prophylactic (destroys the gametocytes of all types of malarial parasites). It is administered after quinacrine treatment to prevent relapse. The dose should be followed strictly as prescribed by the physician. It is marketed in bottles of 25 × 0.01-gram tablets.—*Australasian J. Pharm.*, 21 (1940), 360. (A. C. DeD.)

Progesterone (The Upjohn Co., Kalamazoo, Michigan) consists of pure synthetic crystalline corpus luteum hormone dissolved in sweet almond oil and each cc. contains progesterone 1 mg. (1 I. U.), $C_{21}H_{30}O_2$. It is indicated in threatened and habitual abortion and in menstrual disturbances due to failure of formation of corpus luteum. The dose is $^1/_2$ to 2 mg. intramuscularly. Progesterone is supplied in boxes of two 1-cc ampuls and twengy-five 1-cc. ampuls.—*Amer. Professional Pharmacist*, 6 (1940), 314. (F. J. S.)

Prokayvit (The British Drug Houses Ltd., London) is 2-methyl-1:4-naphthoquinone (a synthetic chemically related to vitamin K). It is used in cases of obstructive jaundice, neonatal hemorrhage, sprue and coeliac disease, liver disorders, during pregnancy. It is given as intramuscular injection. It is marketed in boxes of 6 x 1-cc. ampuls, each con-

taining 5 mg. of the above substance in oily solution.—*Australasian J. Pharm.*, 21 (1940), 360. (A. C. DeD.).

Quinacrine (Pharmaceutical Specialities (May and Baker Ltd.), Dagenham, England) is the dihydrochloride of a synthetic acridine derivative (2-chloro-7-methoxy-5-diethylamino-isopentylamino acridine. It has a marked schizontocidal action in malaria. The dose is 1/2 to 3 tablets per day, according to age; ground in water or milk, and divided in three portions, each given at mealtime. It is marketed in bottles of 25 x 0.10-gram tablets. Quinacrine soluble for intramuscular or subcutaneous injection will be available shortly.—*Australasian J. Pharm.*, 21 (1940), 360. (A. C. DeD.)

Uropac (Pharmaceutical Specialties (May and Baker Ltd.), Dagenham, near London) is the disodium salt of 3:5-di-iodo-4-pyridoxyl-*N*-methyl-2:6-dicarboxylic acid. It is used as a contrast medium in intravenous urography and other radiographic investigations. It is marketed in single ampuls containing 20 cc. of a sterile 75% solution.—*Australasian J. Pharm.*, 21 (1940), 360. (A. C. DeD.)

Vitamin K Concentrate (E. R. Squibb & Sons, 745 Fifth Ave., New York) obtained from alfalfa, is dissolved in corn oil and supplied in capsule and fluid form. It is biologically standardized in Ansbacher units. It is indicated for the prevention and control of the hemorrhagic diathesis due to a lowered prothrombin content of the blood. The dosage is four capsules or 2 cc. orally to the mother for four days before expected delivery in order to prevent hemorrhage in the newborn; for hemorrhage in the newborn, 0.5 cc. to the infant at delivery or within 72 hours; in obstructive jauncice, for prophylaxis, four capsules or 2 cc. orally daily for three to five days prior to the operation, together with 2 or 3 bile salt tablets four times daily. The solution should not be given by injection. Vitamin K Concentrate is supplied in capsules (containing at least 500 Ansbacher units each, in bottles of 25) and solution (20-cc. bottles, each cc. containing at least 1000 Ansbacher units).—*Amer. Professional Pharmacist*, 6 (1940), 180. (F. J. S.)

SPECIALTIES

A-D Percomorph Liver Oil (Abbott Laboratories, North Chicago, Ill.) is a blend of refined liver oils from fishes of the order *Percomorphi*, adjusted by the addition of cod liver oil to contain 85,000 U. S. P. units of vitamin A and 8500 U. S. P. units of vitamin D per gram. It is indicated in certain cases in children where cod liver oil has been shown to be beneficial in improving the general state of nutrition; where the patient objects to the large doses of cod liver oil or where oils and fats are not well tolerated in the intestine; also, in the treatment of night blindness and other manifestations of vitamin A deficiency and in the treatment of rickets, spasmophilia and osteomalacia. The daily prophylactic infant dose is 10 drops (0.2 cc.) and the same dosage is suited for children and adults. It is supplied in 10-cc. and 50-cc. dropper bottles.—*Amer. Professional Pharmacist*, 6 (1940), 383. (F. J. S.)

Benevol Foot Powder (Labor. C. Viertel, Chemnitz) is a powder containing a salicylic acid derivative, but is free from starch and formalin. It is recommended in the care of weak and sudorific conditions of the feet.—*Pharm. Zentralhalle*, 80 (1939), 509. (N. L.)

Betaxin Syrup (Winthrop Chemical Co., Inc., 170 Varick St., New York) is a palatable, citrus-flavored, non-alcoholic, fluid preparation of vitamin B_1, containing 6 mg. (2000 U. S. P. units) of crystalline vitamin B_1 per fluidounce, or 0.75 mg. (250 U. S. P. units) per teaspoonful (4 cc.). It is used for prophylactic and therapeutic use in all cases where vitamin B_1 is indicated; and may also be employed as vehicle for certain commonly prescribed drugs. The dosage is as follows: prophylactic, one-half teaspoonful (125 U. S. P. units) daily for infants and small children, and twice this amount for older children; adults, one to two teaspoonsful daily. Betaxin Syrup is supplied in 8-oz., 32-oz. and gallon bottles.—*Amer. Professional Pharmacist*, 6 (1940), 315. (F. J. S.)

Boviserin (Behringswerke, Marburg) is a normal beef serum, not intended for injection but for oral use.—*Pharm. Weekblad*, 76 (1939), 784. (E. H. W.)

Carbangin (Pharmakeia, Fabrik pharm. Präparate, Apotheker E. Sommeryer, Berlin) is a coffeekola powder. It is recommended in the treatment of angina, cholecystitis, etc.—*Pharm. Zentralhalle*, 80 (1939), 509. (N. L.)

Cardiazol Tablets with Dextrose (Chem. Fabrik Knoll A. G., Ludwigshafen a. Rh.) contain in each tablet 0.05 Gm. cardiazol and dextrose and have a characteristic lemon flavor. It is indicated in circulatory collapse.—*Pharm. Zentralhalle*, 80 (1939), 524. (N. L.)

Cedilanid (J. Flint, Sandoz Products, London) is a glycoside from *Digitalis lanata*. It is used in heart failure due to mycardial insufficiency and disturbance of rhythm. The dose as tablets: 1–2 tablets three times daily; solution: 1/4–1/2 cc. (7–15 drops) three times daily; suppositories: 1 suppository twice daily; ampuls 2–4 cc. intravenously daily. It is marketed as tablets (0.00025 Gm.): bottles of 40, 250 and 500; solution (1 cc. = 30 drops = 0.001 Gm.): bottles of 10 and 100 cc.; suppositories (0.001 Gm.): boxes of 6; ampuls 2 cc. (0.0004 Gm.): boxes of 6 and 30; ampuls 4 cc. (0.0008 Gm.): boxes of 6 and 30.—*Australasian J. Pharm.*, 21 (1940), 360. (A. C. DeD.)

Cilausik (Bika, Chem.-pharmaz. Fabrik, Stuttgart) consists chiefly of rosin, eugenol, phenol, camphor, thymol, oil of laurel, oil of eucalyptus, oil of citron and zinc oxide.—*Pharm. Zentralhalle*, 80 (1939), 509. (N. L.)

Diostate (The Upjohn Company, Kalamazoo, Michigan) contains in each tablet approximately 5 grains of dicalcium phosphate and 2 1/2 grains of natural calcium phosphates with traces of the elements iron, copper, fluorine, zinc and magnesium (nine tablets approximate the calcium and phosphorus content of one quart of milk). It is used to supplement the intake of calcium and phosphorus, especially of children, expectant and lactating mothers. The dose of Diostate is three to nine tablets daily; and it is supplied in bottles of 100 and 1000 tablets.—*Amer. Professional Pharmacist*, 6 (1940), 385. (F. J. S.)

Dorital (C. F. Boehringer & Sons, Mannheim) is a remedy against hypertension, increased blood pressure from arteriosclerosis. It is found on the market in tablets, containing 0.15 Gm. Fel Tauri Depurat., 0.015 Oxysulfonal, 0.00025 Gm. Atropinum Methylobrom. and 0.11 Gm. Monoformias Calcicus per tablet. The addition of bile to the hypnotic is based on the premise that it is the connecting link between liver function and circulation. Oxysulfonal is chosen because it is more soluble than sulfonal and is thus secreted more rapidly. The dose is 2 dragées three times a day which is later reduced to 1 dragèe.—*Pharm. Weekblad*, 76 (1939), 784. (E. H. W.)

Esiderm with Sulfur (Desitin-Werk C. Klinke, Hamburg) contains zinc oxide, Venetian talc, siliceous earth, glycerin and distilled water in combi-

nation with 10% precipitated sulfur. The mixture is marketed in a colloidal form and is indicated in the treatment of eczema.—*Pharm. Zentralhalle*, 80 (1939), 510. (N. L.)

Ferromin with Liver Concentrate (McNeil Laboratories, Inc., 2900 N. 17th St., Philadelphia) contains in each capsule exsiccated ferrous sulfate 2 gr., thiamin hydrochloride not less than 50 units and liver extract $2^1/_2$ gr. (representing 50 gr. of fresh liver substance). It is used in secondary anemia, anorexia, convalescence, nutritional deficiencies; particularly for growing children and in pregnancy and senility. It is not indicated in pernicious anemia. The dose of Ferromin with Liver Concentrate is two capsules with water three times a day after meals; and it is supplied in boxes of 100 capsules.—*Amer. Professional Pharmacist*, 6 (1940), 382. (F. J. S.)

Granaya and Granaya with Cascara (E. R. Squibb & Sons, 745 Fifth Ave., New York) is a palatable flavored preparation of cleaned karaya gum granules, plain or combined with cascara sagrada. It is used as a laxative, particularly in spastic and in other forms of chronic constipation; pre- and post-operatively; and for constipation associated with such conditions as hemorrhoids or pregnancy. The dose is as follows: Granaya, 1 or 2 teaspoonsful after meals; Granaya with Cascara, 1 teaspoonful after meals or 2 teaspoonsful at bedtime. It is supplied in 4-oz., 10-oz., and $1^1/_2$-lb. bottles.—*Amer. Professional Pharmacist*, 6 (1940), 315. (F. J. S.)

Haemozel Liquor (Labor. "Zely" der Kreuzberg-Apotheke, Berlin) consists chiefly of rhubarb, frangula, aloes, cinnamon, galanga, cardamom seed and a wine base. It is used in the treatment of hemorrhoids.—*Pharm. Zentralhalle*, 80 (1939), 540. (N. L.)

Hepracton B (E. Merck, Darmstadt) is a highly active liver extract intended for injection. It contains lactoflavin and 0.1% vitamin B_1. It is indicated in the treatment of pernicious anemia.—*Pharm. Zentralhalle*, 80 (1939), 510. (N. L.)

Ikasit (Chem.-pharmaz. Fabrik "Mainfranken," Würzburg) consists chiefly of iodine, menthol, camphor, capsicum, aconite and ethereal oils. It is recommended as a liniment.—*Pharm. Zentralhalle*, 80 (1939), 510. (N. L.)

Lepetin (Utrecht and London) is an emulsion with 20% lecithine. It is used in convalescence, in lack of appetite, in arteriosclerosis, etc. The dose is one tablespoonful three times a day for adults. It is flavored with peppermint and vanilla and in a stronger form has silicic acid added.—*Pharm. Weekblad*, 76 (1939), 785. (E. H. W.)

New Remedies. The following new preparations have been placed on the market recently: **Foille,** a water-in-oil emulsion used for the treatment of burns; **Liquemin,** 1 cc. containing 4 mg. of heparin powder corresponding to 2000 anticoagulant units, used to retard the coagulation of blood; **Nebadrene "Pabryn,"** an atropine-pilocarpine compound, used for the treatment of bronchial asthma and hay fever; **Perandren Ointment,** each Gm. of the ointment containing 2 mg. of testosterone, used locally for hypogonadism and chronic mastitis; **Sonasta,** which are tablets containing ethylbromisovalerylamide and oxypropionylaminoethoxybenzene, used for soporific properties.—*Pharm. J.*, 144 (1940), 32. (W. B. B.)

Polypeptol (Dr. Baljet's Chem. and Pharm. Fabriek, Arnhem) is a polypeptone preparation for combating anaphylactic phenomena. In this treatment it is desired to obtain a specific desensitization of the organism with respect to nutritive allergies. The researches of Pagniez and others show that the taking of small quantities of peptones before meals results in an increase of this anaphylaxis with respect to egg white. A combination of peptones yields the best result. Polypeptol contains meat-, fish-, milk-, gluten- and egg-peptones and albumoses. It is found on the market in granules and in a sugar granulation sprayed with oil of anise which contain 5% of these peptones and as polypeptol-pastilles which contain 250 mg. of these peptones per tablet.—*Pharm. Weekblad*, 76, (1939), 785. (E. H. W.)

Puerperal Bacterin Mixed (Sharp & Dohme, Philadelphia, Pa.) is a bacterin representing pathogenic strains of bacteria collected from the cervix and endo-cervix of pregnant women; and it is standardized to contain 2000 million killed organisms per cc. (streptococcus (hemolytic) 700 million, streptococcus (viridans) 300 million, streptococcus (non-hemolytic) 200 million, *staphylococcus aureus* 300 million, *staphylococcus albus* 200 million, colon bacillus 300 million). It is used as a prophylactic immunization against puerperal sepsis associated with child bearing and it is administered parenterally, under the direction of a physician. The bacterin is supplied in packages of 5-cc. and 20-cc. vials.—*Amer. Professional Pharmacist*, 6 (1940), 385. (F. J. S.)

Rabellon (Sharp & Dohme, Philadelphia, Pa.) is a compound of belladonna alkaloids containing hyoscyamine hydrobromide, atropine sulfate, scopolamine hydrobromide; and the combined amount in each tablet is equivalent to 0.5 mg. of total alkaloids expressed as hyoscyamine hydrobromide in approximately the proportions found in Bulgarian belladonna root. It is indicated in the symptomatic relief of Parkinson's disease, paralysis agitans or shaking palsy which is a chronic progressive disease of the central nervous system. Rabellon is to be used under the direction of a physician. It is supplied in bottles of 100 and 1000 quarter-sected tablets.—*Amer. Professional Pharmacist*, 6 (1940), 314. (F. J. S.)

Riona Capsules (Sharp & Dohme, Philadelphia, Pa.) combine propadrine hydrochloride $^3/_4$ grain, acetophenetidin 2 grains and acetylsalicylic acid 3 grains in a dry-filled capsule. It is used in the symptomatic relief of spastic dysmenorrhea; of neuralgia, coryza, rhinitis and malaise of the common cold; and of headache when associated with rhinitis of hay fever. The dosage is: dysmenorrhea, at the onset of distress the patient should be given one capsule, which may be repeated three or four times a day. In severe cases, one capsule may be repeated every three hours. The capsules may be continued throughout the period. For common colds and hay fever, one capsule every three or four hours. Riona Capsules are supplied in boxes of 30 and 100 capsules which are individually wrapped in cellophane.—*Amer. Professional Pharmacist*, 6 (1940), 385. (F. J. S.)

Strophosid (J. Flint, Sandoz Products, London) is a new glycoside, *k*-strophanthosid, isolated from seeds of *Strophanthus kombé* in pure crystalline state. It is used in cases of cardiac weakness. The dose in ampuls (1 cc. = 0.0005 Gm. *k*-strophanthosid): 0.4–1 cc. per day. It is marketed in boxes of 3, 6 and 50 ampuls.—*Australasian J. Pharm.*, 21 (1940), 360. (A. C. DeD.)

BACTERIOLOGY

N^4-*n*-Acylsulfanilylhydroxamides—Chemotherapeutic Evaluation of. N^4-*n*-Valeryl, caproyl and heptanoyl-sulfanilylhydroxamide possess approximately the same therapeutic activity as sulfanilamide against sepsis in mice produced by two strains of hemolytic streptococci and one strain of type II pneumococci.—FRANK B. COOPER, PAUL GROSS and

MARION LEWIS. *Proc. Soc. Exptl. Biol. Med.*, 43 (1940), 491. (A. E. M.)

Agglutinins—Production of, in the Blood Following Peroral and Subcutaneous Vaccination by Typhoid and Paratyphoid Vaccines. Enteric fever vaccines were administered orally and subcutaneously to 89 healthy individuals to determine whether this is followed by agglutinin response. The orally innoculated subjects gave a lesser response, usually to a titer of 1 in 50 or 100. Additional oral doses of the vaccine probably lead to a higher production of agglutinins. Response for typhoid organisms was greater than for paratyphoid A or B. Six tables.—E. SOMASEKHAR. *Indian. Med. Gaz.*, 75 (1940), 223–226. (W. T. S.)

Alcohol—Application of Calcium Hypochlorite in the Distillation of. Bleaching powder (36.6% of available chlorine) may be used at the rate of 150 Gm. per 8000 liters in the sterilization of must.—G. FILGUEIRAS. *Rev. Chim. Ind.*, 8 (1939), 172–173; through *J. Soc. Chem. Ind.*, 58 (1939), 769. (E. G. V.)

α - (*p* - Aminophenylsulfamide)pyridine—Activity of, in Mice Infected with Colon Bacillus or with Staphylococcus Aureus. The drug, administered orally, cured most of the infected mice. Sulfanilamide, under the same conditions, cured less than 50%.—R. L. MAYER. *Compt. rend. soc. biol.*, 129 (1939), 480–483; through *Chimie & Industrie*, 42 (1939), 116. (A. P.-C.)

Antibodies—Effect of Viscosity of Serum on the Rate of Absorption of. The absorption of antibodies from antidiphtheritic horse serum, the viscosity of which has been increased by gelatin, acacia, etc., is slower in rabbits, up to forty-eight hours after injection, than when the antibodies are mixed with saline. The correlation which has been established here may be useful in the proper selection of natural and concentrated sera for a prescribed purpose.—D. C. LAHIRI. *Indian J. Med. Research*, 27 (1939), 225–232. (W. T. S.)

Antiseptics and Their Action. The author discusses briefly the general subject of antiseptics (their advantages and disadvantages) and concludes the azochloramid is a valuable and safe member of this group. It is used in $^1/_{500}$ solution in triacetin.—R. M. FREEMAN. *Ind. Med.*, 9 (1940), 87–88. (F. S. M.)

Antitoxins—Preparing. In the preparation of antitoxins from materials such as antidiphtheric horse plasma, antitetanic horse globulin or scarlet fever antitoxin, relatively inactive substances such as euglobulins and other relatively inactive proteins are removed by precipitation, as by adjusting the p_H to between 6.5 and 4.0 and the use of a material such as acacia, lemon, cherry, tragacanth, or karaya or pectin, pectic acid, pectic acid salts, alginic acid or its salts, agar-agar, mucoitin sulfuric acid, chondroitin sulfuric acid, cholla gum, ghatti gum, mesquite gum, flaxseed mucilage, partially hydrolyzed cherry gum, partially hydrolyzed gum tragacanth or partially hydrolyzed gum karaya. Various examples with details are given.—TILLMAN D. GERLOUGH, assignor to E. R. SQUIBB & SONS. U. S. pat. 2,161,861, June 13, 1939. (A. P.-C.)

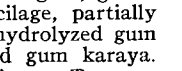
Atoxyl Resistance in Trypanosoma Gambiense—Attempts to Reduce, by Physical and Chemical Means. When trypanosome-infected animals receive subcurative doses of an arsenical the organism becomes resistant to the drug. The resistance is usually permanent and is apparently connected with an impermeability of the organism's membrane. Attempts to reduce the resistance by damaging the membrane by chemical and physical means are now reported. A chosen strain of organisms was made resistant to atoxyl by injecting mice with subcurative doses. Resistance was not altered by temperature changes. Of the chemical agents used, KOH, tannic acid, urea, caffeine, $Na_2S_2O_3$ and NaCl, etc., only one, a 10% solution of glucose reduced the resistance and this not constantly.—F. U. STEINFELD. *Ann. Trop. Med. Paras.*, 34 (1940), 45–51. (W. T. S.)

Autoclave—New Type of Small-Scale. A description of a new type of small-scale autoclave, giving its advantages and disadvantages. The improved design of this autoclave over its earlier model is claimed to have the following advantages: (1) an increase in loading capacity, (2) provides direct accurate temperature measurement, (3) it incorporates a means of sterilizing surgical dressings. Two illustrations are given for the autoclave; one showing the apparatus in full, the other sketching a cross section.—H. BERRY. *Pharm. J.*, 144 (1940), 55. (W. B. B.)

Bactericidals—Water-Soluble Phenolic. Phenolic, water-soluble bactericides, for example, chlorothymol, are dissolved in a deproteinized sulfonated fatty oil, for example, Turkey-red oil, with or without addition of a polyhydric alcohol (glycerol) in a sufficient quantity to dissolve the protein remaining after commercial deproteinization.—P. GOEDRICH. U. S. pat. 2,073,057; through *J. Soc. Chem. Ind.*, 58 (1939), 777. (E. G. V.)

Bile Salt Solutions in Infections with Beta Hemolytic Streptococcus. Parenteral use of sodium taurocholate as a prophylactic and therapeutic agent in treating infections caused by *beta* hemolytic streptococcus, was tested on mice. The animals were infected with five different strains of the organism. A solution of sodium taurocholate and sodium deoxycholate was used. The results were negative. The amounts of bile salts used were too small to be effective; and large doses are toxic.—L. H. ACHMIDT and DOUGLAS B. REMSEN. *J. Am. Med. Assoc.*, 112 (1939), 2119. (G. S. G.)

Chemicals—Production of, by Minute Organisms. A review of chemical changes produced by bacteria, yeast and molds. The chemistry of the future will be microbiological chemistry.—A. W. HIXON and R. R. ROGER. *J. Chem. Educ.*, 15 (1938), 357–326. (E. G. V.)

Diamidines—Trypanocidal Action of. In view of the trypanocidal activity of several guanidines, isothioureas, amidines and amines with alkyl and alkylene chains the authors have investigated the activity of a series of aromatic compounds containing the amidine group. 4:4′-Diamidino stilbene is typical of the compounds investigated but others in which the aromatic groups are linked by an alkane chain, by oxygen, by sulfur and by nitrogen were also included in the study. Of the 42 compounds used, the most promising are certain members of the series, 4:4′-*R*-O(CH_2)*n*-O-*R* and 4:4′-*R*CH:CH—*R*, where *R* =  . Most of the active compounds could be tolerated by mice in intraperitoneal doses of 1 mg. per 20 Gm. mouse. Doses of the same compounds $^1/_{30}$ as large as the tolerated amounts cured the majority of mice infected with *P. rhodesiensa*. This degree of activity is greater than that of the aromatic arsenicals. The therapeutic indices of the compounds was 40 as determined on rabbits infected with the same strain of trypanosomes. None of the compounds had any action on *T. cruzi*, *Spirochaeta recurrentis* or on *Spirillium minus* infections in mice while the most active compound namely, 4:4′-diamidino stilbene, was somewhat effective against *T. congolense*. Cats, cattle and sheep appear to tolerate moderate doses of these compounds while dogs vary con-

siderably in their reaction. Only transient symptoms were observed in humans who received intravenously 1–2 mg. per Kg.—E. M. LOURIE and WARRINGTON YORKE. *Ann. Trop. Med. Paras.*, 33 (1939), 289. (W. T. S.)

Disinfectants—Activity of Common. The following phenol coefficients were determined according to the U. S. Food and Drug Administration method (I) for typhus bacillus, (II) for *Staphylococcus aureus*, (III) as in (II) with 10% of human serum; alkalysol, 2.2, 1.0, 0.9; bacillol, 2.2, 1.8, 0.9; bactol, 3.6, 1.3, 0.7; cellocresol, 0.7, 0.3, 0.1; creolin, 4.3, 0.9, 0.4; herboform, less than 0.1; cresol soap solution (30%), 1.0, 0.6, 0.2 (as in Deuts, Arzneibuch, 1.6, 1.0,—); lavasteril, 6.0, 2.5, 1.0; lysoform, less than 0.1; lysol, 2.2, 1.8, 1.0; phobrol, 13.2, 8.0,—; sagrotan, 4.4, 2.2, 0.7; ufinol, 7.8, 5.0,—; zephirol, 20.1, 15.0, 4.2; caporite, 80.0, 40.0, 0.1; clorina, 40.0, 66.0, 10.0; mianin, 40.0, 70.0, 10.0 (the last three are chlorine compounds).—E. MAIER and E. MULLER. *Fortschr. Therap.*, 12 (1936), 204; through *Chem. Abstr.*, 33 (1939), 5987. (F. J. S.)

Disinfectants—Usefulness of Recent. An investigation of recent disinfectants from the standpoints of activity, cost, odor, effect on skin and on clothing and mode of application.—HANS MÜLLER. *Deut. Med. Wochschr.*, 65 (Feb. 1939), 290–292. (L. K.)

Distemper—Producing a Curative and Preventive Serum for. A vaccine or toxin of several stocks of bacteria belonging in part to the *paratyphus-enteritis*, the *coli* and the *intermedius* group, is injected into animals from which the blood serum is subsequently isolated by known methods.—O. R. VON WUNSCHEIM. Brit. pat. 503,302; through *J. Soc. Chem. Ind.*, 58 (1939), 778. (E. G. V.)

Hydrogen Peroxide—Action of, on Bacterial and White Blood Cell Autolysis. The disintegrating action caused by hydrogen peroxide on bacterial and white blood cells suspensions in prolonged autolysis has been studied. An increase of residual nitrogen together with a decrease of amino acids was observed. In the second part numerous tests concerning the quantitative variation of amino acids contained in derivatives of bacterial and with blood cells autolysis were performed in order to study their relation with temperature and time of contact with different quantities of hydrogen peroxide. It is concluded that hydrogen peroxide has a disintegrating action also on amino acids and that the latter is almost of a physical kind.—M. CALCINAI. *Biochim. terap. sper.*, 26 (1939), 478. (A. C. DeD.)

Incendiary and Bacteriological Bombs. A discussion of the effects of the bombs and means of combating them.—L. MILLARD. *J. pharm. Belg.*, 21 (1939), 913–918. (S. W. G.)

Inoculation Material—Preparation of. Fresh cultures or other preparations of bacteria or viruses are rapidly frozen and dried in a high vacuum (not more than 0.001 mm. mercury) and the still viable cultures are killed by treatment with either anhydrous cell poisons, for example, hydrogen cyanide, or radiations of short wave length. The products are dispersed in physiological saline or in non-aqueous oil.—CHEM. WORKS. Brit. pat. 506,095; through *J. Soc. Chem. Ind.*, 58 (1939), 886. (E. G. V.)

Iodocholeate. Its Efficiency as a Germicide and Its Clinical Performance. This compound is the result of partial chemical combination and partial adsorption of iodine with sodium glycocholeate and taurocholeate and overcomes the disadvantages of inorganic iodine. It is non-irritating and non-volatile, not as destructive to animal tissue as inorganic iodine and its toxicity is less. It is soluble in water and alcohol. The present study shows iodocholeate to be approximately three times more effective as a bactericide against vegetative organisms than ordinary solutions of iodine. It has a greater and more prolonged fungicidal power than tincture of iodine in the presence of protein. After removal of available iodine, the iodized choleates demonstrated germicidal effect. A dose of 2 cc. of undiluted iodocholeate per pound of body weight produced no lethal effect on rabbits. Solutions have a very low surface tension hence giving a high penetrating and diffusing power. It is especially suited for impregnating gauze pads. It is bactericidally effective as surgical dusting powder or in ointments.—H. R. SCHERZER and PAUL GOEDRICH. *Jour. A. Ph. A.*, 29 (1940), 255. (Z. M. C.)

Pertussis—Immunization against. There are conflicting reports on the efficacy of vaccine, especially with Phase I. Clinical studies were made on infants under 1 year, selected by chance. The vaccine used was unwashed Phase I with the total dose of 80,000 million organisms divided into 20,000, 30,000 and 30,000 million given at weekly intervals. As criteria of exposure a test child must have played with a coughing child in the first three weeks of pertussis, or a coughing child must have coughed in a test child's face. There were 211 infants vaccinated and 182 followed as controls. During 34 months there occurred in the vaccinated group 29 exposures followed by 9 cases and 20 escapes. In the same period for the controls there were 32 exposures followed by 29 cases and 3 escapes. Of the 9 cases in the vaccinated children only 3 were typical; of the 29 cases in the control group 3 were severe and 20 were typical. There were no deaths in either group. Observations indicate that vaccine conferred complete or partial protection on the majority. Annual reinjection with a fractional dose is advisable.—JOHN J. MILLER and HAROLD K. FABER. *J. Am. Med. Assoc.*, 112 (1939), 1145. (G. S. G.)

Poliomyelitis—Failure of Hypnotic and Convulsive Agents to Alter the Course of Experimental. Neither the administration of narcotic doses of phenobarbital nor the production of systemic shock by means of insulin or metrazol were capable of influencing the course of experimental poliomyclitis. This is considered as a proof that profound metabolic and cytological changes in the nervous system have no influence on the propagation of the virus.—CLAUS W. JUNGEBLUT. *Proc. Soc. Exptl. Biol. Med.*, 43 (1940), 464. (A. E. M.)

Poliomyelitis—Serum Therapy of. Only in one-half of the cases did the convalescent sera of poliomyelitis victims with and without paralysis, or the sera of persons in the environment of such victims, show worth while quantities of protective substances in neutralization experiments. Sera of poliomyelitis patients without paralysis were valuable in a greater number of instances than sera of those having paralysis. Sera of persons in the environment of those afflicted with the disease showed the poorest protective action. Sera from the placental blood of healthy women protected remarkably well.—E. GILDEMEISTER. *Deut. Med. Wochschr.*, 65 (1939), 1305–1307. (L. K.)

Sterilization of Water by Combinations of Ammonia and Chlorine—Studies on. Addition of ammonia and chlorine separately to water gives quicker sterilizing action than addition of a pre-mixed solution of the agents. The faster action is attributed to the presence of a greater concentration of hypochlorous acid in the water being treated. This also explains the slower sterilizing action of the chloramine derivatives. To correct for offensive odors and tastes the ammonia may be added first followed

by the chlorine.—R. BUYDENS. *J. pharm. Belg.*, 21 (1939), 1043–1052. (S. W. G.)

Sulfanilamido Derivatives of Heterocyclic Amines. Some 2-sulfanilamido thiazoles and pyridines have been prepared and their chemotherapeutic activity against experimental streptococcic and pneumococcic infections in mice has been determined. Several of the compounds appear to possess anti-streptococcic and anti-pneumococcic efficacy comparable to sulfanilamide and sulfapyridine, respectively. R. J. FOSBINDER and L. A. WALTER. *J. Am. Chem. Soc.*, 61 (1939), 2032. (E. B. S.)

Sulfathiazole and Sulfamethylthiazole—Action of, on Staphylococcus Aureus. In *in vitro* experiments sulfamethylthiazole has shown greater bacteriostatic activity than sulfathiazole; the activity of the latter in turn was greater than that of sulfapyridine. In *in vivo* experiments with the same organism sulfapyridine has little, if any, potency. Both sulfathiazole and sulfamethylthiazole have protected mice and the former drug has been slightly but consistently more active than the latter.—GEOFFREY RAKE and C. M. MCKEE. *Proc. Soc. Exptl. Biol. Med.*, 43 (1940), 561. (A. E. M.)

Surgical Dressings—Sterilization of Commercial. The author points out that the statement "sterilized in autoclave" does not have the same meaning as "guaranteed sterile." He further states that the general autoclaving procedure may not produce surgical dressings that tend to remain sterile. The following procedure is recommended. In the bottom of a white cast iron container, which differs from the ordinary model only in the presence of a concave mesh which encircles laterally the base of the recipient, introduce successively the following: a casing of a powdered mixture of anhydrous potassium carbonate and siliceous earth, a disk of impermeable paper or aluminum, a layer of cotton, and finally a disk of cardboard, which is perforated in the center, is tightly pressed under the jutting edge of the mesh and thus blocks the system. Then add enough water, by means of a pipette, through the perforation in the cardboard to impregnate the underlying cotton, pack the container with the dressings in the usual manner and hermetically seal the opening. Transfer to an ordinary autoclave having a tube for cooling its sides with running water and manometric and thermometric controls set in thoroughly moistened siliceous earth. Maintain a slight excess of pressure by manipulation of the vapor and exhaust valve. Because of their moistening the dressings are rapidly heated to 125°, then, after closing the steam cock, cool the closed autoclave with running water. At the same time admit compressed air into the sterilizer to maintain the pressure equilibrium. After the sterilization is completed the dressings are allowed to stand until the potassium carbonate has absorbed the moisture leaving the dressings dry and sterile.—A. LESEURRE. *Bull. sci. pharmacol.*, 46 (1939), 275–277. (S. W. G.)

Taurolin in Septicemia. Taurolin (Schering), a preparation containing salts of cholic acid, sulfur and proteins, is very effective in prophylaxis and therapy of puerperal septicemia.—P. N. LAUXEN. *Munch. Med. Wochschr.*, 83 (1938), 171–172; through *Chem. Abstr.*, 33 (1939), 3454. (F. J. S.)

Thymol as Antigen. Case report.—K. HANSEN. *Deut. Med. Wochschr.*, 65 (Feb. 1939), 249–250. (L. K.)

Vitamin C—Action of Microörganisms on. Various organisms destroyed vitamin C in cultures in 2 to 5 days to the following extent: *B. coli communis* 3.3%, *B. mesentericus vulgaris* 93.1%, *B. viscosus sacchari* 100%, *B. lactis aerogenes* 71.4%, *B. cloacæ* 23%, *B. subtilis* 80.3%, *B. loxosus* 86.5%, *Clostridium cellul* 81.6%, *B. casei* 80.4%, *B. megatherium* 38.8%, *B. filamentosus* 66.7%, *Saccharomyces oxycocci* 23%, *B. leishmanni* 60.3%, *B. bulgaricus* 51%, *B. acidophilus* 100%, *Micrococcus flavus desidens* 100%, *Micrococcus nacræcens* 100%, *Tetracoccus carneus* 100%, *Aspergillus niger* 100%, *Mucor* 100%. The microörganisms which have a strong oxidizing action on fats are the most rapid in their destruction of vitamin C.—L. M. GOROITZV-VLASSOVA and N. D. BYCHMANN. *Voprosy Pitaniya*, 7 (1938), No. 1, 66–73; through *Chimie & Industrie*, 42 (1939), 118. (A. P.-C.)

Water—Supression of Biochemical Processes in. Mercuric iodide is preferred as an antiseptic for water used in corrosion studies. Bacterial growth is inhibited by 0.05% carbolic acid, but not by 0.03% tricresol or 0.1% pyrocatechol.—F. SCHULZ. *Chem. Listy*, 33 (1939), 137–138; through *J. Soc. Chem. Ind.*, 58 (1939), 786. (E. G. V.)

BOTANY

Colchicine and Plant Breeding. Plants containing a multiple of the normal number of chromosomes are of interest to all plant breeders who are concerned with the improvement of cultivated plants. The artificial production of such polyploids has been achieved in a number of species by the use of colchicine. Various methods have been used for applying colchicine. Seeds may be soaked in water first or may simply be put in dry; they may be stripped of their testa or may be allowed to germinate before treatment. The range of concentrations between 0.1 and 1.0% is probably the most useful.—ANON. *Pharm. J.*, 144 (1940), 38. (W. B. B.)

Indolylacetic Acid—Response of Seeds and Seedlings to Treatments with. The paper is introduced by numerous references citing the fact that great variability has been reported to exist in the effect on plant growth of synthetic hormones. It is believed that conflicting reports will continue to appear until the underlying causes of these variations are revealed. The present report is concerned with: first, attempts to obtain stimulating effect from seed and soil treatment with indolylacetic acid, and, second, some attempts to learn something of the factors governing the response to these hormones by the use of other simultaneous treatments. Treating the seeds of oats and the broad bean with diluted indolylacetic acid for 24 hours before planting did not result in an increased growth of the seedlings. Higher concentrations retarded growth. Adding the diluted hormone to soil cultures in which was growing decapitated oat seedings resulted in an increased rate of regeneration of their buds. The length of shoot remaining on the bud influenced this response. Heteroauxin treatment to nitrogen-deficient plants gave no such response. A description of the methods and materials used is included with a discussion of the results.—Y. HWANG and H. L. PEARSE. *Ann. Botany*, 4 (1940), 31. (W. T. S.)

Nutriment Media—Aqueous, Plant Culture on. The methods developed for the production of foods crops on aqueous solutions with mineral nutriments are briefly reviewed, and suggestions made as to possible extensions and as to the mechanism of mineral nutrition of plants. A wide bibliography is presented.—A. MICHAILOFF. *Bull. assoc. chim. sucr.*, 56 (1939), 625–630; through *J. Soc. Chem. Ind.*, 58 (1939), 1275. (E. G. V.)

Plants—Preparations for Promoting Growth of. Glycines of aralkyl-carboxylic acids in which the aryl radical is phenyl, $C_{10}H_7$, or indolyl, and diluent, are used as plant root growth stimulates. In the examples, α-napthacetylglycine, melting at 152–153° (2 Gm.) [from α-$C_{10}H_7.CH_2.COCl$ and glycine (I)] is dissolved in 0.1*N* aqueous sodium hy-

droxide (82 cc.), diluted to 100 cc., and 10 cc. of this solution are added to water (1 liter); cuttings are placed in the solution for 16–20 hours, washed and planted. $CH_2Ph.CO.NH.CH_2.CO_2H$ and allocinnamylglycine, melting at 65–70° (from CPh. C:COCl and I followed by catalytic reduction), are used similarly.—F. HOFFMANN-LA ROCHE AND CO. A.-G. Brit. pat. 511,665; through *J. Soc. Chem. Ind.*, 58 (1939), 1164. (E. G. V.)

Vitamin B_6 as a Yeast Nutrilite. An experiment is presented which asserts the effectiveness of vitamin B_6 in yeast growth stimulation.—R. E. EAKIN and R. J. WILLIAMS. *J. Am. Chem. Soc.*, 61 (1939), 1932. (E. B. S.)

Vitamin B_6, Growth Promoting Factor for Yeast. It is found that crystalline vitamin B_6 has the properties of a bios factor, the bioses being known to profoundly affect the rate of proliferation of *S. cerevisiæ*. There are indications that the growth method may be useful as a method for the determination of vitamin B_6.—A. S. SCHULTZ, L. ATKIN and C. N. FREY. *J. Am. Chem. Soc.*, 61 (1939), 1931. (E. B. S.)

Vitamin C in Plants—Studies on the Formation of. I. The Influence of Light on the Ascorbic Acid Contents in Various Etiolated Seedlings. The ascorbic acid content of illuminated seedlings averages 50% more than that of etiolated seedlings and is directly proportional to the increase of light intensity. When etiolated bean or pea seedlings are exposed to light, the amount of ascorbic acid increases more slowly than in those of any other species. It is thought that there is a direct relationship between ascorbic acid content and photosynthesis.—TOMOTA SUGAWARA. *Japan. J. Botany*, 10 (1939), 141–150; through *Biol. Abstracts*, 14 (1940), 9375. (F. J. S.)

CHEMISTRY

GENERAL AND PHYSICAL

Distilled Water—Colloidal Impurities in. The formation of a fine-grained, formaldehyde-reduced gold sol was used as a measure of colloidal particles in distilled water. Positively charged hydrophobic colloids (such as colloidal silica from soft glass condensers or colloidal copper oxide from copper boilers) present in the water inhibited the formation of the fine-grained gold sol. This inhibitory effect can be reduced and sometimes completely eliminated by (*a*) allowing the water to stand undisturbed in Pyrex glass for some weeks, (*b*) freezing the water and (*c*) adding very small amounts (as low as 1 part in 10 million) of stannic chloride at the p_H range of 9.7–10.3.—S. W. PENNYCUICK and C. E. WOOLCOCK. *J. Phys. Chem.*, 43 (1939), 691–695; through *Chem. Abstr.*, 33 (1939), 6115. (E. G. V.)

Ebulliometers—Table for, for Use with Alcoholic Liquids Containing Solid Matter. The table gives the per cent by volume of alcohol for each 0.05 degree difference between boiling points, from 0 to 8 degrees, for solutions containing 0, 2, 4, 6, 8 and 10 Gm. of sucrose per 100 cc. The table may be used with any ebulliometer whose thermometer is based on the Centigrade scale.—R. F. LONE. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 548–550. (E. G. V.)

Foam—Nature of. V. Phase Inversion and Foam Formation of Emulsions Consisting of Acetic Acid, Benzene and Water. In the system acetic acid, benzene and water there are three regions, one in which oil-in-water type of emulsions result, another in which water-in-oil type emulsions result and an intermediate region in which the type depends on the method of shaking. Foam forms in an oil-in-water type emulsion.—T. SASAKI. *Bull. Chem. Soc. Japan*, 14 (1939), 107–114; through *Chem. Abstr.*, 33 (1939), 6113. (E. G. V.)

Gold Sol for the Lange Test—Improved Method for the Preparation of. Since the advent of the Lange reaction using colloidal gold to test cerebrospinal fluid several efforts have been made to find a convenient method for preparing uniform and suitable gold sols for the test. Formaldehyde, potassium oxalate, sodium citrate, oxalic acid, glucose, as well as other reducing agents, have been suggested for this purpose. Although the use of sodium citrate for reducing the gold chloride is not original with the present authors they outline a definitely superior technique by which it may be employed. The sensitivity of the gold sol thus produced is controlled by: (*a*) using different amounts of citrates, (*b*) by the addition of an acid or an alkali to the sol, or (*c*) by mixing slightly different specimens of the sol. The sol prepared by this method could be preserved up to three months.—ROBERT J. BARTHOLOMEW and NANCY L. GENT. *Australian J. Exp. Biol. Med. Sci.*, 18 (1940), 89–94. (W. T. S.)

Hydrogen Electrode—Barometric Correction Nomograph for. Using the nomograph correction in millivolts can be read for any pressure of hydrogen from 720 to 770 mm. at solution temperatures of 10 to 40° C.—G. F. KINNEY. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 530. (E. G. V.)

Low Temperatures—Production of. Dry ice was mixed with the products listed and the temperatures produced were maintained for at least 4 hours: ethylene glycol, −15°; dimethoxytetraethylene glycol, −31°; diethyl carbitol, −52°; carbitol acetate, −67°; cellosolve, cellosolve acetate, diacetone alcohol and butyl cellosolve, −73°.—H. L. WIKOFF, B. R. COHEN and M. I. GROSSMAN. *Ind. Eng. Chem., Anal. Ed.*, 12 (1940), 92–94. (E. G. V.)

Magnetism and Catalysis. I. Catalytic Decomposition of Potassium Chlorate by Manganese Dioxide and Ferric Oxide. The reaction mechanism of the catalyzed decomposition of potassium chlorate with oxides is examined from the magnetic standpoint by a chemical and magnetic analysis of the products at different stages of the reaction by measurements of x. The mechanism has been proved to involve the formation of an intermediate compound as shown by differences at the intervening stages of the reaction between the observed values of x and the values calculated on the mixture law. The nature of the possible intermediate compound is discussed and the earlier theories are controverted. A modified form of Sodeau's theory of alternate oxidation and deoxidation is suggested. In the case of catalysis by ferric oxide, strict concordance is seen between the observed and the calculated values of x at all stages of the reaction.—S. S. BHATNAGAR, BRAHM PRAKASH and JARNAIL SINGH. *J. Indian Chem. Soc.*, 17 (1940), 125. (F. J. S.)

Magnetism and Catalysis. II. Catalysis of Persulfate and Iodide Reaction by Ferrous Ions. Magnetic evidence is adduced in regard to the formation of a relatively stable intermediate compound which is responsible for the accelerated velocity of the iodide-persulfate reaction. The reaction obviously does not take place merely *via* the formation of ferric sulfate which has been the idea so far. The nature of the compound is discussed.—S. S. BHATNAGAR, BRAHM PRAKASH and JARNAIL SINGH. *J. Indian Chem. Soc.*, 17 (1940), 133. (F. J. S.)

Mixed Acids—Computing, Graphically. The construction and use of triangular charts for the estimation of the composition of three-component mixtures is explained and an example given.—E. BERL. *Chem. Met. Eng.*, 46 (1939), 225–226; through *J. Soc. Chem. Ind.*, 58 (1939), 715. (E. G. V.)

Nitric Acid Density—Nomographic Chart for Temperature Correction of. A chart is provided for

the ready conversion of the observed density of a sample of nitric acid to the density corresponding to 15° and/or the concentration of acid.—E. BERL. *Chem. Met. Eng.*, 46 (1939), 234; through *J. Soc. Chem. Ind.*, 58 (1939), 715. (E. G. V.)

Ropiness of Liquid. A glass rod is dipped into a liquid under examination. The rod is pulled upward with a constant velocity and the length of the liquid produced by this procedure is determined. The length gives the scale of "ropiness." A series of experiments was made with glycerol and the results are discussed in the light of the structural viscosity.—N. KAWAMURA. *J. Chem. Soc. Japan*, 60 (1939), 88–96; through *Chem. Abstr.*, 33 (1939), 3224. (E. G. V.)

Sodium Dichromate Solutions—p_H of. The p_H of solutions of sodium dichromate varied considerably as these solutions were diluted from approximately 4.5 to 0.05 mol. per liter. The curves were but little affected by the distilled water used to make the solutions, but were affected to a greater extent by the container in which they were prepared and tested. Small changes in temperature had a negligible effect. Concentrating rather than diluting the solutions had no effect in the weaker ranges, but gave more acidic values in the stronger. Additions of sodium sulfate and sodium chloride, two of the several impurities normally present with sodium dichromate, were found to have but a small effect on the p_H of the solutions.—H. J. KAUFMANN, W. B. LAUDER and R. K. KEPNER. *Ind. Eng. Chem.*, 32 (1940), 423–426. (E. G. V.)

Viscosity—Determination of. A set-up for Gardner mobilometers is described, whereby accurate temperature control and easy operation are obtained. The conclusions of Cornthwaite and Scofield that the correlation between absolute viscosity and mobility is a straight line have been checked by the authors for much higher viscosities, at various temperatures and for different disks. Provided rigid control of time and temperature is obtained and improvements in mechanical construction are made, the mobilometer can be used as a precision instrument for determination of absolute viscosity.—E. L. BALDESCHWIELER and L. Z. WILCOX. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 525–526. (E. G. V.)

INORGANIC

Cadmium from Zinc—Separation of. The use of granular aluminum as a reagent for the quantitative separation of cadmium from zinc, although it does not entirely supplant the hydrogen sulfide method in all cases, reduces the number of hydrogen sulfide separations in the determination of cadmium and effects a great saving in time.—F. E. TOWSEND and G. N. CADE, JR. *Ind. Eng. Chem., Anal. Ed.*, 12 (1940), 163–164. (E. G. V.)

Germicidal Compositions. Iron (1 part) and iodine (10 parts) are triturated with water at not more than 82°. A stable ferric iodide-iodine solution is formed.—R. C. MCQUISTON. U. S. pat. 2,073,021; through *J. Soc. Chem. Ind.*, 58 (1939), 777. (E. G. V.)

Magnesium and Magnesia. A brief discussion on magnesium, magnesia and a few of the magnesium salts.—ANON. *Pharm. J.*, 144 (1940), 174. (W. B. B.)

Potassium Iodide—Preparation of, by Double Decomposition. Potassium iodide free from iodine and iodate is obtained by boiling (for 5–10 minutes) solutions of potassium carbonate and Fe_3I_8 (from 3 mols of ferrous iodide and 1 mol of iodine). The yield is 97.2–97.6%. The effects on yield, purity and formation of colloidal ferric hydroxide and of varying the proportions of iodine, ferrous iodide and potassium carbonate are recorded. There is no advantage in replacing the potassium carbonate by other potassium salts.—P. G. PATERNOSTO and E. LUQUIN. *Rev. fac. cienc. quim. (La Plata)*, 13 (1938), 57–65; through *J. Soc. Chem. Ind.*, 58 (1939), 822. (E. G. V.)

ORGANIC

Alkaloids

Adsorbents in Alkaloidal Analysis—Non-Interfering. The purpose of the investigation was to find adsorbents that would be applicable in toxicological analysis involving alkaloids. An agent which would coagulate protein and remove pigments but not adsorb any dissolved alkaloid would facilitate filtration and clarification, eliminate digestion with heat and hence be useful in analyses where the alkaloid is easily decomposed. Adsorbents tried were talc, kaolin, silica gel, alumina cream and activated charcoal, U. S. P. XI. Alkaloids used were codeine, quinine, atropine, pilocarpine and cocaine. Adsorption by all five adsorbents was practically unaffected by changes in p_H of the original solutions with the exception of pilocarpine by silica gel. A considerably greater per cent of it was adsorbed at p_H 7.0 than at p_H 1.0 or 4.5, the smallest amount being at p_H 4.5. Increasing the period of contact caused a slight increase in adsorption by silica gel. Increasing weight of adsorbent caused a definite increase in adsorption of the five alkaloids by all adsorbents, being especially marked with silica gel. Concentration of solutions had little effect. The affinity of any one adsorbent for the five alkaloids varied within narrow limits. The adsorption by charcoal was complete or nearly so under all conditions. Adsorption by talc, kaolin and alumina cream was negligible when 5 Gm. were used; 20 Gm. increased it enough to interfere with quantitative recovery.—ESTELLE KOOZIN JOHNSON and L. WAIT RISING. *Jour. A. Ph. A.*, 29 (1940), 269. (Z. M. C.)

Alkaloids and Organic Nitrogenous Bases—Identification and Determination of, by Means of Reinecke's Salt. Many substances may be precipitated by Reinecke's salt (ammonium salt of chromidiammoniotetrasulfocyanic acid with one molecule of water of hydration $Cr(NH_3)_2(SCN)_4NH_4.H_2O$). The authors have evolved the best conditions for the precipitation of amines and alkaloids and they have determined the amount of precipitate obtained by weighing or by colorimetry (the reagent is colored). Although the method was advantageous for certain compounds, incorrect results were obtained with others (ethylamine, propylamine, methylecgonine, ecgonine, narcotine). All the reineckates have about the same rose color, but their crystalline forms and especially the arrangements and groupings of the crystals permit differentiation among certain organic bases.—P. DUQUENOIS and FALLER. *Bull. soc. chim. France*, (1939), 998; through *J. pharm. Belg.*, 21 (1939), 861. (S. W. G.)

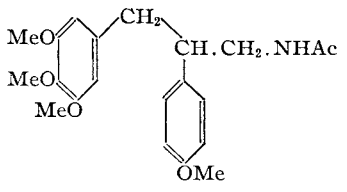
Alkaloids—Indirect Volumetric Determination of. I. Atropine. *Reagent.* Dissolve 25 Gm. of potassium iodide in 200 cc. of recently boiled and cooled distilled water, add 36 Gm. of mercuric iodide and shake for several minutes. Dilute to 1 liter and let stand over night. Filter to remove excess mercuric iodide. *Method.*—Dissolve 50–100 mg. of the alkaloid in a measured volume of 0.1*N* sulfuric acid (about 20 cc.), add the mercuric-potassium iodide solution drop by drop from a burette shaking vigorously after each drop until the precipitate which forms is just redissolved, then add 4–8 times the volume already used of the reagent. Stopper the flask, shake vigorously for 5 minutes, add a small amount of barium sulfate and let stand for 15 minutes. Filter slowly through a double or triple paper

filter and titrate an aliquot portion of the filtrate with 0.1*N* sodium hydroxide, using phenolphthalein, until the color persists after shaking for 20 seconds. Each cc. of 0.1*N* sulfuric acid used up in the precipitation is equivalent to 1 cc. of 0.1*N* alkaloid. The acid is removed by the precipitation of the complex $[HgI_2]n$. Atropine . HI. Another similar procedure using a reagent consisting of 15 Gm. of potassium iodide and 15 Gm. of iodine in enough distilled water to make a liter is given. The reagent should be filtered through a frittered glass filter and allowed to stand over night. The excess of the iodine reagent added should be 2–4 times the amount required for complete precipitation, and no barium sulfate need be added. An aliquot portion of the filtrate is first decolorized with 0.1*N* thiosulfate and then titrated with 0.1*N* sodium hydroxide as above. The amount of alkaloid may also be determined in the second procedure by determining the amounts of potassium iodide and iodine in portions of the filtrate.—C. AUGUSTE. *J. pharm. Belg.*, 21 (1939), 935–941, 961–964. (S. W. G.)

Cinchona Alkaloids in Pneumonia. VII. Amyl and Hydroxyalkyl Apocupreine Ethers. Hydroxypropyl, isomeric hydroxybutyl and isomeric amyl apocupreine ethers have been prepared. Some biological properties of these substances, of interest in the chemotherapeutic study of pneumonia, have been presented briefly. A lowering in the toxicity was accomplished by introduction of the hydroxyl group into the butyl radical of the butyl apocupreine ethers.—M. H. GREEN, A. G. RENFREW and C. L. BUTLER. *J. Am. Chem. Soc.*, 61 (1939), 1783. (E. B. S.)

Colchicine and Related Compounds. I. Some Observations on the Structure of Colchicine. The structure of colchicine has been largely elucidated by Windaus (*Annalen*, 439 (1924), 59) with certain details being added by Grewe (*Ber.*, 21 (1938), 907). The present authors have begun a series of investigations to seek compounds which will retain the activity of colchicine but yet be lacking in toxicity. The present report calls attention to some respects in which the Windaus formula appears unsatisfactory. Colchinol methyl ether, a primary amine obtained by degradation of colchicine, has been converted by nitrous acid into a carbinol. The constitution of colchicine is discussed in relation to the stability and properties of this carbinol and of other degradation products of colchicine.—A. COHEN, J. W. COOK and E. M. F. ROE. *J. Chem. Soc.*, (1940), 194–197. (W. T. S.)

Colchicine and Related Compounds. II. Synthesis of a Simple Analog of N-Acetylcolchinol Methyl Ether. As a preliminary to a synthetic approach to the colchicine structure condensations have been carried out between 3:4:5-trimethoxybenzaldehyde and phenylacetonitrile, phenylacetic acid and their *p*-methoxy-derivatives. From one of the condensation products was obtained a compound



which may have a structural relationship to a colchicine degradation product. Biological examination suggested that further attention should be given to this type of compound.—J. W. COOK and LEWIS L. ENGEL. *J. Chem. Soc.*, (1940), 198–200. (W. T. S.)

Duboisia Myoporoides—New Solanaceous Alkaloids from. An examination was made of the alkaloidal content of *Duboisia myoporoides*, and hyoscine and four new alkaloids, tigloidine, valeroidine, poroidine and isoporoidine, were obtained. Since no trace of hyoscyamine or other similar alkaloids reported by earlier workers has been found, it is recommended that the official description of "duboisine" sulfate as a mixture of hyoscine and hyoscyamine sulfates be discontinued. Tigloidine has been shown to be tiglyl-ψ-tropëine, and has been synthesized. Valeroidine has been shown to be the mono*iso*valeryl ester of a dihydroxytropane previously isolated from Peruvian coca leaves as the dibenzoyl ester, and a structural formula has been suggested. Poroidine and *iso*-poroidine were isolated in the form of a mixture, originally named base *Z*. Poroidine has been shown to be *iso*valerylnortropëine, and *iso*-poroidine to be *d*-α-methylbutyrylnortropëine, and both have been synthesized. A mixture of ten parts of the former with one of the latter has been found closely to resemble base *Z*. A partial separation of base *Z* has been accomplished by an indirect method, and *iso*valerylnortropëine thus isolated; though it has not been found possible to separate *d*-α-methylbutyrylnortropëine, its presence is practically certain.—W. MITCHELL. *Pharm. J.*, 144 (1940), 137. (W. B. B.)

Ergot Alkaloids—Identification of. Digest 3 Gm. of finely powdered ergot with 20 cc. of lead acetate for 1 hour, shaking several times, filter and extract successively with 20, 10 and 10 cc. of ether; pour off the clear solution, evaporate, dissolve the residue in 5 cc. of concentrated acetic acid, add 2 drops of 1% solution of ferric chloride and overlay this solution on 5 cc. of concentrated sulfuric acid in a test-tube. A violet ring shows the presence of 0.02% or more of active alkaloids. The acetic acid solution may be yellow but should not turn brown. The method is a modification of the test proposed by Keller (*Bull. soc. agr. France*, 1867).—E. PERCS. *Magyar Gyógyszerésztud. Társaság Ertesitöje*, 14 (1938), 81–83; through *Chimie & Industrie*, 42 (1939), 105. (A. P.-C.)

Ergotine—Preparation of, and Its Chemical and Biological Determination. A survey of analytical methods. Extracts prepared according to the formulas of a number of pharmacopœias contain less than 50% of the total alkaloids as determined by Allport and Cocking's method. *Claviceps purpurea* occurs in the Argentine on *Spartina maritima*, var. *Braziliensis* and *Lolium* sp.—J. SONOL. *Rev. fac. cienc. quim.* (*La Plata*), 13 (1938), 77–110; through *J. Soc. Chem. Ind.*, 58 (1939), 884. (E. G. V.)

Erythrophleum Alkaloids. I. Erythrophleine. Erythrophleine, an amorphous alkaloid from the bark of *Erythrophleum guineense* G. Don., appears to have the formula $C_{24}H_{39}O_5N$. Hydrolysis with dilute acids yields crystalline erythrophleic acid, $C_{21}H_{32}O_5$, and β-methylaminoethyl ester of erythrophleic acid. Erythrophleic acid contains one carbonyl group, one hydroxy and one methoxy group. As it contains in addition one double bond, probably in the α-β-position with respect to the carboxyl group, it must contain three rings. Selenium dehydrogenation of the acid yields 1:7:8-trimethylphenanthrene and a selenium compound, $C_{19}H_{16}Se$, of unknown structure. It is suggested that erythrophleic acid is a diterpene derivative. Since erythrophleine has a digitalis-like action on the heart, it is clear that cardiac activity of this type is not confined, as generally believed, to steroids containing unsaturated lactone rings.—B. K. BLOUNT, H. T. OPENSHAW and A. R. TODD. *J. Chem. Soc.*, (1940), 286–290. (W. T. S.)