PHARMACEUTICAL ABSTRACTS

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ABSTRACTORS

SPECIALTIES (*Continued*)

Kitano is an ointment containing ammon. ichthyol 2, zinc hydroxycarb. 6; *adeps lanæ* 6; zinc oxide 24; and *lin. calcis* 66. It is suggested as a soothing and healing ointment for all forms of skin irritation, including eczema, psoriasis, acne, burns and chilblains. It can be applied as an antiseptic dressing to wounds, and to piles. Kitano ointment is supplied in tubes, and in jars.—*Quart. J. Pharm. Pharmacol.*, 8 (1935), 767. (S. W. G.)

Läsiolan Wund und Heilsalbe (Kali-Chemie A. G.; Berlin N 47) combines the effect of thiocyanates on suppurating, necrotic tissues with the digestive action of trypsin on proteins and the influence of calcium salts against inflammation. —ROJAHN. *Arch. Pharm.*, 274 (1936), 206.

Magnocarbon tablets contain medicinal charcoal 4 grains, magnesium peroxide 4 grains, and extract of belladonna $^1/_{13}$ grain. They are recommended for the treatment of hyperacidity, enteritis and flatulence. The highly active charcoal used is said to have at least fifty times the absorbent capacity of ordinary charcoal. Magnocarbon is issued in bottles of 50 and 100 tablets. —*Quart. J. Pharm. Pharmacol.*, 8 (1935), 767. (S. W. G.)

Neo-Hepatrat (Nordmark-Werke, Hamburg) is a liver-extract, containing vitamin C, for parenteral or oral administration.

Neospiran (Chem. Fabrik Landshoff and Meyer, Berlin-Grunau) is ophthalic-acid-bis-diethylamide. It is recommended for unconsiousness, collapse, coma, and respiratory paralysis following accidents, poisoning, narcosis and sun-strokes.—ROJAHN. *Arch. Pharm.*, 274 (1936), 196.

New Remedies. The following new remedies are briefly discussed: Cyclopropane, an anesthetic gas which produces a degree of relaxation equal to that of ether; Desitin Wound Powder, which contains 10% *extract. ex oleo jecoris aselli chloratum* and 90% zinc oxid.; Navitol, an oil solution containing per Gm. not less than 50,000 vitamin A and 10,000 vitamin D units (U. S. P. X—1934 Rev.); Transcutan, a concentrated solution of mineral salts obtained from the natural springs of Kreuznach.—ANON. *Pharm. J.*, 136 (1936), 32. (W. B. B.)

Opuntina (Arnalien-Apotheke, Dresden) is an expectorant, galenical remedy prepared from the sap of species of *Opuntia* indigenous to Central America, and mucilaginous substances from *Bassorin*.—ROJAHN. *Arch. Pharm.*, 274 (1936), 198.

Orgakliman, Rejuvan Ovtotal, Rejuven Testitotal and Neotestital are additional preparations for the treatment of limited function of the sex glands.—ROJAHN. *Arch. Pharm.*, 274 (1936), 202.

Orstroglandol (F. Hoffmann-La Roche & Co., Berlin) is a preparation containing the female sexual hormone (α-follicular hormone), in crystalline form and in biologically standardized amounts. The tablets are recommended for use in the treatment of dysmenorrhea, amenorrhea, climatic complaints and ovarian disorders. -ROJAHN. *Arch. Pharm.*, 274 (1936), 202.

Panlittol tablets contain therapeutically active extracts from the pancreas and the thyroid in dosage of $2^1/_2$ grains and $^1/_{10}$ grain, respectively. It is recommended for the treatment of arterial hypertension, and in disorders such as Raynaud's disease in which there is peripheral vasomotor spasm. One tablet should be taken three times daily before meals. Panlittol tablets are supplied in bottles of 24, 100, 500 and 1,000.—*Quart. J. Pharm. Pharmacol.*, 8 (1935), 767. (S. W. G.)

Paraxin (C. J. Boehringer u. Söhne, Mannheimwaldhof) is used to reduce high blood pressure and consists of theobromine-calcium and follicular hormone.—ROJAHN. *Arch. Pharm.*, 274 (1936), 196.

Rastalin (Chemische Fabrik Beringer in Oranienburg bei Berlin) is a cold remedy consisting of methylenediphosphoric acid-hexamethylene tetramine (Uronovan), lactyl-phenetidine and quinine. —ROJAHN. *Arch. Pharm.*, 274 (1936), 199.

Reducto (Sicco A. G., Berlin-Johannisthal). Tablets, containing 0.025 Gm. quinine-hydroiodide, corresponding to 0.01 Gm. iodine, for the treatment of angina, grippe and colds, and also disorders of the heart and thyroid glands.—ROJAHN. *Arch. Pharm.*, 274 (1936), 198.

Rheumitren (Promonta, Hamburg) is an antirheumatic said to contain iodine and sulphur in lipoid-soluble form in addition to mone-, di- and triethanol ammonium salicylates and free benzoic and salicylic acids.— ROJAHN. *Arch. Pharm.*, 274 (1936), 200.

Sango-stop (Turon Ges. für pharm. Produkte, Frankfurt a. M.) is a hemostatic consisting of apple pectin to which has been added a small amount of calcium chloride.—C. A. ROJAHN. *Arch. Pharm.*, 274 (1936), 213. (L. L. M.)

Sanostol (Promonta-werke, Homburg) is a vitamin A, B, C, D product, prepared from halibut liver oil, orange juice and barley germ.—ROJAHN. *Arch. Pharm.*, 274 (1936), 208.

Scottin (Scott & Browne, Frankfurt a. M.) is a cod liver oil concentrate, in the form of drops and pills. One pill is equivalent in vitamin content to a teaspoonful of cod liver oil. ROJAHN. *Arch. Pharm.*, 274 (1936), 208.

Selvoral (I. G.) is the calcium salt of gluco-hexit-citric acid, C:H:OH.COO.CH:(CHOH):-CHOH.COOCa, containing 8.5% calcium. Its use is indicated in calcium therapy.—ROJAHN. *Arch. Pharm.*, 274 (1936), 208.

Solvochin Calcium is a quinine calcium preparation for the painless injection of large doses of quinine and calcium. Each 5-cc. ampul contains 250 mg. of quinine (calculated as hydrochloride) and 72 mg. of calcium (calculated as CaO = 100.75 mg.) in the form of calcium glutaminate. It also contains phenazone to increase its analgesic action; and the hydrogen-ion concentration has been adjusted to that of the tissues, p_H 7.2. Solvochin calcium solution is sterile, and may be diluted in any proportion with water without becoming cloudy. It is suggested for the treatment of all forms of pneumonia. The contents of 1 ampul should be injected twice daily intramuscularly. Solvochin calcium is supplied in boxes of 3 and 12 ampuls, and special packing for hospitals.—*Quart. J. Pharm. Pharmacol.*, 8 (1935), 768. (S. W. G.)

Strophadenyl (G. Henning, Berlin-Tempelhof) is the glycosid strophanthin conjugated with adenosine and phosphoric acid, to be used in cardiac insufficiency. ROJAHN. *Arch. Pharm.*, 274 (1936), 196.

Tamporagan-Kugeln Regenerative and with Radium (A. G.) contains radium bromide and 10% of a lecithin-cholesterol-vitamin mixture in a glycero-gelatin base. It is claimed to stimulate the vaginal epithelium.—ROJAHN. *Arch. Pharm.*, 274 (1936), 201.

Tannic Acid Jelly contains 5% of tannic acid and 0.1% of acriflavine, as an antiseptic, in a water-soluble jelly. It may be applied to 1st, 2nd or 3rd degree burns immediately, and can be applied safely to facial burns without endangering the eyes. The jelly is applied and allowed to dry, and no dressings are necessary except where the burn comes in contact with the clothes. After several applications a firm black coagulum is formed, covering the burnt surface. Healing takes from ten to fourteen days, when the coagulum separates, leaving a normal clean skin. Tannic acid jelly is supplied in 1-oz. and 4-oz. tubes.—*Quart. J. Pharm. Pharmacol.*, 8 (1935), 768. (S. W. G.)

Tectodyn (Ifah, Hamburg-Uhlenhorst) is an extract of young, sound, growing skin for intramuscular, intravenous or internal administration in scrophulosis, furunculosis, bronchial asthma, hay fever and poorly healing wounds.—ROJAHN. *Arch. Pharm.*, 274 (1936), 206.

Valotrat (Nordmarkwerke, Hamburg) is the diethylamide of α-ethylpropionic acid. ROJAHN. *Arch. Pharm.*, 274 (1936), 202.

Ventriculin is desiccated gastric tissue, the hæmatopoietic activity of which is controlled by clinical tests on suitable cases of pernicious anæmia. In primary anæmia the contents of 2 or 3 vials, each containing 10 Gm. of extract, should be given daily, the dose varying with the severity of the symptoms. Ventriculin has an agreeable flavor, and is free from unpleasant odor. Ventriculin is also prepared in combination with $12^1/_2$% of ferric citrate for the treatment of secondary anæmia. Ventriculin is supplied in packages containing 12 vials of 10 Gm. and in bottles of 100 Gm.—*Quart. J. Pharm. Pharmacol.*, 8 (1935), 768. (S. W. G.)

Vitatonin (Curta & Co., Berlin-Britz) is a vitamin B product, recommended to promote convalescence from operative infection or from mental or bodily strains.—ROJAHN. *Arch. Pharm.*, 274 (1936), 209.

BACTERIOLOGY

Chlorine Compounds—Evaluation of Germicidal Potency of. II. Chloramine-T Products. Besides bacteriological methods of evaluation the following chemical method was useful. This is based on the fact that p_H, plays an important rôle in determining the germicidal potency of both hypochlorite and chloramine-T compounds. A definite quantity of powdered phenolphthalein or 1% alcoholic solution when added to chloramine-T solutions causes various color changes ranging from colorless to magenta. Of the six chloramine-T preparations tested, chloramine-T, U. S. P., and Sterichlor showed the highest germicidal efficiency. The 5 commercial solutions became more alkaline on dilution with distilled water of slightly acid reaction. This peculiar reaction may be

due to the presence of bicarbonates. Within the range of 2,000 to 25 p. p. m. available chlorine these products decline in germicidal activity upon dilution. The U. S. P. dichloramine-T became more acid upon dilution and gave a p_H curve similar to hypochlorites. The germicidal potency does not decrease uniformly upon dilution. The assumed concentrations of HOCl in solutions of dichloramine-T are in substantial agreement with the fluctuating germicidal potency. Twenty references.—C. K. JOHNS. *Sci. Agr.*, 15 (1934), 218; through *Chemical Abstracts*, 29 (1935), 2302.

Disinfecting Soaps. Common soaps as well as most medicinal soaps are without microbicidal power. Afridol soap showed some value. A 5% formol soap destroyed coli bacilli within 5 minutes but not bacteria of higher resistance.—ELENA STEPANCOVSKY and MARIA E. RODRIGUEZ. *Rev. farm. (Buenos Aires)*, 77 (1935), 460. (A. E. M.)

Measles and Convalescent Serum. An epidemic is described with an attack rate of 100%. Attenuation was obtained by 5 cc. of convalescent serum in twenty-one cases, and an entire absence of cough and toxemia resulted. Appendicitis and albuminuria occurred as complications in the non-protected cases.—G. W. ELKINGTON. *Brit. Med. J.*, 3919 (1936), 308. (W. H. H.)

Oil of Bergamot—Disinfecting Action of. A study of the disinfecting power of solutions and aqueous emulsions of oil of bergamot stabilized by means of a small quantity of sodium carbonate. The experiments were carried out on the destruction of *B. coli communis* and showed that the disinfecting action of the emulsions was due exclusively to the oil of bergamot and not to the sodium carbonate which, within the range of concentrations used (1 to 3%) acted only as emulsifier. Only when the amount of sodium carbonate is insufficient for complete emulsification of the oil is there a decrease in bactericidal action, which is a function of the degree of emulsification. Aqueous emulsions of linalyl acetate have a considerably greater bactericidal action than those of oil of bergamot. The phenol coefficients of linalyl acetate and oil of bergamot emulsions are 9.44 and 2.75, respectively; as the oil contains about 40% linalyl acetate, it may be concluded that the antiseptic power of the oil is due mainly to its linalyl acetate content.—V. MARINO. *Ann. Igiene*, 45 (1935), 158–176; through *Chimie & Industrie*, 35 (1936), 133. (A. P.-C.)

Staphylococcic Toxin—New Culture Medium for the Production of. Using a medium composed of spleen and veal bouillon, which is high in nucleoproteins and amines, and 12 Gm. of sodium tartrate per liter, it was found possible to grow staphylococcic cultures yielding a toxin possessing a relatively high toxic and antigen power. This medium is cheaply and readily prepared. —GASTON RAMON, ALBERT BERTHELOT and GERMAINE AMOUREUX. *Compt. rend.*, 202 (1936), 515. (G. W. H.)

Sterilization Technique. Tables are given in which data is tabulated on the following: (1) Aerial Counts. (2) Aseptic Capping; (3) Tests for Sterility. Little importance is attached to hand sterilization with disinfectants as it is not practical. The theory underlying the process of tyndallization is that 80° C. is sufficient to kill off all non-sporing organisms, but during the intervals the spores develop into the vegetative form and are killed in the subsequent heating. However, this process has been shown to be unreliable, the fallacy being that because of the absence of nutritive material, spores do not develop, and at the end of the process are still alive. Thus if the infection is of a sporing type, the process will fail, but if of a non-sporing type (such as skin cocci), only one heating is necessary. It has been found that solutions containing *B. mycoides* were non-sterile after submission to the full process, while those containing *Sarcinæ* were sterile after the first heating. Apparatus adopted for effective sterilization is shown. It is a modified Seitz filter of the positive pressure type, but with a buffer flask in between the valve and filter. A small sintered glass filter is placed in the system to take out the fibre which a Seitz pad generally yields. The filtrate drops into a reservoir, which ends either with a glass tube for vaccine bottles, or a hypodermic needle for ampuls. The protection against ærial infection is a bell cover. —H. BERRY. *Pharm. J.*, 136 (1936), 61, 96. (W. B. B.)

Typhoid Bacilli—Survival of, in Milk. The authors have observations on the length of survival of typhoid, paratyphoid and *Ærtryke* bacilli in raw and sterilized milk. Small standardized inoculations of the milk were prepared from agar culture suspensions, and the milk was examined at intervals for specific organisms. As was to be expected, the results were determined to a considerable extent by the degree of acidity of the milk and the temperature at which it was kept. In sterilized milk with an acidity of 17° to 20°, incubated at 37° C., typhoid bacilli died out in twenty-four hours, and paratyphoid and *Ærtryke* bacilli in one to two weeks. At room temperature, however, all three organisms survived for several weeks, even in milk with 33° of acidity.

In one experiment with raw milk kept at 20° C. the organisms perished in twelve to thirteen days; the milk had by this time reached 31° to 38° of acidity. Other experiments with raw milk showed that death often occurred sooner and at lower degrees of acidity. The difference in the results with raw and sterilized milk suggested that other organisms in raw milk had an antagonistic effect upon the survival of the enteric group of bacilli. Experiments made to test this showed that the presence of *B. coli* in sterilized milk kept at 20° C. led to the death of typhoid bacilli in twenty-four hours, and of paratyphoid and *Ærtryke* bacilli in six to seven days. The mode of action of the coliform bacilli was not investigated. It would appear, however, that typhoid, paratyphoid and food-poisoning bacilli survive longer in clean than in dirty milk, and are apt to give rise to infection in human beings consuming it in the raw condition.—H. KLIEWE and E. ELDRACHER. *Zentralbl. f. Bakt.* (Nov. 15, 1935), 269; through *Brit. Med. J.*, 3916 (1936), 194D. (W. H. H.)

Vermin—Apparatus and Process for Killing Human and Animal. An absorbent pad is placed on the part of the individual or animal to be treated, a highly volatile liquid, harmless to the skin and developing heavy vapors that are toxic to vermin (suitably, methyl formate), is applied to the pad, and the latter is covered with a flexible gas-tight garment.—NORMAN D. RIKER, assignor to LETHELIN PRODUCTS CO., INC. U. S. pat. 2,033,357, March 10, 1936. (A. P.-C.)

BOTANY

Beans, Jumping. Jumping beans are the seeds of such tropical American euphorbiaceous plants as Sebastiana and Croton, which contain the larva of a moth, *e. g.*, *Carpocapsa saltitans* or *Graphtolitha sebastianæ*. The peculiar jumping motions of the bean are produced by movements of the larva, which, when full grown, drags back the head and fore-body, the thoracic parts swelling and the thoracic legs being withdrawn. The contracted parts being suddenly released, the larva vigorously taps the wall of the cell with its legs, causing movement of the seed, a movement which may be produced by warming the seed.—ANON. *Pharm. J.*, 136 (1936), 81. (W. B. B.)

Gambir—Malayan. When grown as a main crop, Malayan gambir is at its best eight years after planting; when grown as a "catch" crop with rubber the gambir is usually abandoned about five years after planting (*i. e.*, when the trees begin to yield too much shade) as direct sunlight is essential to good crops. The shrub grows best on damp, virgin jungle soil, varying from sandy to medium loam, and it is invariably grown below 500 feet as experience has shown that when the shrub was grown above that height the yield decreased, and eventually the leaves became useless for the preparation of gambir.—T. ROEBUCK. *Pharm. J.*, 136 (1936), 68.

(W. B. B.)

CHEMISTRY

INORGANIC

Silicate of Magnesium. Certain hydrated silicates of magnesium possess strong antacid properties. The power of neutralizing weak acids attains its maximum in the trisilicates. The initial phases of the reaction are quick but several hours are required for the completion. Within the clinical range of acidities neutralization proceeds more quickly at high acidities than at low ones. Synthetic hydrated trisilicate of magnesium exhibits powerful absorbent qualities. At the saturation point for methylene blue it is seventeen times as active as colloidal kaolin (room temperature), and at body temperature the disparity is even greater. Its immediate adsorptive activity is considerable, but several days are required for saturation. The range of the absorptive affinities covers a great variety of substances, including acid and basic dyes, alkaloids, bacterial toxins, putrefactive amines and food poisons. Adsorption is selective, and a decided preferential affinity was noted for basic dyes—both crystalloid and colloid. It did not absorb the poison of *Amanita phalloides* ("mushroom" poison), but readily removed muscarine ("mushroom" poison) and Müllers mussel poison from aqueous solution.—N. MUTCH. *Brit. Med. J.*, 3916 (1936), 143.

(W. H. H.)

Sodium Sulphite—A Further Note on the Stability of. A report is made on some samples of sulphite assayed some years ago. No sample was less than twenty-one years old. The U. S. P. IX method was used both times. The conclusion is reached that a dried sodium sulphite will keep for three years, perhaps for five or six; that crystalline sulphite loses sulphite rapidly; that a paper carton or a tin can is as good a container as a glass bottle; that a photographic quality, a U. S. P.

quality or an unbranded article is likely to be as good as an expensive grade. A. H. CLARK and SOLOMON GERSHON. *J. Am. Pharm. Assoc.*, 25 (1936), 96. (Z. M. C.)

ORGANIC

Alkaloids

Apocupreine—Purification of. Crude apocupreine is purified by dissolving in alcohol, precipitating the impurities by addition of ether and decanting the supernatant solution. BENJAMIN L. SOUTHER, ALLISON PARK, COURTLAND L. BUTLER and LEONARD H. CRETCHER, assignors to MELLON INSTITUTE OF INDUSTRIAL RESEARCH. U. S. pat. 2,033,555, March 10, 1936. (A. P.-C.)

Apocupreine and Apocupreine Derivatives. Purified alpha-apocupreine having a specific optical rotation of −215°, and its salts. LEONARD H. CRETCHER, COURTLAND L. BUTLER and ALICE G. RENFREW, assignors to MELLON INSTITUTE OF INDUSTRIAL RESEARCH. U. S. pat. 2,033,515, March 10, 1936. (A. P.-C.)

Cinchona Alkaloid Derivative. The product of the hydroxyethylation of a cinchona alkaloid containing a phenolic hydroxyl group by substitution in the phenolic hydroxyl group.—LEONARD H. CRETCHER, WILLIAM L. NELSON, COURTLAND L. BUTLER and ALICE G. RENFREW, assignors to MELLON INSTITUTE OF INDUSTRIAL RESEARCH. U. S. pat. 2,033,514, March 10, 1936. (A. P.-C.)

Han-Fang-Chi—Alkaloids of. The Chinese drug han-fang-chi contains 2.3% of alkaloids. Eleven kilograms were extracted with alcohol (95%), the concentrated extract was dissolved in 1% hydrochloric acid and the filtered solution treated with 1% sodium hydroxide to precipitate the alkaloid, which was crystallized from acetone. It had m. p., 217–218° C. and $[\alpha]_D^{26°\ C.}$ 252.4° in chloroform. The analysis corresponded with tetrandrine, $C_{38}H_{42}O_6N_2$, isolated by Kondo and Yano from the Japanese plant *Stephania tetrandra*. The substance contains four methoxy- and two methylamino-groups. The salts are less easy to crystallize than the free alkaloid, but the hydrochloride, hydrobromide, nitrate, oxalate, picrate and flavianate are described.—K. K. CHEN and A. L. CHEN. *J. Biol. Chem.*, 109 (1935), 681; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 688. (S. W. G.)

Hydroxyethylapoquinine—Method of Production. A new compound, hydroxyethylapoquinine, in which the hydroxyethyl group is attached as a phenol ether.—COURTLAND L. BUTLER and LEONARD H. CRETCHER, assignors to MELLON INSTITUTE OF INDUSTRIAL RESEARCH. U. S. pat. 2,033,683, March 10, 1936. (A. P.-C.)

Essential Oils and Related Products

Aolanthus Gamwelliæ Oil from Northern Rhodesia. Five samples of oil distilled from the flowers (gathered during the seasons 1930 to 1934) of "Nindi" had the following characteristics: specific gravity at 15.5° C. 0.8901 to 0.8915, optical rotation −0.43° to −0.66°, refractive index at 20° C. 1.4730 to 1.4750, acid value 0.9 to 3.9, ester value (determined on the aldehyde-free oil) 27.0 to 39.8, equivalent to 9.1 to 13.3% $C_{10}H_{17}OCO_2CH_3$ in the original oil, ester value after acetylation (determined on the aldehyde-free oil) 251.0 to 270.4, equivalent to 79.5 to 90.0% "total alcohols" as $C_{10}H_{18}O$, aldehydes and/or ketones (by bisulphite) 2 to 7%, soluble in 1 to 1.6 volumes of 70% alcohol at 15.5° C. The oil has the following composition: alcohols (prineipally geraniol) 66.4 to 76.3, esters (as geranyl acetate) 9.1 to 13.3, aldehydes and ketones (probably largely citral) 2 to 7, residue 8.8% or 16.7%. Commercially the oil is inferior to geranium oil. Distillation of the air-dried leaves of *A. gamwelliæ* yielded 2.7% of essential oil having an odor less rose-like and distinctly more lemon-like than the flower oil.—ANON. *Bull. Imp. Inst.*, 33 (1935), 449–451. (A. P.-C.)

Aromatics—New Procedures in the Chemistry of. V. A continuation of series of articles dealing with new aromatics with particular emphasis on acids. A. LEWINSON. *Riechstoff-Ind. Kosmetik*, 11 (1936), 7–10. (H. M. B.)

Camphor and Camphor Oil from Mauritius. Previous cultural experiments with camphor trees in Mauritius have had unsatisfactory results. Further trials have been made with material grown from Formosan seeds of trees of known camphor-producing value. The resulting crop of twigs and leaves grown in the Botanical Gardens at Curepipe at an altitude of 1,850 feet, yielded

on distillation 1.4% of crude solid camphor as well as pale yellow-greenish oil. Both these were sent to the Imperial Institute for examination. The camphor consisted of a mass of small crystals from which 13% of oil and water was separated on pressing. The oil on cooling to 0° C. for several hours separated in all 10% of the solid camphor. After removal of this, the residual oil had Sp. Gr. at 15.5°/15.5° C. 0.9189; $\alpha_D^{16°\ C.}$ 33.22°· $n_D^{20°\ C.}$ 1.4754. The oils obtained from the previous cultural experiments were levorotatory. On fractional distillation of the present oil, and cooling the appropriate fraction, a further 26% of camphor, representing a total yield of 36% of the original oil, was obtained. The light fraction obtained from the camphor-freed oil having Sp. Gr. at 15.5°/15.5° C. 0.8617 was found to contain 2.0% of cineole by the orthocresol method. No appreciable amount of safrole was found in the higher boiling fractions.—*Bull. Imp. Inst., Lond.*, 33 (1935), 142; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 703. (S. W. G.)

Chamomile and Peppermint of 1935. Thirty samples of *Chamomile vulgaris* from ten localities yielded 0.47–1.16% volatile oil ranging from blue to bright blue in color; all but 3 samples of oil had normal or almost normal odors. Twenty-six samples of leaves of *Mentha piperita* from two localities yielded 0.70–1.25% oil with normal odor; all samples of leaves but six were normal with respect to stem content. Will's method for the determination of volatile oils in drugs (*Apoth.-Ztg.*, No. 15 (1932), 216) was changed as follows: "The water in which the oil floats after distillation is separated carefully by suitable inclination of the scale portion of the apparatus. Close the apparatus with a rubber stopper at the lower end, add 10 cc. ether and place the ether-oil-water mixture in a 100-cc. flask. Rinse the scale portion with 2 x 5-cc. portions of ether and add these washings to the mixture in the flask; add anhydrous sodium sulphate and allow to stand for 1 hour, filter through a smooth filter into a weighed flask and proceed as before."—HANNS WILL. *Apoth.-Ztg.*, 50 (1935), 1757–1758. (H. M. B.)

Essences, Perfumes and Oils—Storage of. Glass is universally recognized as the best storage vessel, so far as cleanliness and freedom from contamination is concerned. For small quantities of essence or perfume, white, green or blue demijohns or carboys are both good and cheap. Porcelain vessels, providing they are of good quality, offer very largely the advantages of glass with less risk from breakage. Earthenware has a tendency to become permeated with the preparation stored within it. Metal vessels glass-lined have the qualities of vessels entirely of glass with the elimination of the risk of breakage as an additional advantage. Pure tin vats provide excellent storage accommodation for essential oils in particular. Vats fashioned in copper and "slabbed" with pure tin offer all the advantages of the pure tin vats with a greater durability. For oils generally, barrels, tanks, vats or beakers of aluminum are satisfactory and are in every-day use in all leading essential oil distilleries. Fruit essences in large bulks are very successfully stored in wood casks and vats, providing the cask or vat may be retained for the individual use of an essence or preparation.—ANON. *Perfumery Essent. Oil Record*, 27 (1936), 65. (A. C. DeD.)

Myoporum Deserti—Essential Oil and Other Constituents of. In a preliminary examination of *Myoporum Deserti*, a shrub indigenous to all the states of the Australian Commonwealth, except Tasmania, and known as Dogwood Poison Bush, Ellangowan Poison Bush, Turkey Bush and Sweet-fruited Myoporum, the dried leaves collected in Queensland from the fruiting plant, yielded 0.46% of essential oil, by distilling the alcoholic extract of the material. It was a golden-yellow liquid, with sweetish mentholaceous, somewhat unpleasant odor; Sp. Gr. 1.004; $[\alpha]_D$ −14.93°; n_D, 1.4767; ester value, 1.43; aldehydes 2–4%, phenols 1.4%; ketones (calculated as ngaione) 80%. This ketone has not yet been specifically identified. The toxic effect of the air-dried leaves and fruit of the plant have been confirmed, 1 lb. of each being lethal to sheep and calves. The toxic principle has not yet been isolated; there is evidence of the presence of a glycoside in the material. The characters of the oil differ from those of the oil of *Myoporum lætum* examined by McDowall.—A. ALBERT. *J. Roy. Soc., N. S. W.*, 68 (1935), 144; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 705. (S. W. G.)

Oil of Celery. Analysis of a number of oils of celery dust of known origin and purity gave the following range for the characteristics of the oils: specific gravity at 15° 0.885 to 0.892 (once 0.907), optical rotation 49° 30′ to 65° 30′ (once 43° 50′), refractive index at 20° 1.4860 to 1.4865, acid value 1.87 to 3.7, ester value 44.8 to 65.95, soluble in 6.2 to 8 volumes of 90% alcohol (sometimes insoluble). One sample of celery seed oil had: specific gravity at 15° 0.9165, optical rotation 55° 45′, acid value 1.12, ester value 74.9. The above values differ from those given by Gildemeister and Hoffmann and confirmed by Guenther (*Am. Perfumer* (Nov. 1935), 75), and it is

suggested that the difference may be due at least in part to the fact that commercial celery dust contains from 3 to 5% seed, while the samples on which the above data were obtained were completely freed from seed.—Établissements Antoine Chiris. *Parfums France*, 14 (1936), 12–13. (A. P.-C.)

Oil of Cinnamon Leaf of the Seychelles. The collection of leaves is carried on by native men and women. The daily collection approximates 40 to 80 kilos for women and 50 to 100 kilos for men. No attention is paid to the varying types of cinnamon, nor any attempt made toward selection, although variations are particularly noticeable in the leaves. The relative proportion width to length of the leaves is perhaps the most noticeable feature—"broad" with a ratio of one to one and a half and "narrow" with a ratio of one to three. Characteristics described by the natives are "white," "yellow," "red" and "blue" cinnamons. Using the fully grown leaves—as far as possible the extremes of both the narrow and broad types—a number of experimental distillations were conducted by the writer to establish the superiority, if any, of any particular kind of leaf; this resulted in no marked difference in oil yields. The usual procedure is to distil the fresh leaves and the time between collection and distillation rarely exceeds 24 hours. Experimental work by the writer shows that an oil-loss accompanies the long storage of this material. Distillation is carried out entirely by the cohobation method of distilling, mainly in under-fired stills, although there are a few distilleries equipped with steam boilers. Resulting material from distillations is usually returned to the land and is of particular value on patchouli plantations. With the introduction of Ordinance No. 19, of 1935, conditions and arrangements now include regulations for the exporting and marketing also of cinnamon leaf oil. The provisions of this ordinance are discussed.—W. Holdsworth-Haines. *Perfumery Essent. Oil Record*, 27 (1936), 53. (A. C. DeD.)

Oil of Lovage. Distillation of the whole plant in full bloom yielded 0.248% of oil resembling that of celery or of angelica rather than that of lovage roots, and having the following characteristics: specific gravity at 15° 0.9252, optical rotation 25° 11′, refractive index at 20° 1.4890, acid value 7, ester value 79.26, ester value after cold formylation 148.70, soluble in 0.2 to 2 volumes of 90% alcohol with turbidity above 2 volumes, and in 0.1 to 6 volumes of 95% alcohol with turbidity above 6 volumes. The ester value is much lower than previously reported.—Établissements Antoine Chiris. *Parfums France*, 14 (1936), 12. (A. P.-C.)

Oils of Tagetes. A review of the composition of oils of various species of *Tagetes* previously published, and also of some species as yet unreported. *Tagetes Patula.*—Steam distillation of the whole plants in full bloom gave 0.3% of oil with: specific gravity at 15° 0.897, optical rotation 1° 10′, refractive index 1.5100, acid value 1.8, ester value 16.8, ester value after acetylation 87.7, soluble in 0.1 volume of 90% alcohol; these constants agree with those of Schimmel (*Ber. Schimmel & Co.* (1908), 144; (1909), 87) except that the optical rotation is positive and the refractive index higher. The oil should be protected from air and light which produce polymerization and resinification. *Tagetes Lucida.*—Yielded 1% of oil having: specific gravity at 15° 1.006, optical rotation 0° 15′, refractive index 1.5211, acid value 1.96, ester value 21.04, ester value after acetylation 77.15, soluble in 6 volumes of 75% alcohol and does not become turbid on dilution. *Tagetes Anisata.*—Yielded 0.7 to 0.8% of green oil resembling oil of anise and having: specific gravity at 15° 0.986, melting point −6°, refractive index 1.5432, optical rotation −1° 10′, saponification value 3.1, ester value after acetylation 23.4, soluble in 5 volumes of 90% alcohol. *Tagetes Minuta.*—Yielded 0.5% of oil exhibiting a tendency to rapid polymerization and having: specific gravity at 15° 0.936, optical rotation 1° 7′, refractive index 1.496, acid value 1.5, ester value 44.5, ester value after acetylation 116.5, soluble in 1.5 volumes of 90% alcohol. *Tagetes Arborea.*—A mixture of 40% leaves and 60% stalks yielded 0.2333% of oil having: specific gravity at 15° 0.947, refractive index 1.4943, soluble in 3 volumes of 85% alcohol and in all proportions in 90% alcohol. *Tagetes Erecta.*—Distillation of the whole plant yielded 0.01% of oil having: specific gravity at 15° 0.914, optical rotation 7° 55′, refractive index 1.4915, acid value 0.56, ester value 28.05, ester value after acetylation 92.58, soluble in 0.2 volume of 90% alcohol. *Tagetes Signata.*—Distillation of the flowering plants yielded 0.096% of oil having: specific gravity at 15° 0.892, optical rotation 6° 15′, refractive index 1.5034, acid value 1.8, ester value 16.8, ester value after acetylation 78.4, insoluble in 80% alcohol, soluble in 1 volume of 85% alcohol. *Tagetes Glandulifera.*—A number of distillations carried out at different times and furnishing yields varying from 0.187 to 0.263% of oil showed that best yields are obtained when the plant is at maturity.

An oil that had been obtained in 0.187% yield had the following characteristics: specific gravity at 15° 0.922, optical rotation 1° 30′, refractive index 1.5112, acid value 1.96, ester value 16.81, ester value after acetylation 62.13, soluble in 1 volume of 90% alcohol.—G. IGOLEN. *Parfums France*, 14 (1936), 6–11. (A. P.-C.)

Perfumes—New Procedures in the Chemistry of. A continuation of a review dealing with organic acids which might enter into perfume materials.—A LEWINSON. *Riechstoff-Ind. Kosmetik*, 11 (1936), 30–33. (H. M. B.)

Fixed Oils, Fats and Waxes

Cryptocarya Latifolia Nuts from South Africa. Extraction of "Ntonga" nut kernels with hot petroleum ether removed, along with the fat, a brown resinous substance which separated out on cooling and which was readily soluble in benzene and easily saponifiable. The oil extracted with cold petroleum ether had the following characteristics: specific gravity at 100° 0.8647, melting point (open tube method) 26.0°, refractive index 1.4585, acid value 56.5, saponification value 213.0, iodine value (Wijs, 3 hrs.) 75.2, unsaponifiable matter 1.4%, soluble volatile fatty acids 11.1, insoluble volatile fatty acids 0.3, solidifying point of fatty acids 39.5°. The residual meal gave a positive reaction for alkaloids.—ANON. *Bull. Imp. Inst.*, 33 (1935), 451–453. (A. P.-C.)

Olive Oils—Moroccan. The data presented consist of a tabulation of the results obtained on 101 samples harvested from 1926 to 1931. The average weights of olives and stones, % pulp, % water, oil yield on the pulp and on the whole olives, iodine number of the oil and of the liquid fatty acids, and % margarine in the oil, were determined.—J. VALIN. *Ann. Fals.*, 29 (1936), 31–41. (A. P.-C.)

Tea Seed Oil. The examination of three samples of tea seed oil, two of commercial origin (Chinese) and one prepared in the laboratory from Java seed, gave the following results:

	Commercial Samples		Prepared in Laboratory
Acid value	2.2	2.4	20.7
Ester value	185.9	185.3	169.7
Saponification value	188.1	187.7	190.4
Iodine value (Hanus)	87.6	87.5	89.6
Reichert-Meissl value	0.3	....	....
Polenske value	0.3	....	....
Arachidic acid test	Negative	....	....
Phytosterol, per cent	0.12	....	0.14
M. p. of phytosterol acetate	156°–157° C.	....	175–176° C.
Bellier reaction	Negative	Negative	Negative
Kreis reaction	Negative	....	Very weak
Bishop reaction	Negative	....	Negative
Boudouin reaction	Negative	....	Negative
Unsaponifiable matter, per cent			
(Spitz and Honig method)	0.67	0.68	1.31
(Bertram method)	0.74	....	0.84
Total fatty acids, per cent	95.1	95.7	94.9
Molecular weight of fatty acids	283.6	286.2	279.7
Consistency of fatty acids	Liquid	Liquid	Solid
Solid fatty acids, per cent			
(Grossfeld method)	7.7	....	19.7
(Bertram method)	10.3	....	18.5
Iso-oleic acid, per cent	0.3	....	1.0

The constants and reactions show a great similarity with those of olive oil, and none of the special color reactions for the detection and identification of tea seed oil is satisfactory. An attempt to base a method for the detection of tea seed oil in olive oil on the high m. p. of the phytosterol acetate derived from the former was unsuccessful.—J. PRITZKER and R. JUNGKUNZ. *Z. Unters. Lebensm.*, 69 (1935), 542; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 707.

(S. W. G.)

Vegetable Oils—New British Standard Specifications for. Recently adopted specifications for crude maize oil, crude palm kernel oil, crude soya bean oil, refined cottonseed oil and sesame oil are given and briefly discussed.—H. M. LANGTON. *Food*, 5 (1936), 245–246. (A. P.-C.)

Glycosides, Ferments and Carbohydrates

Ceratoniæ Gummi, Carob Gum. Inexpensive Substitute for Gum Tragacanth. Until recently the hard, chestnut-red seeds of *Ceratonia Siliqua* have been regarded as useless. Formerly, the presence of a large amount of gummy material in the seeds was well known, but the difficulty was to separate it from other unpleasant constituents in the embryo. By a series of ingenious mechanical processes, the gummy material is now obtained. An analysis of "carob gum" shows its composition as follows: galactan, 29.18; mannan, 58.42; pentosans, 2.75; proteins, 5.29; nitrogen, 0.83; cellular tissue, 3.64; mineral matter, 0.82; an enzyme, ceratoniase, is also present. Even before the production of this powder in a condition suitable for food purposes, it had already largely replaced tragacanth in several important industries, notably in the rubber industry to facilitate creaming of the latex, in paper making as a size, and in tanning. The purified powder now commercially available forms a solution at least equal in viscosity to that of tragacanth, and is being used for thickening sauces and pickles in place of starches and tragacanth, for "smoothing" ice-cream in place of gelatin and starches, etc. Some formulas which have been made from this gum, and found satisfactory, are given.—W. A. KNIGHT and M. M. DOWSETT. *Pharm. J.*, 136 (1936), 35. (W. B. B.)

Stachyose (Mannotetrose) and Aucuboside (Aucubin)—Presence of, in Plantago Maritima and P. Carinata. The fresh roots of *P. maritima* were extracted twice with boiling 90% alcohol. The combined alcoholic liquids were distilled in the presence of calcium carbonate and the concentrated extract taken up with water. This aqueous extract, which contained 27.16 Gm. of extractive material per 100 cc., produced an angular rotation of +33° 45′ in a 2-dcm. tube. After treatment with invertase the rotation was reduced to +20° 50′. This indicated the presence of a glycoside giving *d*-fructose on hydrolysis. The glycoside stachyose was isolated as follows: 500 cc. of the aqueous solution of the residue from the alcoholic extractions were diluted with 500 cc. of water and mixed with 150 cc. of lead subacetate solution. The precipitate was washed with 125 cc. of water and the combined filtrates mixed with 95 cc. of 10% sulphuric acid. The precipitated lead sulphate was removed and the liquid mixed with 260 Gm. of barium hydroxide. The mixture was filtered yielding a filtrate of about 1150 cc. to which was added 76% alcohol (about 3 volumes) until no further precipitation occurred. After 48 hours standing the precipitate was filtered off, dried with suction, washed with 100 cc. of 76% alcohol, suspended in 2000 cc. of water and decomposed with 10% sulphuric acid. The excess acid was neutralized with 20 Gm. of calcium carbonate, the liquid brought to a boil and filtered, resulting in 1,250 cc. of filtrate, 10 cc. of which gave a residue of 0.412 Gm. The solution was distilled under reduced pressure and the residue extracted successively with 95, 85 and 80% alcohol. Each extract was cooled for 26 hours before decantation and on being seeded with stachyose each extract slowly deposited crystals. These crystals possessed all the characteristics of stachyose. The test with emulsin indicated the presence in *P. maritima* of a beta-glycoside. The glycoside was isolated as follows: a quantity of the alcoholic extract of the fresh root of *P. maritima* was taken up in water and mixed with lead subacetate solution. Sodium acetate and calcium carbonate were added and the mixture after complete desiccation in the open air was extracted repeatedly with a hot solution of 4 parts of ethyl acetate and 1 part of 80% alcohol. On concentration and seeding, the solution deposited 0.65 Gm. of a crystalline product. After purification with animal black and recrystallization from 72% alcohol, the crystals still contained about 10% of impurities but from their appearance and reactions they were undoubtedly aucubin. Stachyose was obtained from *Plantago carinata* by the same method used with *P. maritima* but the authors were unable to obtain crystalline aucubin from *P. carinata*.—H. HERISSEY and M. GRAVOT. *J. pharm. chim.*, 22 (1935), 537. (G. E. C.)

Other Plant Principles

Pepper Pigments—Red Pigment of Capsicum Annuum. The perfection pimento, used in the United States as an article of diet, is a variety of *C. annuum*, morphologically distinct from the equally non-pungent Hungarian paprika. The former gave a maximum yield of 0.3% of the red

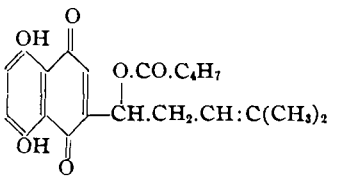
pigment capsanthin, $C_{40}H_{58}O_3$, identical with that previously obtained from the Hungarian variety.—W. L. BROWN. *J. Biol. Chem.*, 110 (1935), 91; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 733. (S. W. G.)

Peucedanum Decursivum Maxim—Chemical Examination of the Root of. This drug is commonly used in China as an antipyretic and expectorant under the name of chien hu. Tests show the absence of alkaloids. The alcoholic extract yields a small amount of essential oil. The petroleum ether extract of the residue yields a series of acids, a phytosterol identical with spongosterol (*Z. physiol. Chem.*, 41, 109), and an unidentified compound.—YUOH-F. CHI and YI-T WONG. *J. Chinese Chem. Soc.*, 2 (1934), 329; through *Chemical Abstracts*, 29 (1935), 2659.

Unclassified

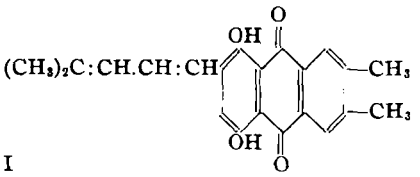
Aldehydes—Cleavage of. The di-ortho-substituted benzaldehyde compounds which contain in 2,6-position, a bromine, iodine or any other halogen atom and a nitro group, have the property to change these aldehyde groups to formic acid and a new compound under the influence of an alkali. The new 2,6-dibrombenzaldehyde was obtained in brominating the compound 2,6-dibromtoluol and then saponifying it with H_2SO_4. Thereby further brominating of the intermediate compound 2,6-dibrombenzylbromide was eliminated. The compound 2,-iodo-3,6-dichlorbenzaldehyde was split up with the addition of an alkali into 1,-iodo-2,5-dichlorbenzol and formic acid, while 2-amino-3,6-dichlorbenzaldehyde which formed in the usual manner remained unused. 2,6-Dibromvanillin remains unchanged during the reaction, while 2,6-dibromveratrum aldehyde splits up quickly into 3,5-dibromvenatrol. The free (OH) group in the *p*-position prevents the elimination of the (CHO) group; while in the *m*-position the (OH) group has no such influence. Aminobenzaldehyde seems to have similar relationship. Under similar influences the compound 2-nitro-3,6-dichlorbenzaldehyde splits into 1-nitro-2,5-dichlorbenzol (at 55°). 2,6-Dichlor-3-nitrobenzaldehyde and 2-nitro-6-bromvenatrum aldehyde split up also, the last-named compound changes over to a new compound 3-nitro-5-bromveratrol (at 98°) which was so far unknown.—G. LOCK. *Ber.*, 68 (1505), 1935; through *Chem. Zentralb.*, 106 (1935), 2361. (G. B.)

Alkannet Root—Red Dye of. The root of alkannet contains a coloring material which was first extracted with petroleum ether. To this a hot solution of copper acetate was added and a red-violet coloring substance was recovered having the composition $C_{21}H_{20}O_6Cu$ or $C_{20}H_{2c}O_6Cu$. On the addition of ether and HCl to this compound, an uncombined light red, oily substance was obtained. This substance as well as the copper acetate combination mixture were free of (OCH_3) groups. The red oily material exhibited the following new behavior: If to this mixture a solution of KOH is added, the color of the mixture changes to blue, and an unpleasant odor is developed when the same solution is acidified. This unpleasant odor was observed in an unsaturated acid which was isolated and which was identified as angelic acid. In order to prove that angelic acid is not present as such in the alkannet root, in the crude extract or the copper acetate combination, the root was steam distilled. No angelic acid was recovered. If the same process of steam distillation is used and H_2SO_4 is added to the experiment, angelic acid is quickly recovered. According to the analysis of the molecular weight of the reddish, oily substance the structural formula $C_{21}H_{22}O_6$ or $C_{20}H_{22}O_6$ was derived. In the reaction in which KOH and an acid were used about 27.6% of angelic acid was recovered; if we take in consideration the formula $C_{21}H_{22}O_6$ for the oily substance then 1 molecule of $C_{21}H_{72}O_6$ should yield 1 molecule (27.03%) of angelic acid. The formula $C_{16}H_{16}O_5$ was given to the remaining coloring material. The angelic acid in the alkannet root is present not as angelic acid but as an ester, and it is this ester which is saponified when KOH is added to it. Which of the (OH) group is esterified is not known; the following structural formula was given as a possible explanation for the ester.



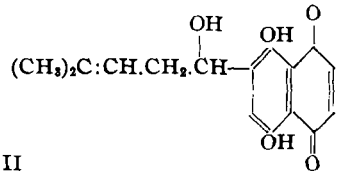
K. BRAND and A. LOHMANN. *Ber.*, 68 (1935), 1487; through *Chem. Zentralb.*, 106 (1935), 2379. (G. B.)

Alkannins—Constitution of. In previous experiments it was believed that $C_{17}H_{18}O_5$ was the proper coloring material found in alkannet root. On further examination it was found that the methyl ester of this compound was the true constituent of alkannet root. The nickel-alkannin compound is free of any (OCH_3) group. For the purpose of avoiding methylation of the coloring material, it was reacted with glacial acetic acid and not with methanol HCl. In this manner crystals of alkannin free from (OCH_3) groups were obtained, whose analysis corresponds with the yield having the formula $C_{16}H_{16}O_5$. Other authors established the fact that shikonin and alkannin are opposite in their optical activity. In order to find out the correct position of the (OCH_3) in the side chain of alkannin methyl ether, the authors used the method proposed by Diels and Alder. The ether extract renders with 2,3-dimethylbutane (1,3) a product of an expected composition $C_{22}H_{28}O_5$ which showed a strong inclination of being dehydrated. This compound was boiled with alcoholic KOH; a free (OCH_3) compound formed ($C_{20}H_{20}O_4$),



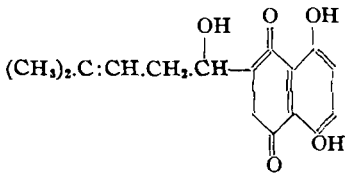
I

which resembled the homologue of chinazarin. According to these findings we can then derive the conclusion first, that the (OCH_3) group is located not in the nucleus, but in the side chain of the compound; secondly, the (OCH_3) is found not in the quinone-nucleus but in the hydroquinone nucleus of naphthazarine molecule. The double bond in the quinone group of alkannin cannot be substituted. If methyl ether is reacted with diazomethane, a compound $C_{19}H_{20}O_5N_2$ was obtained. The primary product was dehydrated and the surplus of CH_2N_2 group was methylated at the N atom. On the ground of these results, and the optical activity of the alkannins, they possess either the constitution of Formula II



II

or its tautomeric equivalent V



H. RAUDNITZ and W. STEIN. *Ber.*, 68 (1935), 1479; through *Chem. Zentralb.*, 106 (1935), 2380. (G. B.)

Dichloroarsines—Use of Liquid Hydrochloric Acid in the Preparation of. The process used for the preparation of dichloroarsines of the general formula R-$AsCl_2$, in which R is an alkyl radical, consists in preparing 10-chloro-5,10-dihydrophenarsazine by action of arsenic trichloride, treating the resultant compound with an organo-magnesium compound containing the alkyl radical corresponding to that of the chloroarsine which is desired, and finally decomposing the product thus obtained (after liquefaction) by a current of dry hydrochloric acid gas with formation of diphenylamine hydrochloride and the dichloroarsine. When R is a tertiary butyl radical, the 10-tertiary butyl-5,10-dihydrophenarsazine partly decomposes before melting, so that instead of passing dry hydrochloric acid through the melted compound, the unmelted product is added to

perfectly dry liquid hydrochloric acid at −85° to −90° C., in which it dissolves and with which it reacts immediately. After allowing the reaction to proceed for about 10 min., with stirring, the hydrochloric acid is allowed to evaporate. The residue dissolves completely in carbon tetrachloride, but after standing for some hours or on gentle heating there is formed a precipitate consisting of nearly pure diphenylamine hydrochloride. On evaporating the carbon tetrachloride, the dichloroarsine is obtained in 78 to 82% yield. The remainder of the tertiary butyl-dihydrophenarsazine is converted into 10-chloro-5,10-dihydrophenarsazine.—F. GOVAERT. *Compt. rend.*, 200 (1935), 1603–1605; through *Chimie & Industrie*, 34 (1935), 1369. (A. P.-C.)

Heterocyclic Compounds—Preparation of New. Diazotized arylamines or their substitution products are made to react with 3,5-diaminopyridine or its derivatives.—SCHERING-KAHLBAUM A. G. Belg. pat. 409,009, May 31, 1935. (A. P.-C.)

Hydrocinchonines—Esterification of. The name epicinchonine was given to an isomeric base obtained from cinchonine. Nevertheless this compound was the same as epicinchonine obtained by other methods used than that of the authors. Hydrocinchonine showed the same chemical behavior as cinchonine. It was converted to a toluene-sulphonic acid ester (m. p. 166–167°), $[\alpha]_D = 52.5°$), then the toluene sulphonic acid ester was converted into a benzyl derivative. The benzyl derivative (m. p. 141–142° $[\alpha]_D = -22.5°$, after it was saponified, yielded a dextrorotatory base (m. p. 201–202°; $[\alpha]_D = +154.5°$. Supposing that the optical inversion had occurred at the carbinol-carbon atom, the final product should have been identical with epihydrocinchonine; this was, however, not the case. This behavior had the following explanation. The natural alkaloid, that is, the base type of 1,2-hydroamine does not undergo rearrangement to an epi-alkaloid but is isomerized through the development of the nucleus of the quinuclidine ring to a heterocinchonine or *h*-cinchonine. The following compounds were obtained from cinchonine having these properties: *p-Toluene sulphonyl hydrocinchonine*—$C_{20}H_{30}O_3N_2S$-$CH_3.CH_2$-$C_7H_{11}N$-$CH(OSO_2C_7H_7)$-C_5H_6N was obtained when it was mixed and agitated with 50 Gm. of hydrocinchonine, 50 Gm. of toluene sulphonic acid chloride and 180 cc. pure pyridine. This was crystallized out on addition of alcohol, away from light. The yield obtained was about 20%, m. p. 166–167°. Sp. rotation $[\alpha]_D^{20}$ in alcohol = +52.5°. *Benzoyl-h-hydrocinchonine*—$C_{26}H_2$-O_2N_2-$CH_3.CH_2$-$(C_7H_{12}N)$:$C(OCOC_6H_5)$-C_5H_6N was obtained when *p*-toluenesulphonylhydrocinchonine was boiled for about 4 days with 13 Gm. of anhydrous potassium benzoate and 30 cc. of alcohol. Prismatic crystals separated out, m. p. 141–142°; $[\alpha]_D^{18}$ −25.6°. *h-Hydrocinchonine*, $C_{19}H_{24}ON_2 = CH_3.CH_2$-$(C_7H_{12}N)$:$C(OH)$-$C_5H_6N$. Boiling the benzoyl yield with 25% HCl, colorless crystals were obtained in acetic ether; m. p. 201–202°. $[\alpha]_D^{20} = +154.5°$ in alcohol.—R. LUDWICZAKOWNA and J. SUSZKO. (*Arch. Chemji Farmacji*, 2 (1935), 196–202 (Posen, Univ.); through *Chem. Zentr.*, 106 (1935), 2214.) (G. B.)

Ketosulphide Carbonic Acid—Cleavage of. When benzoin is reacted with thioglycolic acid under the influence of anhydrous HCl an acid of the following composition (I) is obtained:

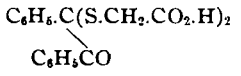
$$\begin{matrix} C_6H_5CH.S.CH_2.CO_2H \\ | \\ C_6H_5C{=}O \end{matrix}$$

The (CO) group in the formula in (I) was established through the usual derivatives. The acid in (I) condenses to a new compound II

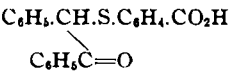
$$\begin{matrix} C_6H_5.C.S.CH_2.CO_2H \\ \| \\ C_6H_5.C.S.CH_2.CO_2H \end{matrix}$$

when in the presence of another molecule of the acid and $ZnCl_2$. Perhaps the other acid molecule attaches itself to the (C=O) group and one molecule of water is thus eliminated. When benzoin is condensed with $ZnCl_2$ a mixture of compounds combine with a larger quantity of the compound in (II) than the compound in (I). Formula (I) is split up not into its corresponding components but into desoxybenzoin and sulphine acetic acid ($HO.S.CH_2.CO_2H$). The solution in (I) with NaOH becomes cloudy at lower temperature; if boiled, the desoxybenzoin separates out. Acidifying the alkaline solution H_2S is liberated and a trace of oxalic acid is detected in the compound Because of the ease with which the compound in (I) splits up the derivative from desoxybenzoin,

e. g., desoxyanisoin was rapidly produced. The alkaline splitting up of the compound $C_6H_5.CO.CH_2.S.CH_2.CO_2H$ (III) follows in the same direction as the former compounds. Contrary to this, the acid having the formula

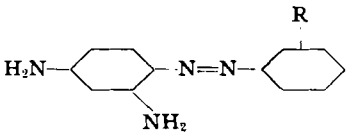
IV 

splits up only slightly in the same direction. Principally there is a decomposition in the benzoic acid and another compound $C_6H_5.CO.CH_2.S.CH_2.CO_2H$ (V). The alkaline splitting up of the acid in the compound in (VI)



which separates into benzoic acid and another compound having the structural formula $C_6H_5.CH_2.S.C_6H_4.CO_2H$ (VII) occurs in a similar manner.—O. BEHAGHEL and E. SCHNEIDER. *Ber.*, 68 (1935), 1588; through *Chem. Zentralb.*, 106 (1935), 2364. (G. B.)

Monoazo Compounds, Medicinal. The patent covers the use as a medicinal substance of an azo compound having the following structural formula:



in which a hydrogen atom closer to the azo group than the para-position is replaced by R which represents a halogen atom or a lower alkyl group.—R. R. RENSHAW, E. T. TISZA and B. F. DUESEL, assignors to THE PYRIDIUM CO. U. S. pat. 2,030,897, Feb. 18, 1936. (A. P.-C.)

Picoline and Anilin—Reaction of. The author states that if (chloroxypropyl)-phthalimide is reacted with pyridine, quinoline or isoquinoline, new addition products are yielded. These new products, *e. g.*, the phthalyl esters, are split up and new primary and quaternary bases arise during the reaction. If α-picoline is converted in the same manner, the hydrochloride salt of (ν-amino-β-oxypropyl)-picolylium chloride is obtained. Using the condensation method, 1 molecule of aniline was reacted with $^1/_3$ molecule of epichlorhydrin and 1 molecule of (chloroxylpropyl)-chlorimide, the following two compounds: N,N,N′-triphenyl-β-oxypropylendiamine and $C_6H_4(CO_2)N.CH_2.CH(OH).CH_2NHC_6H_5$ were obtained.—T. FUKAGAWA. *Ber.*, 68 (1935), 1344; through *Chem. Zentralb.*, 106 (1935), 2367. (G. B.)

Pyrazolone Derivatives—Manufacture of. Equimolecular proportions of an aromatic hydrazine of the type $RNH.NH_2$ and of dicetene are made to react together.—CARBIDE AND CARBON CHEMICALS CORP. Belg. pat. 408,836, May 31, 1935. (A. P.-C.)

Thymol and Carvacrol—Some Mercurated Derivatives of. Reference is made to previous reports on thymol mercury derivatives, dealing with their structure and properties. These compounds retain their phenolic character and contain a rather high percentage of mercury, suggesting possible importance as insecticides and fungicides. Carvacrol has recently been employed in the treatment of dermaphytosis and no report of the application of the reaction of mercuric salts to carvacrol has been found in the literature, so the possibility is under investigation. Preliminary report is made of a few derivatives. Details of experimental work are given for mono-chlormercuri carvacrol and di-chlormercuri carvacrol, mono-acetoxymercuri-carvacrol, mono-chlormercuri thymol methyl ether and mono-chlormercuri carvacrol methyl ether. The monochlor derivatives dissolve readily in dilute alkalies to form the corresponding phenolates, which may be obtained by crystallization from the solution, or precipitated in the form of the mono-hydroxymercuri carvacrol by treatment of the alkaline solution with carbon dioxide. Equimolecular proportions of carvacrol and mercuric acetate were used but the product was a mixture of the mono- and di-derivative, the former predominating. Ten per cent ointments of the mono-chlormercuri carvacrol were prepared and will be tested clinically for fungicidal properties.—JOSEPH B. BURT. *J. Am. Pharm. Assoc.*, 25 (1936), 112. (Z. M. C.)

BIOCHEMISTRY

Androsterone and Related Sterols. The authors describe methods by which, through a series of syntheses, it is possible to obtain the three male hormones, androsterone, Δ^5-dehydroisoandrosterone and testosterone from cholesterol.—RUSSEL E. MARKER, FRANK C. WHITMORE, OLIVER KAMM, THOMAS S. OAKWOOD and JOHN M. BLATTERMAN. *J. Am. Chem. Soc.*, 58 (1936), 338. (E. B. S.)

Anterior Pituitary-Like Hormone—Process of Obtaining. Anterior pituitary-like hormone is concentrated from its solutions by adding benzoic acid solution which forms a benzoic acid precipitate in which the hormone is adsorbed. The precipitate is separated from the solution; the adsorbent is dissolved, leaving an insoluble residue containing the hormone, and the latter is extracted from the residue by means of a suitable solvent.—EDWARD A. DOISY and PHILIP A. KATZMAN, assignors to PRESIDENT AND BOARD OF TRUSTEES OF ST. LOUIS UNIVERSITY. U. S. pat. 2,035,642, March 31, 1936. (A. P.-C.)

Bilirubin—Determination of, in Blood by the Diazo Method. Various methods for carrying out the quantitative indirect Van den Bergh reaction are criticized by the author, and it is pointed out that there is no uniformity of results obtained by these different methods and no standard technique is universally accepted. After comparing the original method, the Thannhauser-Anderson modification, Hunter's method and White's modification, the author concludes that the Thannhauser-Anderson technique is the most satisfactory for all but grossly hemolyzed sera, and recommends that this should be adopted as a standard method, as follows: To 1 cc. of serum (or plasma), 0.5 cc. of diazo reagent is added. After maximum color has developed, 2.5 cc. of absolute alcohol and 1 cc. of saturated ammonium sulphate are added, and the contents are mixed and centrifuged. The color is compared with 2.161% cobaltous sulphate solution, the dilution factor being 4.—E. G. GODFRIED. *Biochem. J.*, 29 (1935), 1337; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 722. (S. W. G.)

Cholic Acids—Determination of, in Blood. A method for the determination of cholic acids in blood is described. This involves the use of a "Stufenphotometer" a modified Pettenkofer reaction being used. Five-cc. portions of blood are treated with absolute alcohol and barium hydroxide-barium acetate mixture is used to precipitate the protein. The barium is then precipitated with sulphuric acid and the mixture alkalized and evaporated. The lipoids are extracted with ethyl acetate, and the final aqueous material then filtered, treated with furfuraldehyde and sulphuric acid and compared with a standard.—B. JOSEPHSON. *Biochem. J.*, 29 (1935), 1519; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 723. (S. W. G.)

Cortin. Hormone of the Adrenal Cortex. In assaying adrenal extracts, there is no contradiction between the Swingle and Pfiffner test on dogs and the Everse-de Fremery test on rats, provided the same sample is used. However, rats require about 500 times more hormone per Kg. than dogs. Cortin extracts of sufficient purity and activity to be further concentrated without considerable loss may be obtained by means of distribution between pentane and 20% aqueous methyl alcohol. The entire hormone fraction may be separated from the concentrates by ketone reagents, the 5.4 Gm. of active substance from 1,000-Kg. adrenals being a mixture of hydroxyketones and diketones, free from nitrogen, sulphur, phosphorus and halogen and containing about 3 rat units/mg. A number of inactive crystalline substances were isolated from both active and inactive adrenal concentrates. They were related to one another in that they contained 21 C-atoms and 5 O-atoms. It is probable that the potent adrenal fractions belong to the same class of compounds as these substances. Complete experimental details are given.—T. REICHSTEIN. *Helv. Chim. Acta*, 19 (1936), 29; through *Squibb Abstract Bull.*, 9 (1936), A-436.

Ethyl Alcohol—Determination of, in Body Fluids. A rapid and simple method for the determination of ethyl alcohol in body fluids has been developed which requires no complicated apparatus or special skill, and is applicable alike to the clinical determination of alcoholic intoxication and to experimental studies on this compound. The method consists of the distillation of the alcohol *in vacuo* into a dichromate-sulphuric acid oxidizing mixture, with iodometric determination of the amount of alcohol oxidized. The accuracy of the method is such that for specimens containing one mg. of alcohol or more the probable error does not exceed 1.5%.—HENRY NEWMAN. *J. Pharmacol.*, 56 (1936), 278. (H. B. H.)

Ferric Iron—Determination of Traces of, in Blood Serum. A differential electrometric method for titration of from 2 to 5γ (micrograms) of ferric iron in a concentration of about 1 part

per million is described. This method is, in general, accurate to a few tenths of a per cent. The application of the method to the titration of the iron of blood serum is developed.—J. DUBNOFF and P. L. KIRK. *Mikrochem.*, 19 (1936), 194. (W. H. H.)

Follicular Hormone—Concentrated Aqueous Solutions of. The patent provides a concentrated solution of follicular hormone in aqueous resorcinol solutions.—FRANZ ELGER, assignor to HOFFMANN-LA ROCHE, INC. U. S. pat. 2,035,152, March 24, 1936. (A. P.-C.)

Fructose—Determination of, in Blood. Ten cubic centimeters of the filtrate obtained by precipitating whole blood with zinc sulphate solution, and separating (equivalent to 1 cc. of blood), is acidified with acetic acid, and evaporated in a tared test-tube to just less than 4 cc., and then adjusted exactly to 4 cc.; 4 cc. of hydrochloric acid (5 parts of concentrated acid and 3 parts of water) and 0.4 cc. of a 20% alcoholic solution of diphenylamine are added and the mixture shaken thoroughly and heated in a water-bath for fifteen minutes. After cooling, 10 cc. of butyl alcohol and 2 Gm. of ammonium sulphate are added and the contents of the tube again thoroughly mixed to extract the blue color. A solution of fructose of suitable strength (0.1 mg. per 4 cc. is most suitable in tolerance tests) is similarly treated, and the colors of the separated organic layers are compared colorimetrically. Blank determinations on fasting blood give only the slightest color, equivalent to about 1 mg. of fructose per 100 cc.—J. PATTERSON. *Biochem. J.*, 29 (1935), 1398; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 724. (S. W. G.)

Glutathion and Ascorbic Acid—Determination of, in Animal Tissues. When glutathione is determined in organs by means of potassium iodate, part of the reduction of the iodate is due to ascorbic acid. The proportion of reduction due to ascorbic acid is not the same for all the organs; it can be determined after destroying the glutathion by means of formaldehyde. The concentration of the formaldehyde is of considerable importance, as the ascorbic acid, which resists its action when it is alone, is destroyed to a considerable extent in the presence of glutathion; on the other hand, the formaldehyde must be added after (and not during) de-albumination of the extract at the rate of 0.3 cc. of 5% formaldehyde solution for each 4 cc. of de-albuminized filtrate. The mixture is allowed to react at room temperature for an hour and a half. Destruction of glutathion is complete and about 6 to 10% of the ascorbic acid is destroyed. In addition to these two reducing substances, animal organs contain a third substance of unknown nature which reduces iodic acid.—K. WACHHOLDER, KÄTHE ANDERS and K. UHLENBROOCK. *Hoppe-Seyler's Z. Physiol. Chem.*, 233 (1935), 181–185; through *Chimie & Industrie*, 35 (1936), 289–290. (A. P.-C.)

Hormone. The urine of pregnant individuals is concentrated *in vacuo* at a temperature not exceeding 40° C. and treated with a large excess of a water-soluble organic solvent; the precipitate thus formed (which contains a principle displaying the physiological activity of the hormone of the anterior pituitary lobe) is separated by filtration. The filtrate is freed from the water-soluble organic solvent and is then extracted with a neutral, immiscible organic solvent to separate the ovarial hormone.—FRITZ LAQUER and HERMANN WEYLAND, assignors to WINTHROP CHEMICAL CO., INC. U. S. pat. 2,035,557, March 31, 1936. (A. P.-C.)

Iodine—Determination of, in Biological Material. To 15 cc. of oxalated blood in a 500-cc. digestion flask are added 15 cc. of water, 30 Gm. of potassium dichromate, 10 mg. of cerous sulphate, and finally, with cooling over ten minutes, 80 cc. of 3% potassium dichromate solution in sulphuric acid. The flask is warmed over a free flame until foaming has ceased. After cooling, 25 cc. of water is added and the liquid is boiled until this amount has been evaporated and all odor of acetic acid removed. The flask is brought to 50–55° C., and 4 cc. of liquefied phosphorous acid added to reduce the chromic acid and iodates. The contents are steam distilled into 10 cc. of 0.1% potassium carbonate. When the solution in the receiver measures 50 cc., it is transferred to a 125-cc. flask. Three drops of 10% sodium bisulphite and 2 drops of 0.01% methyl orange are added, the mixture made just acid with sulphuric acid, boiled for one minute and cooled. The acidification and boiling are repeated until the material remains acid on cooling. Bromine vapor is now blown on to the solution, which is concentrated to 2 cc. and cooled. Two drops of starch solution, and a few crystals of potassium iodide are added, and the solution titrated with $N/1000$ sodium thiosulphate. This method is a modification of Leipert's arsenical method, which is criticized. Suggestions for adaptation of the present method to other biological materials are given.—V. TREVORROW and G. FASHENA. *J. Biol. Chem.*, 110 (1935), 29; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 726. (S. W. G.)

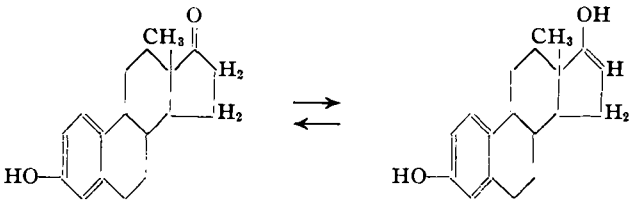
Lead—Determination of, by Means of Diphenylthiocarbazone in the Urine of Healthy

People and of People Suffering from Saturnism. *It is important to first remove the urinary iron,* the oxidizing action of which would destroy the reagent. This is effected by adding to 1 liter of urine a small quantity of calcium chloride and treating with ammonium oxalate in acid solution; the iron remains in solution as a complex salt, while the lead is removed in the precipitate, which is filtered, dried and calcined below 830° C. The residue, consisting of oxide and carbonate, is treated with sodium citrate and dissolved in 20% nitric acid. After neutralizing the solution, a small quantity of potassium cyanide is added to prevent the precipitation of accompanying metals such as bismuth, and the solution is reduced with hydroxylamine hydrochloride and shaken vigorously with dithizone (diphenylthiocarbazone). The method will detect 0.001 mg. of lead per liter of urine and can determine 0.005 mg. per liter with an accuracy of $\pm 10\%$. For the detection of lead in blood or in feces, the latter are burnt wet in presence of copper salts; the residue is taken up in dilute acid and precipitated with hydrogen sulphide; the precipitate is filtered and treated on the filter with hot concentrated nitric acid which dissolves the lead and leaves on the filter the precipitated sulphur together with any siliceous matter that may be present. The filtrate is concentrated, neutralized and treated as described above for urine.—B. BEHRENS and H. TAEGER. *Arbeitsschutz* (1935), No. 8, 194–195; through *Chimie & Industrie*, 35 (1936), 315. (A. P.-C.)

Lead—Determination of Small Quantities of, in Biological Materials. A study of the determination of lead by means of dithizone in amounts of about 2 to 3 mg. per kilo of material, with an error of not more than 0.1 mg. Tin interferes only in the stannous form; by destroying the organic matter with sulphuric-nitric-perchloric acid mixtures, the tin is entirely converted to the stannic form and will not interfere. The interference of iron apparently is not due to a true oxidation, and it is a function of the iron-lead ratio and also of the amount of cyanide present. From a study of the production of a brown coloration by iron with dithizone in the presence of varying amounts of lead and potassium cyanide, it is concluded that the interference of iron in the determination of lead can be overcome by making a preliminary extraction in which potassium cyanide is added in small successive portions until just enough has been added to overcome the action of interfering metals, but without causing "oxidation" of the dithizone; the determination is then carried out on another aliquot of the sample solution to which is added the necessary amount of potassium cyanide as ascertained in the preliminary extraction. It has thus been found possible to determine quantities of lead of the order of 0.01 mg. in presence of 5 mg. of iron and 2.5 mg. of copper or zinc. The technique of the procedure adopted is described in detail, including precautions as regards cleanliness of apparatus and purity of reagents. It is essentially as follows: destroy organic matter with nitric, sulphuric and perchloric acids, add 30 cc. of water, 20 cc. of 20% ammonium acetate solution and 20 cc. of 50% citric acid solution, neutralize to litmus paper with ammonia, heat to boiling until any precipitate which may have formed has dissolved, cool, make to 200 cc. and determine lead colorimetrically on an aliquot containing from 0.01 to 0.02 mg. of lead. To determine the amount of 5% potassium cyanide solution required, add 0.5 to 1.0 cc. of potassium cyanide and 1 cc. of 0.02% solution of dithizone in carbon tetrachloride diluted with 2 volumes of carbon tetrachloride just before use, shake, decant and note the color of the carbon tetrachloride layer; if it has not the characteristic red shade of the lead-dithizone compound, add successive 0.2-cc. portions of cyanide (shaking after each addition) till the desired shade is obtained; separate the carbon tetrachloride layer, add 1 cc. of dithizone solution to the aqueous layer, shake, add more cyanide solution if required, separate the carbon tetrachloride solution, and continue till extraction is complete as shown by the dithizone solution retaining its green color. The total amount of potassium cyanide solution thus used is then added to a fresh aliquot of the sample solution which is extracted with successive 1-cc. portions of the 0.02% dithizone solution; the combined extracts are diluted to 20 cc. with carbon tetrachloride washed with successive 5-cc. portions of 0.5% ammonia till the washings are colorless, and then shaken with 5 cc. of $2N$ hydrochloric acid which liberates free dithizone. The latter is estimated colorimetrically with a photoelectric colorimeter and the results are obtained directly from the milliampere reading by means of a curve which is readily plotted by means of two supplementary determinations carried out with each determination or group of determinations. The lead content is a linear function of the log. of the reading obtained on the instrument; it is therefore merely necessary to run a blank determination on the reagents (which gives the zero of the curve), and to run a determination on an aliquot of the blank to which has been added a known amount of lead (suitably 0.01 mg.), these two determinations furnishing two points which completely define the

straight-line curve. The lead content of the sample is read off directly from the curve. The sensitiveness of the method is of the order of 0.0005 mg. of lead, and the error is generally less than 0.001 mg., or about 5% on 0.02 mg. In spite of its apparent complexity, the method is simple of application, and 4 to 6 determinations can be carried out simultaneously in 5 to 6 hours.—H. CHEFTEL and MDLLE. M. L. PIGEAUD. *Ann. Fals.*, 29 (1936), 76–92. (A. P.-C.)

Œstrin—Structure of, in Alkaline Solution. As a result of absorption spectra studies, the authors state that while the œstrin molecule in acid or neutral solution contains a carbonyl group, this group in alkaline solution is enolized, so that a new, fourth, double bond appears. The following formulas are given:



Keto form Enol form

K. PEDERSEN-BJERGAARD and S. A. SCHOU. *Quart. J. Pharm. Pharmacol.*, 8 (1935), 669–673. (S. W. G.)

Pituitary Hormones—Process for the Preparation of Injectable and Stable. The isolated hormones, or finely divided, dried, water-soluble extracts containing them, are suspended in oil and the suspension is sterilized.—PRODUITS ROCHE. Belg. pat. 411,355, Oct. 31, 1935. (A. P.-C.)

Sodium—Microdetermination of. To 1.5 cc. of water in a 15-cc. centrifuge tube, is added 0.1 cc. of blood or serum, followed by 0.4 cc. of 20% trichloracetic acid. After centrifuging, 1 cc. of the clear liquid is transferred to another such tube, and 5 cc. of uranium reagent added. The latter is prepared by mixing a hot 15.4% solution of dihydric uranyl acetate in 2.8% acetic acid with an equal amount of a hot 46.2% solution of trihydric zinc acetate in 1.4% acetic acid, setting aside for twenty-four hours and filtering. To the centrifuge tube 2.1 cc. of alcohol (95%) is added in 0.3-cc. portions over half an hour. After centrifuging, decanting and draining, the precipitate is centrifuged with 10 cc. of acetone saturated with sodium uranyl zinc acetate, decanted, drained and transferred to a 100-cc. flask with water; in all about 70 cc. Titration is performed with *N*/50 sodium hydroxide, using 0.5 cc. of 1% phenolphthalein solution, to a barely perceptible pink. A blank determination should be made. The reaction, which is stoichiometric, is represented thus:

$$Na(UO_2)_3Zn(CH_3COO)_9 + 8NaOH = 3UO_2(OH)_2 + Zn(OH_2) + 9CH_3COONa$$

Suggestions are made for the application of this method to urine, fæces and deproteinated blood.—A. WEINBACH. *J. Biol. Chem.*, 110 (1935), 95; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 728. (S. W. G.)

Vitamin E Crystallized. This method consists of the use of cyanic acid as a reagent. This acid leads to the formation of crystals in the red wheat germ oil, and when these crystals are removed and dissolved they yield a substance which will overcome vitamin E sterility of rats in single doses of 0.003 Gm. The potent substance is classified as a form of higher alcohol and an empirical formula has been suggested. The exact formula will require further research. O. H. Evans and Mrs. O. H. Evans point out that there may be other substances which are vitamin E potent, as vitamin A is found in at least five naturally occurring substances. But the crystalline derivative now obtained is expected to provide a means of studying the precise chemical structure of vitamin E.—ANON. *Calif. West. Med.*, 44 (1936), 240. (W. H. H.)

ANALYTICAL

Absorption Spectrum Analysis—Application of, to Research and Practice Particularly in the Fields of Vitamins and Hormones. A review and description of spectral apparatus.—L. FUCHS. *Pharm. Monatshefte*, 17 (1936), 24–26. (H. M. B.)

Almond and Apricot Kernel Oils—Chemical and Physical Examination. The following adulterants are commonly found in almond oil: lard and olive oils, arachis oil, rape oil, cottonseed oil, poppyseed oil. The detection and determination of apricot kernel oil in almond oil is a matter of great difficulty, the resemblance being so great that the ordinary methods of chemical analysis are not effective. In view of the adulteration which sometimes occurs, and the fact that prosecutions have been instituted, an investigation was made in order to discover whether a satisfactory method could be found for determining quantitatively any such substitution. Two tables are given which show the results of many varieties of kernel oils. The oils were subjected to a number of tests, some of which were satisfactory while others were not. It is concluded that almond and apricot kernel oils are so similar that, for all practical pharmaceutical purposes, they may be considered identical.—R. G. HARRY. *Pharm. J.*, 136 (1936), 199. (W. B. B.)

Antipyrine—New Reaction of. Application to Its Detection and Determination in Pyramidon. In acetic acid solution antipyrine gives a persistent red coloration with xanthydrol, while under the same conditions pyramidon gives only a slight pale yellow coloration. The reaction is obtained with 0.1 mg. antipyrine. The color intensity is proportional to the amount of antipyrine and the latter can be determined (either alone or in admixture with pyramidon) as follows: to 0.1 Gm. of sample add 1 cc. of 10% solution of xanthydrol in acetic acid and 2 cc. of glacial acetic acid and heat to boiling. One part of antipyrine can be detected in 200 parts of pyramidon, and the sensitiveness can be increased to 1 in 1000 by adding stannous chloride reagent to the 2 cc. of acetic acid added.—M. DANTEC. *Ann. Med. & Pharm. Col.*, 32 (1934), 379; through *Ann. Fals.*, 29 (1936), 111. (A. P.-C.)

Arsenic—Determination of, by Potassium Bromate. Gyory's method of determining arsenites depends on the following reaction: $3H_3AsO_3 + KBrO_3 = 3H_3AsO_4 + KBr$. The titration is performed in the presence of hydrochloric acid, and methyl orange is used as indicator, being decolorized by excess of bromate. The method has the defect that an appreciable amount of bromate may be used up in oxidizing the methyl orange unless the amount of the latter is kept very small, and at the end the bromate must be added very cautiously as the reaction with the indicator is slow and the end-point may easily be overrun. The author tried about sixty other indicators and found Ponceau RRR, methylene blue and Bordeaux B best. Ponceau RRR is pink in acid solution and is decolorized by bromate. It can be used with both $N/10$ and $N/100$ solutions and in concentrations of hydrochloric acid not exceeding 50%. Methylene blue is green in acid solution and changes to blue with bromate. It can be used with both $N/10$ and $N/100$ solutions and the concentration of hydrochloric acid can vary from 50–80%. The bromate must be added slowly. Bordeaux B is pink in acid solution and is decolorized by bromate. It can be used with $N/10$ solutions with from 20–80% of hydrochloric acid; for $N/100$ solutions 50% of hydrochloric acid should be used.—T. SOTGIA-ROVELLI. *Boll. chim.-farm.*, 74 (1935), 265; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 690. (S. W. G.)

Ascaridole—Determination of.—Uniformity of Analytical Methods. The Essential Oil Sub-Committee recommends a method for the determination of ascaridole in chenopodium oil. The method depends on the titration of the iodine liberated under specified conditions by the ascaridole from a strongly acidified solution of potassium iodide. The following reagents are required: Glacial acetic acid; 90% acetic acid; $5N$ potassium iodide solution in water (83% w/v); hydrochloric acid, B. P. (32%); $N/10$ sodium thiosulphate solution. The method of determination is as follows: About 2.5 Gm. of the oil is weighed out into a 50-cc. graduated flask, and the flask filled to the mark with 90% acetic acid. Some of this solution is placed in a narrow burette graduated in 20ths of a cc., with the divisions sufficiently far apart to enable the readings to be estimated to $^1/_{100}$ cc. The burette should be fitted with a stop-cock and jet of sufficiently wide bore to enable 5 cc. to be run out in not more than five seconds. The reaction is carried out in a stoppered tube as used for the determination of aldehydes and ketones—approximately 150 mm. long by 25 mm. in diameter. In this tube are placed 3 cc. of the potassium iodide solution, 10 cc. of glacial acetic acid and 5 cc. of hydrochloric acid; the tube is stoppered and placed in a freezing-mixture until the temperature is reduced to $-3°$ C. Approximately 5 cc. of the acetic acid solution of the oil are then run in from the burette as rapidly as possible; the tube is immediately stoppered and the contents mixed and allowed to stand in a cool place (not in a water-bath) for five minutes, during which time their temperature will rise slowly, but must not exceed 10° C. The exact volume run out of the burette should be noted after about two minutes, when the contents have drained down

completely. At the expiration of five minutes, the contents of the tube, now dark brown in color, are titrated directly with $N/10$ sodium thiosulphate solution. The end-point is sharp, the final liquid being white and turbid, owing to the finely dispersed minute oil globules. Starch must not be used as an indicator. At the same time, a blank experiment is carried out under the same conditions of temperature, 3 cc. of the potassium iodide solution, 10 cc. of glacial acetic acid, and 5 cc. of hydrochloric acid being used, as a small amount of iodine is always liberated by the reagents. Before titrating this blank, however, it is necessary to dilute it with 20 cc. of water. The amount indicated by the blank should be deducted from the titration. Each cc. of $N/10$ sodium thiosulphate is equivalent to 0.00665 Gm. of ascaridole. From the results of their experiments, the members of the committee are of the opinion that the maximum variation in the percentage of ascaridole, as determined by this method, should not exceed $\pm 1\%$. Tables are included showing the results obtained by the sub-committee.—ESSENTIAL OIL SUB-COMMITTEE. *Perfumery Essent. Oil Record*, 27 (1936), 106. (A. C. DeD.)

Ascorbic Acid and Other Molecules Containing the Ene-orthodiol Grouping—Color Reaction of, with Titanium. Ascorbic acid, dihydroxymaleic acid, catechol, adrenaline, dihydroxyphenylalanine, pyrogallol, gallic acid and tannin with titanium sulphate give color reactions which appear to be limited to compounds containing the ene-orthodiol, —C(OH)—C(OH)—, group. It is affected by the p_H, and excess of the reagent. For the determination of ascorbic acid in lemon juice, 5 drops of an acid solution of Ti_2SO_4 containing 0.005 mg. of titanium per drop is added to 10 cc. of the juice followed by soda until the maximum coloration is obtained which is orange-yellow to brownish red.—JEAN ETTORI. *Compt. rend.*, 202 (1936), 852. (G. W. H.)

Bismuth Preparations—Tests of the Swedish Phar. for. A review and discussion of the purity tests for bismuth preparations cited in the Swedish Phar. X.—H. NILSSON. *Farm. Revy*, 35 (1936), 205. (C. S. L.)

Brominated Preservatives—Detection of, in Food Products. As certain products, such as wine, normally contain small quantities of bromine, detection of added brominated preservatives (such as bromoacetic acid) is carried out by extracting with ether, evaporating at low temperature after adding 1 to 2 cc. of water (to dissolve the bromoacetic acid and prevent its volatilization), adding a little bromine-free magnesia, calcining carefully at low temperature, taking up with a few cc. of water, and testing for bromine by means of the Denigès-Chelle sulpho-fuchsine reagent, or preferably by Hahn's reaction (*Compt. Rend. Acad. Sci.*, 197 (1933), 245).—FLORENTIN and MUNSCH. *Ann. Fals.*, 29 (1936), 104–105. (A. P.-C.)

Chlorine—Microdetermination of. The decolorization of methyl red solutions, as carried out by Winkler's method, appears to be the best. It is sensitive to 0.02 mg. per liter. Winkler uses 0.1 Gm. methyl red (Kahlbaum—prepared) dissolved in 10 cc. of $1N$ alkali and diluted with water to 1 liter. The unknown solution (100 cc. acidified with HCl) is titrated with this solution until a permanent red coloring appears. For determining small chlorine mixtures, methyl orange can be employed. A 0.001 molar aqueous methyl orange solution (0.33 Gm. per liter) is used. Two to three cc of the chlorine solution is weakly acidified with HCl and titrated with the methyl orange solution.—I. M. KORENMAN. *Mikrochem.*, 19 (1936), 144. (W. H. H.)

Cocaine Alkaloids—Determination of, in Mixtures with Other Alkaloids and Local Anesthetics. The author's method of separating cocaine alkaloids (cocaine, cinnamyl cocaine and the truxillines) from other alkaloids and from other bases occurring in coca leaves and coca extracts is based upon the fact that the coca alkaloids are relatively weak bases and furthermore are much more soluble in petroleum ether than most other alkaloids and related bases. This is particularly true of cocaine and since it is the only commercially important base found in coca the method is of great value in separating it from other alkaloids, bases and cocaine substitutes which might be present in commercial products. If to an acid solution containing the mixed bases or alkaloids sodium bicarbonate is added, in place of the usual ammonia water, and petroleum ether or a mixture of it with sulphuric ether be used to extract the liquid, cocaine or cocaine alkaloids will be extracted. Any other bases remaining in the sodium bicarbonate mixture may also be recovered by adding ammonia and extracting with the usual solvents. In a few cases where traces of other alkaloids are extracted by the above procedure, the mixed bases may be dissolved in $N/10$ sulphuric acid and a 3% solution of potassium permanganate in $N/2$ sulphuric acid added in excess. The solution thus obtained may be decolorized with oxalic acid, sodium bicarbonate added and the extraction with petroleum ether carried out as described above. Cocaine only will be extracted

from the oxidized mixture. In case of coca extracts, if to the solution of the mixed bases in acid which is finally obtained, sodium bicarbonate is added in place of the usual ammonia and the extraction carried out with petroleum ether as above outlined the cocaine alkaloids only are extracted and their quantity readily determined. If the amount of pure cocaine is desired it can be separated by the potassium permanganate as above described, or the benzoic, cinnamic, and truxillic acids may be determined by a method outlined in the paper and their quantities calculated with a moderate degree of accuracy. On this latter point the original article should be consulted.—JOHN R. NICHOLLS. *Analyst*, 61 (1936), 155–159. (A. H. C.)

Colorimetric Analysis by Means of the Photo-Electric Cell. This is a very important and interesting paper which is rather too technical to be abstracted and should be consulted by anyone interested.—NORMAN STRAFFORD. *Analyst*, 61 (1936), 170–176. (A. H. C.)

Cosmetic Ingredients—Effect of Temperature on. A reference table of melting, boiling and subliming points of some 150 substances.—HERMAN GOODMAN. *Am. Perfumer*, 32 (1936), No. 3, 73–74. (G. W. F.)

Cresol—Boiling Points of. The authors report on the boiling points of various samples of crude cresol, which were mixtures in different proportions of *o*-, *m*- and *p*-cresol.—M. BEUKEMA-GOUDSMIT and T. POTJEWIJD. *Pharm. Weekblad*, 73 (1936), 57. (E. H. W.)

Cresol, Crude—Determination of the Quality of, by the Weight of the Nitro-Product. The authors have investigated the method of Raschig for the determination of the quality of cresol. In this method 10 Gm. of cresol after treatment with sulphuric and nitric acids must yield a nitro-product which weighs at least 8.7 Gm. This nitro-product must have a melting point of not less than 105° C. By this treatment the *o*- and *p*-cresols are converted into oxalic acid, the meta-cresol alone forming a trinitro-product. This method is then essentially a method for the determination of *m*-cresol which should be present to the extent of 50%. The authors found their results to vary considerably due to oxidation of the meta-cresol. The determination of the melting point of the nitro-product excludes the presence of picric acid in the nitro-product. The presence of 5% of phenol is not detected by the melting point method. This method is of value only when taken in conjunction with the boiling point method described by the authors in a previous paper. When the results of the three methods (boiling point of the cresol mixture, weight of the nitro-product and melting point of the nitro-product) are considered collectively the quality of the cresol can be fairly well determined.—M. BEUKEMA-GOUDSMIT and T. POTJEWIJD. *Pharm. Weekblad*, 73 (1936), 97. (E. H. W.)

Diphenylcarbazide—An Internal Indicator for Use in the Titration of Iron with Dichromate. The author of this paper has devised a technique of general application which corrects the errors that have previously prevailed in the use of diphenylcarbazide as an indicator for the titration of iron. The paper should be consulted for all the details of the method.—H. E. CROSSLEY. *Analyst*, 61 (1936), 164–169. (A. H. C.)

Fixed Oils—British Standards for. Seven new British Standard specifications have been issued for a series of agreed standards for vegetable oils. These specifications, which have been drawn up by the British Standards Institution, are for castor, refined cottonseed, crude maize, crude palm kernel, perilla, sesame and crude soya bean oil. A table is given which consists of an abstract from the seven specifications; in each instance specific instructions are given for sampling, and details are recorded in appendices of the composition of the reagents used.—ANON. *Pharm. J.*, 136 (1936), 200. (W. B. B.)

Lavatera Thuringiaca L.—Value of, as a Substitute for the Leaves and Flowers of Althea. In order to determine adulteration of althea by *Lavatera Thuringiaca L.* (A) the fruit, leaves and flowers of each of the drugs were studied and compared. The viscosity numbers of aqueous extracts of the drugs according to the method of E. Waldstätten (*Scientia pharmaceutica*, 6 (1935), 61) for althea leaves were 1.25, for leaves of (A) 1.47, flowers of (A) 1.78. The mucilage content of the flowers of (A) was greater than that of the leaves of (A) which was greater than that of the leaves of althea.—F. BERGER. *Pharm. Monatshefte*, 17 (1936), 24–26. (H. M. B.)

Linolenic Acid—Qualitative Test for. Its Value and Limitations. The test is applied by layering 1 cc. of oil over 5 cc. of arsenophosphotungstic acid reagent, prepared as for the determination of uric acid by the method of Benedict, and heating in a boiling water-bath for one hour. A positive test for a linolenic oil is the development of a deep blue color in the reagent layer. The possibility of a positive test for other highly unsaturated oils is discussed, as well as possible use

of the reagent in quantitative estimations.—GUSTAV J. MARTIN. *J. Am. Chem. Soc.*, 58 (1936), 364. (E. B. S.)

Magnesium—Cause of Error in the Microdetermination of, by Certain Methods. In the determination of magnesium by precipitation as magnesium ammonium phosphate, the results are frequently vitiated by the presence in the substance of zinc which, in presence of ammonia, gives a double phosphate of zinc and ammonium. The conditions under which the two salts precipitate vary only as regards the p_H of the solution, the former salt precipitating in neutral or slightly acid medium and the second in strongly alkaline medium. The polarographic method shows that, in the determination of magnesium by the molybdate method, the presence of zinc produces results about 2.5% too high.—B. BASSANI and V. ZAMBOTTI. *Atti Soc. Med. Chir. Padova*, 13 (1935), No. 2, 15; through *Chimie & Industrie*, 35 (1936), 289. (A. P.-C.)

Myrrh from Kenya. Two specimens of myrrh from Kenya, one (A) from the Mandera district the other (B) from the Wajin district, have been submitted to the Imperial Institute for valuation. Both samples consisted of irregular lumps, 1½–2 inches in diameter, and small grains, reddish brown to reddish yellow in color; the odor was aromatic and the taste bitter. The fracture of (A) showed white markings; that of (B) was harder and had no white markings. (A) gave 46.2% of matter insoluble in 90% alcohol and 4.5% of ash. (B) gave 64.7% of alcohol-insoluble matter and 6.5% of ash. Both were therefore well within the B. P. limits. Both were reported to be of saleable quality by a commercial expert. Subsequently a commercial trial consignment of about 5 cwt. was sent. This was of similar quality and resembled Aden myrrh of commerce and was readily disposed of as myrrh of fair merchantable quality. Further shipments of ½–1 ton at a time were recommended.—*Bull. Imp. Inst. Lond.*, 33 (1935), 134; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 732. (S. W. G.)

Nessler's Reagent Test for Aldehydes in Ether—A Modified. The U. S. P. test for aldehydes will show the presence of 50 to 100 parts per million, and can be made more sensitive by using solid potassium hydroxide, but is of no value for quantities as low as 5 to 10 parts per million. A simple Nessler's reagent test will detect 5 parts per million of aldehyde but it is also sensitive to alcohol which is present in U. S. P. ether. In attempting to modify the reagent to make it more sensitive to aldehyde and not sensitive to alcohol, many variations of the reagent itself as well as conditions under which the test was conducted were tried. Some details of these experiments are reported. It was found that the reaction due to alcohol can be eliminated by time. Hence the following is suggested as a suitable official test for aldehydes in U. S. P. anesthetic ether: "Place 20 cc. of ether in a colorless glass-stoppered cylinder and add 7 cc. of a mixture of 1 cc. of alkaline mercuric potassium iodide T.S. with 17 cc. of a saturated solution of sodium chloride. Stopper the cylinder and shake vigorously for ten seconds, then set aside for one minute; the aqueous layer shows no sign of turbidity."—F. N. VAN DERIPE, E. C. VILLHEIMER and F. W. NITARDY.—*J. Am. Pharm. Assoc.*, 25 (1936), 209. (Z. M. C.)

Nessler's Reagent Test—Comparison of, with Other Tests for Aldehydes in Ether. Report is made of an investigation of the comparative value of the U. S. P. Nessler's reagent test, the pyrogallol and fuchsine sulphurous acid reagent test and the ammoniacal silver nitrate reagent test for aldehydes in ether. A highly purified ether, free from alcohol, aldehydes, peroxides and unsaturated compounds was prepared. Methods for removal of unsaturated compounds, alcohol and water are described. The purified ether was adjusted to its original water content of 0.5% with purified redistilled water and samples for the tests by the three reagents were prepared. A sample containing one part per million of acetaldehyde was tested. Results indicated that both the pyrogallol and fuchsine sulphurous acid reagent and Nessler's reagent are sensitive to this amount of aldehyde but ammoniacal silver nitrate reagent is unsatisfactory. Three samples containing 0.5%, 1.0% and 1.25%, respectively, of alcohol were prepared. The alcohol used had been purified and gave a negative test for aldehydes. Tests of these three samples showed that pyrogallol and fuchsine sulphurous acid reagent is not affected by alcohol and that Nessler's reagent is. This was difficult to understand but repetition of the test indicated that a mixture of alcohol with ether in the absence of aldehyde produces a positive test with Nessler's reagent from which it must be concluded that the reagent is not specific for aldehydes. The ammoniacal silver nitrate reagent was also found to give no reaction with alcohol-ether mixture. To test comparative sensitivity of reagents to unsaturated compounds in alcohol and aldehyde-free ether, allyl alcohol and ethylene were tried but the latter proved unsatisfactory. Results on a sample with

allyl alcohol indicated that none of the aldehyde reagents is affected by unsaturated compounds. Summarizing, the authors conclude that U. S. P. Nessler's reagent and pyrogallol and fuchsine sulphurous acid reagent are sensitive to aldehyde in ether in amounts as low as one part per million. The Nessler's reagent is sensitive to alcohol in ether as low as 0.5% and gives a positive test even in the absence of aldehyde. The pyrogallol and fuchsine sulphurous acid reagent is sensitive only to aldehydes. Neither reagent is sensitive to unsaturated compounds. Ammoniacal silver nitrate reagent is unsatisfactory for the detection of small amounts of aldehyde.—F. N. VAN DERIPE, E. C. VILLHEIMER and F. W. NITARDY. *J. Am. Pharm. Assoc.*, 25 (1936), 207.

(Z. M. C.)

Nickel—Volumetric Determination of, in the Presence of Cobalt. The determination is based on the difference in stability between potassium cobalticyanide and potassium nickelocyanide. The latter can be destroyed and the nickel transformed to the chloride without affecting the cobalticyanide. The nickel in the presence of cobalticyanide is then titrated by the drop method. This method has the advantage of needing no filtration and requiring less than ½ hour. The precision is 0.05–0.2 mg. of nickel. The method allows the determination of small quantities of nickel in cobalt.—G. CHARLOT. *Bull. Soc. Chim., mem.* (5), 3 (1936), 324; through *Squibb Abstract Bulletin*, 9 (1936), A-455.

Novocaine—Microchemical Reactions of. Microchemical reactions of novocaine are discussed. Crystals cannot be obtained by micro-sublimation but may be obtained by precipitation which is brought about by taking the novocaine up in water and then adding a strong salt solution. The crystals have an upper angle of 60° and polarize light beautifully. Gold and platinum salts give crystals as do also mercury salts, picrolonic and picric acids, all of which are described. Potassium bichromate gives crystals having an upper angle of 78°. The reaction with bromine water is best carried out with a potassium bromide-potassium bromate mixture in which the novocaine is mounted under a cover glass. A drop of HCl is then added at the side of the cover glass and the characteristic crystals are formed. The color reaction with furfurol is best carried out by mounting the novocaine crystals in an olive oil-furfurol mixture. They soon take on a red color. This reaction is given with aromatic amines and serves to detect substances which are not aromatic amines, as adulterants of novocaine.—M. WAGENAAR. *Pharm. Weekblad*, 73 (1936), 122.

(E. H. W.)

Odor Curves. Classification and plotting odor curves is suggested, using five component parts and five degrees for each: Strength—1, wood; 2, tea; 3, lilac; 4, cloves; 5, ammonia. Tone—1, smoked meat; 2, burning leaves; 3, pineapple; 4, clover; 5, iris. Clarity—1, sachet; 2, locust blossoms; 3, rain; 4, turpentine; 5, menthol. Persistency—1, violet; 2, apple; 3, anise; 4, neroli; 5, otto of rose. Esthetic Effect—1; asafetida; 2, cod liver oil; 3, sawdust; 4, coffee; 5, rose.—RALPH BIENFANG. *Am. Perfumer*, 32, No. 4 (1936), 49–50. (G. W. F.)

Pharmaceutical Preparations—Analysis of Some. Report is made of an investigation of some simple pharmaceutical preparations which it is believed are made in retail stores. An arbitrary limit of ten per cent variation on either side of the official or defined value of the principal ingredient was accepted in every case, except that of Basham's Mixture, where the U. S. P. tolerance was used. A tabulation shows number, limits of ten per cent tolerance, percentage, below, above and beyond, and extreme limits for the following preparations: Aspirin capsules, 5 gr.; quinine capsules, 3 gr.; quinine capsules, 5 gr.; Diluted Hydrochloric Acid; Basham's Mixture—ammonia; Basham's Mixture—iron; Lugol's Solution—iodine; Lugol's Solution—potassium iodide; Argyrol Solution—10%; Argyrol Solution—15%; Potassium Permangate Solution—1%; and Saturated Solution of Potassium Iodide. An examination of this tabulation indicates a considerable percentage of every group falls beyond the 10% limits. The number containing an excess compares favorably with those that are deficient, which seems to eliminate desire for sophistication.—WILLIAM F. REINDOLLAR and HOWARD E. CHANEY. *J. Am. Pharm. Assoc.*, 25 (1936), 221. (Z. M. C.)

Picrolonic Acid—Microdetermination of, by Means of Methylene Blue. The author's method (*J. Roy. Soc., N. S. W.*, 47 (1934), 240, 411; *Quart. J. Pharm. Pharmacol.*, 7 (1934), 701) is applicable to the microvolumetric determination of picrolonic acid in organic compounds. These are best dissolved in hot water, or, if necessary, in hot *N*/10 hydrochloric acid. After cooling, the excess of hydrochloric acid is neutralized with excess of calcium carbonate. The solution is then treated as previously described. The picrolonates of α-naphthylamine, *p*-toluidine and piperidine

have afforded satisfactory results.—A. BOLLINGER. *J. Roy. Soc., N. S. W.*, 68 (1935), 197; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 698. (S. W. G.)

Surgical Dressings—Examination of. In the annual report for 1935 of the work of the Manchester Testing House and Laboratory it is shown that there has been an increase in the number of samples of surgical dressings falling below the required standard. The following statement shows the total number of dressings or appliances received annually since the inauguration of the testing scheme for England, Wales and Scotland, together with the actual number and percentage found to be deficient:

Period Aug.-July	Total Dressings Received	Deficient in Quality		Deficient in Quantity*	
		No.	Per Cent	No.	Per Cent
1928–1929	1119	170	15.2	61	5.5
1929–1930	1029	118	11.5	45	4.3
1930–1931	1122	129	11.5	31	2.8
1931–1932	1029	71	6.9	23	2.2
1932–1933	1054	46	4.4	26	2.5
1933–1934	1059	34	3.2	26	2.5
1934–1935	980	59	6.0	29	3.0

* A tolerance of 5% was allowed before recording a sample as deficient in quantity.

The reduction in the number of dressings received for analysis during 1934–1935 is accounted for by a temporary suspension of the testing scheme during the interval which elapsed between the publication of the revised standards of the B. P. C. and the date fixed by the Department of Health for Scotland for the new standards to come into force.—MANCHESTER TESTING HOUSE REPORT. *Pharm. J.*, 136 (1936), 313. (W. B. B.)

Thallium Group—Qualitative Separations on a Micro Scale. A scheme for the separation, identification and estimation of the ions of the thallium group of Noyes and Bray (thallium, silver and lead) using a one-milligram sample has been presented. The ranges of usefulness have been investigated and the experimental data are reported. Results of trial analysis of samples are given. The detection of 0.2% of thallium in the presence of silver or lead (one part of thallium in the presence of 1,000 parts of either silver or lead) has been shown to be possible.—A. A. BENEDETTI-PILCHER and W. F. SPIKES. *Mikrochem.*, 19 (1936), 239. (W. H. H.)

Tung Oil—Determination of, in Meal and Press Cake. Because of absorption of oxygen from the atmosphere, the ordinary Soxhlet extraction method has to be modified in order to overcome this difficulty. The authors overcome this by passing nitrogen through the apparatus, provision being made to prevent undue rapid evaporation of the solvent.—C. B. POLLARD and L. M. ELLIS. *Am. J. Pharm.*, 106 (1936), 31. (R. R. F.)

Vitamin C—Enzymatic Method for Determination of. A rapid enzymatic method for the estimation of vitamin C, has been elaborated by the use of an ascorbic acid oxidase, obtained by the extraction of the pericarp of ripe Hubbard squash (*Cucurbita maxima*) with dilute alcohol. The solutions to be examined are purified by the mercuric acetate process, which removes interfering substances such as cysteine, glutathione and proteins, while the subsequent treatment with hydrogen sulphide gas, which is a part of the process, serves the dual purpose of removing mercury, and reducing any oxidized ascorbic acid present. The solution so obtained is adjusted to p_H 5, and the total reducing power is determined on an aliquot portion, using 2:6-dichlorobenzenone indophenol which has been standardized against a solution containing 0.025% of pure ascorbic acid and 0.05% of cysteine in $N/100$ solution of hydrochloric acid. To a second aliquot portion of the solution are added 1 cc. of $M/1$ acetate buffer solution of p_H 6 and 10 cc. of the enzyme solution, and the mixture is kept at 38° C. for thirty–sixty minutes. At the end of this time 1 cc. of 2% solution of sulphuric acid is added and the residual reduction is determined as before. From the difference between the values obtained, the quantity of vitamin C present may readily be computed. Special methods are given for the preparation of solutions before the determination of vitamin C in citrus fruits, Hubbard squash, beer, tea and milk.—H. TAUBER and I. S. KLEINER. *J. Biol. Chem.*, 110 (1935), 559; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 730.

(S. W. G.)

Yohimbine—Tests for Identification of the Alkaloid. Characteristics of the alkaloid, with respect to its optical properties, are thoroughly discussed. For comparison, both the alkaloid and the alkaloid hydrochloride were examined with various metallic chlorides, alkaloidal reagents and their acid salts. Other tests were made, such as color tests with yohimbine and the ultraviolet light effect upon the alkaloid and its salts.—M. L. SHANER and M. L. WILLARD. *Mikrochem.*, 19 (1936), 222. (W. H. H.)

PHARMACOGNOSY

VEGETABLE DRUGS

Pomegranate Rind—Structure of. The structures of the pericarp and calyx are reviewed in detail. Diagrammatic sketches of cells of various parts are given. The following results are given for the examination of the drug in a No. 60 powder. Solution of chloral hydrate, clove oil, alcoholic solution of phloroglucin and hydrochloric acid, and iodine water were used as mountants. 1. The abundant stone cells, occurring both in groups and isolated. 2. The large amount of cellulose parenchyma containing bright yellow plates and irregular lumps of tannin, many of which also occur loose, having been liberated from the cells during powdering. 3. The numerous small rounded starch grains and occasional calcium oxalate crystals. 4. The strongly cuticularized epidermis with scattered stomata, and the few small spiral vascular elements. 5. The absence of fibres. The pollen grains, epidermal trichomes and fibrous layer from the anthers are found only after carefully searching several preparations.—C. OLIVE GRIFFITHS. *Quart. J. Pharm. Pharmacol.*, 8 (1935), 622–630. (S. W. G.)

Psyllium and Seeds of Other Plantago Species. The following summary is given: *The Outer Epidermis of the Seed-Coat.*—1. In each of the five species considered in this account the cells have the form of flattened polygonal prisms with a thin smooth cuticle covering the outer periclinal walls. 2. In *P. amplexicaulis* the cells differ from those of *P. ovata* in their radial dimension only, which is about one-eighth of that of the corresponding cells of *P. ovata*. 3. In *P. Psyllium, P. arenaria, P. lanceolata* the cell walls are thin, the outer periclinal and anticlinal walls color pink with ruthenium red and are therefore pectosic. The walls also color lightly purple with hæmatoxylin solution and darker purple with methylene blue. The cells are almost filled with a colorless mucilaginous material which swells greatly in contact with water, it stains pink with corallin soda and is of a hemicellulosic nature (all reactions are given). The remains of the cell lumen, containing material, which colors yellowish brown with iodine water, occupy a very small part of the cell against the inner tangential wall. 4. *P. Cynops* differs in structure from *P. Psyllium* in that the remains of the cell lumen form an irregularly shaped "tube" running from the outer to the inner periclinal wall in the center of the cell. *The Middle or "Collapsed" Layer of the Seed-Coat.*—5. In each species studied, excepting *P. ovata*, this layer consists of the collapsed cellulose walls of a tissue which is only one cell in thickness. *The Inner Epidermis of the Seed-Coat.*—6. The cells have the form of polygonal prisms; the walls are thin, colorless and suberized, the outer periclinal wall being strongly adherent to the endosperm; the seeds owe their color to the brown contents of these cells. 7. Characteristic variations for each species occur in this layer. The variations may be in the dimensions, the shape of the walls or the form of the contents. This layer is easily found in the powder of the seeds and affords the most reliable means of identifying them either singly or in admixture. *The Endosperm.*—8. The dimensions, structure and contents of the cells are similar to those of *P. ovata*, except in the case of *P. amplexicaulis*, in which the thickening of the endosperm cell walls occurs mainly on those walls running parallel to the faces of the seed. *The Embryo.*—9. The characters of the embryo are in all cases similar to those of *P. ovata*. Diagrammatic sketches are included.—E. W. SKYRME. *Quart. J. Pharm. Pharmacol.*, 8 (1935), 609–621. (S. W. G.)

PHARMACY

GALENICAL

Activated Carbonaceous Material Having Colloidal Properties—Process and Apparatus for the Manufacture of. Carbonaceous material and the previously heated hydrophilic reaction products are pulverized and intimately mixed in a closed chamber in such a manner as to cause,

during the reaction, a sudden rise in temperature to a maximum of 250° C.—N. V. OCTROOIEN MAATSCHAPPIJ ACTIVIT. Belg pat. 411,427, Oct. 31, 1935. (A. P.-C.)

Apparatus—Description of. A description of scientific apparatus, particularly apparatus for small scale manufacture. Many illustrations of various types of apparatus are shown.—ANON. *Pharm. J.*, 136 (1936), 320. (W. B. B.)

Codex 1934—Coloring Materials of. While the proportion of any coloring matter in pharmaceutical preparations is small, and, for that reason, the risk of poisoning is reduced, it is desirable to remove any grounds for suspicion by making use of pigments which are known to be harmless. A list is given of dyes which are permitted to be used in the confectionery and foodstuffs trade. If these dyes are used in the customary proportions, they are harmless. Vegetable and animal colors are subject to wide variation both in hue and intensity, and, for this reason, have been displaced in the Codex by coal-tar dyes selected from the list given. Intensity of color may be measured in two ways. One is to dilute the solutions in such a fashion that equal shades are formed, and note the quantities of the solutions required to match. The intensity is inversely proportional to the quantity of diluent used. The second test is the tintometric test. Solutions are examined in the Lovibond tintometer, and the tints required to match the dye are noted. A table is given which shows the reactions of certain dyes to acid, alkali and bromine. The variability of certain vegetable colorings matter is illustrated. Coloring materials used in confectionery are listed.—E. G. BRYANT. *Pharm. J.*, 136 (1936), 233. (W. B. B.)

Cold Cream, Swiss Pharmacopœia V—Suitability of, as a Cooling Salve. The article is a commentary upon a paper by Lutz and Haenel having appeared in *Schweiz. med. Wschr.*, 65 (1935), 1228. The authors of this article claim that the cold cream of the Swiss Phar. IV or V is not suitable from a dermatological standpoint in that it does not keep well, it separates water on standing, does not mix well with sulphur-containing oils, does not possess sufficient permeability and does not spread well on exuding surfaces. The author comments upon these statements and suggests the following formula which would be an improvement and which does not contain proprietary ingredients. Cera alba 100 parts, cetaceum 100 parts, ol. arachidis 550 parts, aqua destfervid. 250 parts, cetyl alcohol 5 parts, ol. rosæ 20 gtt. The cetyl alcohol is melted with the waxes and the hot distilled water poured in and stirred till cool. The oil of rose is then added. —P. WEINREICH. *Schweiz. Apoth.-Ztg.*, 74 (1935), 49. (M. F. W. D.)

Creams—Modern. Replacing older soap emulsifying agents, glyceryl monostearate and lanolin absorption bases are used extensively. The former will produce oil-in-water creams with ten times its weight of water and lotions with 30 times. The latter, used to the extent of about 20%, gives water-in-oil creams.—R. A. KRAMER. *Am. Perfumer*, 32, No. 4 (1936), 69–70. (G. W. F.)

Dihydroxy-diamino-arsenobenzene—Stable Solutions of, and Its Derivatives. Sufficient ascorbic acid (or its salts) is added to solutions of dihydroxy-diamino-arsenobenzene or its derivatives to stabilize the solutions.—FRANZ ELGER, assignor to HOFFMANN-LA ROCHE, INC. U. S. pat. 2,035,153, March 24, 1936. (A. P.-C.)

Distillation Losses—How to Avoid. An explanation of the method of calculation of losses in the distillation of volatile products (such as essential oils), with indications of the precautions which should be taken to avoid or minimize these losses.—YOLAND MAYOR. *Parfumerie Moderne*, 30 (1936), 21–27. (A. P.-C.)

Easton's Syrup—Cause and Prevention of Discoloration. Ferrous salts, perfectly dry, in well-stoppered containers, will keep indefinitely, but in the presence of air and moisture they quickly oxidize. Sunlight does not cause oxidation of ferrous salts in solution, on the contrary it appears to inhibit the process. Observations were made of the changes on storage which occurred in preparations of Easton's Syrup made according to various formulæ. As an outcome of these observations, the following new formula for Easton's Syrup is suggested: Ferrous sulphate (in clean, dry crystals), 41.98 Gm.; calcium phosphate, 15.61 Gm.; dilute sulphuric acid, 3.0 cc.; phosphoric acid, 15.0 cc.; hypophosphorous acid (30%), 15.0 cc.; solution of strychnine hydrochloride, 30.0 cc.; quinine sulphate, 14.8 Gm.; syrup, 560 cc.; glycerin, 140 cc.; distilled water, to produce 1,000 cc. Add the sulphuric acid to 80 cc. of distilled water and dissolve the ferrous sulphate in the solution with gentle heat. Mix the phosphoric acid and the hypophosphorous acid with 80 cc. of distilled water and in this dissolve the quinine in the mixture. Heat to boiling point and set aside for a few minutes to allow all the calcium sulphate to separate (the sulphuric

acid is included to assist in this). Filter. Wash the filter with sufficient distilled water to produce 300 cc., add the glycerin and syrup to produce 1,000 cc. It is suggested that each batch of Easton's Syrup be bottled immediately into 2-, 3- and 4-ounce bottles, preferably white, and prescribers be recommended to order in these quantities, not exceeding 4 ounces at a time.—H. B. HAMMOND. *Pharm. J.*, 136 (1936), 231. (W. B. B.)

Excipients for Pills—Studies on. A study is made of the disintegration time of various types of pills made with excipients permitted by the Phar. Dan. 1933. The test fluid is a pepsin hydrochloric acid solution, except for keratin coated pills, for which an alkaline trypsin solution is used. Results as to degree and time of disintegration of 49 types of pills are tabulated. Particular approval is expressed of an excipient mixture used in the arsenic pills of the Swedish Phar., namely, *Sacch. Lact.*, 4 Gm., *Gummi Arabic.*, 0.4 Gm., *Syr. Sacch., q. s.*—H. SVENSSON. *Farm. Revy*, 35 (1936), 141, 157. (C. S. L.)

Glycerin of Starch B. P. 1932—Preparation of. The formula for glycerin of starch in the 1932 Pharmacopœia differs from that in the B. P. 1914 in that the amount of starch is decreased by 15%. The formula is now identical with glycerite of starch, U. S. P. X. The B. P. 1932 directs that a suspension of starch in water be added to glycerin previously heated to about 140° C., and heating continued at a temperature not exceeding 140° C., with constant stirring until a translucent jelly is formed. Tables are given in which it is shown that there is very little difference in the time required for heating at 140° C. and at 110° C., whereas there is a definite risk of discoloration at the higher temperature.—W. SUMNER and R. V. LLOYD. *Pharm. J.*, 136 (1936), 145. (W. B. B.)

Iodo-Casein. To prepare this substance a solution of casein should first be prepared using a dilute solution of sodium carbonate or sodium hydroxide. To this should be added slowly, with constant stirring, a solution of iodine prepared with potassium iodide until the equivalent of 18% of iodine has been added. The iodo-casein can be precipitated by the careful addition of acetic acid, and should be washed free from uncombined iodine and potassium iodide. The dose is from 5 to 10 gr.—ANON. *Pharm. J.*, 136 (1936), 331. (W. B. B.)

Iron Bile Salt—Preparation of. Iron bile salts are prepared by treating a substance of the class consisting of bile and bile-acid and bile-salt preparations with an ionizable iron salt, at a hydrogen-ion concentration at which formation of insoluble iron bile salts occur.—HENRY DOUBILET, assignor to ELI LILLY & CO. U. S. pat. 2,034,333, March 17, 1936. (A. P.-C.)

Liniment of Potassium Iodide with Soap, B. P. C. It is very convenient to prepare this liniment by the following method: Mix the glycerin with 680 cc. of distilled water and add the mixture in small quantities to the curd soap contained in a mortar, triturating the saponaceous mass thoroughly after each addition of the mixture. Dissolve the potassium iodide in 120 cc. of distilled water and add the whole quantity of the solution at once to the mortar. Triturate the mixture until a homogeneous mass is obtained. Finally add the oil of lemon, and again triturate the gelatinous product. The liniment can very easily be prepared by this cold process, and the product so obtained compares favorably with that prepared according to the B. P. C. method, in which the curd soap is dissolved in water on a water-bath and the loss of water during the process is made up afterward.—ANON. *Pharm. J.*, 136 (1936), 186. (W. B. B.)

Ointment of Iodine, Stainless, N. F. The prescribed method of making the non-staining iodine ointment of the N. F. led to such a considerable loss of iodine and caused such discomfort to the operator that an alternative method was sought. The following procedure was ultimately adopted: Powder 4 oz. of iodine in a glass mortar, and transfer to a glass wide-mouthed jar provided with a well-fitting glass stopper. Pour into the bottle 7 fl. oz. 160 minims arachis oil, insert the stopper and leave in a warm place, shaking occasionally. Complete solution is effected within 3 hours, and the resulting oil, in which much of the iodine seems to be in combination as well as in solution, forms, on cooling, a viscous fluid. All that is then necessary is to weigh out 4 oz. 18 grains of the oil and incorporate it with 26 oz. of yellow soft paraffin. There is almost no smell of iodine during any stage of the manufacture, and though it may seem to take more time than the original process, this is not really so, as sufficient iodized oil is prepared by this means for at least two batches of ointment, and the mixing of the oil and soft paraffin is easily effected.—K. F. MOOREY. *Pharm. J.*, 136 (1936), 232. (W. B. B.)

Ointments. The author reviews some of the more recent articles dealing with the problem of preparing ointments, his aim being to point out the importance of extensive research on each

ointment in order to find the base best suited to the action desired. Attention is directed to the fact that the old classification of ointment bases probably must be changed. Some of the bases discussed are wool fat, water-miscible vanishing creams, cosmetic creams. The question of absorption of medicinal substances by the skin is also discussed. The emulsion type of ointments is given some consideration.—RALPH W. CLARK. *J. Am. Pharm. Assoc.*, 25 (1936), 215. (Z. M. C.)

Paraffin Oil Emulsions. The value of triethanolamine stearate for the preparation of stable emulsions of liquid paraffin is noted. Triethanolamine of commerce is a mixture of 5% mono-, 20% di- and 75% tri-ethanolamine. (Schimmel & Co. and Merck preparations were used.) *Triethanolamine stearate* is made from *Acidum Stearicum*, Swedish Phar. X, 1,000 Gm., Triethanolamine, 492 Gm. The stearic acid is melted on the water-bath and the amine run in in a thin stream with constant stirring. The mixture is warmed till a semi-solid mass is formed. This is spread on wax paper and when cool is ready for use. It is a yellow-white, solid, waxy mass, soluble in water, alcohol and chloroform, insoluble in ether, benzol or benzine. It slowly browns in color with age, so should not be made in too large batches. *Emulsio paraffini:* Triethanolamine stearate, 30 Gm., *Paraffinum liquidum purum*, Swedish Phar. X, 700 Gm., *Aqua distillata ad* 1,000 Gm. Without overheating, the amine stearate is melted into the liquid paraffin. The water is added with stirring till the emulsion forms. The white emulsion can be obtained thin enough to pour well and has been observed to be stable for over one and a half years. It mixes well with such agents as diacetylbishydroxyphenylisatin or with phenolphthalein. As the triethanolamine enhances the cathartic power, the doses of these must be decreased. Considerable quantities of water, syrups, dried or fluidextracts, tinctures or acids can be added without altering the consistency. Alkaline solutions thicken the emulsion so that it pours with difficulty. A formula called *Emulsio paraffini fortior* is described: Acetphenolisatin, Dan. Phar. 1933, 0.10 Gm., *Emulsio paraffini ad* 1,000 Gm. This has received clinical test. Dose, one tablespoonful.—S. NORSTROEM. *Farm. Revy*, 35 (1936), 125. (C. S. L.)

Plaisters—Medicinal. Although solvents have been improved, and pure petroleum ethers, ligroin, toluol, trichlorethylene, etc., have displaced the older crude solvents, yet the keeping properties of wet spread plaisters are not good, particularly abroad, where extremes of temperature are met with.—E. BERRY. *Pharm. J.*, 136 (1936), 206. (W. B. B.)

Sodiumferripyrophosphate—Sterile Solution of. The author gives directions for the preparation of this solution. Ferric chloride solution and water are sterilized separately by heating for $^1/_2$ hour in the water-bath; 4 Gm. of the $FeCl_3$ solution is weighed and added to 50 Gm. of the water under aseptic conditions. Nine grams of sodium pyrophosphate are dissolved in 50 cc. of distilled water, filtered and sterilized in the boiling water-bath for $^1/_2$ hour. The $FeCl_3$ and sodium pyrophosphate solutions are then carefully mixed and filtered under aseptic conditions. The solution contains 0.55% Fe and has a p_H of 6.7.—P. VAN DER WIELEN. *Pharm. Weekblad*, 73 (1936), 61. (E. H. W.)

White Beeswax—Chemical Process for Preparation of, from Crude Beeswax. Crude beeswax is melted in direct contact with an aqueous solution of an alkali metal salt and an alkali metal hydroxide, to extract alkali-soluble impurities. After cooling the wax is separated from the solution and again melted in contact with a second aqueous alkali metal salt solution, and an alkali metal hypochlorite solution is added while stirring the mass. After cooling, the purified wax is separated from the solution.—CHARLES S. BISSON and WALTER B. DYE. U. S. pat. 2,037,-111, April 14, 1936. (A. P.-C.)

Wines, Medicinal. A description of the production of orange wine for use in medicated wines instead of white Malaga wine. The orange juice should be partly neutralized with calcium carbonate to a residual acidity of 10 Gm. per liter (expressed as sulphuric acid); the reducing sugars are determined and the alcohol yield calculated therefrom (180 Gm. glucose = 92 Gm. alcohol), and sugar (previously inverted) is added at the rate of 2 kilos per 100 liters of juice for each per cent of alcohol in order to obtain a fermented juice containing 14% alcohol. Fermentation should be carried out with selected cultures.—A. LEAL. *Publ. Pharm.* (*S. Paulo*), 1, No. 1 (1935), 7–9; through *Chimie & Industrie*, 35 (1936), 371. (A. P.-C.)

PHARMACOPŒIAS AND FORMULARIES

Pharmacopœia—New Hospital. A brief review of the fifth edition of the Pharmacopœia of the Edinburgh Royal Infirmary.—ANON. *Pharm. J.*, 136 (1936), 230. (W. B. B.)

Pharmacopœia—New United States (XI) and the Public Health. A modern pharmacopœia is defined. Aside from being a guide for the physician and pharmacist, it exerts a beneficial influence upon the public welfare attested by the popular belief that the U. S. P. greatly helped to prepare the way for Federal legislation relating to drugs. While physicians to-day do not regard drugs as being indispensable for either the prevention or treatment of disease as they did centuries ago, drugs may still be considered to be of prime importance in maintaining public health. The pharmacopœia had its beginning as early as the sixteenth century B. C. in the Egyptian Ebers Papyrus. The first pharmacopœia to receive official sanction was that of Nuremberg which was compiled by Valerius Cordus and first published in 1546. A history of the U. S. P. from the time of its inception is then given followed by a discussion on the mechanism of revision. The author comments on some of the more notable changes in the monographs of the new revision and includes tables showing additions to the U. S. P. XI and articles official in the U. S. P. X but not admitted to the U. S. P. XI. Physicians are sometimes misled into believing that the Pharmacopœia is an obsolete work and that the new remedy or "specialty" is an improvement over the official product. The chief reason for this deception is the fact that U. S. P. preparations are on a price-competitive basis so the drug manufacturers, naturally, prefer to sell their specialties with a protective trade-marked name. It is the belief of the author, due to the distribution of "debunking" literature among the laity, that it may not be long until the patient becomes conscious of the value of the Pharmacopœia to his welfare, and he may then become instrumental in forcing the physician to the more extensive use of the U. S. P. drugs.—G. B. ROTH. *Med. Ann. Dist. Columbia*, 5 (1936), 5. (W. A. P.)

United States Pharmacopœia XI. Some new factors have operated in the revision of the U. S. P., and some new principles in dealing with the control of drugs have been introduced. The difficulties of the Committee of Revision are no doubt lightened in many cases by the principle of interim revision which has been in operation since 1933, whereby a revision of a section of the Pharmacopœia, or a new monograph, can be made official at any time by publication of an announcement by the Board of Trustees. This procedure gives an opportunity for future action in certain instances where circumstances have prevented definite changes or additions being made in the eleventh Pharmacopœia; for instance, the admission of insulin and the adoption of the international standards and units for biologically assayed drugs. The list of 58 new articles added to the Pharmacopœia contains the names principally of chemicals and serological products, and includes only the following galenicals: Emulsion of liquid petrolatum, extract of liver, solutions of irradiated ergosterol, liver, histamine phosphate, parathyroid and sodium hypochlorite, and mild tincture of iodine. The general article on sterilization in the appendix to the U. S. P. X is reprinted in the new Pharmacopœia without substantial change. In this Pharmacopœia some advance has been made in the direction of acceptance of certain principles of biological assay which have been indicated by the Permanent Commission on Biological Standardization of the League of Nations and accepted for the British Pharmacopœia, *viz.*, that such assays should be based upon comparison with a standard preparation, and that potency should be expressed in international units defined in terms of the relevant international preparations. Vitamins A and D are recognized. The pharmacy of galenicals has been carefully revised. Ointments have undergone thorough revision.—C. H. HAMPSHIRE. *Pharm. J.*, 136 (1936), 89, 118, 205. (W. B. B.)

NON-OFFICIAL FORMULÆ

Contraceptives—Household. A discussion is presented of home-made contraceptives, consisting of tampons medicated with acetic acid, lemon juice or alum or treated with fats or oils, and jellies containing a starch-glycerite base and lactic and boric acids. The essential components of a jelly are the base, most commonly starch-glycerite and a spermicide, commonly organic acids, a few salts of aluminum and zinc, oxy-quinoline sulphate and hexylresorcinol; bactericides are optional. It is suggested that a thick, water-soluble jelly, paste or mucilage, suitable as an inexpensive base in contraceptive jellies, might be obtained from cereals, animal gelatins, mosses, gums, quince and psyllium seeds, etc.—ROBERT L. DICKINSON. *J. Contraception*, 1 (1936), 43; through *Squibb Abstract Bulletin*, 9 (1936), A-467.

Cosmetic Make-Up Base—Method of Manufacture of. The patent provides a make-up material in solid form which comprises a compressed body containing pulverulent texture ingredients and pigments, uniformly distributed in a mixture of lanolin and soap, the lanolin being emulsi-

fiable with water by rubbing the surface of the body with a moistened applicator.—FRANK FACTOR, assignor to MAX FACTOR & CO. U. S. pat. 2,034,697, March 24, 1936. (A. P.-C.)

Cosmetics in Pharmacy. Comments on certain types of cosmetics are made. These types include face powders, foundation creams, "skin foods," cleansing cream, lipstick, protective creams and lotions, astringents and deodorants, hair creams, shampoos, nail varnishes. Formulæ are given for several of these types.—H. E. SKINNER. *Pharm. J.*, 136 (1936), 321. (W. B. B.)

Creams—Triethanolamine Stearate in. A hand cream can be made according to the following formula: Triethanolamine, 12½ gr.; stearic acid, 2 drams; oil of theobroma, 24 gr.; glycerin, 96 m.; quince seed, 20 gr.; preservative (*e. g.*, methyl-*p*-hydroxy benzoate), 1 gr.; water, 1 fl. oz. Dissolve the preservative in half the water, add the quince seed, allow to soak for twenty-four hours and strain. With the rest of the water mix the triethanolamine, bring the temperature to boiling point and stir into the solution the stearic acid, cocoa butter and glycerin, previously melted together. When emulsification is complete, add the quince seed mucilage and stir until the product is smooth. Perfume can be added when the cream has cooled to about 40° C.—ANON. *Pharm. J.*, 136 (1936), 188. (W. B. B.)

Face Powder Manufacture. The vegetable ingredients as used in a face powder formula possess the power of absorption to a very much higher degree than do any mineral materials, and for this reason their presence is imperative. The best starch is rice, although maize and wheat starch are equally good on account of their whiteness and transparency. The importance of talc, one of the mineral ingredients, is still very great in face powders on account of its adhesive properties; it is, therefore, used to counteract the deficiencies of starch in this respect. Kaolin is the corresponding aluminum silicate and is usually mixed with the cheaper talc as it reduces the glossy nature of the latter. Zinc oxide is prepared nowadays specially for use in cosmetics and ointments in such a way that it is guaranteed free from lead, cadmium or arsenic, so that it is perfectly safe in use. Zinc oxide adheres well and lends body to the powder in which it is incorporated. It is of great value in the treatment of skin affections because it acts as an astringent and drier and promotes the healing of wounds and abrasions. Calcium carbonate is used in the form of precipitated chalk. Magnesium carbonate has lightness, good color and adhesive properties. Bismuth subnitrate is used to a certain extent as a base on account of its pearly tone, but lacks transparency and often becomes discolored when in contact with the skin. Other ingredients which are sometimes used in face powders are borax, boric acid, bicarbonate of soda and alum. Adhesive properties are obtained by the incorporation of strictly regulated amounts of metallic stearates of which by far the most important are the stearates of zinc and magnesium. The sifting of powders is a highly important part in their manufacture, as although the individual ingredients as a rule are obtainable in a very finely divided state, proper mixing cannot be obtained unless an efficient sifting process is employed, and this becomes doubly important when a coloring material and a perfume have to be incorporated. The newer types of machinery include the centrifugal type of sifter which eliminates the necessity for an elevator feed, the powder being forcibly driven through a revolving partitioned spiral directly on to an enclosing cylindrical screen. The blended powder then falls through the annular space between the screen and an outer cylindrical container. The ball mill blender is a comparatively simple apparatus in which the powder is introduced into a cylinder filled with balls of porcelain, flint, etc., the lid clamped on and the mill started. The power consumption of this type of blender is necessarily high on account of the large dead weight of the apparatus and the balls. The pulverizer type of apparatus gives a large output of very fine powder, but suffers from the defect that two operations are necessary, since the powder must first be thoroughly mixed in the correct final proportions before being introduced into the pulverizer.—H. SILMAN. *Perfumery Essent. Oil Record*, 27 (1936), 102. (A. C. DeD.)

Insecticide—Preparation of. Tobacco extract is treated with sufficient sulphuric acid to convert the nicotine to sulphate; the treated extract is concentrated to about 38° Bé and mixed with about 1 lb. of a fatty acid to 6 lbs. of concentrate, thus producing a concentrated insecticide spray material.—CARL SGONINA. U. S. pat. 2,037,276, April 14, 1936. (A. P.-C.)

Meerschaum. The word is the German for "sea-foam." This mineral, a hydrous magnesium silicate ($Mg_2Si_3O_8.2H_2O$) of whitish gray to cream in color, allied to magnesite, has a specific gravity of 0.988 to 1.279, and a hardness of 2 on Mohs scale. It occurs in irregular nodular masses in alluvial deposits. The main site of such deposits is on the plain of Eski Shehr on the Haidar Pacha-Angora line in Asia Minor, and in a lesser degree on the islands of Eubœa and

Samos; also in Hrubschity and Kromau in Morarea. Likewise there are beds in Pennsylvania, Utah and South Carolina. An ideal powder is said to have the following points: Good covering power; adhesiveness; matt or peach-like; absorbent; easy spreading; not readily dissipated. Powdered meerschaum in a normally constituted face powder would do much toward all these points, particularly as an absorbent, and in powders destined for greasy or oily skins it should prove a distinctly valuable component.—ANON. *Perfumery Essent. Oil Record*, 27 (1936), 111. (A. C. DeD.)

Teeth and Hair—Preparations for. The table offered in PHARMACEUTICAL ABSTRACTS, 2, (1936), 114–115, is from the following reference.—ANON. *Drug and Cosmetic Ind.*, 37 (1935), 460–461. (H. M. B.)

Treatment Lines. Various lines of skin treatments are discussed.—ANON. *Drug and Cosmetic Ind.*, 38 (1936), 335–336. (H. M. B.)

Vitamin F in Skin Creams. A review of the occurrence and effects of this vitamin (the unsaturated fatty acids, linolic and linolenic).—MARY I. SHEPHERD. *Drug and Cosmetic Ind.*, 38 (1936), 326–328, 337. (H. M. B.)

DISPENSING

Acriflavine Eye-Drops. A satisfactory method of preparing acriflavine eye-drops is as follows: Acriflavin., 1; aq. dest., 200; cera alb., 5; ol. ricini, ad 1,500. Dissolve the white wax in the castor oil and triturate the warm solution with a warm solution of the acriflavine in water. An emulsion is formed which can be diluted with castor oil if required.—ANON. *Pharm. J.*, 136 (1936), 248. (W. B. B.)

PHARMACEUTICAL HISTORY

Apothecary Shops of Colonial Times. The author has gathered from articles published in pharmaceutical literature and other sources a wealth of facts about these old apothecary shops. The appearance of such a shop and a present-day one are contrasted. Some of the old stores mentioned are the Glentworth store now in the Philadelphia College of Pharmacy and Science, the store of Dr. Dyott in Philadelphia, the Marshall store also in Philadelphia and the shop of William Davies of Boston, probably the first store in America. A very interesting old store is Apothecaries' Hall in South Carolina, which is a museum now. Probably the most interesting of Colonial apothecary shops was that kept by Dr. Hugh Mercer which is notable because of its connection with George Washington. Considerable information about it is given. There were about twenty apothecary shops in Philadelphia in colonial days. Of these the Christopher Marshall store has the greatest reputation. It was here that Elizabeth Marshall, probably the first woman pharmacist, worked. Other Philadelphia stores were those of John Speakman, John Bartram, Samuel Wetherill, George Glentworth and Elias Durand. Dr. Andrew Craigie was the first Apothecary-General of the United States. Another prominent figure in those days was Dr. John Morgan, one of the founders of the first medical society in Philadelphia, in 1765. In closing the author alludes to the invention of soda water by Priestley, the discoverer of oxygen, and also to the fact that Benedict Arnold kept a drug shop.—MILLICENT R. LAWALL. *J. Am. Pharm. Assoc.*, 25 (1936), 230. (Z. M. C.)

Endocrine Therapy—History of. The development and application of knowledge concerning the endocrine secretions and endocrine therapy are described.—E. C. DODDS. *Pharm. J.*, 136 (1936), 179. (W. B. B.)

Estonian Pharmacy Forges Ahead. The author writes in an interesting way of the progress of pharmacy in Estonia from 1695 down to the present time.—RUDOLPH WALLNER. *J. Am. Pharm. Assoc.*, 25 (1936), 226. (Z. M. C.)

Hoffman's Drops—History of, and Their Origination.—ANON. *Pharm. Post*, 68 (1936), 81–83. (H. M. B.)

Medicine Book of Two Famous Doctors. A list of remedies and their therapeutic uses published in the 18th Century at Venlo. From a standpoint of materia medica the list is of historical value and throws light upon the materia medica of that time.—P. L. MÜLLER. *Pharm. Weekblad*, 73 (1936), 2–19. (E. H. W.)

Pharmacists—Influence of, upon the Development of Chemistry. The influences of the following pharmacists are discussed: (1) Albert Johann Kunkel, (2) Joachim Becher, (3) Stefan

Franz Geoffroy d Ä., (4) Johann Friedrich Böttiger (Böttger), (5) Wilhelm Franz Rouelle, (6) Sigismund Andreas Marggraf, (7) Valentin Rose d Ä., (8) Carl Wilhelm Scheele, (9) Martin Heinrich Klaproth, (10) J. F. Westrumb, (11) Joseph Louis Proust, (12) Valentin Rose, (13) L. N. Vauquelin, (14) Paul Traugott Meissner, (15) Friedrich Sertürner, (16) Joseph Pelletier, (17) Joseph Caventou, (18) Heinrich Rose, (19) Christian Friedrich Schönbein, (20) Jean Baptiste André Dumas.—FRIDO KORDON. *Pharm. Post*, 68 (1936), 78–81, 90–92, 100–107. (H. M. B.)

PHARMACEUTICAL EDUCATION

College Life—Complexity of. Attention is directed to the marked changes that have taken place in college life. In early times the institution felt little responsibility for the student; the instructor was all important; going to college was a real event in the life of the student and the members of his family and the community in which he lived. Now, hordes of students enter our colleges, many of them with a real desire for an education but also many because it is "the thing to do" and because it will assist in securing a white-collar job. The attitude of the student and his parents has changed. The idea is not that the student may be capable of taking an education with advantage to himself and his college but that if he fails the teachers are to blame. The usual thing is that the poor student complains of boredom while the good student does not. There are poor instructors but they are few in number; the instructor is rarely to blame; apparently there are more and more students who expect the college to give them an education. An examination of some of the activities of the college indicates that they are alive to the situation. Entrance requirements are made for the purpose of reducing waste to a minimum but if the college is a state institution it is almost compelled to accept every graduate of a high school that meets its requirements. It then becomes the duty of the college to give poor students who come as much guidance as possible. Nearly every college gives orientation tests that assist the faculty in guiding students. A student may fail because of lack of mental ability, ill health, lack of ambition or lack of interest. It is the duty of the college then to correct the fault or advise the student to leave college. The college cannot tell a student that he is sure to fail, it must point the way to a successful life without a college education. Students who find themselves uninterested should be allowed to choose another curriculum or be taken out of college. College should emphasize the importance of obeying health laws. They must look after the health of their student bodies and make provisions for necessary instruction in health matters. Facilities and instruction for physical exercise must also be provided. In formal instruction all students must be treated alike but, since no two students are alike in all respects, every college should have trained personnel officers, one for men and one for women. Whether there is any formal mechanism of this sort or not, good instructors will invite confidence and feel it a duty to give needed guidance. Colleges should offer opportunities for extra-curricular activities, athletics, debating, literary societies, dramatics, editorial work, etc.; but the "sideshows" must not be so attractive that the student loses sight of the "main tent." The faculty must use good judgment in controlling these matters.—C. B. JORDAN. *J. Am. Pharm. Assoc.*, 25 (1936), 24. (Z. M. C.)

PHARMACEUTICAL LEGISLATION

Professional Pharmacy—The Changing Attitude of Government toward. Changes in government trends and the underlying reasons are discussed. At one time it was difficult to secure passage in Congress and in State legislatures of laws increasing standards. About fifteen years ago the mass merchandising era came in. It removed the personal element. Direct national advertising lessened the influence of the independent pharmacist. A natural result of this system was that large manufacturing houses intensified detailing to the physicians. Prescribing U. S. P. and N. F. preparations decreased. Another pernicious result was self-medication. Physicians tried these detailed preparations on their patients and this custom is probably responsible for 90% of what they term counter-prescribing. Then the chain store and the cut-rate store came into existence. Gradually registered pharmacists became less competent. Consequently, the breakdown in the morale, the attitude of predatory members of the profession, the direct appeal of manufacturer to consumers, had their effect upon men in governmental positions. They, too, became price conscious. A specific example of the changed attitude was manifest in Colorado in the assault on the college prerequisite law, but the governor realized that the attempt to suspend

operation of the law would be a backward step. Fortunately the trend seems to be moving in the other direction.—ARTHUR D. BAKER. *J. Am. Pharm. Assoc.*, 25 (1936), 245. (Z. M. C.)

MISCELLANEOUS

Pharmacy—Student's View of. An optimistic outlook on the practice of pharmacy, as viewed by a student.—J. W. ROWSON. *Pharm. J.*, 136 (1936), 207. (W. B. B.)

Prescription Business—Service That Built a. In preparing to open an exclusive prescription pharmacy, the author recalled that lack of practical therapeutics in the curriculum of both medical colleges and colleges of pharmacy was a vulnerable spot. With this thought in mind, he decided to undertake a direct mail Bulletin of Information Service to the doctors. The first bulletin invited the doctor to telephone for information. It also offered a few brief paragraphs with information of unusual character. This plan was continued, information being confined almost exclusively to official products or new and non-official items. Gradual progress was made until the mailing list included six hundred names. This service has developed a confidence between the doctors and the store that has more than compensated for the effort and expense.—L. D. BRACKEN. *J. Am. Pharm. Assoc.*, 25 (1936), 219. (Z. M. C.)

Publicity—Your Opportunity for. One's first thought of publicity for pharmacy is of Pharmacy Week. The author reports that 800 American newspapers in 1934 published news and editorials on Pharmacy Week, which perhaps was the greatest public recognition that pharmacy has had. Hundreds of stores entered the national window display contest. Promotion of gardens of medicinal plants is an excellent means of publicity, because it focuses public attention upon professional aspects of pharmacy. Another important project is the possibility of inducing the government to issue a special pharmacy stamp. The fundamental thing behind all publicity is that something of merit had to be accomplished. What has been done by the pharmacists of Birmingham, Alabama, is a specific example of what is being attempted. A small leaflet bearing on its cover page, "This Emblem Protects You," lists a number of statements under the heading "Ethical Pharmacy Shields You" and carries on its last page the name and address of the individual pharmacy which distributes it. Numerous other cities have undertaken some special advertising campaign. A number of other methods of obtaining publicity are cited.—HOWARD STEPHENSON. *J. Am. Pharm. Assoc.*, 25 (1936), 222. (Z. M. C.)

PHARMACOLOGY, TOXICOLOGY AND THERAPEUTICS

PHARMACOLOGY

Anterior Pituitary Extract—Stability of, in Aqueous Solution. The results are summarized as follows: 1. Anterior pituitary extract kept in aqueous solution at room temperature was found to lose 50% of its activity in 9 days and 75% in 23 days. 2. When kept at −2° C. the loss in activity was greatly retarded. After one year the solution still retained 50% of its original potency. 3. The activity of solutions kept in cold storage was not affected by the use of a preservative (merthiolate).—I. W. ROWLANDS. *Quart. J. Pharm. Pharmacol.*, 8 (1935), 642–645. (S. W. G.)

Cissampelos Pareira L. var., Gardneri Diels—Pharmacology of. The extract contains alkaloids, saponin, sugar and organic acids. It is of low toxicity. Applied to the isolated heart it causes first increase of tonus and decrease of the amplitude. Larger doses cause paralysis in diastole. The respiration is accelerated for a short time.—LUIS FLORIANI. *Rev. farm. (Buenos Aires)*, 78 (1936), 49. (A. E. M.)

Cocaine—Estimation of the Excretion of. Cocaine cannot be detected in the fæces after subcutaneous injection, but in the urine only. It was estimated in the following way. The urine was received in vessels containing enough $2N$ hydrochloric acid to acidify it. Each portion of urine was measured, neutralized to litmus with $N/1$ sodium hydroxide and uranyl acetate added until the clear fluid over the precipitate, which settled quickly, was yellow, and no further precipitate was formed on addition of another drop of uranyl acetate. The total volume was measured and, after filtration, an aliquot part of the filtrate was made alkaline to phenolphthalein with 13% sodium carbonate solution, and then well shaken three times in a separating funnel with one and a half times its volume of ether. The united ether extracts were carefully dried with anhydrous sodium sulphate. The ether was then shaken out with 10 cc. of $N/10$ hydrochloric acid for five

minutes. The hydrochloric acid solution was removed, freed from ether and 5 cc. used for analysis. Cocaine was estimated by precipitation with phosphomolybdate according to the process described for atropine (*Arch. Pharm. Berl.*, 270 (1935), 520; *Quart. J. Pharm. Pharmacol.*, 6 (1933), 222). The amount excreted is very small, especially if the urine is alkaline. In acid urine the highest percentage found was 16% of the amount injected. Some cocaine is re-absorbed by the mucous membrane of the bladder. A method for estimating cocaine by testing its mydriatic effect on the pupil of the mouse was found not to be very accurate.—H. A. Oelkers and E. Vincke. *Arch. exp. Path. Pharm.*, 179 (1935), 341; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 724. (S. W. G.)

Di-iodotyrosine—Diuretic Action of. Di-iodotyrosine was prepared from *l*-tyrosine by Henze's method and made up as a 10% solution for physiological experiments by addition of sufficient NaOH to just effect solution. Doses were administered intravenously to catheterized rabbits which had been subjected to various conditions of diet and water intake. It was concluded that di-iodotyrosine has a less intense but more prolonged diuretic effect than "diuretin" and that it is extra-renal in its action.—A. Ogata and T. Tanaka. *J. Pharm. Soc. Japan*, 55 (1935), 16–18. (R. E. K.)

Diphtheria Intoxication—Protective Measures in. Pigeons (177) were used as experimental animals, and varied schedules of treatment with the following agents administered systemically were found ineffective as life saving measures in experimental diphtheria intoxication: digitalis, congo red alone or with digitalis or pituitary extract, and sodium sulphocyanate. Complete protection was obtained with cevitamic acid (ascorbic acid) when used in mixtures with diphtheria toxin, but protection was absent, incomplete and irregular when toxin and cevitamic acid were alkalinized, or injected separately, the latter in confirmation of the results of others.—P. J. Hanzlik. *J. Pharmacol.*, 56 (1936), 269. (H. B. H.)

Earthworm, Rational Use of, for the Evaluation of Vermicides. Report is made of an attempt to evolve a biological method which would show the relation between vermicidal activity and chemical constitution. It was necessary that the method use only small amounts of material and that it be simple and rapid. Soundness of any such method depends not only upon rational principles but upon exclusion of such factors as tolerance of the host to the drug. So no attempt was made to establish ultimate value of the compounds in therapeutics. The value of methods which employ worms as experimental animals is discussed briefly. The most common objection to the use of worms is that they are more sensitive to active substances than the pathological parasites. On the other hand, the earthworm is more sensitive to chemical agents than the endoparasitic worms, the latter being more susceptible to environmental influences. In spite of objections to the use of the earthworm, several things suggest further study of their use. No scientifically valid expression of vermicidal activity based upon the use of intact earthworms has been utilized; the greater susceptibility of earthworms over ascarids and other parasites provides a more sensitive method; a more sensitive test object will detect weaker activity and the use of solutions of lower concentrations is made possible. Experimental work is reported in considerable detail, including means of caring for the worms in the laboratory, technique of method, object, procedure and survival time-concentration. Thymol, carvone and pulegone were tested. Results are tabulated and shown by graph and equations for calculating values are given. The authors summarize their findings as follows: "1. A method employing the intact earthworm (*Lumbricus terrestris*) as test animal, by which the criterion of muscular toxicity is based upon the rate of change of apparent speed of fatality with change in molar concentration, has been developed. 2. The fatality- or survival-time corresponding to a given concentration, as determined by this method, is noted as the minimum time of immersion in an aqueous solution of the test substance which will prevent recovery of two out of three worms in 18 hours. 3. The toxicities of thymol, carvone and pulegone have been determined by this biological method."—Glenn L. Jenkins and L. Lavan Manchey. *J. Am. Pharm. Assoc.*, 25 (1936), 194. (Z. M. C.)

Ephedrine—Effect of, on Erythrocytes, Leucocytes and Platelets in the Normal and Splenectomized Guinea Pig. Ephedrine produced a similar increase in the number of erythrocytes, leucocytes and platelets in both normal and splenectomized guinea pigs. The spleen is therefore not essential for these changes in this animal. In addition to other evidence the disproportionate increase in the different cell elements indicated that "blood concentration" is not an adequate explanation of the changes. Ephedrine probably causes extrusion into the circulation of

erythrocytes, leucocytes and platelets from storage and hæmopoietic centres, including the bone marrow.—S. L. SIMPSON and B. H. E. CADNESS. *J. Pharmacol.*, 56 (1936), 389. (H. B. H.)

Ergometrinine—Action of. Ergometrinine has about 1/100 the oxytocic activity of ergotocin. It inhibits isolated rabbit intestines. In a cat, a dose of 4 mg. per Kg. caused a fall of blood pressure accompanied by a bundle branch block, nodal tachycardia and finally nodal rhythm.—K. K. CHEN, EDWARD E. SWANSON and CHESTER C. HARGREAVES. *Proc. Soc. Exptl. Biol. and Med.*, 34 (1936), 183. (A. E. M.)

Ferric Chloride—Studies on the Effect of, on Tuberculous Rabbits. Dilute ferric chloride solution intravenously administered definitely retards the progress of tuberculosis in experimentally infected rabbits.—VALY MENKIN. *Proc. Soc. Exptl. Biol. and Med.*, 34 (1936), 262. (A. E. M.)

Gonadotropic Preparations—Relative Activity of Different, on Œstrous Rabbits, Pregnant Rabbits and Immature Rats. The following summary is given. 1. Horse pituitary, cow pituitary and urine of pregnancy extracts have been assayed on œstrous, 15-day pregnant and 25-day pregnant rabbits and on immature rats. 2. The amounts required to cause ovulation in pregnant rabbits are higher than those necessary for œstrous rabbits in all the extracts tested. 3. The ratio, weight of rat unit/weight of rabbit unit, is very similar for extracts of urine of pregnancy and for horse pituitary; ox pituitary, per rabbit unit, is relatively inactive on young rats.—I. W. ROWLANDS. *Quart. J. Pharm. Pharmacol.*, 8 (1935), 646–650. (S. W. G.)

Gonadotropic Substances—Response of Immature Rats to Various. The effects of various gonadotropic substances, including anterior pituitary extract and urine of pregnancy extract, on immature male and female rats are recorded. Tables and graphs are included and standardization curves are given for anterior pituitary and urine of pregnancy extracts. An assay method based on the average size of the ovaries in groups of 10 rats injected for 5 days is given. The standard error in the determination of the dose is ± about 10%.—RUTH DEANESLY. *Quart. J. Pharm. Pharmacol.*, 8 (1935), 651–668. (S. W. G.)

Male Hormones. An increase in the amount of oil solution, or the addition of palmitic acid to it, greatly increases the effectiveness of androsterone or testosterone. The effect is not obtained if the excess oil or fatty acid is given by separate injections in another part of the animal.—R. DEANESLY and A. S. PARKES. *Lancet*, 230 (1936), 837. (W. H. H.)

Mucin, Gastric. Prophylactic against Gastro-Duodenal Ulcers and "Acute" Toxicity Resulting from Cinchophen. The administration of gastric mucin is markedly effective in preventing the gastro-duodenal ulcers and "acute" toxicity of cinchophen in dogs.—P. E. REID and A. C. IVY. *Proc. Soc. Exptl. Biol. and Med.*, 34 (1936), 142. (A. E. M.)

Neoarsphenamine Solutions—Increase in Toxicity for Mice of, on Exposure to Air. The following summary is given: 1. Solutions of one sample of neoarsphenamine increased 17.5% in toxicity for mice, while standing exposed to the air for 15 minutes (the increase rose to 23% in 25 minutes). 2. This increase in toxicity was prevented by protecting the solutions from air with liquid paraffin. 3. The slope of the dose mortality curve for protected solutions has been determined ($\lambda = 0.071$). This is not appreciably different from the slope of the characteristic curve obtained by Durham, Gaddum and Marchal (*Med. Res. Coun., Spec. Rep.*, Series No. 128, 1929), using unprotected solutions of neoarsphenamine.—REUBEN WIEN. *Quart. J. Pharm. Pharmacol.*, 8 (1935), 631–641. (S. W. G.)

Octin—Effect of, upon Intact Intestine in Non-anesthetized Dog. Octin bitartrate and octin hydrochloride when injected intravenously in a non-anesthetized dog cause loss in the general tonus, decreased force of the rhythmical contractions and decreased peristaltic activity in the Thiry-Vella loop of either the jejunum or ileum and of the duodenum. Equal quantities of either octin or papaverine, when injected, produced a decreased tonus but the duration of the effect of the former drug is found to be three to twelve times longer than that of the latter. Octin bitartrate in large doses caused nausea and vomiting in some of the animals studied. Octin causes a temporary fall followed by a prolonged rise in blood pressure. The cardiac stimulating action of octin is similar to that of epinephrine but larger doses are needed. The excised uterus of the rabbit is contracted by octin. The uterus of the non-pregnant cat which is relaxed by adrenaline is contracted by octin. Octin causes slight vaso-constriction of the blood vessels in frogs. The relaxation of bronchial muscle observed with octin was less than that noted with adrenaline.—CHARLES M. GRUBER. *J. Pharmacol.*, 56 (1936), 284. (H. B. H.)

Physostigmine—Pharmacology of. In experimental animals where the cardiac vagus response to weak faradic stimulation had been abolished by barbiturates, doses of 0.2–0.35 mg. physostigmine salicylate per Kg. had no detectable spontaneous effect on the heart rate, but after an interval of 2–3 minutes between the intravenous injection of physostigmine and faradic stimulation, the same or even weaker current caused marked cardiac inhibiton which occasionally persisted several minutes after cessation of stimulation. Acetylcholine produced a similar cardiac slowing, but not so marked nor consistent. The physostigmine sensitization of the vagus to stimulation lasted about 30 minutes and further intravenous doses of barbiturates antagonized the sensitization. In dogs and rabbits injected intravenously with sufficient nicotine salicylate (0.2–0.3 mg. per Kg.) to make the peripheral vagus non-responsive to strong faradic stimulation, injection of physostigmine followed in 3 minutes by faradic stimulation of the peripheral end of the vagus nerve and caused marked cardiac inhibition. Thus physostigmine antagonized the synaptic paralysis produced by nicotine.—CHARLES R. LINEGAR, JAMES M. DILLE and THEODORE KOPPANYI. *Science*, 82 (1935), 497; through *Squibb Abstract Bull.*, 8 (1935), A-1874.

Pituitary Sexual Hormone. The author comes to the following conclusions as the result of experiments on thirty sexually mature male guinea pigs which were injected daily with 20 units of prolan (pituitary hormone) for ten days. In moderate doses the injection did not have any influence on the sexual parenchyma, whereas it provided a slight increase of the interstitial tissue. In animals in which the vasa deferentia were ligatured, prolan caused a stimulation of the male gonads by awakening the activity of the seminal cells, which had been quite abolished by the ligature; it also favored increase of the interstitial tissue.—G. LUXXHESE. *Policlinico, Sez. Prat.* (Jan. 15, 1936), 1; through *Brit. Med. J.*, 3923 (1936), 566D. (W. H. H.)

Posterior Lobe Pituitary—Depressor Substances in the. Fresh posterior pituitary lobes of cattle were extracted with acetone, the acetone evaporated to form extract X and the residual lobes dried to form powder A. Solutions of A and X, injected into cats tolerant to the pressor principle of pituitary extract, produced a fall in blood pressure and changes in organ volume. Assays as well as chemical and physiological characteristics, indicate that the major portion of the activity is due to histamine. When powder A was extracted for 20 hours with ethyl alcohol the residual powder was called B and the alcoholic extract, after evaporation, was called Y. Solutions of B or Y, injected into cats tolerant to the pressor principle of pituitary extract, produced a fall in blood pressure. If the extraction were continued for 80 hours, a residual powder C was produced which may contain slight traces of depressor substances, but usually all of the depressor material is present in the extract Z. Assays, as well as chemical and physiological characteristics, indicate that most of the activity of Y is due to histamine. When enough ethyl alcohol is added to an acid extract of posterior lobe pituitary powder (A) to make 70% alcohol, a precipitate is formed. Solutions of this precipitate (D), the pressor principle (E) or oxytocic principle (F) injected into cats tolerant to the pressor principle of pituitary extract, did not produce any change in blood pressure or organ volume.—EDWARD LARSON. *J. Pharmacol.*, 56 (1936), 396. (H. B. H.)

Posterior Lobe Pituitary Hormones and Insulin—Antagonism between. Evidence is offered that mild insulin hypoglucemia in dogs can be completely abolished by small doses of the oxytocic hormone of the posterior lobe of the pituitary; corresponding doses of the pressor fraction have little or no effect. Larger doses of the oxytocic hormone not only abolish the insulin effect but cause a rise in the blood sugar level above normal.—H. C. ELLSWORTH. *J. Pharmacol.*, 56 (1936), 417. (H. B. H.)

Quinine Hydrochloride—Effect of, on Resistance of Rabbit Red Cells. Quinine dissolves red cells *in vitro*. The concentration in the organism is never high enough to permit hemolysis by quinine alone; however, it activates other lysins (such as bile salts) which might be present.—ERIC PONDER and JULIUS C. ABELS. *Proc. Soc. Exptl. Biol. and Med.*, 34 (1936), 162. (A. E. M.)

Rotenone and Mixed Pyrethrins—Acute Toxicities of, in Mammals. Rotenone injected intraperitoneally killed more than half of the animals if given in doses from 2 to 10 mg. per Kg. The lethal dose by oral application is 75 to 100 mg. per Kg. Pyrethrins kill in solution in petroleum oil at the ratio 100 to 150 mg. per Kg. when injected intraperitoneally. Over 50% of guinea pigs died after oral administration of 1,500 mg. per Kg. while rats tolerated this dose. Rotenone is more irritating when applied to the eye than is pyrethrin. The symptoms of intoxication are

described.—MICHAEL B. SHIMKIN and HAMILTON H. ANDERSON. *Proc. Soc. Exptl. Biol. and Med.*, 34 (1936), 135. (A. E. M.)

Theelol by Oral Administration—Effectiveness of. Since the isolation of two crystalline estrogenic hormones, Theelin or ketohydroxyestrin and Theelol or trihydroxyestrin, there is disagreement about relative potency. Prior to the adoption of the International Estrogenic Standard at the London Conference of 1932, the literature shows conflicting statements as to the relation between the rat unit and the mouse unit as well as between the potency of Theelin and Theelol. Some of these discrepancies are discussed briefly. In the experimental work reported, the doses were given orally instead of subcutaneously. The dose was divided into three parts given at intervals of 4 hours to sensitized rats and 20 rats were used at a particular dosage level. A positive test requires 75% positive reaction of the rats. Many comparisons indicate rather definitely that Theelin is three times as potent as Theelol when administered hypodermically. A tabulation of a series of oral tests shows these results rather well. The effect of the various estrogenic principles when administered orally to immature female rats has been studied experimentally and the results tabulated. Experimental work has also been done on oil solutions of Theelin for intramuscular use. It was found that a single injection is as effective as a three-part dose injected at 4-hour intervals but it is impossible to get all the activity known to be present in an oil solution. When administered orally the several estrogenic principles were relatively less effective in oil solution than in aqueous solution. This is also shown by a tabulation. On the basis of this experimental work, Theelol appears to be the ideal principle for oral use.—L. W. ROWE and A. E. SIMOND.—*J. Am. Pharm. Assoc.*, 25 (1936), 201. (Z. M. C.)

Vitamin E Unit. It seems desirable to express the unit for vitamin E, in terms comparable to the units adopted by the U. S. Pharmacopœia for vitamins A and D. Numerous reports concerning a valuation of vitamin E potency are expressed in some other way and these methods of expression are confusing with each other as well as contrary to the accepted methods for A and D. "When 25 mg. of cold pressed wheat germ oil are required daily throughout the period of gestation to insure a litter of rats in a mother definitely known to have been vitamin E depleted," the authors described this as a 40-E oil. This figure is obtained by dividing 1,000 (mg. in a gram) by 25. This expression agrees more closely with the vitamin A than the vitamin D expression in the Pharmacopœia.—A. J. PACINI and D. R. LINN. *J. Am. Pharm. Assoc.*, 25 (1936), 206. (Z. M. C.)

TOXICOLOGY

Methylene Dichloride Intoxication. The cases described suggest that methylene dichloride is dangerous to those who are exposed to the fumes of it in any confined and unventilated space. The effects are to be attributed to its anesthetic action upon the nervous system and are largely subjective—*viz.*, headache, giddiness, stupor, irritability, numbness and tingling in the limbs, and possibly some degree of chronic anemia. It seems to be important to emphasize that many of the industrial solvents (beside the chlorinated hydrocarbons) while they may not cause "occupational disease" may be real factors in the production of lowered efficiency, industrial fatigue and definite physiological abnormalities of feeling and of conduct. It appears that this valuable industrial solvent can safely be used in industry provided adequate ventilation is maintained.—H. COLLIER. *Lancet*, 230 (1936), 594. (W. H. H.)

Potassium Permanganate Poisoning. A case is reported of attempted suicide by swallowing 30 Gm. of potassium permanganate in solution. Repeated vomiting and administration of egg whites were followed by complete recovery. Seven other cases of poisoning, previously reported, are reviewed. Potassium permanganate has a local corrosive action which is terminated in the presence of albumin or acids.—EDMUND W. KLINEFELTER. *Am. Med.*, 41 (1935), 570; through *Squibb Abstract Bull.*, 8 (1935), A-1875.

THERAPEUTICS

Alcohol—Intraspinal Injection of. The intraspinal injection of alcohol is a dangerous procedure unless carried out with great care and strict attention to the details of the technique advised. The injection often relieves the severe pain of malignant disease. Eighteen cases which have been treated by this method are briefly described.—W. R. RUSSELL. *Lancet*, 230 (1936), 595. (W. H. H.)

Alcohol—Intraspinal Injection of. The procedure of injecting alcohol into the subarachnoid space is invaluable for the relief of chronic, painful conditions. A single injection usually gives relief for as long as ten to twelve months. It obviates the necessity for using narcotics in large doses, and diminishes the possibility of making drug fiends of chronic invalids. Excessive doses, however, may paralyze muscles. There is definite clinical and experimental evidence that sympathetic fibres are affected when alcohol is injected. The motor function can be influenced by somewhat larger doses of alcohol than is used for the relief of pain alone, and this has led to a possible means of controlling involuntary tremors and spasms.—E. L. STERN. *Med. Rec.*, 143 (1936), 327. (W. H. H.)

Alkali Treatment of B. Coli Pyelitis. Alkaline therapy possesses several distinct advantages, for it can be continued indefinitely without harm to the individual or serious interference with the activities of a normal existence; it permits of a normal diet being taken, and, above all, it confers protection against relapses so long as it is conscientiously carried out. Nevertheless it is of little use in cases with increasing urinary obstruction, as in the later stages of pregnancy, or in cases in which mechanical deformities of the renal pelvis or ureters cause stagnation of urine. It is of doubtful value in cases with chronic ulceration and scarring of the renal pelvis, neuro-muscular incoördination, or congenital anatomical defects of pelvis or ureters. Such cases can only be cured, if at all, by inhibiting the growth of the bacilli *in situ*, and it is in these cases that the ketogenic diet or mandelic acid should be tried.—A. A. OSMAN. *Brit. Med. J.*, 3924 (1936), 575. (W. H. H.)

Arsphenamine Dermatitis—Local Treatment for. During the acute stages of arsphenamine dermatitis when the skin is edematous and covered with vesicles, both open and unbroken, local treatment is important, if only to relieve the intense discomfort of the patient. H. has found the use of a 5% aqueous solution of tannic acid, either sprayed all over the body or applied as a moist dressing, of great value. This is kept up until the edema subsides and the vesiculation disappears. Then when the dry exfoliation begins, the use of a zinc paste without salicylic acid is very efficacious. This is prepared as follows: zinc oxide, 1 ounce (28 Gm.), starch, 1 ounce and petrolatum, 2 ounces (56 Gm.).—LESTER HOLLANDER. *Arch. Dermatol. Syphilol.*, 33 (1936), 537; through *Squibb Abstract Bull.*, 9 (1936), A-440.

Bismuth Arsphenamine Sulphonate (Bismarsen)—Results of Treatment of Congenital Luetics with, for Five Years. Bismuth arsphenamine sulphonate (Bismarsen), for the treatment of lues in children, has the great advantage of ease of intramuscular administration. This insures a more constant and prolonged period of therapy, so necessary for congenital lues. Reactions are less common than with the usual antisyphilitic drugs and toxicity is rare. Purpura was the common toxic manifestation. Lesions, especially those in infants, heal promptly; interstitial keratitis, however, is the slowest lesion to respond. A check on sixty-one patients shows that 61% have a negative blood serology, and 24% show marked attenuation, a total of 85% helped. Patients with neurosyphilis showed definite improvement, and further complications were probably prevented. The experience of the author and that of other clinicians who have used various antisyphilitic drugs, indicate that Bismarsen is superior for congenital luetics. Relapses, both clinical and serological, were rare.—WILLIAM ANTHONY REILLY. *J. Chemotherapy*, 13 (1936), 9. (W. A. P.)

Chloral Hydrate—Effect of, on the Heart. Chloral hydrate in therapeutic doses has no harmful effect upon the heart. When the blood pressure is lowered during chloral hydrate administrations the effect is not much greater than occurs in natural sleep.—S. ALSTEAD. *Lancet*, 230 (1936), 938. (W. H. H.)

Cholesterol—Importance of, and Value for the Human Skin of Pomades Containing It. The fat naturally present in the human skin is characterized by high, combined and free cholesterol contents, which, owing to its high water-emulsifying power, facilitates elimination of water through the skin. Skin creams should therefore contain a large amount of cholesterol, particularly sterol, in a free form.—HERBERT STAHL. *Parfumerie Moderne*, 30 (1936), 17, 19. (A. P.-C.)

Dermatitits—Prevention of Occupational. The following formulas are recommended for the prevention of occupational dermatitis: (1) Chlorinated lime, 175 gr.; sodium bicarbonate, 350 gr.; boric acid, 35 gr.; water 30 oz. This solution is diluted in 10 parts of water and is applied before using soap and water. (2) Glycerin, 960 Gm.; alcohol, 691 Gm.; salicylic acid, 340 Gm.

This solution is applied to the face, neck, wrists and hands after washing, and seems to keep the skin soft and pliable. (3) Ivory soap flakes, 7.48%; glycerin, 26.4%; sodium silicate, 24.2%; tragacanth, 0.21%; oil of lemon, 0.16%; water, 41.6%. This solution forms a non-irritating invisible covering for the skin to protect it from contact with certain substances.—ANON. *Pharm. J.*, 136 (1936), 286. (W. B. B.)

Drugs—Action of, in Treatment of Nervous Diseases. The author discusses aminoacetic acid in the treatment of muscular dystrophy, the rôle of calcium medication in personality and behavior disturbances, glandular extracts and snake venom in the treatment of certain types of epilepsy, ergotamine tartrate in the alleviation of migraine and cites other advances which have been made in the treatment of nervous diseases.—EDWARD PODOLSKY. *Am. J. Pharm.*, 106 (1936), 23. (R. R. F.)

Fouadin—Use of, in Treatment of Undulant Fever. Fouadin is a complex compound of antimony and pyrocatechin-disulphonic acid. Pyrocatechin (which is related to adrenaline) is easily oxidized and therefore many of its compounds are unstable. The acid derivatives of pyrocatechin are much more stable, and several metallic complexes have been synthesized. Fouadin is antimony bis-pyrocatechin di-sodium sulphonate, and the metal is trivalent. It is usually injected into the gluteal region, and to adults, 1.5 cc. has been given on the first day with 3.5 cc. on the second day, followed by 5 cc. on alternate days. There is no pain at the site of injection and the drug is well tolerated, no secondary effects having been observed. The above doses are suitable for an average male adult, but the maximum dose in the female patients has been 4.5 cc.—C. Z. NEUMANN. *Lancet*, 230 (1936), 1001. (W. H. H.)

Gold Salts—Treatment of Bronchial Asthma with. Gold was employed in an oil vehicle. Five out of six patients were cured.—CAMILO CESTONI. *Semana méd.* (*Buenos Aires*), 43 (1936), 1169. (A. E. M.)

Gold Salts—Value of, in Hyperthyroidism. The author records thirteen cases of hyperthyroidism in patients aged from 19 to 48 in whom the intramuscular or intravenous injection of gold salts were employed with the following results. In seven there was a great improvement in the symptoms and physical signs; in three the results were nil; in two there was a marked improvement followed by a return to the former state; and in one the treatment had to be abandoned. The favorable results persisted for several weeks after the treatment had been stopped. The best route for the introduction of gold salts is the intramuscular; the doses should be small and should be repeated.—L. B. FUERTES. *Anales de Medicina Inter.* (Jan. 1936), 57; through *Brit. Med. J.*, 3929 (1936), 868B. (W. H. H.)

Gold Therapy—Value of, in the Treatment of Pulmonary Tuberculosis. Favorable results obtained with Sanocrisine are reported.—ISIDORO R. STEINBERG. *Semana méd.* (*Buenos Aires*), 43 (1936), 127. (A. E. M.)

Mandelic Acid and Ammonium Salt. Value of, in Urinary Infection. Of 29 cases of urinary infection treated with mandelic acid 24 showed sterile urine within 2–21 days. Of the successful cases 2 had also concurrent nephritis in an active stage which was not adversely affected by the treatment. Of the 5 failures at least three were unsuitable cases in which cure was not to be anticipated. Ammonium mandelate was found to be as effective as the sodium salt and when it was used it was usually unnecessary to give the unpleasant ammonium chloride. The proper use of these remedies will prevent chronic pyelonephritis.—H. E. HOLLING and R. PLATT. *Lancet*, 230 (1936), 769. (W. H. H.)

Ozone—Use of, in Obstetrics and Gynecology. Ozone was applied locally in various infectious conditions. Very favorable results are reported.—TOMÁS A. CHAMORRO. *Semana méd.* (*Buenos Aires*), 43 (1936), 1037. (A. E. M.)

Placental Extract—Use of a Blood Coagulant, in the Treatment of Hemophilia. Tissue protein was prepared from human placentas for use in the treatment of hemophilia by grinding the placentas, extracting with isotonic saline, centrifuging to remove red cells and acidifying to p_H 5 with $N/10$ HCl. The washed, heavy flocculent precipitate with p_H adjusted to 7.5 represented the coagulant fraction. The nitrogen concentration of the final solution should be between 2–3 mg. per cc. The extract possessing coagulant activity was a turbid material, brown in color, whose activity was destroyed by oxidation and aging, and whose potency must be checked frequently. Experiments showed that it was potent even when used in dilutions as high as 1:10,000. In normal individuals, 30 minutes after the administration of 5.0 cc. extract, the clotting time of

venous blood was reduced from 6.5 to 1.5 minutes, and the clotting time of capillary blood from 2.5–1.5 minutes. The extract was given to 15 patients with hemophilia. Usually 5.0 cc. was given orally, and, if there was no response, the dosage was raised in stages until 10–15 cc. were given 2–3 times a day. If oral administration was impossible, 5.0 cc. was given intramuscularly. Of the 15 cases 11 showed satisfactory response. Intravenous injection must be avoided. Duration of the effect of the extract varies with the individual, therefore coagulation time of venous and capillary blood should be noted daily to determine the frequency of administration. Two cases were given the extract over a period of time without detriment. Animal tissue extracts shorten the coagulation period of the blood of hemophilia patients for a short period, whereas placental extracts reduce clotting time of venous and capillary blood for periods of 48 hours–9 days.—R. CANNON ELEY, ARDA A. GREEN, CHARLES F. MCKHANN, ISRAEL KAPNICK and HARRIET F. COADY. *J. Pediat.*, 8 (1936), 135; through *Squibb Abstract Bull.*, 9 (1936), A-461.

Scabies. This disease (commonly known as "itch") is discussed and the various methods of treatment are offered as well as the following formulas: (1) For children: Precipitated sulphur 20 parts, petrolatum 580; (2) for delicate skins: Precipitated sulphur 40 parts, petrolatum 560; (3) for adults: (*a*) Balsam Peru 60 parts, sulphur ointment 540; (*b*) Beta-naphthol 7.5 parts, Balsam Peru 40, sulphur ointment to make 600; (4) Balsam Peru 30 parts, petrolatum 150, lanolin 420, storax 160, petrolatum 440. The "24 hour" or Danish Treatment is described.—A. RICHARD BLISS, JR. *Drug and Cosmetic Ind.*, 38 (1936), 329–330. (H. M. B.)

Sodium Bicarbonate—Tolerance to Subcutaneous Injections of. The solution should not be of higher concentration than 1.1%. It must be sterilized at 60° in a closed container. A solution thus prepared can be injected in quantities of 250 cc. and is well tolerated.—GABRIEL PECO and EDUARDO COLOMBO. *Semana méd. (Buenos Aires)*, 43 (1936), 984. (A. E. M.)

Sodium Bromide—Administration of, in Bread. The author was so impressed by the success of the treatment of his epileptic son with bread containing sodium bromide that he has since followed this system in more than fifty cases of epilepsy with satisfactory results. The following prescription is for an epileptic: To 250 Gm. of wheat flour and 250 Gm. of coarsely ground wheat flour he adds 30 Gm. of sodium bromide with yeast and water but no salt. The dough thus made is baked, and the loaf lasts for seven days, one-fourteenth of the loaf being eaten every morning and evening. The bread may be eaten with anything that may please the fancy. This treatment should be continued for at least three years, but the dosage of the sodium bromide may be reduced after there has been no attack for a year.—L. STENGEL. *Tidsskr. f. d. Norske Laegefor.* (Jan. 1, 1936), 32; through *Brit. Med. J.*, 3922 (1936), 514B. (W. H. H.)

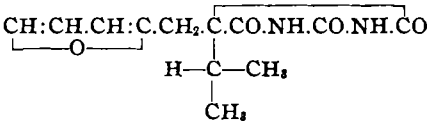
Sodium Iodide Thiosulphate (Activated Sulphur)—Use of, in the Treatment of Thromboangiitis Obliterans. In *thromboangiitis obliterans*, pain and disturbed phospholipin metabolism resulting in anoxemia are two of the outstanding symptoms. Sodium thiosulphate tends to palliate the deleterious effects of anoxemia but when given intravenously in doses up to 15 grains, it has been found inadequate. Administration of larger doses was followed by very severe intractable headaches. Sodium iodide thiosulphate proved to be non-toxic and well tolerated by patients in doses of 50 to 100 grains when administered intravenously. Under this treatment, pain (when of neurogenic origin, in contradistinction to that of claudication) was the first symptom to disappear. As the treatment progressed, patients were able to sleep well, ulcers and gangrenous areas were replaced by healthy tissue and the patients gained weight.—HAROLD M. RABINOWITZ. *J. Chemotherapy*, 13 (1936), 1. (W. A. P.)

Urea—Use of, as a Solvent in Preparations of Antigen Extracts. Extracts of protein constituents from food with urea solution seem to be suitable for the preparation of allergens. They very seldom give reactions with non-allergic individuals and permit considerable concentration. The protein is denatured to a certain degree.—EATON M. MACKAY and ROBERT W. LAMSON. *Proc. Soc. Exptl. Biol. and Med.*, 34 (1936), 123. (A. E. M.)

NEW REMEDIES

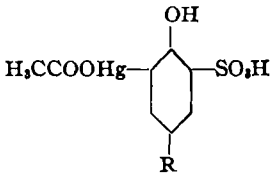
SYNTHETICS

5-Isopropyl-5-furomethyl Barbituric Acid. The patent protects 5-isopropyl-5-furomethyl barbituric acid having the formula:



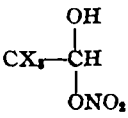
It forms whitish crystals, soluble with difficulty in water, melting at 168° to 170° C., and possesses valuable hypnotic properties.—GUSTAV HEILNER, assignor to CHEMISCHE FABRIKEN DR. JOACHIM WIERNIK & Co. U. S. pat. 2,035,317, March 24, 1936. (A. P.-C.)

Monoacetoxymercurialkylphenolsulphonic Acid. This compound is claimed to be a new water-soluble germicidal compound, in which the alkyl radical has from 4 to 9 carbon atoms and is substituted in the para position to the phenol group, and in which one bond of the mercury is attached directly to a carbon atom in a position ortho to the phenol group on the benzene nucleus and the other bond of the mercury is attached directly to an acetoxy group, and the sulphonic acid radical is substituted in the remaining ortho position to the phenol, according to the following formula:



—EMIL C. FANTO and ALLAN L. OMOHUNDRO, assignors to MCKESSON & ROBBINS, INC. U. S. pat. 2,037,371, April 14, 1936. (A. P.-C.)

Uric Acid-Dissolving Remedies—Process for Their Production. A trihalogen acetic aldehyde is made to react at about 10° to 25° C. with nitric acid of 20 to 65% strength, to yield



in which X is a halogen.—JOHN GAATHAUG. U. S. pat. 2,038,484, April 21, 1936. (A. P.-C.)

SPECIALTIES

Betaxine (I. G. Bayer) is the antineuritic vitamin B, the formula of which is given as $C_{12}H_{16}N_4OS$. It is packed in ampuls containing 400 pigeon-units (T. E.). The test is run with pigeons fed with a vitamin-free diet and which show beriberi symptoms. One T. E. (pigeon-unit) is the quantity of vitamin daily which must be administered to keep such a pigeon in normal health. This quantity is between 0.0025 and 0.0035 mg. Betaxine is used in beriberi, neuralgia, etc.—*Pharm. Weekblad*, 73 (1936), 219. (E. H. W.)

Bracethyl tablets (Österreichische Heilmittelstelle, Wien 3), a sedative and mild hypnotic, contain in each tablet 0.5 Gm. of bromdiethylacetylcarbamide.—*Pharm. Zentralh.*, 77 (1936), 168. (E. V. S.)

Calcium-Homburg (Chem. Pharm. A.-G. Bad Homburg, Frankfurt) is a stable solution of calcium glutaminate in water. It is obtainable in ampuls containing 5 and 10 cc. of the solution which contain, respectively, 120 and 240 mg. of calcium, or 2.4% calcium. The solution is miscible with other medicinal solutions and may also be diluted with water. It may be mixed with strophanthine, cardiazol, etc.—*Pharm. Weekblad*, 73 (1936), 219. (E. H. W.)

Cupronat Tablets (Dinklage & Co., Cologne) contain copper albuminate; packages of 20 tablets.—*Pharm. Presse*, 41 (1936), 96. (M. F. W. D.)

Cystopyrin (Genatosan, Ltd., Loughborough, England) is a double salt of hexamethylenetetramine and sodium acetate, used as a urinary antiseptic in the treatment of cystititis, prostatitis

and gonorrhea. It is sold in tubes of 20 and bottles of 200 tablets.—*Drug and Cosmetic Ind.*, 38 (1936), 391. (H. M. B.)

Effervescent Thyroxine Tablets. An effervescent tablet which is quickly soluble in tap water to form solutions that remain free from turbidity on standing in contact with air, comprises thyroxine, constituents capable of producing evolution of carbon dioxide upon contact with water, at least sufficient caustic alkali to render the thyroxine soluble in distilled water, and a substantially larger quantity of a highly soluble hydrotropic substance selected from a group consisting of the amides of carbon dioxide and the ethers of such amides which are substantially inert physiologically.—WALTER SCHOELLER and HANS GOEBEL, assignors to SCHERING-KAHLBAUM A.-G. U. S. pat. 2,032,890, March 3, 1936. (A. P.-C.)

Eisentropon Dragees (Dinklage & Co., Cologne) contain iron albuminate; packages of 50 tablets.—*Pharm. Presse*, 41 (1936), 96. (M. F. W. D.)

Ergot Alkaloids—Solution of. The patent provides a therapeutic composition comprising a solution of ergot alkaloids in a compound of the general formula $XOC_2H_4.O.C_2H_4OH$, in which X represents hydrogen or an alkyl radical.—WALTER G. CHRISTIANSEN and JOHN LEE, assignors to E. R. SQUIBB & SONS. U. S. pat. 2,033,921, March 17, 1936. (A. P.-C.)

Eugenozym (N. V. Zyma-Ysat, Amsterdam) is a vitamin-B complex, containing the substances associated with it in sources in the plant kingdom. Besides these vitamin-containing plant constituents it also contains flavoring materials. This medicinal and diet material is according to Dr. P. Honekamp, employed for the building up and recovery of internal glandular and nervous affections. It is found on the market in boxes containing 375 and 750 Gm.—*Pharm. Weekblad*, 73 (1936), 219. (E. H. W.)

Expit (Chemical Factory of Heyden at Radebeul-Dresden) is a 5% solution of the protein derivative Adhægen, that is used as an expectorant in acute and chronic affections of the respiratory organs.—*Pharm. Weekblad*, 73 (1936), 219. (E. H. W.)

Fixacid (N. V. Orgachemia, at Oss) is a synthetically prepared aluminum silicate which is found on the market in tablet form. Each tablet contains 1 Gm. of this aluminum silicate, and has $p_H = 7$. The gastric juice of healthy individuals has an acid content which compares with a hydrogen-ion concentration of p_H 3–4. With supersecretion and hyperacidity the p_H is much lower. Newer research has shown that sodium bicarbonate and magnesium oxide are not suitable to neutralize this excess stomach acid, and that a substance having a more certain buffer capacity is required. To this end the aluminum silicates are very useful, not because, like aluminum hydroxide, they possess a strongly alkaline character, but rather an alkaline but not a physiological reaction with the gastric juice takes place.—*Pharm. Weekblad*, 73 (1936), 220. (E. H. W.)

Ferrum Cuprum Pepton. Dragetten K. & C. (Kronik & Edels, G. m. b. H., Vienna, 7th dist.) contain reduced iron and peptonized copper; put up in packages of 50.—*Pharm. Presse*, 41 (1936), 96. (M. F. W. D.)

Flavadin Solution (Curta & Co., Berlin) is a 2% aqueous solution of flavadin (acridinium-arsenic compound) put up in packages of 50 cc.—*Pharm. Presse*, 41 (1936), 95. (M. F. W. D.)

Fumigant. A composition suitable for destroying pests and germs of all kinds comprises alkylene oxides dissolved in liquid carbon dioxide under pressure.—HANS SCHRADER and ERWIN BOSSERT, assignors to UNION CARBIDE & CARBON CORP. U. S. pat. 2,037,439, April 14, 1936. (A. P.-C.)

Instantine (I. G. Farbenindustrie) is an analgesic appearing in tablet form in boxes of 12. These tablets contain, per tablet, 300 mg. aspirin, 120 mg. phenacetin, 50 mg. caffeine and 30 mg. salophen. This combination of medicaments has a central analgesic effect and thus is particularly useful for headache, toothache, sore throat and pain in the ear. Dose 1–2 tablets, as necessary, at 3-hour intervals.—*Pharm. Weekblad*, 73 (1936), 220. (E. H. W.)

Iodoglandine (Dr. Baljet, Arnhem) contains the active constituents of thyroid gland. It is found on the market as Liquid Iodoglandine, dose 3–6 drops, Iodoglandine tablets, dose 1–2 tablets and Iodoglandine Powder, dose 0.2 to 0.4 Gm.—*Pharm. Weekblad*, 73 (1936), 220. (E. H. W.)

Iodtropon-Struma Tablets (Dinklage & Co., Cologne) contain 5% of iodtropon; packages of 40 and 100 tablets.—*Pharm. Presse*, 41 (1936), 96. (M. F. W. D.)

Iron, Copper and Manganese Preparation—Process of Making. A colloidal, non-astrin-

gent therapeutic agent of iron, copper and manganese is produced by adding slowly with stirring an aqueous solution of the chlorides of these metals to a solution of sodium gluconate, adding the resultant solution to a solution of sodium carbonate, maintaining the p_H on the acid side and stirring until the reaction is complete.—JOHN TORIGIAN, assignor to THE DRUG PRODUCTS CO., INC. U. S. pat. 2,034,783, March 24, 1936. (A. P.-C.)

Istizin Bonbons (Bayer, I. G. Farbenindustrie A.-G., Leverkusen am Rhein) contain in each 0.30 Gm. of 1,8-dioxyanthraquinone; packages of 12.—*Pharm. Presse*, 41 (1936), 95. (M. F. W. D.)

Kombetin (C. F. Boehringer & Sohne, G. m. b. H., Mannheim-Waldhof) is the new name for Strophanthin Boehringer which is supplied in 1-cc. ampuls containing 0.0005 Gm. of the glucoside.—*Pharm. Zentralh.*, 77 (1936), 151. (E. V. S.)

Lösiolan Wund- und Heilsalbe (Kali-Chemie A.-G., Berlin NW) contains, in a neutral ointment base, sulphocyanic and calcium salts, tryptic enzymes and ethyl *p*-aminobenzoate. It is used for acne vulgaris, eczema seborrhoica, furunculosis, carbuncles, impetigo, lupus, panaris and phlegmon.—*Pharm. Zentralh.*, 77 (1936), 167. (E. V. S.)

Leber-As-Solvon ampuls (Labopharma, Dr. Laboschin G. m. b. H., Berlin-Charlotteburg) contain in each ampul 0.05 Gm. of sodium monomethylarsenite, 0.1 Gm. of sodium glycerophosphate, 0.0005 Gm. of strychnine nitrate and 1 cc. of a high-valued liver autolysate. It is used for anemias and leukemias.—*Pharm. Zentralh.*, 77 (1936), 167. (E. V. S.)

Lecibis (R. and O. Weil, Frankfurt) is an oil-soluble bismuth salt of tricamphocarbonic acid stabilized by lecithin.—*Pharm. Monatshefte*, 17 (1936), 28. (H. M. B.)

Lopion (Bayer Products, Ltd., London) is the sodium salt of auro-thiosinamine benzoic acid containing 40% gold. It is suggested for the treatment of tuberculosis in all forms, chronic rheumatoid arthritis and other indications of gold therapy, and is sold as single packings of one ampul containing a dose ranging from 0.01–0.75 Gm.—*Drug and Cosmetic Ind.*, 38 (1936), 391. (H. M. B.)

Mercaffin Ampuls (Chem.-pharm. A. G., Bad Homburg) contain a mercurous oxide compound of caffeine; put up in packages of 5 ampuls.—*Pharm. Presse*, 41 (1936), 96. (M. F. W. D.)

Mercaffin Tablets (Chem.-pharm. A. G., Bad Homburg) contain a mercurous oxide compound of caffeine; packages of 12 tablets.—*Pharm. Presse*, 41 (1936), 96. (M. F. W. D.)

Neo-Vlro (Hygiena, chem. Fabrik, Frankfurt a.m.) contains para-chlor-metacresol, anesthesin, etc., in packages of about 2 Gm.—*Pharm. Presse*, 41 (1936), 95. (M. F. W. D.)

Nervadenis (Vademiss-Laboratorium, Berlin N 58) contains in each 1,000 Gm. of product, 10 Gm. of piscidia bark, 15 Gm. of valerian root, 10 Gm. of sodium phenylallylmalonylcarbamide, 30 Gm. of saccharated iron oxide, 55 Gm. of alcohol and sufficient aromatic syrup. It is used for angina, climacteric difficulties, nervous intestinal disorders and depressive conditions.—*Pharm. Zentralh.*, 77 (1936), 168. (E. V. S.)

"915" (E. Fourneau) is a combination of one part Stovarsol and 2 parts ethyl amino-underyl-amino-methoxyquinoline. For swamp fever caused by *Plasmodium vivax* daily injections of 0.30 Gm. for six successive days are recommended.—*Pharm. Monatshefte*, 17 (1936), 30. (H. M. B.)

Novexurat-Tabletten (Österreichische Heilmittelstelle, Wien 3) contains in each tablet 0.5 Gm. of methylphenylquinoline carbonate. It is used for arthritis and rheumatism.—*Pharm. Zentralh.*, 77 (1936), 168. (E. V. S.)

Novotropon Powder (Dinklage & Co., Cologne) contains egg yolk, nutrient salt mixture, sodium salicylate, casein, etc.; packages of 100 Gm.—*Pharm. Presse*, 41 (1936), 96. (M. F. W. D.)

Nujol Cream (Stanco Inc., Bayway, U. S. A.) contains purified paraffin oil, acacia, lactic acid, sodium benzoate, etc., in packages of 16 oz.—*Pharm. Presse*, 41 (1936), 96. (M. F. W. D.)

Nyktogen Tablets (E. Taeschner, Chem.-pharm. Fabrik, Potsdam), a hypnotic, contain in each tablet 0.35 Gm. of α-bromisovalerianylcarbamide-diethylmalonylurea which is the equivalent of 62% of diethylbarbituric acid and 13.5% of bromine.—*Pharm. Zentralh.*, 77 (1936), 168. (E. V. S.)

Obstipal (N. V. Orgachemia, at Oss) appears on the market in the form of dragées. It

consists of the anthraquinone glucosides in the same form that they are found in aloe, rhubarb, frangula, senna, etc. It has the advantage that these glucosides are present in practically pure form, free from extraneous matter. Dose 1–2 dragées; in stubborn cases 3–4 dragées.—*Pharm. Weekblad*, 73 (1936), 220. (E. H. W.)

Œstroglandol (F. Hoffmann-La Roche & Co., A.-G., Berlin) is a standardized female sex hormone containing in each tablet 500 international units (I. E.) or in each ampul 1,000 units. Each unit is the equivalent of 0.1 gamma of the London standard. It is used for dysmenorrhea, amenorrhea, climacteric difficulties and for various secondary female troubles.—*Pharm. Zentralh.*, 77 (1936), 168. (E. V. S.)

Optipect (Chem.-pharm. Labor. Dr. H. Thiemann, Lünen i.W.), an expectorant, contains menthol, camphor, ephedrine, ammonium carbonate, potassium iodate, dimethylaminopyrazolon and an alcoholic extract of eucalyptus, primrose and salvia.—*Pharm. Zentralh.*, 76 (1935), 769. (E. V. S.)

Orgatonicum (N. V. Orgachemia, at Oss) is a combination of liver extract, vitamins, etc., adapted to improve the general condition of the patient. Each flask of Orgatonicum contains 2.5 Gm. of concentrated liver extract, 3 Gm. yeast extract, iron in absorbable form 1 Gm., phosphates 6.0 Gm., copper in absorbable form 0.094 Gm., levulose 20 Gm., malt extract (diastase) 2.5 Gm., cinchona alkaloids 0.045 Gm., caffeine-catechine 0.5 Gm., nux vomica alkaloids 0.006 Gm., medicinal wine and flavoring 150 cc.—*Pharm. Weekblad*, 73 (1936), 220. (E. H. W.)

Parasiticide. A toxic substance in quantity greater than the normally lethal dose is combined with a substance of colloidal nature for colloidally holding the toxic substance to protect against the effect of such dose, and the mixture is formed into pellets for internal use.—FRANK F. LINDSTAEDT, assignor to GROVER D. TURNBOW. U. S. pat. 2,036,638, April 7, 1936. (A. P.-C.)

Perdynol (Chem. Fabrik Perdynamin G. m. b. H., Berlin O27) is a combination of menthol and oils of thyme, salvia, rosemary, hyoscyamus, hyssop, lavender, in mutton tallow. It is used for rheumatism, arthritis, various neuralgias, inflammation, chest and throat infections.—*Pharm. Zentralh.*, 77 (1936), 168. (E. V. S.)

Phosoforme (Laboratories de Biologie et Physiologie appliquées Drout & Plet) is a mixture of mono- and diethyl-ortho-phosphoric acid, found on the market in 7% solution and in 50% drops, and is used for dyspepsia following alkalosis, in asthma, rachitis, chronic rheumatism, etc. The dose of the solution is two or three spoonfuls per day: of the drops 50 drops twice a day, in increasing doses if necessary.—*Pharm. Weekblad*, 73 (1936), 220. (E. H. W.)

Progynon Oleosum (Schering-Kahlbaum) has been modified as to dosage units. The international benzoate unit I. B. E. De I. B. E. is equal to 1 M. E. and 5. I. E. Progynon oleosum is found on the market in ampuls containing 10,000 and 50,000 I. B. E. (international benzoate units).—*Pharm. Weekblad*, 73 (1936), 221. (E. H. W.)

Prosplen Ampuls (Ifah G. m. b. H., Hamburg) contain an albumin and lipoid-free splenic extract in packages of 3 and 10 ampuls of 2 cc.—*Pharm. Presse*, 41 (1936), 96. (M. F. W. D.)

Prosplen Drops (Ifah G. m. b. H., Hamburg) are put up in packages of 15 cc. containing a concentrated and standardized splenic extract.—*Pharm. Presse*, 41 (1936), 96. (M. F. W. D.)

Pyelol Tablets (Medicinalco, Kopenhagen) contain in each 0.60 Gm. purified calcium chlorate and 0.30 Gm. salol; packages of 50 and 100.—*Pharm. Presse*, 41 (1936), 95. (M. F. W. D.)

Rheupharm Tablets (Pharmarium G. m. b. H., Berlin-Charlottenburg) contain in each 0.5 Gm. phenylquinoline carbonic acid, 0.005 Gm. of codeine phosphate and 0.0005 Gm. of colchicine. It is indicated for use in gout, rheumatism, lumbago, neuralgia and ischias.—*Pharm. Zentralh.*, 77 (1936), 168. (E. V. S.)

Rhythmoton "C" (Destillon-Gesellschaft m. b. H., Koblenz a. Rh.) is a liquid containing ephedra, grindelia, gaultheria, hedge mustard, cactus grandiflorus, cascara amarga, muira puama and cratægus in combination with 3% of aminopyrine, 6% of inosin derivatives and menthol. The dose is 30 drops. It is used as a preventive for light and medium attacks of asthma, angina pectoris and migraine. **Rhythmoton "S"** is a powdered mixture of organic cerebral lipoids, ephedrine, caffeine, sodium salicylate, camphor monobromated, menthol, saponin, magnesium oxide, dimethyl-iodo-oxyquinicine, calcium sulphoguaiacolate, and benzyl-*o*-phthalic acid derivatives. It is used for the most severe attacks of asthma, angina pectoris and migraine.—*Pharm. Zentralh.*, 77 (1936), 182. (E. V. S.)

Röntgenit (A.-G. für med. Produkte, Berlin N65) is a prepared emulsion of the finest available powdered barium sulphate. It is used as an X-ray contrast meal for showing the smallest folds of the intestinal tract. Specific directions are given for administration.—*Pharm. Zentralh.*, 77 (1936), 152. (E. V. S.)

Sanalepsi "Russi" (Chem.-pharm. Institut Russi & Co., Ancona) occurs either as pills or liquid in commerce. Each pill, the equivalent of 25 drops of the liquid, contains 0.05 Gm. of ethylphenylmalonylcarbamide and 0.1 Gm. of cascara with the addition of extracts of valerian, datura and hyoscyamus. It is used for the treatment of epileptics.—*Pharm. Zentralh.*, 77 (1936), 183. (E. V. S.)

Sanapect (Franz Kuhl, Chem.-pharm. Präparate, Köln a. Rh.), an expectorant, is a mixture containing fluidextract of thyme, syrup of altheæ, potassium sulphoguaiacolate and elixir of glycyrrhiza.—*Pharm. Zentralh.*, 76 (1935), 461. (E. V. S.)

Sango-Stop (Turon, Gesellsch. für pharm. Präparate m. b. H., Frankfurt a. M.) is a colloidal plant hemostat in isotonic solution. It is marketed in 20-cc. ampuls containing 0.3 Gm. of colloidal polygalacturonic acid ester, 0.1 Gm. of calcium chloride and 0.14 Gm. of sodium chloride, and in flasks of 50 or 150 cc. containing 5% of the colloidal polygalacturonic acid ester, 0.05% of calcium chloride and 0.7% of sodium chloride.—*Pharm. Zentralh.*, 77 (1936), 152. (E. V. S.)

Sensibamine Ampuls (Sanabo-Chinoin G. m. b. H.) are put up in packages of 3 and 6 ampuls containing 0.35 mg. of sensibamine per 1 cc. (ergot alkaloid).—*Pharm. Presse*, 41 (1936), 96. (M. F. W. D.)

Sensibamine Tablets (Sanabo-Chinoin G. m. b. H.) are put up in packages of 15 tablets, each containing 0.70 mg. of sensibamine (ergot alkaloid).—*Pharm. Presse*, 41 (1936), 96. (M. F. W. D.)

Siozwo (F. Blumhoffer Nachf., Fabrik pharm. Präparate, Köln) is an ointment containing bismuth subgallate, ichthyol, extract of witch hazel and colloidal silica in an organic base. It is indicated for use in inflammatory conditions, eczemas, burns, etc.—*Pharm. Zentralh.*, 77 (1936), 152. (E. V. S.)

Siramose (Dr. Baljet, Arnhem) is a syrup which contains 6 Gm. *Diatractum Droseræ*, 6 Gm. *Diatractum Thymi* and 6 Gm. potassium sulphoguaiacolate per 100 cc. Dose, 1 child's spoonful or 1 dessert spoonful three times a day as sedative or expectorant.—*Pharm. Weekblad*, 73 (1936), 221. (E. H. W.)

Sodium Morrhuate and Quinine Solution—Mixture of, and Method of Admixing. A pharmaceutical mixture of sodium morrhuate, quinine alkaloid and benzyl alcohol, in solution, is claimed as new.—FREDERICK R. GREENBAUM, assignor to THE NATIONAL DRUG CO. U. S. pat. 2,037,196, April 14, 1936. (A. P.-C.)

Spasepiletten (Österreichische Heilmittelstelle, Wien 3) contains in each pill 0.015 Gm. of phenylethylbarbituric acid. It is used for hypertonia, vasoneurosis, angina pectoris, epilepsy, migraine, etc. **Spasepil-Tabletten** occurs in two strengths containing either 0.1 Gm. or 0.3 Gm. of phenylethylbarbituric acid. It is used as a strong sedative, hypnotic or anti-epileptic.—*Pharm. Zentralh.*, 77 (1936), 152. (E. V. S.)

Tempo-Fussbad (Tempo-Fabrikate Inh. A. Haunschild, Berlin SW), a wash for foot sweats, corns, burning, aching and cold feet, is a mixture of sodium perborate, calcined sodium carbonate, borax, soap powder and various oils.—*Pharm. Zentralh.*, 77 (1936), 152. (E. V. S.)

Valisan (Schering, Ltd., London) is a compound of bromine and the bornyl ester of isovaleric acid. It is said to be a nonhabit-forming sedative.—*Drug and Cosmetic Ind.*, 38 (1936), 391. (H. M. B.)

Valocordin (Chem. Fabrik Helfenberg A.-G., Helfenberg. b. Dresden), for stenocardiac pains, tachycardia and intestinal spasms, contains ethyl bromisovalerate, sodium phenylethylbarbiturate, hops and mint. The dose is 5 to 20 drops.—*Pharm. Zentralh.*, 77 (1936), 152. (E. V. S.)

Ventropharm Tablets (Pharmarium G. m. b. H., chem.-pharm. Fabrik, Berlin-Charlottenburg 5) contain magnesium peroxide, medicinal carbon, cinchona bark, peppermint oil, caraway oil and extract of absinthium. They are used for the treatment of stomach and intestinal catarrh, chronic disturbances of the bile ducts and fermentative dyspepsia.—*Pharm. Zentralh.*, 77 (1936), 183. (E. V. S.)

Vexurat Tablets (Österreichische Heilmittelstelle, Wien 3), for arthritis and rheumatism,

contain, in each, 0.5 Gm. of phenylquinoline carbonic acid.—*Pharm. Zentralh.*, 77 (1936), 183. (E. V. S.)

Vismoton (Pharm. Industrie 'Ist' A. B. Cronemeyer, Hamburg 1), formerly called **Visvisan**, are tablets containing the male sex hormone, the anterior pituitary lobe hormone, egg lecithin, extract of muira puama and extract of yohimbe.—*Pharm. Zentralh.*, 77 (1936), 183. (E. V. S.)

BACTERIOLOGY

Anterior Poliomyelitis—Vaccination against Acute. Effective vaccination against acute anterior poliomyelitis requires the administration of active virus. Treatment of remote monkey passage virus with sodium ricinoleate and phenylmercuri-nitrate has resulted in sufficient attenuation to render the vaccine safe for the vaccination of monkeys. No individual who received the full 3 doses has developed poliomyelitis. Among the 10,725 inoculated individuals using sterile vaccine, prepared with the addition of 1:80,000 phenyl-mercuri-nitrate, 91% had no local reactions aside from slight stinging pain immediately after injections, followed by very slight tenderness for a day or two. Nine per cent of the local reactions have been comparable to those produced by injections of diphtheria toxoid.—J. A. KOLMER. *Southern Branch Am. Public Health Assoc.* (1935), 78. (A. H. B.)

Antimeningococcus Sera—Study of the Virulence of Meningococcus Strains and of the Protective Activity of. Stock strains of Groups I and III used in the production of serum for many years were found to have a relatively high degree of virulence. Polyvalent antimeningococcus serum produced with six stock strains exhibited marked protective potency against a virulent stock strain and highly virulent recent strains of Groups I and III.—S. M. COHEN. *J. Immunol.*, 30 (1936), 203. (A. H. B.)

Autolyzing Tissue—Rôle of Bacteria in. Autolyzing digests of hog and beef liver obtained fresh from the slaughter house, have been shown to contain highly resistant strains of spore-forming bacterial cultures. Anærobic spore-forming bacilli grew in digests which were free from putrid odors and showed no gross evidence of bacterial growth.—J. R. REEVES and H. E. MARTIN. *J. Bacteriol.*, 31 (1936), 191. (A. H. B.)

Colloidal Cadmium Proteinate—Bactericidal and Bacteriostatic Value of. In recent years a large number of compounds of heavy metals have been prepared in the colloidal state and found to have some bacteriostatic and bactericidal action. It seemed reasonable to expect some activity on the part of colloidal cadmium proteinate. A reversible colloidal cadmium proteinate which contained 5.32% of cadmium was prepared. It had no bactericidal action and only slight bacteriostatic action. Experimental work is reported in detail.—W. A. LOTT and W. G. CHRISTIANSEN. *J. Am. Pharm. Assoc.*, 25 (1936), 205. (Z. M. C.)

Colon Organisms in Milk—Evaluation of Certain Media for the Detection of. Formate ricinoleate broth is satisfactory for use in the detection of colon organisms in milk, as it inhibits the growth of false test organisms and permits growth and gas production by one or more cells of *Escherichia-ærobacter* organisms.—C. N. STARK and L. R. CURTIS. *Am. J. Pub. Health*, 26 (1936), 354. (A. H. B.)

Diphtheria Carriers—Note on, with Reference to Types of C. Diphtheriæ. From 3,429 throat swabs of normal school children and adults 45 strains of *C. diphtheriæ* (1–3%) were isolated. Of these 17 (38%) were virulent and 28 (62%) avirulent. The type incidence among 35 of the 45 strains was as follows: type I (mitis), 8; type II ("intermediate"), 1; type IV (gravis colony, non-starch fermenting, virulent), 1; type VI (gravis colony, non-starch fermenting, avirulent), 21; unclassified, 4. No strains of types III (gravis) and V (gravis colony, starch fermenting, avirulent) were found. The importance of the virulence test is stressed in view of the high incidence of type VI (avirulent) strains, both among contact carriers and in the present series.—M. H. CHRISTISON, H. A. WRIGHT and B. J. SHRARER. *J. Path. Bacteriol.* (British), 42 (1936), 345. (A. H. B.)

Disinfection of Rooms. It is important to recognize the bacteriological distinction between a disinfectant, a substance capable of destroying all bacteria with which it is brought into effective contact, and an antiseptic, which only inhibits bacterial activities for a variable period of time. Infections caused by delicated pathogenic agents, such as the pneumococcus, meningococcus, gonococcus, *B. influenzæ*, etc., which perish rapidly under natural conditions outside the human body, do not require room disinfection. It is sufficient to prevent the use of the room for a few

days and admit plenty of light and fresh air. The practice of room disinfection has one serious drawback; it tends to lead to a false sense of security and to the neglect of the all-important routine of cleansing with soap and water.—ANON. *Pharm. J.*, 136 (1936), 201. (W. B. B.)

Filter—Improved Bacteria-Proof. An improved positive pressure filter is described and illustrated. This filter consists of three main parts, a barrel furnished with a cap, and a filter base, in which can be fitted a Seitz filter pad. The filter pad, supported on two layers of gauze (upper, heavy; lower, fine) lies on top of the filter base, and is held in place by the barrel, which can be firmly fastened to the base by three winged nuts and bolts, an overlapping portion on the head of the latter engaging with the flange on the barrel. A rubber washer between this flange and the filter pad enables a bacteria-proof joint to be secured. At the top of the barrel is another flange on to which the cap screws, a second thicker rubber washer being used to render the joint air tight. In the center of this cap is a valve to which can be attached a cycle pump for the production of positive pressure. When the solution is to be used for the preparation of a sterile solution a fresh Seitz filter pad is placed in the base, to which the barrel is then attached and firmly screwed down. F. WOKES. *Pharm. J.*, 136 (1936), 313. (W. B. B.)

Foreign Protein—Development of Sensitization in Human Beings. The first evidence of hyperreactivity is a twenty-four-hour delayed type of skin reaction, which is often replaced in more sensitive subjects by the usual immediate wheal and flare at the site of injection. Skin sensitivity is lost in the reverse order of its appearance—the immediate wheal is replaced by the twenty-four-hour reaction and this in turn will become negative, and humans may be rendered sensitive to very minute amounts of serum protein by the intracutaneous route of injection.—J. R. MOTE and T. D. JONES. *J. Immunol.*, 30 (1936), 149. (A. H. B.)

Herpes Virus—Properties of Homogenized. The brains from rabbits immediately after they have succumbed to an experimental infection are removed sterilely and either homogenized at once or placed in sterile 50% glycerol. Fresh or glycerolated brain tissue is triturated for a few minutes in a sterile mortar, and made into a 10% suspension with 50% sterile glycerol of p_H 7.4. The suspension is then slowly passed through an homogenizer three or more times, the resulting product passed through an homogeneous suspension of finely divided tissue elements. Homogenized H. F. herpes encephalitis virus is extremely potent, producing death in rabbits within 5 days when inoculated intracerebrally.—C. W. BUGGS and R. G. GREEN. *J. Infect. Diseases*, 58 (1936), 98. (A. H. B.)

Liquor Antisepticus—F. D. A. Test for Antiseptic Value of. A culture medium was prepared according to the directions given in Circular No. 198 of the United States Department of Agriculture. Directions are given for caring for the test organism, as well as specifications for the phenol used. According to this method the *Staphylococcus aureus* culture must show a certain resistance to phenol but it is difficult to find a culture of suitable phenol resistance and to maintain it so. Four strains were tried and not one strain coincided with the required phenol resistance. The phenol resistance of the cultures tested are shown by a chart. Because of these day-to-day variations and other difficulties in maintaining standard resistance, the following standards as to phenol resistance of the organism have been decided upon for inclusion in the National Formulary:

Phenol	Ten Min.
1–80	−
1–90	+

Three antiseptic solutions following the formula of N. F. VI with variations in the quantities of thymol and chlorothymol were prepared and tested upon *Staphylococcus aureus*. One of these solutions has been approved as the official *Liquor Antisepticus*. This solution kills the test organism at 1-, 2- and 3-minute intervals. The following preparations were also tested for antiseptic value: (1) surgical solution of chlorinated soda assaying 0.48% NaOCl and 0.46% available chlorine; (2) alcohol (35%); (3) silver nucleinate (10% solution); (4) silver nucleinate (20% solution); (5) hydrogen peroxide, U. S. P.; (6) "Pepsodent Antiseptic."—ESTHER MEYER and E. N. GATHERCOAL. *J. Am. Pharm. Assoc.*, 25 (1936), 212. (Z. M. C.)

Lymphocytic Meningitis—Virus Etiology of. A virus has been isolated from the cerebro-spinal fluid of two patients suffering from obscure nervous symptoms associated with an increase of lymphocytes in the cerebro-spinal fluid. The virus inoculated intracerebrally into monkeys, mice, rats and guinea pigs causes a fatal infection: post mortem there is an intense infiltration of

the meninges, choroid plexus and ventricles with round cells. When inoculated intraperitoneally into mice the virus causes no symptoms, but remains for some weeks in the spleen and kidneys. It is excreted in the urine of mice and can pass through the lightly scarified skin. A similar virus has been isolated from apparently healthy mice. The human and mice strains isolated in this country behave in animals in the same way as the American virus described by Armstrong. Sera from human cases in this country contain immune bodies to the American virus and to the English mouse strain virus. Certain of the properties of the virus are described and the mode of infection discussed.—G. M. FINDLAY, N. S. ALCOCK and R. O. STERN. *Lancet*, 230 (1936), 650.

(W. H. H.)

Pneumococci (Type I)—Influence of Oxygen Tension on the Respiration of. Decrease of oxygen tension in the tissues occurs in every stasis of blood and lymph. In all of these cells *Bacterium azotobacter, Micrococcus candicans, Escherichia coli, Pseudomonas pyocyanea, Vibrio Metchnikovii, Staphylococcus Aureus*, the respiration is inhibited by HCN and CO, catalyzed by a hæmin-containing ferment. The respiration and growth processes of type I pneumococci depend upon oxygen tension.—C. SCHLAYER. *J. Bacteriol.*, 31 (1936), 181. (A. H. B.)

Staphylococcal Toxin. A method is described for obtaining a staphylococcal toxin which, with a suitable strain, is reasonably rich both in α-hæmolysin and leucocidin. It is observed that filtration may remove all leucocidin from a toxin originally feeble in this respect. Methods are given for the estimation of leucocidin in toxin and of antileucocidin in serum. A convenient unit of antileucocidin is suggested in terms of standard K serum, B 8760, issued by the Wellcome Laboratories. A description is given of the susceptibility of the rabbit leucocyte to α-hæmolysin, toward which the human cell is related, if not absolutely immune. Confirmation is supplied of Dolman's finding that in chronic furunculosis virulent staphlococci are commonly carried in the anterior nares. Evidence is produced indicating that in chronic superficial infection the antileucocidin of the serum commonly shows a significant increase, whereas the antihæmolysin often does not; also that in a deep-seated infection the rise in the antihæmolytic titre of the serum is accompanied by a relatively greater increase in antileucocidin. A comparison of the toxigenic capacity of a number of different strains of cocci suggests that strains which have succeeded in invading human tissue will commonly be found capable of producing leucocidin in considerable amount. The importance of the concentration of antileucocidin in antitoxic serum is discussed.—A. K. HENRY. *Lancet*, 230 (1936), 526. (W. H. H.)

Tetanus Toxoid—Studies of. With the addition of varying volumes of a 10% solution of aluminum potassium sulphate to 10-cc. volumes of the toxoid, the best precipitation occurred in the tube containing 1.2 cc. of the alum solution and required 1.2% of the alum or 12 cc. of the 10% solution to each 100 cc. of the toxoid. Two injections of alum-precipitated tetanus toxoid produce a higher immunity than three injections of the unprecipitated toxoid.—F. G. JONES and J. M. MOSS. *J. Immunol.*, 30 (1936), 115. (A. H. B.)

Tubercle Bacilli—Destruction of, within Phagocytes in Vitro. Tubercle bacilli undergo lysis *in vitro* after being phagocytosed by normal mononuclear leucocytes in the presence of immune serum. Lysis of tubercle bacilli, phagocytosed by mononuclear leucocytes, is a probable method of destroying the organisms in the tuberculous infected body.—B. J. CLAWSON. *J. Infect. Diseases*, 58 (1936), 64. (A. H. B.)

Tubercle Bacilli—Tentative Methods for the Cultivation and Isolation of, and the Production of Tuberculin. *Tuberculosis Culture Media.*—Potato egg medium for the isolation of tubercle bacilli. Potato 1,000 cc., water 1,000 cc., monobasic potass. phosphate 14 Gm., filtrate from above 900 cc., malachite green 2% solution 34 cc., crystal violet 1% solution 6.5 cc. *Preparation of Tuberculin.*—Medium. Asparagin (Pfanstiehl) 5 Gm., ferric amm. citrate (Baker's) 0.05 Gm., mag. sulphate (Baker's) 1 Gm., pot. acid phosphate (Baker's) 3 Gm., amm. citrate (Baker's) 5 Gm., sodium chloride (Merck) 2 Gm., sodium carbonate (Merck) 1 Gm., glycerol (Baker's) 50 cc., distilled water 1,000 cc. Dispensed in 150-cc. amounts in 1-liter flasks. Sterilized in the autoclave at 120° C. for 1 hour from Johnson strain of tubercle bacillus of moderate virulence such that 0.5 mg. of the moist culture will cause the death of the guinea pig in 6 to 8 weeks. *Test for Potency.*—The intradermal test in guinea pigs is the method used for standardization.—A. L. MACNABB. *Am. Pub. Health Assoc. Year Book*, 26 (1936), 188. (A. H. B.)