PHARMACEUTICAL ABSTRACTS

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ABSTRACTORS

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Digitalis Leaf—East Indian. Report of the Investigation of. Twenty-nine samples of digitalis leaf grown in Java were investigated comparatively with some European samples. Considerable difference between the East Indian and European leaves was observed. The infusion of the East Indian Leaf showed a stronger cumulative effect. Somewhat different results were obtained in the determination of the Hoekstra fractions (the East Indian leaf had a higher digitaline fraction). The author believes that some of the differences between the European and the East Indian leaves was due to the rapid drying of the latter resulting in its stabilization. Charts and tables of pharmacological data are given.—U. G. Bijlsma. *Pharm. Weekblad*, 72 (1935), 255. (E. H. W.)

Drugs—Scheme for Microscopic Examination of. Discussion of a scheme for the microscopic examination of drugs.—E. Skarmitzl and Z. Blazek. *Časopis Československ. Lékárnictva*, 14 (1934), 301–305; through *Chem. Zentr.*, 106 (1935), 749. (G. B.)

Grindelia Robusta, Nutt.—Histologic Study of. A histologic study of root, stem, leaf, bracts and inflorescence of the plant. Special reference is given to the oleo-resinous secretory apparatus and its anatomic location.—J. Giroux and J. Susplugas. *Bull. sci. pharmacol.*, 42 (1935), 89. (C. T. I.)

Kola—Jamaica and Madagascar. The most of the kola-nuts on the European market have been coming from Africa, these being preferred because of their supposed higher content of caffeine. To verify this a supply of Jamaica kola-nuts were obtained, examined and assayed according to the procedure of the Swiss Pharmacopœia. Fifty of the nuts were assayed individually and the average content of purine base was found to be 1.74%. This is well above the requirements of the Pharm. Helv. V (not less than 1.5%). Forty Madagascar kola-nuts were similarly assayed and showed an average of 1.33%.—L. Rosenthaler. *Pharm. Acta Helv.*, 10 (1935), 47. (M. F. W. D.)

Psyllium Seed—Further Studies on. Reference is made to earlier studies. The present report covers examination of new lots of seeds from Spain and France, plants with mature fruit and seed from growers in France and Spain, comparison with herbarium specimens and with standard descriptions of the species involved. Examinations included external morphology, cross sections and the mucilage swelling factor by the method previously outlined. The report is well illustrated. The following conclusions are reached: Good French and Spanish psyllium seeds of the current American market are yielded by *Plantago psyllium* and *Plantago arenaria; Plantago psyllium* seed is superior to *Plantago arenaria* seed in mucilage swelling capacity; while most of the French psyllium seed is coming now from *Plantago arenaria* and less from *Plantago psyllium*, occasional lots are mixtures of the two with, rarely, some *Plantago cynops*.—Heber W. Youngken. *J. Am. Pharm. Assoc.*, 24 (1935), 207. (Z. M. C.)

Rhubarb—Cultivation of Medicinal. Russian and Chinese rhubarb are identical in their active constituents. The Russian rhubarbs recommended are: *Rheum palmatum*, and *R. officinale*. Rheum Emodi contains only traces of active constituents.—D. Schtscherbatschew. *Sowjet. Pharmaz.* (Russ.: Ssowjetskaja Pharmacija) 5 Nr. 2.25–27 1934; through *Chem. Zentr.*, 106 (1935), 270. (G. B.)

Syzgium Jambolana—Notes on. In literature the cortex and fruits appear also under the names: *Eugenia Jambolana* Lam. and *Calyptranthis Jambolana*, W. In medicine the fruits, rinds and leaves are used as aromatic astringents and as a dye. The pharmacognosy of the fruits and rinds as well as the investigations of various workers are reported.—DRAFELN. *Apoth. Ztg.*, 50 (1935), 112. (H. M. B.)

ANIMAL DRUGS

Fish Liver—Preservation of, for Oil Production. To prevent destruction of vitamins by enzymic and bacterial action the liver is heated by means of steam to about 90° and immediately before, during or after the heating. Ten Kg. sodium chloride per 100 Kg. liver is dissolved in the mass. After the cooling of the mass, the container is closed.—ANTIESELSKABET FERROSAN. Dan. Pat., 48,412, Feb. 19, 1934.

Musks—Natural. Natural musk, as understood by the perfumer, is an animal secretion and like other natural fixatives, ambergris, civet and castoreum, is valued not only for its own odor and fixative qualities, but because it can impart a vitality to a perfume. Ambergris is the only one which is apparently unconnected with the sexual life of the animal producing it. Castoreum, civet and musk are all glandular secretions and their production is connected with the breeding season. The musk of commerce is produced by the musk deer (*moschus moschiferus* L.). The musk pod is entirely absent in the female and is a small more or less spherical sac, situated near the animal's abdomen. It varies in weight from about 10 to 50 Gm., when trimmed of hair and superflous skin. When cut open, the pods consist of about 70% of their gross weight of a black or reddish brown granular substance which is the musk itself. When exposed to the air it has a strong ammoniacal odor. There are many varieties of musk offered under such names as Assam, Nepaul, Yunnan, Indian, Tonquin and Cabardine. Tonquin musk provides 80 to 85% of the world's supply. The deer producing this quality live on the southern slopes of the Thibetan mountains. Adulteration is carried out fairly widely by the extraction of the genuine musk through the natural vent on the exterior side of each pod and the substitution of most anything. A pure dry musk should contain from 50 to 75% of water-soluble material, but only 10 to 15% of matter soluble in alcohol. The moisture should not exceed 12 to 15% and the ash not more than 8%. Muskone has been isolated from musk to the extent of from 0.5 to 2%. Perfumers use the musk in the form of a 3% solution in alcohol and the longer the tincture is kept, the better; six months being accepted as the minimum.—A. C. STIRLING. *Chem. and Drug.*, 122 (1935), 316. (T. G. W.)

PHARMACY

GALENICAL

Atropine Group—Homeopathic Tinctures of. Twelve homeopathic preparations prepared from Belladonna (plant, mature and immature fruits, root and seed), *Hyoscyamus niger*, *H. scopolia*, *Datura stramonium* (herb and seed), *Datura arborea* flowers, *D. metel* seeds and Duboisia are reported containing alkaloids of the atropine group. The tinctures and the homeopathic dilutions of these preparations are characterized according to their reaction to the Vitali and Fehling tests; their alkaloidal contents are determined and the completeness of the extraction of the total alkaloidal content is discussed. The tinctures are biologically tested on the eye of the cat for their mydriatic action and the limits determined for this action. The fluorescence phenomena of the tinctures and their dilutions are fixed, measured according to Rojahn, and the detectable limits determined. This method permits certain distinctions between Belladonna and *Hyoscyamus niger* and between the other two Hyoscyamus species due to their scopoletin content. The capillary power and its fluorescence phenomena is also described, the results of which correspond to the previously mentioned determinations. The results are tabulated in five tables.—A. KUHN and G. SCHÄFER. *Pharm. Zentralh.*, 76 (1935), 49. (E. V. S.)

Cherry Laurel Water and Solution of Hydrocyanic Acid—Preservation of, by Paraffin Oil and Vaseline. Stability studies on cherry laurel water and hydrocyanic acid solution revealed, (1) placing a layer of vaseline or paraffin oil over the surface of the preparation prevents deterioration considerably with vaseline being the better preservative; (2) 1% tartaric acid is a good stabilizing agent, alcohol a fair one; (3) preserving in a refrigerator prevents loss of hydrocyanic acid;

(4) containers (glass) with thick walls keep the preparation better than thin-walled containers, and (5) warmth and light rays hasten deterioration greatly. For an every-day dispensing set-up, the authors recommended a stoppered bottle surrounded with a layer of black paper and provided with an outlet in its base so that the solution or water may be drawn off without disturbing the superimposed layer of vaseline or paraffin oil.—A. GUILLAUME and G. DUVAL. *Bull. sci. pharmacol.*, 42 (1935), 74. (C. T. I.)

Cream or "Watersalve"—Preparation of Tenacious. The tenacious mucilage from plants, especially psyllium seed, is obtained by rapid boiling. The mucilage thus obtained is used to replace swelling drugs such as powdered tragacanth.—F. FUNCK. D. R. P. 603528 Kl. 30h. from 16/1. 1932, rendered 10/10/1934; through *Chem. Zentr.*, 106 (1935), 109. (G. B.)

Ipecac—Contribution to the Knowledge of the Extraction of. Ipecac root contains the alkaloids cephæline and emetine which must be extracted quantitatively; and the alkaloids psychotrine, hydroipecamine and ipecamine, saponins, ipecacuanhin (a glucoside), and ipecacuanhic acid (a tannin-like substance), all of which, according to previous research, seem to be without desirable activity. In previous work on ipecac the following variables have been taken into account: Fineness of the powder, period of heating, combinations of extraction media and concentrations of the solvents. In this paper we have chosen to vary the maceration process while maintaining a constant temperature and pressure, thereby eliminating these factors from consideration. As variables, we have chosen the fineness of the powder, the alcoholic strength of the menstruum and the time allowed for the action of the solvent on the drug. Cartagena Ipecac of the U. S. P. X was separated by hand into gray Cartagena roots, smooth roots with rhizomes, and red-brown roots, which were then dried to constant weight at 40° C. Total ash determinations were run on each group, and determinations of the alkaloidal content using the method of the Pharm. Helv. V. To study the effect of the fineness of the powder, the gray Cartagena roots were powdered in a drug mill to a coarse powder and then sieved through a set of U. S. P. X standard sieves into 6 powders of uniform fineness. The results of ash and alkaloidal content determinations show that the finer the powder the higher the alkaloidal content. Tinctures were then prepared using powders of the six degrees of fineness prepared above, and each was extracted with menstrua containing 35, 55, 75 and 95 per cent alcohol by volume, making 24 tinctures in all. Ten parts by weight of the menstruum were weighed into a flask and vigorously shaken with one part of the drug once each hour for six consecutive hours, and then filtered through a No. 1 Whatman filter. The temperature was maintained at 23° C. throughout. Each tincture was then assayed for alkaloidal content by the method of the Pharm. Helv. V. The dry residue was determined by evaporation and drying to constant weight at 95° C. The results were represented graphically. A second series of tinctures was prepared from all gray roots of uniform alkaloidal strength, the roots being powdered by hand, sieved and treated in exactly the same manner. The results paralleled closely those of the first set. A new shipment of Cartagena Ipecac was obtained, sorted and only the gray roots used to prepare a third set of tinctures, all factors being kept the same as in the first series except that drug reduced to a No. 100 powder of uniform ash and alkaloidal content was used, and that the time allowed for maceration was varied into periods of 1, 3, 24 and 48 hours, the same percentages of alcohol being used. The drug was shaken vigorously with the menstruum six times at regular intervals depending on the total time allowed for extraction. The menstrua containing 35 and 55 per cent alcohol extracted all of the alkaloids in one hour. In a final series of tinctures where the process of maceration was combined with pressure by rubbing the drug and menstruum together in a mortar, it was shown that hard rubbing and the use of fresh portions of solvent increases considerably the speed of the extraction in the cases of the more concentrated solvents.—K. STEIGER. *Pharm. Acta Helv.*, 10 (1935), 59. (M. F. W. D.)

Solution of Iron and Ammonium Acetate, U. S. P. X—Stabilization of. Variation in order of mixing ingredients showed no advantage in stability of product and mechanical mixing had no advantage over hand mixing. Storage at refrigerator temperature prevented deterioration. The addition of acetic acid up to 18 per cent of dilute acid in the finished preparation increased stability. Time of precipitation was found to be inversely proportional to the quantity of acetic acid present; daily agitation has no effect on time of precipitate formation. The addition of alkali in concentrations of 5 per cent or more of alkali exerts a stabilizing influence. By exactly doubling the concentration of active ingredients, a stable preparation was obtained.—W. J. HUSA and L. J. KLOTZ. *J. Am. Pharm. Assoc.*, 24 (1935), 125. (Z. M. C.)

Nitroglycerin Tablets—Influence of Method of Preparation of, on Nitroglycerin Content. The temperature of drying has much influence on the content of nitroglycerin. The smallest loss was observed in drying at 20° for 5 minutes. Loss depends also on the concentration of nitroglycerin used. Solutions containing more than 1% should not be used.—ZSIGMOND BARI. *Magyar Gyógyszerésztud. Társaság Értesitője*, 11 (1935), 68–81; through *Chem. Abstracts*, 29 (1935), 2303.

Tinctures—Evaluation of, Made according to Six Different Procedures. Twenty-four tinctures were prepared (1) by maceration according to Phar. Hung. III, (2) by double maceration according to Phar. Ital., (3) by digestion according to Phar. Hung. II, (4) by a treatment on steam-bath with reflux cooler for 3 hours, (5) by percolation according to Phar. Hung. III and (6) by diacolation in a special 3-tube apparatus. Best colors and transparency were obtained by percolation and diacolation. Specific gravity varied from 0.89 to 0.91. Dry matter content varied but little; it was lowest in tinctures made by maceration and highest in those made by diacolation, percolation and steam-bath treatment. Ash was lowest in the digested tinctures and highest in the percolated and diacolated tinctures. Diacolation and percolation products were highest in active matter; maceration tinctures were lowest.—ZSIGMOND BARI. *Magyar Gyógyszerésztud. Társaság Értesitője*, 11 (1935), 37–67; through *Chem. Abstracts*, 29 (1935), 2303.

PHARMACOPŒIAS AND FORMULARIES

British Pharmaceutical Codex—Review of. The *monographs* are divided into three sections, covering (1) methods of manufacture, (2) standards and methods of assay and (3) actions and uses of the drugs in question. The "actions and uses" section is itself subdivided, whenever this is possible, into (1) pharmacological action and therapeutic use, (2) methods of administration, (3) incompatibilities (4) antidotes, and (5) doses. In the third section substances occurring in the Brit. Phar. are included in the Codex, and the official standards are also included, as also are the actions and uses of these drugs. Among the substances which are included in this issue for the first time are mercurochrome; liver extract; stomach extract; insulin; peptone; scarletinal toxin and antitoxin; specific sera against botulism, dysentery, plague and infections by streptococci, pneumococci and meningococci. In the articles dealing with these sera an account of the typing of the organisms concerned is given, and the bearing upon immunization therapy. The Brit. Phar. antitoxins (diphtheria, tetanus and gas-gangrene), toxins (tuberculin, diphtheria and vaccinia) and "vaccines" (bacterial antigens) are included, and the actions and uses described. In the section dealing with the actions and uses of ephedrine, ergot and the pituitary hormones, the material has been extended and brought up-to-date.—L. HORDER. *Pharm. J.*, 134 (1935), 210. (W. B. B.)

British Pharmaceutical Codex 1934. The author reviews the B. P. C. 1934 and comments on its legal aspects and its status overseas. The section on Surgical Dressings, the Formulary and the Appendices are discussed briefly. Many reasons for revision are given.—C. E. CORFIELD. *Pharm. J.*, 134 (1935), 297. (W. B. B.)

British Pharmaceutical Codex 1934—Medical Aspects of. The usefulness of the Codex to medical practitioners is found in the correlation of pharmacology and therapeutics. It supplies in one volume a great amount of *ad hoc* information which cannot be obtained in any other place. The detailed activities and uses of drugs and the most appropriate methods of administration are very useful in the writing of prescriptions. A feature of the Codex as a text is the excellent way in which it describes preparations such as elixirs, colloidal solutions, emulsions, etc., and the methods of sterilization—tyndallization, pasteurization, etc.—J. ORR. *Pharm. J.*, 134 (1935), 233. (W. B. B.)

British Pharmaceutical Codex 1934—Pharmaceutical Aspects of. Among the vitamin preparations contained in the Codex are (1) Liquor Vitamin A, a standardized preparation; and (2) Extract of Malt with Vitamins, containing 1% of Liquor Vitamin A and 1.5% of Liquor Ergosterolis, B. P., with Extract of Malt. No official Codex preparations of vitamin C are included, except fresh orange and lemon juice and their concentrated preparations. Incidentally, the Codex states that lemon juice is stable at room temperature for at least fourteen months if the p_H is kept at its natural acidity point of 2.2, even though it may be heavily infected with moulds and yeast. Injection of Sodium Morrhuate and Injection of Quinine and Urethane are two interesting Codex preparations. The latter will deposit on cooling, and the former may do so, but

both will clear on warming; they should be warmed prior to injection. Peptone, for injection purposes, is required by the Codex to be free from more than traces of histamine. Digitalin of the Codex is now standardized, for a biological assay has been introduced whereby this mixture of glucosides is assayed and standardized just as *Digitalis Pulverata* is. It can be given either subcutaneously or intramuscularly, and a 3% injection is included. In the Formulary it is suggested that *Collyria* be not prescribed with an aromatic water as the basis because of the difficulty of sterilization. *Nebulæ* should be prepared with *Paraffinum Liquidum Leve* B. P. C., which has a lower specific gravity and lower viscosity than the official liquid paraffin. The formulas for emulsions are designed for hand-made preparations, and when such are made in a homogenizer, the quantity of gum may be reduced, otherwise the emulsion would be far too thick. Another revolutionary change is the introduction of a dye, azorubrum, intended to replace cochineal. The method of preparing green extract of belladonna has been radically altered. It is no longer made from fresh belladonna leaf juice, but is an alcoholic extract which is assayed, and then adjusted with liquid glucose to 1% of total alkaloid.—H. BERRY. *Pharm. J.*, 134 (1935), 233. (W. B. B.)

Sterilization—Notes. A selection of proposed formulas for the Chilean "Formulario Oficial de la Asquifa" includes Injection of Hexamethylenetetramine and Injection of Morphine Hydrochloride. Mercurial solutions for injection, as follows: Injection of Mercuric Cyanide, Injection of Mercurochrome and Injection of Mercuric Iodide. These mercurial injections, which contain the equivalent of 1% of mercury, are supposed to be isotonic and neutral.—*Pharm. J.*, 134 (1935), 235. (W. B. B.)

Swiss Pharmacopœia—Review of. The new Swiss Pharmacopœia contains 1050 items; 304 new items have been added and 108 have been dropped from the 4th edition. Besides 43 pages of introduction it contains 1244 pages. The book is divided into four parts, *viz.*, introduction, general part, special part (containing the monographs) and tables. History is given from the Ticinese Pharmacopœia of 1844 (the first cantonal Pharmacopœia) to the present time. The committee for the 5th edition was appointed in 1922, the work of revision requiring 10–11 years. The general part of the Swiss pharmacopœia is discussed at length, the discussion involving drugs, pharmaceutical specialities, methods for determining weights, measures, temperature and other constants. The reviewer speaks of the new Swiss Pharmacopœia as a *modern* pharmacopœia.—T. POTJEWIJD. *Pharm. Weekblad*, 72 (1935), 170. (E. H. W.)

Swiss Pharmacopœia—Review of the Monographs of. The reviewer discusses the new 5th) Swiss Pharmacopœia with special reference to the monographs. These are discussed as to form, content, tests, etc. Botanicals, chemicals, tinctures, decoctions, emulsions, pills, galenicals, etc., are considered in groups.—T. POTJEWIJD. *Pharm. Weekblad*, 72 (1935), 214. (E. H. W.)

NON-OFFICIAL FORMULÆ

Astringent Lotions. These lotions should be called "stronger lotions" and probably are more effective in correcting oiliness with which blackheads are associated rather than refining coarse pores. The following are some type formulas: (1) Glacial acetic acid 2.00%, zinc sulphate 0.15%, alum, 2%, glycerin 4%, menthol 0.08%, alcohol 20%, water 71.52%, perfume 0.25%. (2) Alum 2%, magnesium sulphate 4%, boric acid 2%, formaldehyde 0.1%, glycerin 3%, alcohol 20%, water 68.7%, perfume 0.2%. (3) Aluminum chloride 2%, boric acid 1%, glycerin 4%, alcohol 15%, water 77.75%, perfume 0.25%. Dissolve the perfume oil in alcohol and the water-soluble chemicals in water and stir in the perfumed alcohol, mix thoroughly and filter. ANON. *Drug and Cos. Ind.*, 36 (1935), 39. (H. M. B.)

Cleansing Cream—New. A cream which does not separate in summer and gives a good lather when mixed with water and is recommended for sensitive skins and as an adjunct in the treatment of acne is made as follows: Stearic acid 20%, liquid petrolatum 5, triethanolamine 5, coconut oil soap, water 40, glycerin 5. Heat the first 3 ingredients to 85°; heat the glycerin and water to the same temperature and dissolve the coconut oil soap maintaining the temperature. Add the soap solution to the stearic acid slowly and with stirring and continue stirring until cool.—J. G. DOWNING. *Drug and Cos. Ind.*, 36 (1935), 420. (H. M. B.)

Cosmetic Preparations—Borax and Sulphur in. The uses of borax especially its combination with glycol are discussed and the following formulas offered: *Cold Cream.*—Glyco-wax—,

beeswax 20 parts, liquid petrolatum 120 parts, water 54 parts, borax 2 parts, perfume 1 part. Melt the first three substances together, dissolve the borax in the water and heat both mixtures to 65° C. and then stir slowly the borax soln. into the wax mixture. Pour out the cream at 50° and add more water, if desired, to make the cream softer. *Vanishing Cream.*—This type usually has a silver-like appearance due to the use of paraffin, boric acid and glycerin with borax usually added as an antiseptic: 19.5 Kg. stearic acid, 0.5 Kg. almond oil, 375 Gm. KOH, 1 Kg. ammonia water (sp. gr. 0.88), 1 Kg. borax, 8 Kg. water. Melt the mixt. of almond oil and stearic acid, pour the mixt. at 82° C. into the aq. soln. of alkali, heat to boiling, cool to 70° C., allow to stand over night. By repeated warming to 38–43° and cooling with occasional stirring a good lustre is obtained in about 3 days, then stir in the glycerin and perfume. *Sulphur* and colloidal S apparently are valueless in the care of the hair because of their insolubility but oil-soluble S-Sb preparations (sulfoform) seem to show promise since the S is in an ionic form as the SH-ion. Commercial S products have particles of the following sizes: in μ: lime-sulphur (sulphur layer) > 1, colloidal S (drop-like) < 0.6, sulphidal (difficultly discernible structure) 3–6 and 16, extremely finely ground S (cryst.) 2–4, mean 10.7, "Wackenrodisch" solution (aq. soln. of H_2SO_3 saturated with H_2S with cooling and exclusion of light) (crystals with smooth surfaces) 3–50, precipitated S (crystals with curved surfaces) 6.4–16 and 32–48, flowers of S (crystals) 6–40; 32–48, ground cryst. S (crystals) 15–80. Final evidence shows that borax is in demand in these preparations on the basis of physico-chemical properties; S, however, is a substance which presupposes a chemical-dermatological knowledge for its use and without this is purposeless.—TH. RUEMELE. *Riechstoff Ind.*, 10 (1935), 22-25. (H. M. B.)

Cetyl Alcohol—Applications of, in Cosmetics. Cetyl alcohol used in the base of non-fatty creams has been found to be readily absorbed by the skin. As a tested formula the following mixture is recommended: 70 parts vaseline, 20 parts paraffin, 10 parts cetyl alcohol, 5 parts anhydrous lanolin, with 100 parts water. The addition of cetyl alcohol proved to have a marked retarding effect upon the onset of rancidity and, moreover, increased greatly the capacity for taking up water.—DR. S. MALOWAN. *Perf. and Ess. Oil Rec.*, 26 (1935), 52. (A. C. DeD.)

Cold Balms. The following experimental types are offered: (1) *Petroleum Jelly Type.*—Menthol 0.7%, methyl salicylate 5.8%, camphor 8%, eucalyptol 5%, mustard oil 0.5%, soft short fibre, white petrolatum 80%. (2) *Petroleum Jelly Type.*—Menthol 0.7%, chloral hydrate 9%, camphor 9%, methyl salicylate 10%, oil of cade 5%, soft, short fibre, white petrolatum 66.3%. In both cases, dissolve the camphor and menthol in the mixed oils; melt the petrolatum at 105° F. and stir in the previous mixt. (3) *Water-in-Oil Type.*—Menthol 1%, mustard oil 1%, eucalyptus 15%, camphor 1%, absorption bases derived from lanolin 30%, water 45%, stiff, long fibre, white petrolatum 7%. Dissolve the menthol and camphor in eucalyptus oil and add mustard oil. Melt the petrolatum and add the lanolin base maintaining the temperature at 45° C., stir in the above mixture followed by water at the same temperature, mix until an emulsion is formed. (4) *Oil-in-Water Type.*—Glyceryl monostearate 12%, white beeswax 6%, methyl salicylate 5%, menthol 1%, camphor 1%, mustard oil 0.5%, water 74.5%. Place the stearate, wax and water in a kettle, heat until the stearate melts and the whole becomes white and homogeneous. Dissolve the camphor and menthol in the methyl salicylate and add the mustard oil. Cool the mass to 50° C. and add the latter mixture. This product is characteristic of the so-called "greaseless balm" type.—ANON. *Drug and Cos. Ind.*, 36 (1935), 279-280. (H. M. B.)

Cosmetic Products—Hydrogen-Ion Concentration of. I. Fatty Skin Creams. This type of preparation is considered a water-in-oil type of emulsion, and when put on the skin the fatty portion is resorbed in part while the water remains in a great part on the surface producing a characteristic cooling action by its evaporation. With aqueous suspensions of seven commercial creams of American, English and Spanish origin, using *p*-nitrophenol, phenol red and β-di-nitrophenol as indicators in color comparators, three were slightly alkaline, one acid and three neutral; with alcoholic solutions of the same, two were acid, two nearly neutral and the p_H of three were not determined because extremely turbid alcoholic solutions were obtained. It is concluded that wax-free fatty creams in alcoholic solutions are almost neutral while those containing waxes are acid.—KARL PFAFF. *Riechstoff Ind.*, 10 (1935), 6. (H. M. B.)

Eau de Cologne. A discussion of Eau de Cologne, its constituents and manufacture with or without distillation is given. In preparing a cheaper type of perfume, use is made of isopropyl alcohol, or a mixture of this with ordinary alcohol, as a solvent for the oils. Synthetic oils are

used in place of the extracts employed in the better grade. A method for preparing solid Eau de Cologne is also given.—H. SILMAN. *Perf. and Ess. Oil Rec.*, 26 (1935), 45. (A. C. DeD.)

Feminine Hygiene Jellies. The following formulas are offered: *Lactic Acid Jelly (Starch-Glycerite).*—Lactic acid 1%, boric acid 5%, glycerite of starch, U. S. P. a sufficient quantity. It is advisable to dissolve the boric acid in the glycerin before preparing the glycerite. An alkali starch produces a more stable jel than an acid starch. *Lactic Acid Jelly (Gum Tragacanth).*—Lactic acid 1.5%, boric acid 4%, glycerin 10–30%, tragacanth (depending on quality) 2.5–4%, water, a sufficient quantity. Cooking the tragacanth and selection of a good quality helps preserve the jel. The use of less than 20% glycerin produces a jel which is apt to harden. *Lactic Acid Jelly (Gum Karaya).*—Lactic acid 1.5%, boric acid 4%, glycerin 5–20%, gum karaya (depending upon quality) 3–5%, water, a sufficient quantity. This is a new formula and is growing in popularity. The advantages and disadvantages of each of the above are discussed. Such acids as acetic, citric and tartaric have also been used, but lactic acid is preferred since it is already present in vaginal secretions and boric acid tends to maintain the acidity of the jelly in the presence of the protective colloids in the semen. Quinine and oxy-quinoline have little or no spermicidal value. All jellies of this type should have some aromatics and a cologne 1–3000 strength is recommended.—STOUGHTON. *Drug and Cos. Ind.*, 36 (1935), 30, 39. (H. M. B.)

Lip Stick. The composition, the molds, the coloring, the smoothness on application, the brightness and the perfuming of lip sticks are discussed.—A. G. AREND. *Perf. and Ess. Oil Rec.* 26 (1935), 39. (A. C. DeD.)

Lip Sticks—Chemistry of. Dibromo and tetrabromo derivatives of fluorescein have replaced vegetable dyes and alloxan as coloring agents in indelible nontoxic lipsticks: tasteless castor oil appears to be more satisfactory as a solvent for these colors than butyl stearate and other esters. Irritations to some individuals seems to arise due to compounds produced by removal of Br- atoms of the dye molecule and their combination with unsaturated ricinoleic acid. Care should be taken to use the proper proportions of the dye and oil (5% dye and 15% oil). The ideal stick should have the following properties: (1) spread in a thin layer, (2) m. p. 118° F., (3) possess sufficient tackiness, (4) shall not impart an unnatural or stiff feeling to the lips, (5) tasteless, (6) permanent in color, and should have about 75% vegetable and animal oils and waxes and the remainder mineral oils and paraffins. Lanolin is added to give tackiness and counteracts irritation and drying effects of the dye; beeswax (not over 10%) and ceresin are used to give consistency and to bind the castor oil; ozokerite to give a more easily crushable stick. As stiffening agents carnauba wax (10%) and paraffins are added; as a lubricant mineral oil is preferred. Absorption bases to decrease irritation and dryness such as cetyl alcohol are necessary.—THORPE DEAKERS. *Drug. and Cos. Ind.*, 36 (1935), 273–274, 280. (H. M. B.)

Passiflorine. A correspondent inquires as to the composition of "Passiflorine" and the Latin nomenclature corresponding to the following: "Extrait fluide de passiflore;" "Extrait moux de Saule blanc" and "Extrait moux de Cratægus oxyac." The reply is: "Passiflorine" (German "Passiflorin") consists of,

Extractum Flor. Passiflor. incarnat.	0.5 Gm.
Extractum Salicis albæ	0.25 Gm.
Alcoholatura Cratægi oxyacanthæ	gtt. XX
Sirupus Sacchari et Glycerin, *q. s.* ad.	5 cc.

H. J. VAN GIFFEN. *Pharm. Weekblad*, 72 (1935), 177. (E. H. W.)

Shaving Cream—Latherless. A mixture is prepared containing stearic acid 11, lanolin 10, cocoanut oil 0.3, concentrated ammonia water 1.35, paraffin wax 6, spermaceti wax 2, boric acid 1.5, water 75 parts, together with small quantities of menthol, camphor and perfume.—GEO. D. GETTEMULLER and SAMUEL L. GOLDHEIM. U. S. Pat. 1,991,501, Feb. 19, 1935. (S. W. G.)

Skin Creams—New Bases for. New bases mentioned are (A) *Hydrocerin* and *Boerocerin*, which are especially resorbed by the skin; they increase the resorption of creams containing fats, and are unsaponifiable and never become rancid. *Hydrocerin* creams produce a fatty appearance on the skin; and *Boerocerin* creams leave the skin lustreless; such creams are used as day and night creams, and are of value as powder bases. The latter base is used in the preparation of the finest American creams, which are very homogeneous and have a constant consistency, changing but little with extreme changes in temperature. These properties are due chiefly to the high

cholesterin content. (B) *Almecerin and Cefatin.*—The former is a bright yellow substance with a slight odor of wool-fat, indicating the presence of cholesterin and produces water-in-oil creams. The latter which is the base for dry creams of the oil-in-water type, is of wax-like consistency and almost white. The following recipes are of interest: (1) *Base.*—

	Hard	Medium	Soft
Hydrocerin	8%	8%	5%
Paraffin	8%	——	——
White vaseline	84%	92%	95%

(2) *Cream for Browning of the Skin.*—Hard base 40%; liquid petrolatum 10%, distilled water 50%–100%. (3) *A Universal Cream.*—Hydrocerin 2.17%; paraffin 50/52, 1.17%; liquid petrolatum 8.33%; white vaseline 21.67%; distilled water, 66.66%. (4) *American Creams.*—Boerocerin, 2.66%; liquid petrolatum, 4%; paraffin, 6.66%; white vaseline, 20%; glycerin, 3.33%; distilled water, 66.35%. (5) *Fatty Cream Base.*—Almecerin, 50%; water, 50%. (6) *Toilet Cream* (easily rubbed in and slightly fatty).—Almecerin, 40%; water, 60%. (7) *Glycerin Toilet Cream.*—Almecerin, 40%; glycerin, 10%; water, 50%. (8) *Fatty Cream.*—Almecerin, 40%; liquid petrolatum, 20%; water, 40%. (9) *Lanolin Cream.*—Almecerin, 28.6%; lanolin, 14.3%; water, 57.1%. (10) *Day Cream Base.*—Cefatin, 25%; water, 75%. (11) *Glycerin Day Cream.*—Cefatin, 25%; glycerin, 75.%; water, 67.5%. (12) *Fatty Day Cream.*—Cefatin, 25%, liquid petrolatum, 6.25%; water, 68.75%. (13) *Cream with Mother of Pearl Appearance.*—Cefatin, 24.4%; glycerin, 4.9%; water, 68.2%; alcohol, 2.5%. (14) *Mixed Cream.*—Cefatin, 18.9%; stearin 6.3%; almecerin, 5.7%; glycerin, 2.6%; water, 66.5%.—K. PFAFF. *Riechstoff Ind.*, 10 (1934), 157–158. (H. M. B.)

Soap—Improving Additions to. An invention relating to processes for the manufacture of soaps to which might be added substances has been described by Victor Boulez. Its object is to give to the soap pastes improved physical, detergent or other qualities, and to suppress or diminish soap losses. The addition of substances removes from soaps their hygroscopic character and increases also their keeping qualities. Some of the substances which can be added are enumerated.—*Perf. and Ess. Oil Rec.*, 26 (1935), 68. (A. C. DeD.)

Soaps—Some Disinfecting. A discussion of soaps having a definite disinfectant action including carbolic soaps, cold-process carbolic soaps, cresol soaps, iodine soaps, sulphur soaps and mercury soaps is given.—*Perf. and Ess. Oil Rec.*, 26 (1935), 69. (A. C. DeD.)

Sunburn Preventives. Any compound which will fluoresce in ultraviolet light of 2900–3100 A.° will protect the skin from destructive rays of the sun. The following are suggested: benzyl salicylate, menthol salicylate, æsculin, *o*-oxyæsculin, tannic acid, phenyl salicylate, quinine bisulphate, oleate and hydrochloride, ethyl *p*-amino-benzoate, sodium-naphthol 6,8-disulphonate, β-oxynaphthoic acid, 6-oxy-2-naphthoic acid, α-naphthol-8-sulphonic acid, β-naphthol-3,6-disulphonic acid. As vehicles vegetable oils are useful. The following recipes are offered: (1) *Oil.*—Benzyl salicylate 8%, menthyl salicylate 5, olive oil 43, cottonseed oil 43, perfume 1. (2) *Lotions* (*a*).—β-oxy-naphthoic acid 3%, quinine bisulphate 2, alcohol 15, glycerin 5, rosewater 75. Dissolve the quinine in the alcohol, and the acid in the rose water and glycerin; mix and filter. (*b*) Sodium-naphthol-6,8-disulphonate 5%, ethyl *p*-amino-benzoate 1, alcohol 15, glycerin 5, witch-hazel 74%. Dissolve the 1st ingredient in the witch-hazel and the 2nd in the alcohol and glycerin and mix the two solutions. (3) *Creams.*—(*a*) Quinine bisulphate 4%, absorption base from lanolin 25, white mineral oil 15, alcohol 10, glycerin 5, water 40, perfume 1. Dissolve the quinine in alcohol and add glycerin and water, warm to 130° F. Heat the base and oil until melting occurs and then stir in the quinine solution slowly. (*b*) White beeswax 7%, glyceryl monostearate 12, white mineral oil 5, petrolatum 3, glycerin 3, alcohol 10, benzyl salicylate 5, menthol salicylate 3, perfume 1, water. Heat the stearate, wax, oil and petrolatum together until melting occurs and mix until congealing takes place, then stir in a solution of the other ingredients and stir until ready for filling.—*Drug and Cos. Ind.*, 36 (1935), 417–418. (H. M. B.)

Tooth Pastes—Children's. The basis of use and manufacture of tooth preparations are discussed. Investigations show that children dislike mouth and tooth preparations because of their odor, taste, grittiness and local astringent or irritant effects. Very fine calcium and magnesium carbonates are recommended as mechanical cleansers with tragacanth as a binding agent, neutral glycerin, a blend of oils of peppermint and anise with saccharin as a sweetening agent.—A. R. BLISS, JR. *Drug and Cos. Ind.*, 36 (1935), 409–410, 416. (H. M. B.)

Turtle Oil Creams. Only recently, turtle oil has been introduced into pharmaceutical products and information regarding the substance is somewhat scarce. After twelve months' observation, the author claims the oil to be beneficial to the complexion, and when mixed with other nutritive oils, makes an ideal wrinkle cream. Best results were obtained when it was used in a 50% concentration with oils such as almond or olive oil. Turtle oil melts at 15° C., being just able to pour; at 20° C., it becomes a liquid, and at 25° C., it is liquid and clear. Turtle oil is not granular to the feel between the fingers at 10° C., although it has that appearance. The author gives two formulas, as follows, for anti-wrinkle creams containing turtle oil.

	A	B
Turtle Oil	50	30
Almond Oil	27	46
Lanolin	15	16
Beeswax	8	8

In Formula B, enough turtle oil is included to claim the title, but in this case the object is to aid the assimilation of the others. The most suitable preservatives are the hydroxybenzoic type.—C. DOUBLEDAY. *Chem. and Drug.*, 122 (1935), 269. (T. G. W.)

Vanishing Creams. These have as ingredients (*a*) triple-pressed stearic acid, melting point not less than 56° (10–25%), (*b*) glycerin, (*c*) alkalis as potassium and sodium hydroxides, potassium and sodium carbonates to form a soap; the potassium compounds produce a soft cream; sodium compounds a harder cream. The following formulas are suggested: (1) Stearic acid-triple pressed 20%, KOH 1.5, H_2O 68.5, glycerin 5, alcohol 4, perfume 1, and HCHO solution 0.05. Melt the acid and heat to 212° F.; dissolve the KOH in 30% of the H_2O and heat to 212° F.; add the hot alkali to the acid with constant agitation and continue until emulsified and add the remainder of the water and glycerin after heating to the same temperature. Add the alcohol in which the perfume has been dissolved, allow to age. This cream is fairly soft. (2) Stearic acid 20%, glycerin 10, K_2CO_3 0.8, Borax 0.4, H_2O 64, alcohol 4, perfume 0.8, HCHO solution 0.05. Heat the water and glycerin into which has been dissolved the salts to 212° F.; melt the acid and heat to the same temperature. Start mixing the water-glycerin solution and slowly add the acid; mix until the temperature has reached 120° F., then add the HCHO solution, alcohol and perfume; mix for 20 minutes longer. This produces a harder cream than (1). (3) Stearic acid 25%, lanolin (anhyd.) 4.5, triethanolamine 1.35, carbitol 9, H_2O 60, perfume 0.15. Heat the acid and lanolin to 160° F.; heat the triethanolamine and water to the same temperature and place in a mixer, add the acid mixture with constant stirring; when smooth add the remainder of ingredients and stir until cold. This produces a cream that is absorbed completely and imparts a softness and smoothness to the skin. (4) Stearic acid 20%, KOH 1, cetyl alcohol 1, borax 0.5, glycerin 10, alcohol 5, H_2O 60, perfume 2.5. Procedure as in (1). (5) Stearic acid 18 parts, K_2CO_3 1.2, butyl stearate 2.5, H_2O 75, perfume 0.3. Procedure as in (1). Butyl stearate in this preparation is a substitute for glycerin which is apt to absorb moisture from the air and give a sticky feeling.—J. M. WILLIAMS. *Drug and Cos. Ind.*, 36 (1935), 413–414. (H. M. B.)

White Liniment—Suggested Formula for. A formula containing triethanolamine crude, N. N. R., is submitted. Both the stirrer method and the bottle method have been tried. White Liniments by other formulas are discussed.—L. H. BALDINGER. *J. Am. Pharm. Assoc.*, 24 (1935), 130. (Z. M. C.)

DISPENSING

Chloroform—Safety Color for. According to the *Apoth.-Ztg.*, 3 (1935), 32, the question of a safety color for anesthetic chloroform has been considered because of the frequency of accidents through the unnoticed and unintentional employment of chloroform for anesthetic ether. Smell is no absolute protection against interchange of these anesthetics, and for this reason it has been found necessary to search for a distinctive dye for anesthetic chloroform. Results of research have shown that for this purpose dimethylamido-azobenzene can be used. A sufficient depth of color is obtained by adding 2 cc. of a 0.5% solution of dimethylamido-azobenzene (which represents 0.01 Gm. of dye) to 50 cc. of chloroform. This quantity is stated to be so low that no effect of the dye on the anesthetic is to be expected, and the color is easily removed from fabrics

by ordinary washing or by the use of a weak acid (*i. e.*, vinegar), followed by a thorough rinsing in water.—*Pharm. J.*, 134 (1935), 212. (W. B. B.)

Dispensing—Determination of Reasonable or Permissible Margin of Error in. II. Ointments. Different types of ointments which pharmacists are asked to dispense were divided into three classes: those that only have to be transferred from stock container to a dispensing jar; those which involve the incorporation of a liquid with a fatty or hydrocarbon base; those which involve incorporation of a solid with fatty or hydrocarbon base. Three series of tests were made. The objective of the first was to determine effect on capacity of difference in nature of bases, trituration before packing, incorporation of a liquid, incorporation of a solid, size of jar. The second series aimed to determine variation in capacities of jars manufactured by each of four manufacturers. The third objective was the variation in capacities of jars purchased at random. How these experiments were carried out is explained and the figures are tabulated. The following conclusions were reached: 1. Petrolatum was the lightest of the four bases studied, followed in order by a 50 per cent lanolin and petrolatum mixture, lanolin and benzoinated lard when packed as received. 2. The frequency and magnitude of error are greater in cases where the base is packed in the solid state, than in those where the filling is accomplished by melting and pouring, except for benzoinated lard. 3. The capacity of jars by weight is decreased by triturating the ointment base on a slab previous to packing in the solid state. 4. The capacity of jars by weight may be decreased or increased by the incorporation of a liquid or a solid with the base, depending on the nature of the liquid or solid and other factors. 5. The percentage of error found was in inverse proportion to the size of the jar. 6. Jars of a designated size made by a single manufacturer do not vary in capacity beyond reasonable limits. There was observed, however, a great variation in the capacity of jars of a designated size made by different manufacturers. The latter variation is due largely to the use of different standards by the manufacturers for fixing capacity. To overcome this condition it is suggested that uniform standards for fixing standards be adopted by the manufacturers, and that the material taken as the basis for formulating these standards be petrolatum, because of its comparatively low specific gravity and uniformity with respect to other physical properties. 7. The results of the tests show that it is impossible for a glass manufacturer to prepare ointment jars which will hold the same quantities by weight of the different ointments dispensed on physicians' prescriptions. It is believed, however, that it is possible for them to manufacture ointment jars which will hold within reasonable limits definite quantities of petrolatum or other base selected as a standard. The pharmacist will then be able to dispense the full quantity of an ointment with a low specific gravity. In the case of ointments with a high specific gravity, the filling of the jar may be done in such a manner as to leave a concave surface, thereby preventing the ointment from coming in contact with the top of the jar, and also satisfying the patient as to the fullness of the jar. In the case of very heavy ointments, such as mercurial ointments, it will be necessary to weigh off the quantity prescribed and to dispense it in a jar of the size which it will come nearest to filling. 8. With regard to the margin of error which may reasonably be expected in dispensing where jars of the same manufacture are used, our observations point to a figure which at the outside is twice the standard deviation, or 25 per cent, for $^1/_2$- and 1-ounce jars; and twice the standard deviation, or 18 per cent, for 2-ounce jars.—MARVIN J. ANDREWS. *J. Am. Pharm. Assoc.*, 24 (1934), 350, 421. (Z. M. C.)

Easton's Syrup. Strict adherence to the B. P. method for preparation of Easton's Syrup should keep this preparation water-white for six months or more. A still better method is to use Easton's formula, which can be found in "Squire's Companion," 1890.—A. RENNIE. *Pharm. J.*, 134 (1935), 247. (W. B. B.)

Ointments—Eye. Starch, zinc oxide, alkaloids and other substances used in the preparation of ointments, can be sterilized with ether. The ointments should be dispensed in tin tubes.—J. FABICKI. *Wiadomosci farmac.*, 61 (1934), 157; through *Chem. Zentr.*, 106 (1935), 747. (G. B.)

PHARMACEUTICAL HISTORY

Cosmetics—History of, in Modern Times.—A. HAUENSTEIN. *Riechstoff-Ind.*, 10 (1935), 49–53. (H. M. B.)

German Apothecary Faenze of the Renaissance. A historical account of old German Apothecaries' Faenze vessels.—FERCHLE. *Apoth. Ztg.*, 49 (1934), 1706, History of German Apothecaries, pages 5–12. (H. M. B.)

Hamamelis (Witch Hazel), Extract and Distillate—History of. In 1865, while the senior author was in the employ of W. J. M. Gordon and Brother, Cincinnati, the firm also employed a business representative named Leon Hurtt. A brother, F. W. Hurtt, who was a banker in New York proposed to purchase the right to make Pond's Extract, a proprietary medicine used almost exclusively by Homeopathic physicians. In 1915, in a personal interview with Leon Hurtt, the author obtained authoritative information and has incorporated it in the present paper. Pond's distilled hamamelis came to be used by Eclectic physicians and then by Allopathic physicians, though chemists and others decided that it had no therapeutic value. It is still in use. Hurtt's story relates in considerable detail how the Oneida Indians used it and how the "Golden Treasure," later "Pond's Extract" was prepared, how the business grew and prospered.—JOHN URI LLOYD and JOHN THOMAS LLOYD. *J. Am. Pharm. Assoc.*, 24 (1935), 220. (Z. M. C.)

Hospital Pharmacists of Amsterdam—Modification in Instruction and Salary Revision of, in 1857. This extensive article by G. Hellinga, based upon a number of old records and documents describes the life of the Pharmacist in the Amsterdam Hospital in 1857 and the trend of events which led to revision in his status at that time. It is of considerable historical interest.—*Pharm. Weekblad*, 72 (1935), 318–334. (E. H. W.)

"Patent Medicines." The author relates something of the history of Goddard's Drops, Anderson's Pills, Dutch Drops, Daffy's Elixir, Lockyer's Pills and Stoughton's Elixir.—J. H. HOCH. *J. Am. Pharm. Assoc.*, 24 (1935), 147. (Z. M. C.)

Pharmacognosists of Nineteenth Century—Eminent American. The life and work of John M. Maisch, Edson S. Bastin and Julius O. Schlotterbeck are the subjects of the first instalment of an historical paper.—H. W. YOUNGKEN. *J. Am. Pharm. Assoc.*, 24 (1935), 148. (Z. M. C.)

Pharmacognosists of Nineteenth Century—Eminent American. (See preceding abstract.) The men who are considered this time are Albert Schneider, Henry Kraemer, Lucius E. Sayre and Otto A. Wall.—HEBER W. YOUNGKEN. *J. Am. Pharm. Assoc.*, 24 (1935), 215. (Z. M. C.)

PHARMACEUTICAL EDUCATION

Four-Year Curricula in Pharmacy—Comparison of. A critical examination was made of courses in so-called theoretical and operative pharmacy as outlined in catalogs of member-colleges of the American Association of Colleges of Pharmacy, and the results tabulated. Comparison is made with the Syllabus requirement with comments by the author as to what he believes best. General comments include some important criticisms. The curricula of eleven schools offer too many courses, which could be corrected in part by combining a didactic with a laboratory course. A few offer seminar courses which are of questionable value for undergraduates. There is too much variation in credit value of laboratory courses; some received no credit, some gave one credit for four clock hours. Courses in use of library and literature might be offered in history of pharmacy; courses called research and thesis should be elective. Twenty-three curricula list courses that apparently are review courses for board examinations. Not all curriculum outlines and course descriptions are sufficiently complete and clear.—HENRY M. BURLAGE. *J. Am. Pharm. Assoc.*, 24 (1935), 228. (Z. M. C.)

Mathematics—Pharmaceutical. Some Observations after Twenty-five Years' Experience in Teaching. In the days of the two-year course classes needed much drill on tables of weights and measures. Their learning was a memory feat. Continued use clinches the memory part, but to-day students seem to get mental pictures of weights and measures as something real though they are not as proficient in the multiplication table as formerly. High school students of to-day do not have the rich experience drawn from farms and villages that their elders did but when one knows what the high schools are trying to teach one finds many students easier to teach. The difficulty of teaching about percentage solutions will be largely solved by the statement that will appear in the next Pharmacopœia. A teacher's ingenuity is taxed most in getting students to apply what they know. Teachers should not accept answers involving fractional weights or measures but insist on weighable and measurable denominations. Also utmost accuracy should be required in the class room. They will learn by experience when to use "round number" factors. —EDWARD SPEASE. *J. Am. Pharm. Assoc.*, 24 (1935), 227. (Z. M. C.)

Pharmacy and Academic Standards—Theory of. If practical pharmacy is the "application of the knowledge and training in physics, chemistry, botany, therapeutics, etc., to the making of medicine," no college is giving too much time to it. Reasons for this statement are briefly discussed.—H. A. LANGENHAN. *J. Am. Pharm. Assoc.*, 24 (1935), 158. (Z. M. C.)

Pharmacy and Academic Standards—Theory of. Some changes are suggested for the outlines in the Pharmaceutical Syllabus and the paper on the same topic by W. Paul Briggs is discussed.—H. M. BURLAGE. *J. Am. Pharm. Assoc.*, 24 (1935), 156. (Z. M. C.)

Pharmacy and Academic Standards—Theory of. Time and credit evaluations need adjustment on a sounder economic basis. The entire four-year course should be brought into line with other baccalaureate degree courses.—W. P. BRIGGS. *J. Am. Pharm. Assoc.*, 24 (1935), 153. (Z. M. C.)

PHARMACEUTICAL LEGISLATION

Surgical Dressings. Over 1000 samples of surgical dressings are submitted annually to the Manchester Chamber of Commerce Testing House and Laboratory by the 200 Insurance Committees in England, Wales and Scotland, and a certificate of analysis is issued in respect to each stating whether the dressing complies with the requirements laid down in the B. P. C. Since the adoption of the testing scheme in 1925, the percentage of deficient dressings has decreased by 90%. Deficiencies were found to be less frequent in manufacturers' or wholesalers' wrappings, as required by the Drug Tariff, than in those which were not so wrapped. Many standards for surgical dressings have been amplified and amended, and standards have been instituted for such new dressings as batiste, chloramine gauze, euflavine gauze, cellulose wadding, oiled paper, rubber adhesive plaster, zinc oxide plaster, elastic adhesive bandage, zinc paste bandage and cellulose tissue.—ANON. *Pharm. J.*, 134 (1935), 301. (W. B. B.)

MISCELLANEOUS

Advertising—Place of a Field Representative in Coöperative Professional. Pharmacists can use the mails for reaching physicians but perhaps the ideal way is to combine frequent personal contact with mail contacts. In a community with a number of stores interested in professional business owners can coöperate in a common advertising program. Advertising funds can be pooled and a full-time representative employed, a man who possesses distinct capabilities for the task of "selling the professional services and personalities of the pharmacies" he represents. Such an individual can be helpful in many other ways at the same time.—L. W. RISING. *J. Am. Pharm. Assoc.*, 24 (1935), 142. (Z. M. C.)

Cosmetics. Report on Progress in 1934.—K. PFAFF. *Riechstoff-Ind.*, 10 (1935), 38–41. (H. M. B.)

Dentists and Pharmacists—Coöperation between. Attention is directed to the natural relation between dentistry and pharmacy, to the work of the Council on Dental Therapeutics. The "Accepted Dental Remedies" is soon to appear in book form. The author discusses ways in which pharmacists can meet the problem.—S. M. GORDON. *J. Am. Pharm. Assoc.*, 24 (1935), 136. (Z. M. C.)

New Drugs and Their Standards. The article consists of a résumé of an address by Dr. C. H. Hampshire at a meeting of the Bath and District Branch of the Pharmaceutical Society of Great Britain, held on February 27, 1935. Benzyl benzoate, bromoform, ephedra, the enzymes, the toxins, antitoxins, serums, vaccines and the specific arsenicals were dealt with as instances of the up-to-date nature of the contents of the Codex. The standards for surgical dressings of the Codex have served a useful purpose in connection with National Health Insurance.—ANON. *Drug. Circ.*, 122 (1935), 298. (T. G. W.)

Prescription Compounding. The third in a series of papers dealing with prescription compounding. The author discusses the lack of uniformity when a prescription is filled by different people as one of the reasons for physicians dispensing. Physicians dispense proprietaries because they are visited daily by detail men, the moral of which is to do your own detail work. The author does not believe that everything done in a prescription room should be visible by the public any more than that the place should be entirely closed, and he gives reasons for his belief. In his opinion a successful prescription pharmacy cannot be run by one man alone because when a man works at a prescription he should not be interrupted. More than twenty prescriptions are

given. Difficulties are discussed and methods for compounding given.—J. LEON LASCOFF. *J. Am. Pharm. Assoc.*, 24 (1935), 232. (Z. M. C.)

Prescription Departments—Note on Open. The author reports that a number of physicians interviewed were "unanimous in their disapproval of a department in which it was possible to see the different ingredients that enter into the finished prescription." Next to seeing the ingredients the doctors objected to the tendency toward self-medication. If the patient sees a poison label unwarranted fear is engendered. If a prescription has to be tried a second time the patient may think the pharmacist is lacking in ability or is careless. As an alternative, the author suggests a visible manufacturing department.—J. N. SILSBY. *J. Am. Pharm. Assoc.*, 24 (1935), 133. (Z. M. C.)

Professional Outlook. In spite of the fact that the public appreciation of pharmacy has slumped, the author is optimistic because of an inherent feeling that pharmacy is an essential and public health profession.—L. M. KANTNER. *J. Am. Pharm. Assoc.*, 24 (1935), 134. (Z. M. C.)

Publicity—Furthering Pharmaceutical. The author believes that the only way to convince the public that skill is used in filling prescriptions is to show what is done. A prescription counter that can be seen has an educating value. There is an increasing inclination to classify retail drug stores as "merchandising establishments." Opening the prescription department will show the processes of compounding and manufacturing. It may tend to curtail dispensing by physicians. There seems to be no reason why some part of the department should not be out of sight in order to permit privacy in working out dispensing problems. Untidy prescription departments would have to be cleaned up. A glass partition should be used to shut out conversation in the drug store proper from interference with work. That the drug store is still a *drug store* needs emphasis.—W. BRUCE PHILIP. *J. Am. Pharm. Assoc.*, 24 (1935), 224. (Z. M. C.)

PHARMACOLOGY, TOXICOLOGY AND THERAPEUTICS

PHARMACOLOGY

Acacia—Effect of Intravenous Injections of, on Physio-Chemical Properties of Blood. The hemoglobin % and cell count decrease with the dilution of the blood following injections of acacia. The oxygen content of the blood falls to a more marked degree. This is probably due to a coating of the erythrocytes with acacia hindering normal cell respiration.—A. CHRISTIE, N. M. PHATAK and M. B. OLNEY. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935), 670. (A. E. M.)

Aconitum Napellus—Extract of. Chemical Composition and Physiological Assay of Aconite. The exact nature of the principles contained in the drug is not established with certainty, although crystalline aconitine is accepted as the active principle. By progressive hydrolysis of crystalline aconitine, there is obtained first, benzoylaconine and acetic acid, and then benzoic acid and aconine. Aconitine is combined in the plant with aconitic acid, which is related to citric acid. Because the alkaloid easily undergoes hydrolysis to form products much less toxic than aconitine, one can easily see how the toxicity of the drug can vary widely, while the chemical determination may not reveal the change. These facts necessitate a physiological assay for the drug and its preparations. In addition to the uncertain chemical status of the drug, geologic and climatic factors modify considerably the therapeutic value of the drug. A comparison is made of the various physiological assays proposed from time to time. The method developed by Goris is used in this paper. The determination of the physiological activity of a dry extract of aconite containing about 0.5 per cent alkaloids soluble in ether is made in the following manner: the dry extract is dissolved in 25 per cent alcohol to obtain a tincture and this is then diluted just before use to contain about 0.05 per cent alkaloids. A volume such as will contain approximately 7 units of aconitine is then injected. Thus for a 375-Gm. pig $375 \times 0.000,000,07$ or 0.000,026, 25 Gm. is used and the tincture is diluted with physiological salt solution till each cubic centimeter represents 0.000,026, 25 Gm. of alkaloids. If the animal does not die within six hours, the dose is increased to 8 units, etc., until death is produced, a new animal being used each time. This dose is then injected into several animals and the exact value in units determined. Two out of three animals must die within the time limit. For the particular sample assayed, the value was found to be 10 units. The same drug from which the above extract was prepared was then percolated to prepare a tincture. By a similar procedure, its value was found to be 10 units. The following

conclusion is then drawn: the preparation of a dry extract, if the temperature is not allowed to go above 40° C., does not alter the alkaloidal strength of the preparation more than the preparation of a tincture by simple percolation. A sample of our extract, shown chemically to contain 0.485 per cent alkaloids soluble in ether, was sent to Professor Tiffeneau for assay. The results of his determinations when calculated to toxicity units also gave a value of 10 units. By a comparison of the M. L. D. of the tincture prepared and of crystalline aconitine, it is calculated that 65 per cent of the total alkaloids contained in the tincture was aconitine. A comparison of this method with that of the U. S. P. X and of the Spanish Phar. is made.—R. FREUDWEILER. *Pharm. Acta Helv.*, 10 (1935), 51. (M., F. W. D.)

6-Alkyl-Meta-Cresols—Oral Toxicity of. The toxicity to rats upon oral administration of a complete series of 6-alkyl-meta-cresols from meta-cresol through 6-decyl-meta-cresol was determined. From a comparative study of the toxicity of 6-hexyl-meta-cresol with hexylresorcinol, in animals and in man, the authors conclude that the former substance is no more toxic to man than hexylrosorcinol and has been given orally to 100 individuals in doses up to 4.2 cc. without symptoms or complaints.—HAROLD W. BROWN and PAUL D. LAMSON. *J. Pharmacol. & Exper. Therap.*, 53 (1935), 264. (H. B. H.)

Alpha-Dinitrophenol—Some Effects of, on Pregnancy in White Rat. Doses of 20 mg. per Kg. body weight given twice daily did not affect the pregnant rats in any way with the only exception, that the mortality of the young during the nursing period was increased.—L. M. R. WULFF, L. A. EMGE and F. BRAVO. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935), 678. (A. E. M.)

Amidopyrine. Inhibition of Leucogenic Activity in Rabbit by Certain Cyclic Compounds. Rabbits respond readily with leucocytosis to treatment with nucleic acid. Amidopyrine given for 18 days by mouth prevents such response. Antipyrine, phenylhydrazine hydrochloride, *o*-quinone and catechol have the same effect. Alpha-dinitrophenol produces an initial stimulation followed by inhibition.—DAVID R. CLIMENKO. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935), 823. (A. E. M.)

Anesthetics, Local—Testing of, by Sciatic Nerve Block in Guinea Pig. Sciatic nerve block has been added to the quantitative testing of local anesthetics on the intact and untreated guinea pig and the technique of the method is given. Optimum injections were 0.2 cc. in volume, and analgesia was determined by light exploratory pinches of the skin. Determinations were made on the following local anesthetics: 1-dimethylamino-2-dimethylaminoethyl-2-butanol (alypine) (I), γ-diethylaminopropyl ester of cinnamic acid (apothesine) (II), sulphate of γ-dibutylaminopropyl ester of *p*-amino benzyl alcohol (butyn) (III), 2,2,6-trimethyl-4-piperidinol benzoate (β-Eucaine) (IV), procaine (novocaine) (V), 2-butoxy-*N*-(β-dimethylaminoethyl)-cinchoninamide (nupercaine) (VI), and 4-dimethyl-amino-3-methyl-2-butanol (tutocaine) (VII). The relative durations of sciatic block at the concentrations 0.5, 1.0 and 2% were, respectively: I: 1.5, 1.2, 0.9; II: 2.6, 1.4, 1.2; IV: 1.8, 1.0, 1.5; III: 5.6, 2.7, 2.0; VII: 3.4, 1.9, 1.3; in terms of the figures obtained at the same concentrations with V taken as unity. All save VI yielded results that were uncomplicated at these concentrations by local systemic or toxic effects. The addition of 1:20,000 epinephrine to approximately threshold concentration of V and VII prolonged the analgesia about 10 and 24 times, respectively. The advantages of the method are the small quantity of sample required, the distance of the area of cutaneous analgesia from the site of injection, the fact that analgesia is complete in 1–3 minutes after injection and that the potency is measured by the duration of cutaneous analgesia. The accuracy of the method is gaged by the ratios of the probable errors to their respective mean values, the mean of 39 such ratios is 6.5% of the average periods of analgesia ranging from 10–200 minutes.—L. F. SHACKELL. *Anesthesia and Analgesia*, 14 (1935), 20; through *Squibb Abstract Bull.*, 8 (1935), A-386.

Apiol—Pharmacologic Tests of. Slow intravenous injection of crystalline apiol (0.1–0.2 Gm. per Kg.) or liquid apiol, yellow or green (0.1 or 0.2 cc. per Kg.) in chloralosed dogs always caused marked hypotension and bradycardia, diminished the amplitude of auricular contractions and slowed up the ventricular beats. Vagus section at the neck suppressed these reactions and a new injection of apiol had practically no effect on auricular or ventricular contractions or on arterial pressure. Thus the effects of apiol were due to its action on the pneumogastric center. However, the toxic effects occurred regardless of vagus section and death ensued due to heart failure. Tests on suitable samples by the bromination method showed the following apiol titer for the various kinds: crystalline (Merck), 96%; crystalline (Rhone Poulenc), 75%; liquid

green, 47% and liquid yellow 48%, while the corresponding mortal doses in Gm. per Kg. intravenously in dogs were 0.5–0.75, 1–1.5, 1.8–2.2 and 0.25–0.40, respectively. Thus there was no close parallelism between theoretical apiol content and toxicity. Perhaps the chemical treatment for changing green apiol to yellow apiol gave rise to isomers that were more toxic than crystalline apiol.—F. MERCIER and L. VIGNOLI. *Compt. rend. soc. biol.*, 118 (1935), 170; through *Squibb Abstract Bull.*, 8 (1935), A-420.

Apomorphine—Action of, upon Small Intestine in Non-anesthetized Dogs. Apomorphine momentarily decreases the general tonus of the ileum and jejunum. Large doses increase the tonus. It may increase the peristaltic activity and at the same time decrease the tonus.—CHARLES M. GRUBER and JOHN T. BRUNDAGE. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935), 863. (A. E. M.)

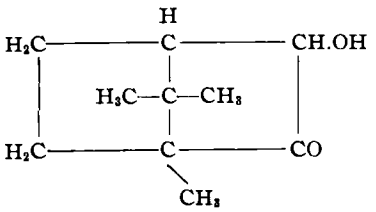
Aromatic Acids—Body Temperature Changes Produced by Sodium Salts of Some. Sodium 3,5,dinitrosalicylate injected intramuscularly into pigeons and rats causes a decrease of body temperature of 2–4°. Sodium 3,5,dinitrobenzoate shows the same effect but less marked. Animals treated with antipyrine, sodium salicylate and benzoate showed variations of less than 2°.—R. K. BREWER and M. S. DOOLEY. *Proc. Soc. Expt. Biol. Med.*, 32 (1935), 778. (A. E. M.)

Ascorbic Acid—Influence of, on Sensitization of Guinea Pigs to Neoarsphenamine. Ascorbic acid prevents sensitization to neoarsphenamine. The minimum dose is decidedly higher than that which protects against scurvy.—M. B. SULZBERGER and B. L. OSER. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935), 716. (A. E. M.)

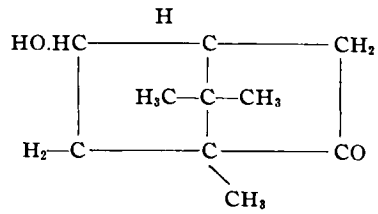
Barbiturates—Sex Difference in White Rat in Tolerance to Certain. The female rat is more sensitive than the male for amytal, nembutal, evipan, pernocton and hebaral or ortal. No difference was found with barbital and phenobarbital.—H. G. O. HOLCK and M. A. KANÂN. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935), 700. (A. E. M.)

Caffeine Per Se and Caffeine Beverage—Effect of, on Reaction Time in Young Adults. The effect of coffee and of caffeine was studied upon the reaction time of ten subjects. It was found that coffee containing an equivalent amount of caffeine produced parallel results to caffeine administered in capsules but to a lesser degree in most individuals. Twenty-four hours after the administration of caffeine either as such or in the form of coffee in amounts of from 2.9 to 5.6 mg. × Kg. no significant effect could be noted upon the reaction time.—RALPH H. CHENEY. *J. Pharmacol. & Exper. Therap.*, 53 (1935), 304. (H. B. H.)

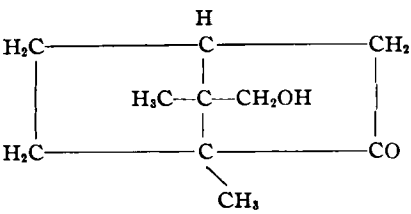
Camphors and Diketone-Camphanes—Degradation of, in Animals. From the urine of dogs poisoned with camphor, Asahina and Ishidate isolated the following oxy-camphors:



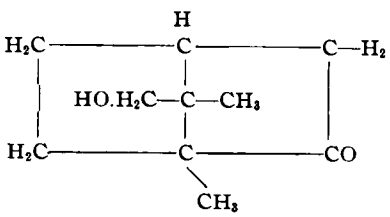
3-Oxy-camphor



5-Oxy-camphor



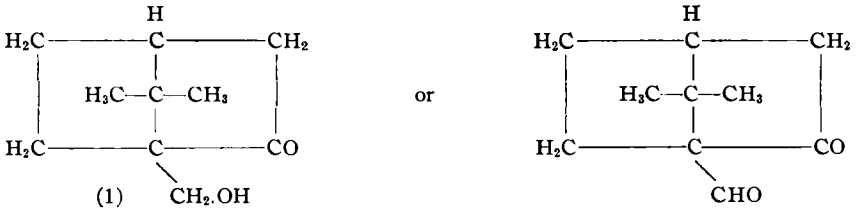
Cis-π-oxy-camphor



Trans-π-oxy-camphor

According to Tamura such degradation of camphor in animals, that is, their oxidation, is important pharmacologically. There is a positive-inotrope reaction on normal frog hearts, but

the reaction is not evident at the time of application, but only after a lapse of time. This fact explains the formation of potent products of metabolism of camphor. Dilute solutions are not active immediately after application. The pharmacological tests made of pure oxy-camphor have so far no support in the theory given by Tamura. The same holds true for the higher oxidizable substances (aldehydes, acids, ketones). Vita-Camphor (a mixture of 5-oxy-camphor and oxo-camphor) and oxo-camphor in a higher grade of purity have no cardiac reaction. A cardiac stimulation in frog hearts, according to Takebe, is possible due to 10 oxy-camphor. But 10 oxy-camphor (1), has not been found in the urine. The crude mixture of oxy-camphor on the



(1)

addition of potassium hydroxide, and on great dilution, shows a typical camphor effect. With a 1:20,000 solution the pulse beat is fast, and then gradually sinks. With bisulphate of lye the free vita-camphor, shows weak, but constant cardiac reactions; this fact is not true when using synthetic products. These results led to more search of degradation products of camphor in urine. Boiling *p*-diketone-camphor with chromium trioxide, then with oxygen and alkali, finally with toluene, *p*-nitro-benzoylchloride and pyridine, a quantity of nitrobenzoates with a melting point of 120.5–122° was obtained. Upon analysis oxy-4-camphor-nitro-benzoate was found to be the product of the reaction. If potassium permanganate were used in place of oxygen, the result would be a material of the formula $C_8H_{10}O_2$ with a melting point of 131–132.5°; which may produce more degradation products. It is evident that more products of metabolism of camphor can be found in urine. There is a transition of camphor ring to cyclo-camphane ring in animals. *p*-Diketo-camphane and cyclo-camphane both form into oxy-cyclo-camphane. Both acids have the same formula, $C_{10}H_{12}O_3$, melting point, acidity, crystallization fashion and semi-carbazones.—F. REINARTZ, W. ZANKE and M. KÜRSCHGEN. *Ber.*, 68 (1935), 310. (G. B.)

Cinchona Alkaloids—Value of, in Pneumonia. Miscellaneous Alkaloids and Some Hydrocupreine Ethers. This paper is a preliminary study of a number of naturally occurring cinchona alkaloids, their hydrogenated derivatives and some artificially prepared alkaloids with reference to their pneumococcicidal activity, toxicity and protective ability. Hydroxyethylhydrocupreine, an alkaloid prepared by the writers, proved to be far less toxic to mice than optochin, and was highly efficient in protecting them against pneumococcic infection.—C. L. BUTLER, W. L. NELSON, A. G. RENFREW and L. H. CRETCHER. *J. Am. Chem. Soc.*, 57 (1935), 575. (E. B. S.)

Diodotyrosin—In Vivo Action of. I. Diuretic Action. Diodotyrosin was shown to be an extra-renal diuretic in rabbits. The German abstract in the *J. Ph. Soc. Japan* should be consulted for details of experimental conditions and results.—A. OGATA and T. TANAKA. *J. Pharm. Soc. Japan*, 55 (1935), 14 to 18. (R. E. K.)

Ephedrine after Digitalis—Cardiac Irregularities Produced by. The authors employed dogs and administered ephedrine and digitalis intravenously, studying the effects upon the heart by means of electrocardiographic tracings. It was found that digitalis greatly prolonged the duration of arhythmias produced by ephedrine, in some instances cardiac irregularities were brought about by the simultaneous administration of both drugs which had not occurred when either drug was used singularly. Digitalis tended to increase the number of ventricular irregularities due to ephedrine. No fatalities were recorded from the use of these ephedrine-digitalis combinations in amounts allowing of clinical comparison although weakness and prostration and arhythmias of a serious nature were observed.—M. H. SEEVERA and W. J. MEEK. *J. Pharmacol. & Exper. Therap.*, 53 (1935), 295. (H. B. H.)

Ergot Alkaloids—Effect of, on the Uterus. The authors review the use of ergot including a test for determining the biological potency of ergot and its various constituents by determinations of uterine motility of human patients from the sixth–eighth post-partum day. A new substance, water soluble and representing 10% of the crude extract was isolated from ergot, sepa-

rated from an active powder that contained all the activity of the original ergot. Separation of the alkaloids left the oxytoxic activity in the non-alkaloid fraction. Since the active fraction was not alkaloidal, the human uterine method was used to determine activity. The new active principle, is soluble in most hydrophyllic solvents and relatively stable to heat, is agreeable and palatable, the dose is small and may be dissolved in 3 cc. or less of fluid and produces no gastro-intestinal or other undesirable effects. It does not affect the pulse or blood pressure and when given orally the response is usually obtained in 6–15 minutes. The whole curve is characteristic of a good response obtained from an active ergot preparation. No general response appears after the use of pituitrin. The usual dosage is 3 mg. in solid form, capsules or solutions and uniform uterine motility and tone which persists for 3–4 hours are obtained. No evidence of undesirable reactions has been noted in doses 3–4 times the effective one. The authors conclude that clinically, the new principle is suitable for administration whenever the oxytocic activity of ergot is desirable. The new active principle was used in over 100 post-partum patients, giving a good characteristic response, while the active alkaloids in ergot, ergotamine, ergotoxine and sensibamine, given to patients orally in 3-mg. doses, gave no uterine responses within an hour.—M. E. DAVIS, *et al.* *Am. J. Obstet. Gynecol.*, 29 (1935), 155; through *Squibb Abstract Bull.*, 8 (1935), A-327.

Eserine and Acetylcholine—Effects of, on Gastro-intestinal Motility in Normal Dogs. Dogs were injected during ether anesthesia intramuscularly with eserine and eserine plus acetylcholine. One mg. of eserine or less did not regularly produce peristalsis of stomach, ileum and colon. When 0.025 mg. of acetylcholine was added, peristalsis resulted almost instantly. Intramuscular injections of larger amounts, 2–3 mg., of eserine induced general intestinal motility but undesirable by-effects also.—R. FRANK, L. ZIMMERMAN and H. NECHELES. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935), 686. (A. E. M.)

Galinsoga—Pharmacology of. Report is made of experiments undertaken to extend our knowledge of the pharmacology of Galinsoga and to investigate the oxygen consumption by tissues. One and two per cent infusions caused an increase in oxygen consumption by heart tissue but it was not proportional to concentration. The principle or principles are apparently not extracted with cold water and they seem to be destroyed as the infusion ages. Inulin, levulose and dextrose have little influence on oxygen consumption and saponin causes a slight inhibition. Infusion of digitalis seems to contain a principle which causes an increase in oxygen consumption. These experiments suggest the possibility of using a micro-respirometer for a number of investigations.—M. A. YAVORSKY and E. C. REIF. *J. Am. Pharm. Assoc.*, 24 (1935), 108. (Z. M. C.)

Insulin Preparations—Evaluation of. A review of several physiological methods and one chemical method of evaluating insulin. The chemical method is based upon the fact that insulin increases the concentration of copper oxide reducing substances in the urine.—O. KAUSCH. *Pharm. Ztg.*, 80 (1935), 246. (G. E. C.)

Liver—Anti-anemia Potency of, after Gastrectomy in Swine. The anti-anemic potency of the liver becomes progressively depleted after gastrectomy.—L. GOODMAN, A. J. GEIGER and L. N. CLAIBORN. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935), 810. (A. E. M.)

Parasympathetic Drugs—Intestinal Motor Inhibition by. Strips from different parts of the intestinal tract, contracted by acetylcholine or physostigmine are relaxed by pilocarpine. Contraction produced by pilocarpine is reversed by acetylcholine only in a minority of the trials.—F. D. MCCREA and DONALD F. MARION. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935), 876. (A. E. M.)

Phosphated Iodotannic Syrup—Antirachitic Action of. The iodotannic syrup of the French Pharmacopœia does not attenuate the antirachitic efficacy of even minimal effective doses of calcium hydrogen phosphate. The authors believe that the antifixation of calcium attributed to iodotannic combinations is nil provided that free iodine is not present in the preparation. Phosphated iodotannic syrup proved to be very efficacious as an antirachitic preparation.—R. GALLIER. *Bull. sci. pharmacol.*, 42 (1935), 31. (C. T. I.)

Phosphorus—Peculiar Action of, in Treatment of Rickets. White phosphorus administered in a warm 1% oil solution to white rats, deprived of vitamin D and receiving a large excess of calcium as compared to phosphorus, exhibited no rachitic action. The oil of almonds and apricots used as solvent were tested individually, and showed no effect.—R. LECOQ and R. GALLIER. *J. pharm. chim.*, 21 (1935), 211. (M. M. Z.)

Quinine, Quinidine, Hydroquinidine and Hydrocinchonidine—Toxicity of, in Guinea Pig. The lethal dose for about 50% of the animals used in the test is for quinine 0.6 mg.-mol. per Kg., for quinidine 0.4, for hydroquinine 0.4 and for hydrocinchonidine 0.7.—W. T. DAWSON and H. P. HARMS. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935), 595. (A. E. M.)

Rabies—Experimental, in White Mice and Attempted Chemotherapy. II. Plasmochin, merthiolate, metaphen, bismuth violet, iodobismitol, bismarsen, tryparsamide, silver arsphenamine, Bayer 205, ethylhydrocupreine hydrochloride (optochin), pyridium, sodium arsanilate (atoxyl), neostam and sparteine sulphate were used as treatment for rabies in mice with none showing therapeutic value.—ANSON HOYT, ROY T. FISK and CLINTON H. THIENES. *J. Inf. Dis.*, 56 (1935), 21. (A. H. B.)

Sedatives. Types, Uses and Dangers. The types of sedatives are those which manifest their major effect in the mitigation of discomfort or pain arising on a bodily basis, *e. g.*, morphine, codeine, acetylsalicylic acid, sodium salicylate, acetanilide, *p*-acetophenatide and amidopyrine; those which tend to reduce excessive degrees of muscular activity not associated with pain and which do not, in the usual dosage, produce sleep, *e. g.*, 5-ethyl-5-phenyl barbituric acid (luminal), hyoscine, hydrobromide and stramonium; and those effective in controlling states of excessive mental tension, which in the proper dose, will produce sleep, *e. g.*, codeine sulphate, the bromides, chloral hydrate, paraldehyde, alcohol and the numerous barbituric acid derivatives. Sedatives should not be used in conditions of acute intra-abdominal pathology, in which the administration of a sedative might mask the signs of the disease, and the question should be carefully considered in cases of neuroses in which somatic complaints are prominent. The choice of sedative depends upon the indications. As a class the sedative drugs act as central nervous system depressants. The chief dangers from sedatives result from their temporary use in excessive amounts, their use over too long periods of time, and their administration in an unfavorable milieu peculiar to the individual, *e. g.*, allergic and hypersensitivity reactions and habituation to the drug.—G. H. ALEXANDER. *Am. J. Nursing*, 35 (1935), 222; through *Squibb Abstract Bull.*, 8 (1935), A-449.

Sodium Amytal—Effects of, on Erythrocyte Count following Hemorrhage. The capillary and venous blood in the dog is immediately diluted after a single hemorrhage performed under local anesthesia. The dilution is absent, when the hemorrhage is performed under general anesthesia by intravenous sodium amytal. There may even be a concentration of blood. As soon as the anesthesia wears off dilution promptly appears.—R. ELMAN, D. O. WEINER and W. H. COLE. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935), 793. (A. E. M.)

Squill—Bioassay of Powders of. The present study reveals the method of preparation, of preservation and of standardization and also the stability of a standard squill powder. The standard is prepared by placing cut scales of a composite lot of squill on a mincing plate and dried by (1) keeping the drug in a hot air oven at 60° for three days or (2) in the open at 25–30° for a period of seven days. In the course of desiccation the drug should be mixed frequently. The powder is passed next through a No. 45 sieve, dried for several hours at 60° and then sealed in ampuls. A powder containing 4–5% moisture is stable for at least one year. Drying squill by heaping it in a pile and not stirring or mixing results in a fermentation which causes a partial destruction of the glycosides. The method of assay is carried out on the dog (cf. *Year Book, Am. Pharm. Assoc.*, 22 (1933), 131). The authors propose that the official powder have a M. L. D. of 40 mg./Kg. of dog as determined by the above-mentioned assay procedure.—M. MASCRE, J. LÉVY and R. COHEN. *Bull. sci. pharmacol.*, 42 (1935), 66. (C. T. I.)

Thallium—Action of, in Experimental Animals. No support could be found to the claims that thallium intoxication is characterized by alterations of the endocrine function.—A. J. COX, JR., and E. B. RODGERSON. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935), 653. (A. E. M.)

Thioaurates—Contribution to Physiologic Testing of. Aurothiosulphates of sodium and calcium, calcium aurothioglucose, aurothiopropansulphonate of sodium, aurothiomalate of sodium and aurothiolactate of sodium were injected into guinea pigs and rabbits. After 48 hours the animals were sacrificed, and the different amounts of compounds were recovered from the various organs. An oil solution of the quinine salts is retained for the most part, in the muscles in the area injected, and distinct local reaction is produced. This reaction is much less with the other compounds, and no noticeable amounts were retained in the muscles. If the fatty tissue or bones did not retain most of the metal compound then the uterus or placenta was found to be rich in the compound. The metal accumulates especially in the liver, kidney and spleen. Strong doses usually brought

about a larger retention of metal in the kidney.—M. M. PICON. *J. pharm. chim.*, 21 (1935), 215. (M. M. Z.)

Thymus and Pineal Extracts—Biological Effects of Active. Thymus extracts produced acceleration in growth and development which was accelerated in each succeeding generation. Removal of the thymus gland resulted in retardation of growth and development of the offspring, even in the second generation of rats, and this retardation was not apparent in the offspring of thymectomized rats, when the parents had been injected with thymus extract or subjected to thymus transplants. The author assumes from the above that the active principle in thymus extract is a hormone. In a study of pineal extracts, two were found to produce dwarfism invariably when injected intra-peritoneally into white rats, but the same step-like progression was not found. Dwarfism seemed no more marked in the 4th generation than in the 3rd.—A. M. HANSON. *Proc. Staff Meetings Mayo Clinic*, 10 (1935), 113; through *Squibb Abstract Bull.*, 8 (1935), A-453.

Vitamin C—Influence of, on Development of Skin Sensitivity to Neoarsphenamine in Guinea Pig. Skin sensitivity is not developed in animals suffering from subacute scurvy. Dextrose seems to have a protective effect.—C. W. CHAPMAN and C. A. MORRELL. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935), 813. (A. E. M.)

TOXICOLOGY

Balsam of Peru—Hypersensitivity of Skin to. It is estimated that 2% of the individuals who have never used any ointments have a skin supersensitive to Peru balsam and the numerous preparations containing this balsam, while 5 times as many are hypersensitive if they have previously used various ointments. This hypersensitivity, which is characterized by eczema, etc., is absolutely specific. A patch test is advised before the use of Peru balsam ointments, especially where the individual has been undergoing prolonged treatment or where a chronic eczema is present. —W. ENGLEHARDT. *Munch. med. Wochschr.*, 82 (1935), 256; through *Squibb Abstract Bull.*, 8 (1935), A-319.

Boric Acid-Containing Fat-Reducers. Two preparations of the urea-boric acid type, although labeled as harmless, were found to produce severe pains in the occiput, stomachache and nausea. Strict supervision of the sale of boric acid-containing reducing agents is recommended. Completely harmless, active substitutes for the above will be discussed in a future report.—SCHENK. *Pharm. Ztg.*, 80 (1935), 136. (G. E. C.)

Dinitrophenol—Case of Poisoning by, with Recovery. A case report of an 18-year-old girl who had taken 24 reducing capsules with suicidal intent. The patient's face was flushed, the respiration rate was 38 to 40 per minute, rapid and short, pulse 144, and the temperature was 103.4° F. Routine gastric lavage was done with a 5% solution of sodium bicarbonate. The symptoms being those associated with an overdose of alpha-dinitrophenol, the patient was placed in an ice-pack in order to bring down the temperature. This was repeated whenever the temperature went over 101° F. Oxygen was administered at intervals during the first evening, and 500 cc. of dextrose was administered intravenously. The patient slept at intervals during the first night, and the next night she complained of being hungry but vomited after taking some food. Her condition was much improved the second day. She took fluids freely, retained them and felt very much better. Recovery continued uneventfully and the patient was discharged on the third day. The patient, in describing her symptoms afterward, stated that during the entire time she felt as if she were on fire. At no time was consciousness lost, and there was little or no pain evident during her stay at the hospital. Dinitrophenol was found in the gastric contents on laboratory examination.—J. C. GEIGER. *J. Am. Med. Assoc.*, 104 (1935), 915. (M. R. THOMPSON)

Gold—Toxicity of Injections of. After injections there are no warning symptoms until some days after 11 injections, when dematitis and very intense irritation and slight ulceration of the mouth occur. These symptoms, although no further injections were made, failed to clear up entirely. Further, the rheumatism, for which these treatments were administered failed to show any improvement.—G. HOLMES. *Brit. Med. J.*, 1 (1935), 58. (W. H. H.)

Mercury Bichloride—Treatment of Poisoning by. While there is as yet no known specific antidote for corrosive sublimate poisoning, W. B. Porter and C. E. Simons (*Amer. J. Med. Sci.*, 188 (Sept. 1934), 375) report a series of forty-six cases in which some measure of success resulted

from a therapeutic scheme comprising gastric lavage and colonic irrigation by a solution of sodium bicarbonate and an internal administration of the salt in a dosage sufficient to maintain the urine alkaline to litmus. There were only three deaths. For the gastric lavage a saturated solution was used at a temperature of 100° F., repeated every 12 hours for the first five days, and continued still longer if the washings contained mercury. An intravenous injection of 500 cc. of a 5 per cent solution was given after the lavage and repeated if vomiting persisted. A colonic irrigation of 5 per cent solution was given daily.—*Brit. Med. J.*, 3868 (1935), 400*b*. (W. H. H.)

Methyl Chloride Poisoning. The symptoms and degree of poisoning are thoroughly discussed along with the citation of numerous cases and their treatments.—C. A. BIRCH. *Lancet*, 228 (1935), 259. (W. H. H.)

Methylene Blue—Therapeutic Use of, in Phenol Poisoning. The case is reported of a patient apparently in distress as a result of having drunk phenol. The patient recovered following successive aspiration of the stomach and lavage with saline, diluted egg albumin and 50% alcohol, respectively; administration of caffeine and adrenaline as stimulants; intravenous injection of glucose and saline; and the intravenous injection of 40 cc. of a 1% solution of methylene blue. It is suggested that the methylene blue may have influenced the favorable outcome.—W. M. SHEPPE. *Military Surgeon*, 76 (1935), 30; through *Squibb Abstract Bull.*, 8 (1935), A-229.

Nitro Compounds—Toxicity of. A review of the toxic phenomena which have been observed experimentally and clinically by numerous authors upon the use of 2,4-dinitrophenol and -*o*-cresol, and similar dinitro compounds. Up to the present time, six deaths have been reported as due directly to the use of 2,4-dinitrophenol for reducing purposes. The British Pharmacopœia has recently added dinitrophenols, dinitrocresols and preparations containing these to its lists of poisons.—H. STRAUB. *Klin. Wochschr.*, 14 (1935) 185; through *Squibb Abstract Bull.*, 8 (1935), A-367.

Phenol—Dermatitis Due to. In a case of dermatitis in which the hands of an interne were involved in a vesiculo-pustular, erythematous eruption, treatment with an ointment containing 2 Gm. crude tar, 2 Gm. zinc oxide and 26 Gm. petrolatum improved the condition of the left hand greatly during twenty-four hours. Treatment of the right hand with phenyl mercuric nitrate (I), 1:1500 jelly was followed by a marked vesicular reaction. Since previous eruptions were precipitated in the dissecting room and in the operating room, the conclusion was drawn that contact dermatitis existed. Treatment of the left hand with the tar ointment and the right hand with the boric acid compresses was followed by marked improvement, but a skin test with I was markedly positive. Various dilutions of phenol in aqueous solution from 1:100,000 to 1:1500 were applied to the arm and patch tests were made with the di-sodium salt of 2,7-dibromo-4-hydroxymercurifluo-rescein (mercurochrome) with negative results. Patch tests with phenol containing vaseline were positive. Recurrences of the dermatitis followed on two occassions when phenol was used.—L. HOLANDER. *Urol. Cutan. Rev.*, 39 (1935), 165; through *Squibb Abstract Bull.*, 8 (1935), A-369.

Poison Cases—Concerning Important. Of 372 cases appearing before the Gerichtlichen-Chemischen Institute of Budapest in criminal affairs in 1934, 85 dealt with new and exhumed cadavers, 32 drugs, 18 food residues and 237 different objects of examination. Chemical examination in 178 cases gave positive results including 35 cadavers, 27 drugs, 7 food residues and 109 different bits of evidence. The cadavers studied showed the following: arsenic 15, chromium 1, zinc 1, bromine 1, iodine 1, alcohol 2, oxalic acid 1, morphine 3, cocaine 1, atropine 1, quinine 1, pyramidon 1, pyramidon and veronal 1, evipan 1, veronal 2 and carbon monoxide 1. Special poison cases are discussed.—R. FRIDLI. *Pharm. Monatsh.*, 16 (1935), 31–32. (H. M. B.)

Poisonings—Native, in the Dutch Indies. Of poisonings in the Dutch Indies, 55% are by arsenic or its compounds, and 9% by decoctions of plants containing alkaloids, saponins, glucosides, toxalbumins, etc. Potassium cyanide is another frequent source of poisonings.—C. J. BLOCK. *Aan P. van der Wielen* (1934), 139–147; through *Chimie & Industrie*, 33 (1935), 626. (A. P.-C.)

Sodium Nitrite—Value of, as Antidote to Hydrogen Sulphide. Sodium nitrite exerts a marked preventive and curative effect on hydrogen sulphide poisoning when administered either before or after the hydrogen sulphide. The antidotal action, demonstrated in mice, is due to the production of methemoglobin which fixes the tonic substance.—V. KARRASSIK and V. CHELOKHANOWA. *Compt. rend. soc. biol.*, 118 (1935), 23; through *Squibb Abstract Bull.*, 8 (1935), A-435.

Strychnine—Poisoning of Children by. The chief source of strychnine poisoning in children was from tablets containing aloin, 0.5 gr. and extract of belladonna, $^1/_{16}$ gr., strychnine $^1/_{122}$ gr. and extract of cascara sagrada, 0.5 gr. Since there were 35 cases of strychnine poisoning in children reported from 1919 to 1933 in Toronto, and 75 fatal poisonings with strychnine in New York State during 1925–1932, the authors conclude that it would be advisable to remove strychnine from the formulas of such tablets.—J. R. Ross and A. Brown. *Can. Med. Assoc. J.*, 32 (1935), 282; through *Squibb Abstract Bull.*, 8 (1935), A-451.

Therapeutics

Acetylcholine—Value of, in Ophthalmology. J. Francois (*Nederl. Tijdschr. v. Geneesk.* (Dec. 1934), 5632) states that numerous ophthalmologists have emphasized the value of the basodilator acetylcholine in obstruction of the central artery of the retina resulting from end-arteritis or essential vascular spasm in quinine anraurosis, optic atrophy, retrobulbar neuritis, thrombosis of the central vein of the retina, blindness due to loss of blood and chronic glaucoma. Acetylcholine may also be of value in visual disturbance caused by changes in the cerebral circulation, such as scintillating scotoma, hemianopia or cerebral blindness. Considerable improvement follows intramuscular injections of acetylcholine in 20-cg. doses daily.—*Brit. Med. J.*, 1 (1935), 400*c*. (W. H. H.)

Anesthetic—New. From his experience in 1200 cases, E. de Meuson (*Rev. Med. de la Suisse Romande* (August 25, 1934), 856) advocates as an anesthetic a mixture of scopalamine, eukodal and ephetonin. This is prepared by Merck in ampuls containing 0.005 Gm., 0.01 Gm. and 0.025 Gm. of each drug, respectively. Ephetonin, synthetically obtained from ephedrine, is an excitant of the respiratory centre, and thus counteracts the paralyzing action of this centre of scopalamine and eukodal. On the eve of the operation, 0.05 Gm. veronal is given orally and repeated three hours before the operation. Two ampuls of the anesthetic mixture are injected subcutaneously an hour and a half, and one ampul three-quarters of an hour before the intervention. This anesthetic should be used prudently in cases of grave renal lesions; it is especially indicated when inhalation anesthetic might be dangerous, as in pulmonary tuberculosis and cardiac affections.—*Brit. Med. J.*, 1 (1935), 138*c*. (W. H. H.)

Arsanilic Acid, *N*-(*p*-Dimethylaminobenzal)—Chemotherapeutic Testing of. Fischl and Singer tested the therapeutic action of *N*-(*p*-dimethylaminobenzal)-arsanilic acid (I) (arsenic yellow) and *N*-(2,4,6-trihydroxybenzal)-arsanilic acid (II) (arsenic brown) against nagana and European recurrent fever in mice. The curative doses of I and II against nagana in Gm. per 20 Gm. of mouse intramuscularly were $^1/_{180}$ and $^1/_{200}$, respectively, and the toxic doses were $^1/_{80}$ and $^1/_{35}$, respectively, the therapeutic indexes being 1:1.5 and 1:4, respectively. I had no curative action against recurrent fever but the curative dose of II was $^1/_{50}$ and the index 1:1, no toxic dose was recorded.—Viktor Fischl and Ernst Singer. *Biochem. Z.*, 276 (1935), 277; through *Squibb Abstract Bull.*, 8 (1935), A-420.

Chemotherapy—Biological Problems in. It was found that the aromatic pentavalent, arsenical and antimonial compounds are but slightly trypanocidal, a solution of about 1:1000 being required to destroy the parasites within 24 hours at 37° C. The corresponding trivalent compounds are, however, amazingly trypanocidal as, even when diluted a hundred million times, they killed the trypanosomes within 24 hours; this is also true of the arsenobenzol compounds, such as novarsenobillon. The non-aromatic trivalent compounds, sodium arsenite and tartar emetic, likewise display considerable activity, their trypanocidal titers being, respectively, 1:3,200,000 and 1:6,400,000. The acridine dye, acriflavine, is highly trypanocidal; but Bayer 205 resembles the pentavalent arsenical compounds in exhibiting practically no trypanocidal action *in vitro*.—W. Yorke. *Lancet*, 228 (1935), 191. (W. H. H.)

Copper, Colloidal—Value of, in Septicæmia. L. M. Reinhold (*These de Paris*, 1934, No. 766) records ten cases of streptococcal or staphylococcal septicæmia in patients aged from 12 to 27, treated by intravenous injections of colloidal copper. The injections should be given in doses ranging from 5 to 20 cc. daily, repeated every day or every two days. These injections should be continued for four or five days after the temperature has fallen, so that the total duration of treatment is about ten days. The cases treated were acute osteomyelitis and puerperal fever.—*Brit. Med. J.*, 1 (1935), 60. (W. H. H.)

Curarine—Case of Tetanus Treated with. It appears that curarine is generally accepted

as the most suitable alkaloid of its group for the use in the treatment of tetanus. After the injection of curarine there is a decrease in the muscle tone and there appeared to be no undesirable effects.—J. S. MITCHELL. *Lancet*, 228 (1935), 262. (W. H. H.)

Garlic and Its Preparations. Garlic is used in affections of the respiratory tract and in hypertension. A tincture prepared by extraction with 80% alcohol, or an extract prepared with a hydroalcoholic menstruum (1:1 or 1:2 with 95% alcohol) is used. A juice may be prepared from 800 Gm. garlic with 200 cc. alcohol and 1000 cc. water. A solution of the garlic essence (2%) in olive oil can be used hypodermically. In bronchitis, the following formula is recommended: Garlic essence 0.5–2%, gomenol 10–20%, a mixture of equal parts of camphor with guaiacol 5–10%, olive oil to make 100 cc.—ALFREDO J. BANDONI. *Rev. farm.* (Buenos Aires), 77 (1935), 25. (A. E. M.)

Gold Salts—Value of, in Disseminated Sclerosis. G. Dubois-Andre (*Le Scalpel*, Oct. 27 (1934), 1517) records three cases of disseminated sclerosis treated by auro-thio-glucose in oily suspension, when good results were obtained despite previous failures with other lines of treatment. He believes that the injections act by arresting the new formation of neuroglia, thus preventing the progressive destruction of myelin and safeguarding the nerve cells and fibres from the menace of fibrotic strangulation. The maximum dose is 30 cg. repeated twice at an interval of ten days. The initial dose is small—5 cg., injected once a week; this is repeated before a higher dose is tried and the same principle is observed throughout the course of treatment.—*Brit. Med. J.*, 1 (1935), 288*b*. (W. H. H.)

Insulin—Value of, in Toxic Diphtheria. Antitoxin intravenously and intramuscularly and dextrose intravenously and by mouth are accepted as the basis of treatment in toxic diphtheria. In diphtheria the response of the body to intravenous dextrose is constantly abnormal and results in higher blood-sugar findings. The degree of variation is a sensitive index to the severity of the attack and serves as a reliable guide to the progress of the disease. A fairly close association appears to exist between abnormalities in tolerance curves and involvements of the cardiovascular mechanism. How much the former depends upon the latter it is impossible to say from this investigation. Insulin does not appear to change the character of the abnormal curves nor to influence the course of the disease, as judged by the fatality and complication rates.—N. D. BEGG. *Lancet*, 228 (1935), 480. (W. H. H.)

Iodine, Colloidal—Use of, in Medicines and Cosmetics. The use of colloidal iodine in medicines and in cosmetics, as a scalp remedy, in soaps, toothpastes and creams is discussed.—O. E. OSTBERG. *Drug and Cosmetic Ind.*, 36 (1935), 423–424. (H. M. B.)

Methylene Blue—Direct Action of, on Hansen Bacillus. Intravenous injections of 1% methylene blue solutions in doses of 20 cc. are retained by leprous tissue and exercise a direct *in vivo* action on the Hansen bacillus which shows progressive microscopic changes characteristic of degeneration, *e. g.*, granular appearance, polymorphism followed by cyanophilia. A number of cases of leprosy are undergoing treatment with methylene blue solutions. One case described showed progressive and rapid amelioration of the lesions, many of which were completely eliminated after 25 injections.—P. LEPINE and J. MARKIANOS. *Compt. rend. soc. biol.*, 118 (1935), 9; through *Squibb Abstract Bull.*, 8 (1935), A-440.

Oestrin—Treatment of Vulvo-Vaginitis with. The main features of the treatment are: (1) that it is shorter than other methods; (2) it is easy of application as the drug can be given by mouth; and (3) it quickly diminishes the discharge and thereby reduces the infectivity of the patient and the risk of spreading the disease.—D. NABARRM and A. G. SIGNY. *Lancet*, 228 (1935), 604. (W. H. H.)

Ophthalmic Therapeutics. A classification of substances used in daily routine for treatment of eye injuries, burns, infections, etc. For instance, castor oil or liquid petrolatum is used to decrease the irritation of a foreign body—or to help to remove it by floating it out. Fluorescein is used for its staining properties as an aid to diagnosis, as it stains only such parts of the eye surface as are denuded of their epithelium, and is of value in showing the extent of injury or ulceration. Methylene blue is also used for its staining properties. Substances used for their direct chemical action include 1–2% solutions of sodium bicarbonate (to neutralize acid burns), boric acid or very dilute acetic acid (in alkaline burns) and 10% neutral ammonium tartrate (in lime burns). Copying-ink pencil—an aniline derivative—acts as a caustic in the eye and can be dissolved out with glycerin- or its activity may be restricted by using weak tannic acid (5%).

Antiseptics for the eye can be applied in many forms. For instance, lotions, as follows: saline, boric acid, sodium bicarbonate, flavine, mercury biniodide, zinc sulphate, potassium permanganate; drops, as (*a*) the silver group—silver nitrate, argyrol, protargol, neoprotosil, collosol argentum; (*b*) zinc sulphate, collosol zinc; (*c*) copper sulphate; (*d*) mercurochrome. Powders to be dusted inside the lids—in a very fine state of subdivision: calomel, iodoform, boric acid. Ointments such as yellow mercuric oxide, zinc oxide, staniform, neoprotosil, copper sulphate and trachomian ointment. The mydriatics such as atropine, homatropine, etc., act on the iris in such a way that the pupil tends to dilate. The myotics, eserine and pilocarpine, contract the pupil and help to reduce intraocular tension.—D. L. CHARTERS. *Pharm. J.*, 134 (1935), 213. (W. B. B.)

Parathyroid Tetany—Treatment of. While Collip's parathormone is active in raising the level of the serum calcium and relieving the symptoms of parathyroid tetany, it is not satisfactory unless injected in large and repeated doses. It is also expensive. In most cases, therefore it is impracticable to employ it. The intravenous administration of 10 cc. of a 10% solution of calcium chloride produces relief of symptoms in a few minutes lasting for about a day and a half. It is an excellent emergency measure. While injecting a solution of this strength care must be taken that none of it escapes into the subcutaneous tissue, for necrosis of tissue and ulceration may result. A good method of treatment is to present continuously to the bowel a large amount of calcium in the form of calcium chloride (150 gr. daily). In cases where this is not effective, 50 to 100 cc. of *N*/3 hydrochloric acid should be given to increase the absorption of calcium. This acid is given in milk in the proportion of 1 to 20 of milk.—D. CAMPBELL. *Lancet*, 228 (1935), 369. (W. H. H.)

Quinidine Sulphate—Evaluation of Use of, in Persistent Auricular Fibrillation. A study of 49 cases of auricular fibrillation in which 46 were classified as permanent and 3 as transient, treated with quinidine sulphate, showed that normal rhythm was restored in 35 or 71.4% of the cases. Of 33 cases with adequate follow-up notes, only 17 or 51% remained regular over 1 year. Two-tenths gram of quinidine sulphate was given orally as a test dose, the following day 0.3 Gm. was administered 3 times, and each day the dose was increased 0.1 Gm. until the rhythm became regular, when the patient was placed on a maintenance dose. Rheumatic valvular disease is most resistant, non-valvular fibrillation responds more readily and in cases of hyperthyroidism without cardiovascular disease treated post-operatively, reversion to normal rhythm is practically invariable. Duration of fibrillation influences to some extent the likelihood of reversion, cases with a short history reverting more readily. It is doubtful whether most cases are in better health with a regular rhythm than with auricular fibrillation when the ventricular rate can be kept slow. There is no method of predicting fatal results with quinidine therapy. The presence of fibrillation and increasing years are both separate factors favoring auricular mural thrombosis. The four indications for the use of quinidine sulphate seem to be: the presence of fibrillation in an otherwise normal heart; its persistence after operation for hyperthyroidism; when the irregularity is the cause of intractable palpitation and in certain hopeless cases where other forms of treatment have failed. Contraindications are an idiosyncrasy to quinine and a previous history of embolism; badly damaged hearts; marked cardiac hypertrophy and long standing fibrillation, etc.—C. M. KOHN and S. A. LEVINE. *Ann. Internal Med.*, 8 (1935), 923; through *Squibb Abstract Bull.*, 8 (1935), A-447.

Strophanthin—Value of, in Angina Pectoris. E. Edens (*Münch. med. Woch.* (Sept. 14, 1934), 1424) believes that angina pectoris is most commonly due to anemia of the heart following increased irritability and spasm of the coronary blood vessels. He has given strophanthin—0.3 mg. strophanthin is given daily (in severe cases twice daily) for three days with an interval of one day. The attacks became less frequent and less painful, and stopped altogether in a short time. He also states that intravenous injection is better than intramuscular or oral administration.—*Brit. Med. J.*, 1 (1935), 138*c*. (W. H. H.)

NEW REMEDIES

SYNTHETICS

Alkoxybenzamides—Substituted. *N*, *N*-Dimethyl(or -diethyl)-di(or -tri)-methoxy(or -ethoxy)-benzamides are prepared by standard processes, *e. g.*, from the alkoxylbenzoyl halides and dimethyl amine or diethyl amine. Examples are given of the preparation of veratric acid

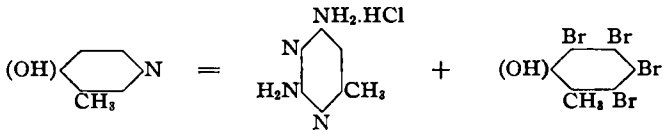
dimethylamide, b_{12} 203°, melts at 102–103°, and diethylamide, b_{12} 205°; *N,N*-dimethyl-3,4,5-trimethoxybenzamide, b_{13} 218°, melts at 74°; *N,N*-diethyl-3,4,5-trimethoxybenzamide, b_{13} 220–226° melts at 54°; *N,N*-dimethyl-2,3-dimethoxybenzamide, b_{12} 172°; *N,N*-diethyl-3-methoxy-4,5-diethoxybenzamide, b_{12} 211–212°, *N,N*-diethyl-3,5-dimethoxy-4-ethoxybenzamide, b_{13} 213°. The products are of therapeutic value in the treatment of circulatory and respiratory organs.—*Soc. pour l'ind. chim. à Bâle.* Ger. Pat., 608,412, Jan. 23, 1935 (Cl. 12*o*. 16). (S. W. G.)

Antimony Compounds—Therapeutic, Bactericidal and Antiparisitic Organic. Antimony oxyacids are dissolved in solutions of salts formed by interaction of cinchona bark alkaloids such as quinine with polyhydroxy monocarboxylic acids derived from aldoses such as the gluconic acid salts of quinine, etc., and the resulting clear solution is evaporated *in vacuo* to obtain the product such as $C_{32}H_{50}O_{20}N_2Sb_2$.—WALTER KUSSMAUL (to Chemische Fabrik vorm. Sandoz). U. S. Pat. 1,991,283, Feb. 12, 1935. (S. W. G.)

Dibroluur (Society for Chemical Industry, Katwijk, Netherlands) is bromdiethylacetylurea, which appears on the market in 0.5-Gm. tablets.—*Pharm. Weekblad*, 72 (1935), 371. (E. H. W.)

Eumarcon (Riedel-de Haen, Berlin) is the sodium salt of isopropyl-β-bromallyl-*N*-methylmalonylureum. It is found on the market in a 10% stabilized aqueous solution used as an intravenous injection for producing partial narcosis in small operations and narcosis in operations of short duration.—*Pharm. Weekblad*, 72 (1935), 277. (E. H. W.)

Picochrome—New Urinary Antiseptic. Picochrome is a new water-soluble azo dye consisting of orthocresyl 5:5, azo 4:6 diamino 2, picoline hydrochloride containing twenty per cent tetrabromoorthocresol. The structural formula of picochrome is given as follows:



Picochrome, incorporating diamino picoline, a newly discovered radicle, is a highly effective urinary antiseptic which exhibits distinct advantages in its bactericidal and bacteristatic action. The analgesic effect on the mucous membranes of the urinary tract is particularly beneficial. Owing to its potency in high dilutions, copious fluid intake may be maintained. It acts equally well in acid and alkaline urines and against *Bacillus coli*, as well as against coccus infections of the urinary tract. The drug is well tolerated by mouth, intravenously and locally, even over long periods. All types of urinary infections have been treated, some resulting in excellent cures, but the majority being influenced with varying degrees of benefit. Although picochrome cannot be classed as the ultimate urinary antiseptic, it presents enough advantages to warrant its inclusion in our favored armamentarium against urinary infection.—A. RAVICH. *Med. Record*, 141 (1935), 343. (W. H. H.)

Prontosil. (I. G. Bayer) is a preparation particularly useful against the principal causes of sepsis, streptococci, staphylococci, etc. It is the hydrochloric acid salt of 4-sulphonamide-2, 4-diaminobenzol. Prontosil is a reddish crystalline powder having a melting point of 247–251°. It is rather indifferent pharmacologically, relatively large doses being secreted unaltered in the urine in test animals. Beginning doses are 3–6 tablets per day, each tablet weighing 0.3 Gm. Ampuls also appear on the market containing 20 cc. of a 0.25% solution for intravenous injection. —*Pharm. Weekblad*, 72 (1935), 371. (E. H. W.)

Tannin—Difficultly Soluble Preparation of. About 153 parts tannin, 33 parts aluminum hydroxide and 25 parts calcium oxide or aluminum or calcium salts equivalent to them are boiled together. An almost tasteless, greenish powder is obtained which is useful as an intestinal astringent.—DARMOL. *Gyogyszervegyeszeti Ipari és Kereskedelmi R. T.* Hung. Pat., 111,367, Jan. 2, 1935. (S. W. G.)

SPECIALTIES

Adexoline (Glaxo Laboratories, London) contains vitamins A and D in high concentration and in the proportion in which they occur in cod liver oil. The vitamin A is obtained from liver oils from the codfish and the halibut; the vitamin D is calciferol G. L., the pure crystalline

product. Each cc. contains 40,000 vitamin A units and 2000 vitamin D units, that is 20 times that of cod liver oil. It is found on the market in vials of 8 Gm. and in capsules.—*Pharm. Weekblad*, 72 (1935), 277. (E. H. W.)

Aecuferrolstroop with Manganese (N. V. Kon. Pharm. Factories of Brocades & Stheeman and Pharmacia., Netherlands) contains 2 mg. of manganese per tablespoon.—*Pharm. Weekblad*, 72 (1935), 370. (E. H. W.)

Alleton (Riedel-de Haen) is a preparation containing 12% garlic oil in chemical combination with dioxycholanic acid, which occurs on the market in pills. Each pill contains the active ingredients of one gram of garlic. The iodine and sulphur-bearing oils of garlic have been recommended in intestinal derangements, dyspepsia, arteriosclerosis and hypertonicity. The crystallized combination with dioxycholanic acid has a less disagreeable odor and taste. The dose is one tablet three times a day.—*Pharm. Weekblad*, 72 (1935), 277. (E. H. W.)

Alloform (Curta & Co., Berlin) is an alum-earth preparation used in preparing solution of aluminium acetate.—*Pharm. Weekblad*, 72 (1935), 277. (E. H. W.)

Allyarsin is the alternative name for *Danarsin* which should not be confused with *Danamin* (see *J. A. Ph. A.*, Abstr. Sec., 24 (1935), 40).—*Pharm. Weekblad*, 72 (1935), 277. (E. H. W.)

Alpecine-Oil (Dr. A. Wolff, Bielefeld) is a "hair-grower" made from olive oil with a lecithin emulsion. This firm also manufactures Alpecine-Hairwater for washing hair.—*Pharm. Weekblad*, 72 (1935), 277. (E. H. W.)

Brocanal (Curta & Co., Berlin) contains 0.025 Gm. phenylethylbarbituric acid, 0.4 Gm. bromcalcium-diethanolamine and 0.015 Gm. caffeine. It is used in epilepsy.—*Pharm. Weekblad*, 72 (1935), 277. (E. H. W.)

Cantan (Bayer, Hoechst) is vitamin C. Each tablet contains 0.025 Gm. ascorbinic acid.—*Pharm. Weekblad*, 72 (1935), 277. (E. H. W.)

Coffex (Dr. R. & O. Weil, Frankfort) is a new name for "Coffeo-citrine" a mixture of acetylsalicylic acid and caffeine.—*Pharm. Weekblad*, 72 (1935), 277. (E. H. W.)

Decholine (Chemical factory of Riedel-de Haen, Berlin) is the legally protected name under which dehydrocholic acid in 0.25-Gm. tablets and sodium dehydrocholate in 5% and 20% solution, in ampuls is found on the market. It serves as a choleretic and cholagogue in gall-stones, etc. The solution is used intravenously, 5–10 cc. every two or three days; the tablets, 1–2 tablets three times a day.—*Pharm. Weekblad*, 72 (1935), 277. (E. H. W.)

Diaturasa (Cera Laboratories, Barcelona) is a remedy for rheumatism, gout, lumbago, neuralgia, etc., appearing on the market in four forms. The liquid for injection contains, according to the label, salicylic-benzo-benzylic ethyl ester 40 mg., benzyl morrhuate 100 mg., benzyl sulphide 10 mg., camphor 10 mg., ether 50 mg., olive oil to make 1 cc. The capsules contain salicylic-benzo-benzylic ethyl ester 100 mg., benzyl morrhuate 95 mg., benzyl sulphide 5 mg., per capsule. The granules contain lithium nucleotinphosphor. 5 Gm., methyl phenylquinoline-carbonic acid 6 Gm., hexammethylenetetramine sulphosalicylic acid 6 Gm., sodium methylarsonate 25 mg., tartaric acid 40 Gm., sodium bicarbonate 40 Gm., essence of peppermint, essence of bananas, vanillin *q. s.* for 100 Gm. of granules. The ointment contains salicylic-benzo-benzylic ethyl ester 25 Gm., terpineol 10 Gm., camphor 5 Gm., menthol 2 Gm., oil of juniper 1 Gm., oil of sage 0.5 Gm., compound oil of hyoscyamus *q. s.* ad. 100 Gm. It is not clear just what salicylic-benzo-benzylic ethyl ester and the other compounds really are.—*Pharm. Weekblad*, 72 (1935), 370. (E. H. W.)

Digalol (Riedel-de Haen) is mentha-dioxycholinic acid, found on the market in 0.1-Gm. tablets. The adjunction "mentha" is not clear as to whether it is a menthol-ester or a mixture. Dioxycholinic acid is used in most affections of the liver and gall bladder. It is thus used in gallstones and as a laxative. The dose is two tablets three times a day.—*Pharm. Weekblad*, 72 (1935), 277. (E. H. W.)

Eusod (Fabrik Schering-Kahlbaum A.-G., Berlin) consists of synthetic aluminum-sodium silicate and magnesium oxide. It is recommended for heartburn. It is distributed in packages of 6 and 12 tablets.—*Pharm. Ztg.*, 80 (1935), 150. (G. E. C.)

Hydronal (I. G. Bayer) is aluminum hydroxide prepared by a special process whereby it is readily soluble in the acid juices of the stomach. When hydronal comes in contact with the gastric juice it gelatinizes and absorbs the acid. Hydronal for use as an antacid in stomach affections appears on the market in 0.5-Gm. tablets.—*Pharm. Weekblad*, 72 (1935), 371. (E. H. W.)

Kataline (Society for Chemical Industry, Katwijk, Netherlands) is a mixture of phenacetin 0.1 Gm., dimethylamidopyrin 0.15 Gm., quinine sulphate 0.05 Gm. and caffeine 0.05 Gm. appearing on the market in tablet form.—*Pharm. Weekblad*, 72 (1935), 371. (E. H. W.)

Lanogeen (Chemical and Pharmaceutical Factory of E. Scheurlich, Hirshberg) is an ointment base which, like lanolin, takes up a large quantity of water. It contains cholesterin-esters.—*Pharm. Weekblad*, 72 (1935), 277. (E. H. W.)

Larostidin (Hoffman-La Roche and Co., A.-G., Berlin) is a 4% isotonic and sterile solution of 1-histidine-monohydrochloride. It is used in the treatment of peptic ulcers of the gastro-intestinal canal. One intramuscular injection per day for three weeks brings about disappearance of pain. The preparation is marketed in packages of 6 and 25 ampuls.—*Pharm. Ztg.*, 80 (1935), 174. (G. E. C.)

Lutreen (I. G. Farben) is a biologically standardized extract prepared from corpus-luteum, which is found on the market in ampuls containing two rabbit-units per cc. It serves in gynecological hemorrhages and in the prevention of abortion.—*Pharm. Weekblad*, 72 (1935), 277. (E. H. W.)

Pelose (Schering-Kahlbaum) is a homogenous mud which absorbs considerable water and becomes very plastic. It is used as a cataplasm in rheumatic affections.—*Pharm. Weekblad*, 72 (1935), 277. (E. H. W.)

Per-iodotheodural (Society for Chemical Industry, Katwijk, Netherlands) is a mixture of 30 mg. of papaverine HCl and 417 mg. of Calcium Salicylate with Theobromino-Calcio, appearing on the market in tablet form.—*Pharm. Weekblad*, 72 (1935), 371. (E. H. W.)

Proviron (Schering-Kahlbaum) is a standardized male sex hormone, of which the formula appears to be $C_{19}H_{20}O_2$. It is used as subcutaneous and intramuscular injection.—*Pharm. Weekblad*, 72 (1935), 277. (E. H. W.)

Sulfigen (Anhaltisches Serum-Institut, Berlin) is a colloidal sulphur preparation, with no protective colloids, containing about 0.13% sulphur and 0.57% sulphur dioxide. In solution polythionic acids are formed which penetrate gelatin and tissue to a depth of 2 mm. and which change into colloidal sulphur and sulphurous acid. It is used in the form of a wash for slowly granulating, infected wounds, eczema, pruritis, ichthyosis and psoriasis. For use, the contents of a tube are dissolved in 0.5 liter of water, and as soon as the solution becomes cloudy and develops the characteristic odor of sulphurous acid it may be applied. It should be used at once as its activity begins to diminish within 30 minutes. It is marketed in cartons containing 5 tubes.—*Pharm. Ztg.*, 80 (1935), 189. (G. E. C.)

Tonicum Katwijk (Society for Chemical Industry, Katwijk, Netherlands) consists of liquid extract of kola 200, saccharum 200, aromatic spirit 90, glycerin 125, saccharas manganosus 2, tincture of nux vomica 10, sodium methylarsenate 1, sodium biphosphate 37, distilled water ad. 1000. Use and dosage is left to the physician.—*Pharm. Weekblad*, 72 (1935), 371. (E. H. W.)

Tonicum Noury (N. V. Nourypharma, Deventer, Netherlands) contains liquid extract of kola 20, glycerin 10, tincture nux vomica 1, sodium methylarsenate 0.1, saccharas manganosus 0.2, sodium biphosphate 3.7, corrigenda ad. 100. It is directed to be used two to three times a day, one-half hour before meals; 1–2 teaspoonfuls for adults and $^1/_2$–1 teaspoonful for children.—*Pharm. Weekblad*, 72 (1935), 372. (E. H. W.)

Tyronorman (Schilddrüsen-Schtzstoff) (Sächsisches Serumwerk, Dresden) is a standardized and biologically assayed antithyreoidal (1 tablet = 10 aT). It is given in doses of two tablets three times a day and is used in Grave's disease and thyreotoxicosis. The diet is directed to contain no meat or fish, but should contain 1–2 liters of milk.—*Pharm. Weekblad*, 72 (1935), 372. (E. H. W.)

Vaccine Dr. Aman (Bayrol, Chemische Fabrik, Munich). This preparation is used for the early diagnosis of cancer and malignant tumors and is prepared from staphylococci which are always present in tumors. It is supplied in ampuls containing 0.3 cc. of which about 0.1 cc., after previous shaking of the ampul, is injected subcutaneously into the forearm. Irritation and rubbing at the point of injection is to be avoided. A malignant growth is present if after 24 hours a bright red coloration and infiltration may be seen at the point of injection.—*Pharm. Ztg.*, 80 (1935), 212. (G. E. C.)

BACTERIOLOGY

Antimeningococcus Serum—Notes on the Concentration and Purification of. Purification of the globulin is best accomplished by fractional solution in dilute-sodium chloride with from 66 to 88 per cent of the serum protein removed. Isoelectric fractionation eliminated 76 to 85 per cent, zinc chloride 79 to 85 per cent, and dialysis and isoelectric fractionation 67 to 80 per cent of the serum protein. The sodium chloride method proved simplest, best for large quantities of serum and the product may be diluted without precipitation with sodium chloride solution.—PHILIP MURDICK and SOPHIA M. COHEN. *J. Immunol.*, 28 (1935), 205. (A. H. B.)

Antityphoid Serum—New. In experiments on mice, published in *Lancet*, 227 (1934), 186, it was established that antityphoid sera containing O and Vi antibodies exert two separate and distinct effects, *viz.:* (*a*) The Vi antibody confers protection against infection with highly virulent strains of *B. typhosus* by suppressing the multiplication of the organisms. (*b*) The O antibody appears to be chiefly responsible for effecting the neutralization of the endotoxin of *B. typhosus*. It was concluded that the efficacy of the therapeutic antityphoid serum would depend on the presence in it of both these antibodies. From the clinical trials, it may be stated that some action on the toxic symptoms and on the fever was exercised by the antityphoid serum.—A. FELIX. *Lancet*, 228 (1935), 799. (W. H. H.)

Bacillary Dysentery—Cause of, in Infants and Children. Chemical and bacteriological data indicated that the Flexner and Sonne strains of the *Eberthella paradysenteriæ* were responsible for 74% of the infectious diarrheas of children and infants. The organisms gradually disappear after the fifth day. The etiological organisms were diagnosed by titer agglutinations.—G. A. DENISON and G. DEHOLL. *J. Infect. Dis.*, 56 (1935), 124. (A. H. B.)

Chlorine—Bactericidal Action of. Because chlorine is one of the most widely used germicides in public health work, an effort is made in this paper to determine the bacterial death rate caused by various concentrations of chlorine. There seems to be concentrations which first stimulate, then inhibit, and finally, in higher concentrations, kill various pathogenic organisms. Exposed to 10–6 dilutions of chlorine, one million bacteria were reduced 99 per cent. The results, however, indicate bacterial growth is just as great before as after the action of chlorine. Bacterial death, then, is reversible to a certain extent and also there are zones of life dormancy after death. Many germicides cause dormancy and not death, judging from the tabulations recorded in the paper.—C. S. MUDGE and F. R. SMITH. *Am. J. Pub. Health*, 25 (1935), 442. (A. H. B.)

Diphtheria Toxoid—Value of Alum-Precipitated. A potent batch of alum-precipitated toxoid was tested on five groups of children, all of whom were Schick-positive before inoculation. Each child received one dose (1 cc.) of this material, and in 152 cases a final Schick test was performed one month after the injection. It has been shown that the figure 83.6 ± 2.0 represents the average percentage of children who became Schick-negative within four weeks. The reactions were classified into three types—general, local erythema and local induration. Generally these reactions were very mild, but the occurrence of much more severe reactions in two cases shows that due care must be exercised in this work, and emphasizes the necessity for a strict interpretation of the Moloney test.—E. A. UNDERWOOD. *Lancet*, 228 (1935), 137. (W. H. H.)

Diphtheria Toxoids—Comparison of Value of Merthiolate and Phenol as Preservatives for. Diphtheria toxoid is best preserved by merthiolate 1:10,000 at icebox temperature. After two years it showed better antigenic value than similar toxoid when preserved with 0.5 per cent phenol.—OLGA R. POVITZKY and MINNIE EISNER. *J. Immunol.*, 28 (1935), 209. (A. H. B.)

Disinfectants—Advances in Testing of. The Food and Drug Administration method of testing antiseptics which was designed by Rühle and Brewer has the advantage of saving time, work and material, and of making possible uniform and comparable results in the hands of different workers. The culture medium is better suited for bacterial growth and the method is not limited to a single test organism as is the case with the Rideal-Walker and the U. S. Hygienic Laboratory methods. A table comparing the results obtained with the three methods is given. The F. D. A. process is particularly well adapted for testing coal-tar antiseptics and iodine solutions of various kinds and concentrations.—E. MAIER. *Pharm. Ztg.*, 80 (1935), 228. (G. E. C.)

Germicidal Substances—Comparison of the Resistance of Bacteria and Embryonic Tissue to. II. Metaphen. Phenol and metaphen inhibit tissue growth to the limits of dilution of 1:840 and 1:76,000. The inhibition of staphylococcus growth occurs with phenol at 1:65, metaphen

1:6000. This gives for both approximately the same toxicity index of 12.9 and 12.7.—A. J. SALLE and A. S. LAZARUS. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935), 937. (A. E. M.)

Herpes Virus—Attempts to Produce Immunity with Large Quantities of Killed. Dead virus is not able to produce any immunity.—EARL B. MCKINLEY and RANDALL L. THOMPSON. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935) 915. (A. E. M.)

Meningococcus Antitoxin—Ferry's. Meningococcus antitoxin prepared by using, as antigens, soluble toxins of Types I, II, III, IV meningococci, appears to be a potent therapeutic agent for Types I and III meningococcus meningitis, as shown in a recent small series in London. Its potency in Type II meningitis is much more doubtful. It is suggested that intensive dosage—*viz.*, twice daily, spinal injections in early acute stage, combined with one or more intravenous injections—is an important factor in the success of treatment.—N. S. BANKS. *Lancet*, 228 (1935), 856. (W. H. H.)

Placenta Serum—Preparation of Anti-Measles. Y. A. Finkelstein, *et al.* (*Sov. Paediat.*, 3 (1934), 34) describe a method of preparing anti-measles serum from placentæ of normal women. The main features of this technique are heating the serum with chloroform to a temperatue of 60° C., and testing its sterility subsequently by animal and cultural inoculations. The sera derived from thirty to forty placentæ are then mixed before they are ready for use. The proportion of anaphylactic and other complications remained relatively low at 0.3 to 0.4 per cent. No difference in effect could be detected between convalescent and placental serum.—*Brit. Med. J.*, 1 (1935), 56. (W. H. H.)

Pneumococci—Application of the Neufeld Reaction to the Identification of Types of. The Neufeld reaction for identification of pneumonia types with the consequent swelling of the capsules which become more distinct and show a ground glass appearance is still the most rapid, as well as a very accurate method of identifying the 32 types of pneumococci. Types I to XXXII are specifically reacted upon by homologous rabbit antisera. Specific type sera can be produced in rabbits. Type III and type VIII may react to the same type antisera.—GEORGIA M. COOPER and ANNABEL W. WALTER. *Am. J. Pub. Health*, 25 (1935), 469. (A. H. B.)

Pneumococcus—Antigenic Characteristics in Man of Certain Products of the. The duration of the immunity following the use of vaccine or of fractions is variable in different individuals, but may persist at least over a period of three months. The antigenic response to type I vaccine is largely homologous, while in type II vaccine, the various fractions, though in different degree, show much greater heterologous response.—LLOYD D. FELTON, W. D. SUTLIFF and B. F. STEELE. *J. Infect. Dis.*, 56 (1935), 101. (A. H. B.)

Staphylococcus—Special Variety of, Concerned in Food Poisoning. The power of staphylococci to be the etiological factor in food poisoning cannot be recognized by agglutination, hemolytic or chemical characteristics. The staphylococcic food poisoners are therefore still undifferentiated strains.—JOSEPH STRIATAR and EDWIN O. JORDAN. *J. Inf. Dis.*, 56 (1935), 1. (A. H. B.)

Sterilization in Pharmaceutical Practice. The value of two new sterilizing agents, namely, "Katadyn" and "Zephirol" is reported. Sterilization is discussed in detail and the following substances are arranged according to their ability to check the growth of organisms and their bactericidal action. The number designates the reciprocal value of the smallest fraction which gives an active dilution:

Substance	Titer	
	Checks Growth	Kills in 48 Hrs.
Nipagin-sodium	450	
Vuzin	500	200
Nipasol-sodium	500	
Nipagin	800	
Nipasol	800	
Benzoic acid	1000	200
Nipabenzyl-sodium	1000	400
Chloramine	1500	1500
Hexylresorcinol	1500	500
Quinosol	2000	400
Rivanol	2500	1500

Trypaflavin	3000	1750
Malachite green	3000	2000
Methylene Blue	5000	2000
Methyl violet	5000	2500
Brilliant green	6000	3000

H. ESCHENBRENNER. *Pharm. Monatsh.*, 16 (1935), 26–29. (H. M. B.)

Streptococci—Studies on the Respiratory Mechanism of. One of the initial products of metabolism in all streptococci is H_2O_2. A thermostable peroxidase was found to be present which appears to be intimately related to the thermolabile dehydrase mechanism in the cell. The ability of streptococci to activate 101 chemicals was studied which demonstrated the dehydrogenation of many carbohydrates. The dehydrase-peroxidase system plays an important rôle in the respiration of the streptococci.—M. FARRELL. *J. Bact.*, 29 (1935), 411. (A. H. B.)

Tetanus Toxin—Immunizing Activity of, in Lanolin. Immunization of rabbits against tetanus was produced by the injection of a non-attenuated tetanus toxin in lanolin and olive oil. The rabbit was injected with 4 cc. of a mixture of 2 cc. of toxin, 3 cc. lanolin and 6 cc. olive oil (equivalent to 10 L. D.'s for the rabbit or 20,000 L. D.'s for the guinea pig). The injection material was slowly resorbed. There were no signs of tetanus. Twenty-two days later the serum of the rabbit contained $^1/_5$–$^1/_{10}$ antitoxic units/cc. and 1 cc. was capable of neutralizing 100 M. L. D. for the guinea pig. A second injection increased the antitoxic titre to 2 units/cc. in 11 days.—G. RAMON and E. LEMETAYER. *Compt. rend.*, 200 (1935), 592; through *Squibb Abstract Bull.*, 8 (1935), A-453.

Tetanus Toxin—Photodynamic Effect of Methylene Blue on. Tetanus toxin can be inactivated by optimum concentrations of methylene blue in the presence of light. *In vivo*, however, methylene blue does not inhibit the effect of tetanus toxin.—KARL M. LIPPERT. *J. Immunol.*, 28 (1935), 193. (A. H. B.)

Tuberculous Antibodies—Latent. Tuberculoprotein (TPT) is prepared by precipitation with trichloracetic acid and is 1.6 times as strong as Kock's Old Tuberculin for cutaneous tests. Specific tuberculous antibodies appear to be exfoliated into the circulation of patients who at some previous time had had a tuberculous infection as indicated by the positive skin test. If antibodies indicate, in any way, resistance against tuberculosis, the results would suggest a persistent protection against tuberculosis long after the original infection.—A. B. BAKER and M. WETHERBY. *J. Infect. Dis.*, 56 (1935), 165. (A. H. B.)

Zephirol—Use of, in the Preparation of Sterile Solutions for Injection. The article is a supplement to a topic published in *Pharm. Acta Helv.*, Nos. 10 and 11, 1934. This paper deals with a new disinfecting medium which has just come on the market under the name of "Zephirol," a preparation of the I. G. Farbenindustrie, and which is labeled as a mixture of high molecular alkyl-dimethylbenzyl-ammonium chloride. The agent is an aqueous solution of "Zephirol" which is clear, yellowish white, foams strongly on shaking, exhibits a faint pleasant odor and reacts weakly alkaline to litmus. Its activity in various strengths toward certain organisms and also their spores is stated. Tests are given which indicate its practicability for sterilizing the hands and rubber goods. It is non-irritant to mucous membranes in 0.5 or 1 per cent solution and is now being used in gynecological practice. The preparation is relatively non-toxic by mouth. In connection with the use of E. K. filters, we believe to have found in "Zephirol" a material suitable for the pre-sterilization of the apparatus. From the above properties, it appears that "Zephirol" can be recommended for general use in the hospital, as well as in the sterilization of filters. We have also developed an apparatus for more rapid filtering of media.—H. ESCHENBRENNER. *Pharm. Acta Helv.*, 10 (1935), 72. (M. F. W. D.)

CHEMISTRY

General and Physical

Fusion Curves of Binary Systems. Bromural and Veronal with Salol and Phenacetin. Two-component mixtures, as follows, were investigated: (I) bromural-salol, (II) bromural-phenacetin, (III) veronal-salol, (IV) veronal-phenacetin. The aforementioned systems all form eutectic mixtures and, in the liquid state, the components are miscible in all proportions. The weight-per cent compositions for corresponding crystallization temperatures were as follows:

(I) 3.5 per cent bromural at 40.8°; (II) 53 per cent bromural at 109.0°; (III) 1.5 per cent veronal at 41.2°; (IV) 26.2 per cent veronal at 121.6°.—K. HRYNAKOWSKI and M. SZMYTÓWNA. *Arch. Pharm.*, 273 (1935), 163. (L. L. M.)

ORGANIC

Alkaloids

Cinchona Alkaloids. Ketone Formation with Sodium Amide. The patent method of Chichibabin for preparing α-aminopyridine from the action of sodium amide on pyridine was used in an attempt to prepare amino derivatives of hydroquinine, quinine and cinchonine. However the alkaloid was transformed into the corresponding ketone instead.—ALICE G. RENFREW and LEONARD H. CRETCHER. *J. Am. Chem. Soc.*, 57 (1935), 738. (E. B. S.)

Ephedrine Alkaloid—Crystalline Forms of. Report is made of an investigation undertaken to show that the hemi hydrate is the usual hydrate of ephedrine, to determine the melting point of anhydrous ephedrine and to ascertain the effects of different amounts of water on the melting point. The alkaloid was distilled at 25 mm.; any water came over quickly; the receiver was changed and distillation continued. The anhydrous base boiled from 151–153°. The solidifying point was between 38.0° and 38.1°. To get a number of values, molten anhydrous alkaloid was put into a round bottom flask fitted with a stopper for an Anschutz thermometer and a stirring rod. Cooling to 30° and stirring brought it to constant value where it remained for some time. A known weight of water was added to the melted mass and the solidification temperature again determined. The addition of water lowered the melting point until with 1.5 per cent a eutectic mixture, ephedrine-ephedrine hydrate melted at 32.1°. Further addition of water raises the melting point until with 5 per cent a maximum of 40° occurs. Boiling points were determined at various pressures. When crystallized from an anhydrous medium like ether, crystals obtained analyzed 100 per cent. Crystallized from water or dilute alcohol, they analyzed 95 per cent. Anhydrous crystals are very hygroscopic, while hydrated are stable. The anhydrous and hydrated bases differ also in crystalline form and in their solubility in oil.—E. E. MOORE and D. L. TABERN. *J. Am. Pharm. Assoc.*, 24 (1935), 211. (Z. M. C.)

Ergometrine. Newly Discovered Alkaloid in Ergot. There appears in the *Brit. Med. J.*, 1 (1935), 520; through *Pharm. J.*, 134 (1935), 321, a communication by Chassar Moir and H. W. Dudley relative to the constituent which according to their investigations is responsible for the clinical effect of ergot preparations. Particulars as to the separation of this constituent will be published later. This body, which has alkaloidal properties is soluble in alkalis and the commonly employed extractive solvents. The ergot investigated by the authors contained 0.1% alkaloids calculated as ergotoxine. The new alkaloid which has been named ergometrine comprises about $^1/_{12}$ of the total alkaloids. The effect of ergotoxine occurs much later than the effect of ergometrine. When 0.5–1 mg. of the new alkaloid is taken *per os*, uterus contractions occur in 6.5–8 minutes, while with 2–3 mg. of ergotoxine the contractions first occur after 35 minutes. Intramuscular injection of 0.25 to 0.5 mg. and intravenous injection of 0.05 to 0.1 mg. give the same effect as the above dose, *per os*. The new alkaloid gives the same color reactions as the other alkaloids of ergot.—*Pharm. Weekblad*, 72 (1935), 345. (E. H. W.)

Ergot—Active Constituents of. Pharmacological and Chemical Study. After obtaining the total alkaloids in as pure condition as possible, those alkaloids having slow ergotoxine or ergotamine type of activity were separated from the promptly acting new alkaloidal principle or principles. Details of procedure are reported. The new substance has not been obtained in pure crystalline form, so only approximate quantitative data are given. A tabulation of eight alkaloids with name of discoverer and date, supposed composition, oxytocic activity, color reaction, cockscomb and isolated rabbit uterine reaction is given. Properties of the new alkaloid and of the others are discussed. Pharmacological action of the new alkaloid was tested by several methods. Moir's clinical observation that there is an important difference between ergotoxine or ergotamine and crude aqueous or hydro-alcoholic extracts of ergot is confirmed and also his conclusion that there is a highly important "unidentified" substance present, but other of his apparent beliefs are disproved. The described procedure for chemical separation shows that all of the significant oxytocic property is in the "total alkaloidal fraction." A method is described for fractionating total alkaloids and also for purification of the new substance. The main difference in pharmacological action of the new alkaloid from formerly known ones is its prompt oxytocic action,

especially orally. It probably is more soluble and more rapidly absorbable. Differences are not so great when given intravenously or when compared on isolated smooth muscle. Total alkaloids are absorbed only after passing into intestine of the cat and this is probably true in humans. Aqueous or hydro-alcoholic extracts, injected intravenously or subcutaneously are intensely irritant, due to the inert fraction. Hydro-alcoholic liquid extracts contain all the "total alkaloids" and completely represent the drug in oxytocic activity but are suitable only for oral administration because of the presence of irritant inert constituents that are responsible for pain and abscesses when injected. Aqueous liquid extracts do not contain all of the "total alkaloids" but practically all of the promptly acting "X alkaloid." The latter is the more important but the slow-acting alkaloids add to duration of effect. Solid or pillular extracts that are highly active can be prepared but most of those available have had alkaloidal activity destroyed by heat. They owe most of the activity they have to "X alkaloid." Method of assay should be chosen for reliability and precision and the author favors a modification of the Broom-Clark Rabbit Uterus method though the colorimetric method offers possibilities. The various methods will be considered in a separate report. All the methods require a "standard of comparison" but this standard has failed. The author has recommended that ergotoxine ethanesulphonate or ergotamine tartrate be made the bioassay standard. The following conclusions are made by the author: (1) The pregnant cat has been found to be a suitable test subject upon which to study comparatively the oxytocic activity of various types of preparations and constituents of ergot. (2) A procedure, involving oral administration of the ergot preparations, has been described and used extensively for the above purpose. Such a procedure can be successfully employed in investigating the chemical source of the significant oxytocic activity of ergot. (3) Carefully prepared hydro-alcoholic extracts of ergot, such as Fluidextract of Ergot, U. S. P. (U. S. P. X or Interim Revision), or Liquid Extract of Ergot, 1932 B. P., contain all of the important active principles of the drug. Such preparations are rich in alkaloids and remarkably prompt and effective upon the uterus following oral administration. (4) Aqueous extracts of ergot do not contain all of the important active principles of the drug. They are deficient in ergot alkaloids, but are never alkaloid-free unless they are many years old or the alkaloids have been destroyed by excessive heat in their manufacture. When carefully prepared, these extracts are remarkably prompt and effective upon the uterus following oral administration. This prompt and effective activity is entirely out of proportion to the ergotoxine or ergotamine equivalents of such preparations. (5) Ergotoxine and ergotamine are indistinguishable in producing a much delayed and erratic action following oral administration. The activity of these alkaloids is, therefore, far from being completely representative of the drug itself or its crude extracts, as formerly supposed. (6) A hitherto unknown, highly important, active principle exists in ergot. (7) Every trace of the significant oxytocic activity has been found to reside in the chemically purified "total alkaloids" of the drug, even in the so-called aqueous extracts, as shown by the prompt activity obtained from the "Total Alkaloidal Fraction" in contrast to the complete lack of significant activity in the "Alkaloid-Free Fraction." (8) Ergotoxine and ergotamine are not representative of the "total alkaloidal activity." The new active principle appears, therefore, to be another member of the specific alkaloids of ergot, since it followed the other alkaloids in the chemical procedure used in obtaining the "Total Alkaloidal Fraction." (9) The activity of aqueous extracts observed by Moir must have been due, contrary to his belief, to "residual alkaloid" consisting mainly of the new alkaloid described in this report. The alkaloidal deficiency of such extracts is due to the inefficiency of water in extracting the ergotoxine or ergotamine. Most of the more stable new alkaloid is readily extracted by water and hence appears in fairly representative amounts in such extracts. (10) The new alkaloid has been isolated in a sufficiently pure amorphous condition to permit of certain pharmacological and chemical comparisons with the hitherto known alkaloids. (11) The new alkaloid is closely related to ergotoxine and ergotamine as is shown by similar chemical behavior and also as is shown by its similar pharmacological action when tested upon the isolated guinea-pig uterus, the isolated rabbit uterus, the cockscomb and the carotid blood pressure of cats or dogs. Its activity persists for hours, as does that of ergotoxine and ergotamine. (12) The new alkaloid differs from ergotamine and ergotoxine mainly by its much more soluble nature, and by its more prompt and powerful oxytocic action following oral administration. The greater solubility, together with the probability that the new alkaloid has a smaller molecule, compared with ergotoxine or ergotamine, undoubtedly accounts for the more prompt absorption and greater

effectiveness of the new alkaloid. (13) All of the remarkable observations of Moir can be explained by the demonstration of the existence of the new alkaloid. (14) None of the active oxytocic principles of ergot (the specific alkaloids) is absorbed to any significant extent from the stomach of the cat, following oral administration. (15) All of the active oxytocic principles of ergot (the specific alkaloids) are absorbed with varying degrees of rapidity from the intestine of the cat following oral administration. The new alkaloid is promptly absorbed while ergotoxine and ergotamine are absorbed with great difficulty. This difference in absorption rate also manifests itself following subcutaneous or intramuscular injection. (16) Ordinary aqueous or hydro-alcoholic extracts of ergot are intensely irritant to the tissues following subcutaneous or intramuscular administration. Severe abscesses develop at the site of injection, especially following the larger doses. (17) The irritant and abscess-forming properties are not due to the important active principles (the specific alkaloids) of ergot. They are due to the otherwise pharmacologically inert extractives appearing in the liquid extracts. (18) The color of an ergot preparation is no indication of its value or activity. The purified, total active principles are colorless in solution. (19) Either ergotoxine ethanesulphonate or ergotamine tartrate constitutes the best available "standard" for comparison in the evaluation of ergot preparations by the currently accepted quantitative methods. (20) The Isolated Guinea-Pig method, as usually applied (as in testing Liquor Pituitarii, U. S. P.), is wholly unreliable as a means of insuring significant activity in ordinary aqueous or hydro-alcoholic extracts. It measures chiefly the worthless non-specific amine activity of such extracts. (21) Clinical activity in reasonably standardized amounts can be insured by requiring official liquid ergot extracts to contain a total specific alkaloidal activity, equivalent to approximately 0.05 per cent, in terms of either ergotoxine ethanesulphonate or ergotamine tartrate, when tested by the Cockscomb method, the Epinephrine-Inhibition Rabbit Uterus method or the Colorimetric method. This will provide for the presence of essentially all of the more important new alkaloid present in the parent drug, plus varying but larger proportions of the less important ergotoxine or ergotamine. None of these methods can serve to differentiate between the new alkaloid, ergotoxine or ergotamine in crude extracts. (22) Solid or pilular extracts can be made to contain a satisfactory amount of activity by extracting properly and avoiding the use of excessive heat and exposure to oxygen in the process of concentration. (23) The non-specific amino-bases of ergot (histamine, tyramine, cholines, etc.) contribute nothing of a desirable nature to the characteristic oxytocic activity of the drug.—MARVIN R. THOMPSON. *J. Am. Pharm. Assoc.*, 24 (1935), 185. (Z. M. C.)

Ergotocin. The authors found that the alkaloids ergotoxine, ergotamine and sensibamine are uniformly ineffective when administered to human mothers in doses of 2 mg. They found, however, that some fluidextracts of ergot were effective in doses corresponding to 3–4 Gm. of ergot. After a year and a half the authors were finally able to isolate a principal which they have named ergotocin which is uniformly effective in human mothers when administered orally in doses of 0.3 mg. and intravenously in doses as low as 0.1 mg. Three-tenths mg. of ergotocin roughly corresponds to 3–4 Gm. of crude defatted ergot. Ergotocin salts as well as the free base are white crystalline substances. The base melts at 155°. The picrate which is red melts at 195–197°. It differs from the other ergot alkaloids (ergotoxine, ergotamine and sensibamine) in that it is not precipitated by Mayer's reagent in dilutions greater than 1:7500, while the other alkaloids are precipitated in dilutions of 1:200,000 to 1:2,000,000. The chemistry of ergotocin will be reported later. Ergotocin is not present in all samples of ergot acceptable on the basis of the U. S. P. assay and therefore the authors believe that the isolation of this principle will put ergot therapy on a rational basis. The principle has low toxicity and small dosage gives prompt action in uterine hemorrhage.—M. S. KHARASCH and R. R. LEGAULT. *Science*, 81 (1935), 388. (E. H. W.)

Harmine and Harmaline. II. Nitro and Amino Derivatives of *O*-Alkyl Ethers of Harmol and Harmalol. *Harmine* is demethylated readily by heating in an open vessel with concentrated sulphuric acid at 120°, with the formation of quantities of harmine sulphonate. Sulphonation is avoided by the use of phosphoric acid (d. 1.7) at the same temperature, thus affording harmol in a yield of about 78 per cent of the theoretical. Demethylation of harmaline with sulphuric acid produces a mixture of harmol and harmalol, but phosphoric acid at 150° gives harmalol in about 80 per cent yields. The phenol bases were alkylated by means of *p*-toluenesulphonic acid esters: the ethyl ether, m. p., 199–200°; *n*-propyl ether, m. p. 203–204°; *n*-butyl ether, m. p.,

218–220°; and isoamyl ether, m. p., 237–238° of harmol were thus prepared. Nitro derivatives of harmine and harmaline, in 65 per cent yields, were obtained by a modified Fischer method (*Ber.*, 45 (1912), 1930), using acetic acid as solvent. Nitroharmaline is oxidized to nitroharmine by chromic acid more advantageously than by permanganate. By methylation of nitroharmine and nitroharmaline with methyl iodide, a yellow crystalline substance is obtained which is decomposed by sodium or ammonium hydroxides into *N*-methyl bases. The two nitro derivatives are reduced readily to the corresponding amines by powdered iron and hydrochloric acid. The hydrochlorides of both amines are crystalline, unstable solids.—R. KONOWALOWA, N. PROSKURNINA and A. ORECHOFF. *Arch. Pharm.*, 273 (1935), 156. (L. L. M.)

Indole Series—Studies in. Complete Synthesis of Physostigmine (Eserine). Preparation of *d,l*-1,3-dimethyl-5-ethoxyoxindolylethyl-methylamine from tryptophan is given. This amine was successfully separated into its optical antipodes by means of *d*-camphorsulphonic acid and *d*-tartaric acid. The *l* modification of this amine, when reduced with sodium and alcohol, gave a product identical with natural *l*-eserethole. This compound was heated to 70–77° with anhydrous aluminum chloride, resulting in the formation of *l*-eseroline, which can be converted to eserine by the method of Polonovski and Nitzberg.—PERCY L. JULIAN and JOSEF PIKL. *J. Am. Chem. Soc.*, 57 (1935), 755. (E. B. S.)

Morphine—Solubility of, in Different Solvents. The following solvents were chosen: water at 20°; solutions of definite hydrogen-ion concentration; solutions buffered with phosphate, with borate and hydrochloric acid, with borate and sodium hydroxide; mixtures of water and ethyl or methyl alcohols; mixtures of chloroform with isopropyl or ethyl alcohols. The mean solubility of water-free base at 20° by 14–20 days' agitation was 0.149 Gm. per 1000 Gm. of water. The base has its lowest solubility at a p_H of 8.9. Composition-solubility graphs are given for the two component solvents.—H. BAGGESGAARD-RASMUSSEN and F. REIMERS. *Arch. Pharm.*, 273 (1935), 129. (L. L. M.)

Nicotyrine—Presence of, in Tobacco. On steam distillation of 500 Gm. finely ground Brazil tobacco in 3 liters of water containing 500 Gm. of potassium hydroxide, a distillate of a strong yellow color is first obtained. This is made distinctly acid with hydrochloric acid and extracted with ether. The extract is washed with water acidified with hydrochloric acid. To the wash water, enough picric acid is added to form a crystalline precipitate, melting at 164° after repeated recrystallization from boiling water. A hydrochloric acid solution gives, on boiling with ferric chloride, an orange-red color; the crystals give a violet color with a solution of *p*-dimethylaminobenzaldehyde in phosphoric acid. This indicates that it is nicotyrine. It is not certain whether it preëxists in the plant or is produced in the fermentation process. If this is purely a fermentation product, it is derived from nicotine because the Brazil tobacco is free from reducing substances.—A. WENUSCH. *Biochem. Z.*, 275 (1935), 361; through *Chem. Abstracts*, 29 (1935), 2662.

Quinine Tannate—Behavior of Various Acids toward. Cinchona bark contains its alkaloids in the form of insoluble tannates. The solubility of quinine tannate was studied in different acids at several concentrations. Hydrochloric and nitric acids dissolve about 1 molecule of quinine per 2 molecules of acid. The solvent power of sulphuric, acetic, oxalic and tannic acids is much lower; but this action does not seem to be in any way related to the p_H. These phenomena are explained by the formation of soluble complexes of quinine tannate with the acid, the solubilities of the various complexes varying considerably. The complexes can react in solution with suitable ions to give, by double decomposition, less soluble complexes; hence, the solvent power of hydrochloric acid is lowered in presence of certain salts such as potassium sulphate. The solubility of the tannate increases with the temperature.—E. Q. ANSINGH. *Aan P. van der Wielen* (1934), 148–158; through *Chimie & Industrie*, 33 (1935), 678. (A. P.-C.)

Essential Oils and Related Products

Aromatics and Volatile Oils—Advances in the Field of, in 1933 Ketones. A review with an extended bibliography.—S. SABETAY. *Riechstoff-Ind.*, 10 (1935), 34–36. (H. M. B.)

Cymbopogon Flexuosus Stapf and Cymbopogon Martini Stapf, Var. Motia, Oils. *C. flexuosus* grown at Palermo from seed obtained from India yielded in two cuttings (end of July and of Sept.) 124 cwt. of leaves and 89.5 Kg. of oil per Ha. The oil had the following analytical characteristics: d_{20} 0.8893, α (10-cm. tube) −3.2°, n_{20} 1.485, citral (by bisulphite) 80%, citral (by sulphite) 74%, soluble in 1 volume of 80% alcohol and in 2 volumes of 70% alcohol. Leaves,

stalks and inflorescences of *C. martini* var. *motia* grown at Palermo from seed obtained from Bombay were distilled separately and gave the following yields of insoluble and of soluble oils, respectively: leaves 0.04, 0.07%; stalks 0.0, 0.03%; blossoms 0.347, 0.128%. The insoluble leaf oil, soluble leaf oil and soluble stalk oil had the following analytical characteristics: d_{16} 0.9201, 0.9134, 0.901; α 42°, 17.1°, 29°; n_{20} 1.4175, 1.3685, 1.3683; acid no. 0.001, 0.009, 0.009; ester no. 16.80, 7.47, 18.67; ester no. after acetylation 119.17, 104.53, 179.20; total alcohols 36.55, 31.59, 57.67%; combined alcohols 4.68, 2.08, 5.20%; free alcohols (as geraniol) 31.87 29.51, 52.09%; soluble in 11, 4, 10 volumes of 70% alcohol, and in 2, 2, 2 volumes of 80% alcohol.—F. BRUNO. *Boll. studi inform. R. Giardino Col. Palermo*, 23 (1934); through *Parfums de France*, 13 (1934), 33–42 (in French and English). (A. P.-C.)

Essential Oil Industry in Seychelles. An account of the present position of the industry and the possibility of improvement.—W. H. HAINES. *Bull. Imp. Inst.*, 32 (1934), 545–559. (A. P.-C.)

Essential Oils—Exports of, from Sicily 1934. A table containing a list of exports of essential oils during 1934 from Sicily, per steamer and rail, in lbs. Avoirdupois net is given. The table contains the chief importers of lemon, sweet orange, bitter orange, bergamot, mandarin and sundry oils. Compared with the figures for 1933, the exports last year declined by 12,000 lbs., but they were over 400,000 lbs. above the shipments in 1932. Great Britain occupies the first place among the importers of Sicilian essential oils. The United States is second.—*Perf. and Ess. Oil Rec.*, 26 (1935), 75. (A. C. DeD.)

Essential Oils from Seychelles. Two specimens of oil of *Cymbopogon nardus* (L.) Rendle (citronella oil) had analytical characteristics similar to those of Ceylon oil of citronella. A sample of oil of *C. citratus* (DC.) Stapf (lemongrass oil) was similar to commercial Cochin lemongrass oil, but had a citral content (86.5% total aldehydes by volume, by the bisulphite method) above the average for the commercial Cochin oil. A sample of oil of *C. flexuosus* (Nees) W. Watson? (or possibly a hybrid between *C. flexuosus* and *C. nardus*) and a sample of oil of *C. confertiflorus* (Steud.) Stapf possessed the characteristics of low grade citronella oils; a sample of oil of *C. flexuosus* (Nees) W. Watson had the characters of a low-grade lemongrass oil. Oil of palmarosa distilled experimentally in the Seychelles, had normal characteristics and was of good quality; the total alcohols and ester contents were slightly higher and the free alcohols lower than usual in the commercial Indian oil. Of two samples of gingergrass oil examined, one was of normal characteristics and the other had characteristics suggesting it had been derived from a mixture of gingergrass and of palmarosa grass. Samples of oil distilled from fresh leaves, from dried leaves, from hairy or pilose leaves, and from smooth or glabrous leaves of *Eucalyptus citriodora* had normal characteristics and contained high citronellal contents (78.7 to 82.6%). Oil distilled from the plant known locally as "Toc Maria" and identified as *Ocimum basilicum* Linn. (?) had constants resembling those of commercial Réunion sweet basil oil rather than those of the French, German, Algerian and Spanish oils. Oil of *O. viride* Willd. had constants falling within the range of previously examined oils from the same source, and the phenols (48%) consisted almost entirely of thymol; the oil would therefore be suitable for the production of thymol. Oil of *O. americanum* Mill. (= *O. canum* Sims) had the following characteristics: $d_{15.5}^{15.5}$ 0.9181, α_D^{20} −3.63°, n_D^{20} 1.4878, acid value 12.4, aldehydes and/or ketones (*via* bisulphite) 71% by volume, aldehydes as citral (*via* hydroxylamine) 62.3% by weight, acids and phenols (by absorption with KOH) 8%, soluble with slight opalescence in 2.2 volumes of 70% alcohol at 15.5°. The aldehydes consist mostly of citral, suggesting the existence of a third botanical species of this plant (cf. Glichitch and Naves, *Chimie & Industrie* Special No., 1029–1033 (June 1933)). Oil of *O. sanctum* Linn. had $d_{16.5}^{15.5}$ 0.9840, α_D^{20} −29.37°, n_D^{20} 1.5210, phenols (by absorption) 33%. The phenols consisted almost entirely of eugenol, contrary to the oils examined by Brooks, in which estragol (methylchavicole) was the chief constituent. Oil obtained in 0.665% yield from an unindentified species of *Ocimum* had the following analytical characteristics: $d_{15.5}^{15.5}$ 0.9385, α_D^{24} −9.93°, n_D^{20} 1.4871, acid value 6.5, ester value 1.2, ester value after acetylation 175.7, equivalent to "total acetylizable constituents" (as $C_{10}H_{18}O$) 55.6%, apparent cineole (*via* *o*-cresol) 17.7%, soluble in 1.8 volumes of 70% alcohol at 15.5°. The odor resembled that of spike lavender oil, but the oil had a considerably higher alcohol content than that of spike lavender. A sample of cinnamon root bark oil obtained in 1% yield contained only 36% cinnamic aldehyde and was much below B. P. standard in all respects. A sample of patchouli oil, distilled from plants which had been introduced into

Seychelles from Ceylon as representing the typical Singapore variety, had characteristics differing considerably from those of Singapore patchouli oil (derived from *Pogostemon patchouli* Pellet) but generally similar to those of Java oil (said to be distilled from *P. heyneanus* Benth., a species indigenous to India).—*Bull. Imp. Inst.*, 32 (1934), 511–539. (A. P.-C.)

Essential Oils from Seychelles. A Survey of the Industry and Suggested Improvements. A short discussion of each of the following oils: citronella, lemongrass, palmarosa, *Eucalyptus citriodora*, ocimum, cinnamon root-bark, patchouli oils is given.—*Perf. and Ess. Oil Rec.*, 26 (1935), 78. (A. C. DeD.)

Geranium Oil—Characteristics of 1934 Algerian. The limits of the analytical constants of 160 samples of the 1934 Algerian harvest of geranium oil were in substantial agreement with those reported for the 1932 and 1933 harvest.—B. ANGLA. *Ann. Fals.*, 28 (1935), 97–99. (A. P.-C.)

Mushrooms—Essential Oil from. Investigations were made with fungi collected in the virgin forests of Brazil. The chemical constitution of well-developed individuals of the genera Clitocybe, Cortinarius, Hydnum, Hygrophorus, Hypholoma, Lactarius, Pleurotus, Polyporus and Psalliota is listed. Investigation has shown that the greater part of the essential oil in fungi exists in glucosidal combination in the stems and cap, while another portion, rather small in quantity, is combined in the wax-like cover of the outside surface of the cap. For small-scale laboratory purposes the glucosides of the species of fungi referred to were obtained by careful evaporation of the aqueous extracts under reduced pressure; the process resulting in viscid residues in most cases of extremely bitter taste, and ready solubility in alcohol. Hydrolysis was attempted with emulsin, invertase and diastase but without any effect whatever. It became evident that only specific enzymes of the same type, if not the identical kind, were able to produce hydrolysis. The enzymatic ferments may be extracted from the fungi by means of glycerin and precipitated from this solution by benzene. Irrigation with water, extended over a period of some days, may conveniently precede the extraction with glycerin; although by this process a certain proportion of enzyme is lost, the resulting substance is apparently more active; whether it is of a greater purity cannot be established. Typical results obtained from the treatment of fungi such as have been mentioned are given in a table.—FRED W. FRIESE. *Perf. and Ess. Oil Rec.*, 26 (1935), 91. (A. C. DeD.)

Umbellulone—Some Pharmacological and Bactericidal Properties of. Report is made of an investigation of the oil of the California laurel and its ketone. Preliminary investigation included a study of the effect of umbellulone on blood *in vitro* and *in vivo*, its effect upon the intact heart of the frog and upon the atropinized frog heart, effect of physostigmine on umbellulonized frog heart and its effect on unanesthetized animals. In testing the fungicidal action of the oil and the umbellulone the organisms used were *Monilio tropicalis* and *Trychophyton interdigetale*. For germicidal action the organisms used were *E. typhi* and *Staphylococcus albus* and the wet filter-paper method and the Agar-Plate Method of the Food and Drug Administration were tried. Several experiments on segments of isolated intestine were carried out, using cats' and rabbits' intestines. Effect of the ketone on the respiration and blood pressure was tried on dogs. Summarizing results, it was found that umbellulone in blood produced methemoglobin *in vitro* and *in vivo* and decided hemolysis of human, guinea-pig and horse blood. Injected intraperitoneally into a guinea pig it caused asphyxiation and death. Inhalation by guinea pig, irritated mucous membrane of eyes and nose and caused irregular respiration but no failure. In dilutions of 1:50 it killed *Monilia tropicalis* and *Trychophyton interdigetale* in 1-, 30- and 60-minute contacts. In presence of blood, peptone and gelatin there was a slight loss in fungicidal power. It killed *E. typhi* and *Staph. albus* in dilutions up to 1:500 in 15 minutes' contact. Phenol coefficient was estimated as 6.25. It decreased frequency of the frog heart; caused loss of tonus, decreased ventricle contraction; stoppage in diastole. Injection of atropine, caffeine or adrenaline had no effect. It probably acts on same nerves and fibres as atropine. Intravenous injection caused lowering of blood pressure and failure of respiration in dogs. These results with post-mortem examination indicate that umbellulone probably acts as a depressant; produces rapid methemoglobin; apparently blocks pulmonary circulation; causes vaso-dilation of heart and large vessels. The minimal lethal dose in dogs is about 0.178 cc. per Kg. of body weight, death being due to failure of respiration and in a few minutes stoppage of the heart.—MILES E. DRAKE and ERNST T. STUHR. *J. Am. Pharm. Assoc.*, 24 (1934), 196. (Z. M. C.)