PHARMACEUTICAL ABSTRACTS

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ABSTRACTORS

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NEW REMEDIES

Synthetics

Atabrin (Winthrop Chemical Co., Inc., New York, N. Y.) is the dihydrochloride of methoxychlor-diethyl-aminopentyl-amino-acridine. It is also known as chinacrin. It is claimed to be an efficient and satisfactory agent for the treatment of malaria, destroying sexual and asexual parasites of tertian and quartan malaria and the asexual forms of tropical malaria. It is marketed in tubes of 15, 0.1-Gm. tablets.—*Am. Drug.* (Mar. 1935), 106. (T. G. W.)

Prostigmin (Hoffmann-La Roche, Inc., Nutley, N. J.) is a 0.5% aqueous solution of the dimethyl carbaminic ester of meta-oxyphenyl-trimethylammonium-methyl sulphate, a parasympathetic stimulant resembling physostigmine. It shows a pronounced action on peristalsis but at the same time the less pronounced miotic influence and almost complete absence of cardiac and vasomotor effects. It is administered hypodermically or intramuscularly for post-operative gas pains, for intestinal atony and for the severe constipation of the bed-ridden and other chronic cases. It should not be used with asthmatics. It is marketed in cartons of 12 and 50, 1.1-cc. ampuls.—*Am. Drug.* (Feb. 1935), 110. (T. G. W.)

Specialties

A. P. L. (Ayerst, McKenna and Harrison, Ltd., Rouses Point, N. Y.) is a preparation of the hormone of the placenta, prepared and biologically standardized in accordance with the technique of Dr. Collip of McGill University. It is a specific stimulant which when administered subcutaneously and intramuscularly will increase the endocrine activity of the ovary. Its use is indicated in uterine hemorrhage, in mastalgia and in the secondary type of amenorrhea. It is not intended for intravenous use. It is available in the form of a sterile standardized solution containing 100 biological day units (Collip) per cc. It is marketed in boxes of 6, 1-cc. ampuls and in 5-cc. and 10-cc. rubber-stoppered bottles.—*Am. Drug.* (May 1935), 108. (T. G. W.)

Absorbent Medicine for Internal Use. An intestinal absorbent medicine is prepared by dispersing kaolin of colloidal fineness in an aqueous dispersion of an inorganic hydroxide gel, *e. g.*, aluminum hydroxide, ferric hydroxide.—John Wyeth & Brother. Brit. Pat. 423,541 (Feb. 4, 1935); through *Chem. Abstr.*, 29 (1935), 4523.

Acecolex (Anglo-French Drug Co., Inc., New York, N. Y.) contains acecoline (stabilized acetylcholine hydrochloride), 2 Gm.; fenchone (terpenic ketone of camphor group), 10 Gm.; ichthyol, 1.25 Gm.; titanium oxide, 2 Gm.; butyl para-amino-benzoate, 1 Gm.; zinc oxide, 15 Gm.; excipient, *q. s.* ad., 100 Gm. It is claimed that recently formed and small varicose ulcers treated by this method usually heal and cicatrize within a week; older ulcers and those with edema and lymphangitis become clean and healthy in a week and cicatrize in a month. It is indicated in the treatment of varicose ulcer; atonic wounds and skin ulcerations in which there is a strong trophic factor. It is supplied as an ointment in 1-oz. tubes.—*Drug. Circ.*, 79 (June 1935), 70. (T. G. W.)

Alomin (Eli Lilly & Co., Indianapolis, Ind.) is a finely subdivided powder which goes readily into suspension in water and contains kaolin, 24 Gm.; aluminum hydroxide, 24 Gm.; calcium carbonate, 16 Gm.; bismuth subcarbonate, 16 Gm.; sodium chloride, 3 Gm.; acacia, 6 Gm.; aromatics, *q. s.*; dextrose, *q. s.* to make 100 Gm. It is claimed to neutralize mineral and organic acids; absorbs toxins of bacterial origin; checks excess secretions from mucous membranes; and allays irritation in the gastro-intestinal tract. It is indicated in gastric hyperacidity and hypersecretion; useful in the presence of frank organic disease, such as gastric or duodenal ulcer; also in certain cases of dysentery and diarrhea. It is marketed in 4-oz. and 1-lb. jars.—*Drug. Circ.*, 79 (July 1935), 62. (T. G. W.)

Aminogen (Christina Laboratories, New York, N. Y.) is a preparation containing the submolecular immunologic "determinants" of the protein molecule complex. Its use is recommended in the treatment of gastro-duodenal ulcers and for the abolition of muscular spasms, of the angiosperm and hyperemia, and for increasing the quantity of anti-pepsin and proenzymes in the blood. It is administered by intramuscular injection. It is supplied in packages containing 12, 24 and 100, 2-cc. ampuls.—*Am. Drug.* (Jan. 1935), 108. (T. G. W.)

Androcalcion H (Laboratories Cortial, Paris) are found on the market as yellow-colored tablets, each tablet containing 0.15 Gm. calcium lactate; 0.05 Gm. magnesium glycerophosphate;

0.05 Gm. theobromine; 0.02 Gm. Testes pulv.; and 0.02 Gm. Iodaseptinum. Androcalcion E is found on the market in blue-colored tablets, each tablet containing 0.2 Gm. calcium lactate; 0.02 Gm. magnesium glycerophosphate; 0.01 Gm. iodomethyl hexamethylenetetramine; 0.02 Gm. Testes pulv.; and 0.02 Hypophysis Lobus anterior.—*Pharm. Weekblad*, 72 (1935), 752. (E. H. W.)

Antagosan (Behring works) is a lactic acid-bacterial preparation used for diseases caused by bacterial infection. The lactic acid bacteria present in the preparation biologically prevent the growth of pathogenic bacteria. Antagosan has no toxic properties and also exhibits no harmful effect on the tissues. The preparation works by lessening secretion and causing the disappearance of the pathogenic germs. It is used in surgery in catarrhal ulceration of the mucous membrane, in wounds, as an irrigant in cystitis, in oto- and laryngology, in inflammation of the middle ear, etc. It is applied in tampons and gauze bandages which are changed every 24 hours. It is found on the market in bottles of 20 and 100 Gm.—*Pharm. Weekblad*, 72 (1935), 824. (E. H. W.)

Anterior Pituitary Extract (E. R. Squibb & Sons, New York, N. Y.) is an alkaline aqueous extract of the anterior pituitary glands of cattle, and containing the thyrotropic and sex stimulating factors of the anterior pituitary gland. It is administered intramuscularly. It is used for pituitary types of dwarfism and Simmond's disease. It is supplied in 10-cc. vials containing 100 growth units.—*Drug. Circ.*, 79 (June 1935), 25. (T. G. W.)

Antuitrin-S (Parke, Davis & Co., Detroit, Mich.) is the sex hormone of the anterior pituitary as obtained from the urine of pregnancy. It is a standardized product representing in each cc., 100 rat units. It stimulates ovarian function notably the development of the corpora lutea. Its use is indicated in metorrhagia, menorrhagia, uterine bleeding, retarded sex development and amenorrhea. It is supplied in the form of a hypodermic solution in 10-cc. rubber-capped vials.—*Am. Drug.* (Apr. 1935), 108. (T. G. W.)

Arsaceticum. According to the *Schweiz. Apoth. Zeitung* (1935), 204, the original *Arsacetine* is no longer produced by I. G. Farben. If the product is called for under this name one should dispense sodium acetylarsanilicum, meeting the requirements of the Pharmacopœia.—*Pharm. Weekblad*, 72 (1935), 752. (E. H. W)

B. R. I. Colloid (Anglo-French Drug Co., Inc., New York, N. Y.) is a lead selenide colloid that has been investigated experimentally and clinically at the Bristol (England) Royal Infirmary and found to be of value in operable carcinoma. It is also called "D_4S." It is administered intravenously in 5- to 10-cc. doses at weekly intervals during 8 to 12 weeks. The maximum dose is 15 cc. It is supplied in 5-, 10- and 15-cc. ampuls.—*Am. Drug.* (Mar. 1935), 106. (T. G. W.)

Baldronit (Otto Reichel, Fabrik pharm. u. biol. Erzeugnisse, Berlin-Neukolln) is a sedative and hypnotic. It is an extract of 80% *Valeriana montana* and 5% *Adonis vernalis* with 12.5% of ethyl allyl barbituric acid with amidopyrine. It is useful in cardiac neurosis, neurasthenia and hypertension.—*Deut. Med. Wochschr.*, 61 (1935), 1002. (H. R.)

Biocholine (Anglo-French Drug Co., New York, N. Y.) is a physiologically tested solution of choline hydrochloride, entirely free from mono- and diethylamines. It possesses the property of rebuilding the cholesterol molecule and increasing the cholesterol content of the blood. Its use is indicated in active tuberculosis, both pulmonary and extra-pulmonary. It should not be used in those diseases (*e. g.*, diabetes) where there is already an excess of cholesterol in the blood. It is supplied in boxes of 25, 50 and 100, 1-cc. ampuls (0.02 Gm. of choline hydrochloride per ampul).—*Am. Drug.* (Apr. 1935), 108. (T. G. W.)

Biseptol (The Maltbie Chemical Co., Newark, N. J.) is a light, soft, antiseptic powder containing bismuth salts, boric acid, thymol iodide, alum, menthol and other ingredients in a base of fine talcum. It is easily wetted by serous exudates. It is used as a dry surgical dressing for the treatment of skin abrasions and skin infections, and is marked in 1-oz. sprinkler top cans.—*Drug. Circ.*, 79 (June 1935), 70. (T. G. W.)

Bismo-Kaolin (Flint, Eaton & Co., Decatur, Ill.) is a white creamy liquid containing in each fluidounce, 40 grains each of bismuth subcarbonate and kaolin in colloidal suspension. It contains no cathartics or oil; no sugar or alcohol. It is marketed in 4- and 16-oz. bottles.—*Am. Drug.* (Mar. 1935), 106. (T. G. W.)

Bismurung is an ointment consisting of bismuth oxychloride in colloidal dispersion in an emollient base. It is recommended as an antiseptic ointment which is soothing and healing in any inflamed, irritated or painful condition of the skin. It is beneficial in all forms of dermatitis

pruritus, eczema and many other conditions. Bismurung is supplied in 1-oz. and 2-oz. tins.—*Quart. J. Pharm. Pharmacol.*, 8 (1935), 317. (S. W. G.)

Bokanol (Chatelain's Laboratories, Paris; George J. Wallau, New York, N. Y. Dist.) is a preparation containing in each case 3 cc. dose 0.001 Gm. of colloidal iron, 0.150 Gm. of sodium glycerophosphate, 0.060 Gm. of sodium cacodylate and 0.0015 Gm. of strychnine cacodylate. The solution is dispensed in a 3-cc. ampul and is recommended in the treatment of neurasthenia, chlorosis and anemia.—*Am. Drug.* (Feb. 1935), 108. (T. G. W.)

Bromostrontiuran, sodium bromide-strontium chloride-urea, is supplied as an intravenous or intramuscular injection, and as tablets for oral administration, for the treatment of itching dermatoses. It is recommended for the treatment of acute and chronic eczema, urticaria, pururitus, neurodermatitis and other forms of dermatitis. The dose in severe cases should be one 10-cc. ampul injected intravenously every day. In less severe cases 5 cc. injected four times a week will be sufficient. Bromostrontiuran tablets should be given 2 or 3 times daily to supplement the injections in severe cases, but may be given alone in milder cases. The 10-cc. ampuls are issued in boxes containing 1, 3 and 8 ampuls. The 5-cc. ampuls are supplied in boxes of 2 and 8. Bromostrontiuran tablets are issued in packages of 25 and 100.—*Quart. J. Pharm. Pharmacol.*, 8 (1935), 317. (S. W. G.)

Cal-B (The Calco Chemical Co., Inc., Bound Brook, N. J.) is a mixture of wheat germ vitamin B and calcium gluconate. It is used for the relief of calcium deficiency and the tonic effect of vitamin B. It should be given only on the advice of a physician. It is marketed in bottles of 4 oz.—*Drug. Circ.*, 79 (July 1935), 60. (T. G. W.)

Calcidex (Intravenous Products, Inc., New York, N. Y.) is a solution of colloidal calcium combined with pure dextrose. Each 10 cc. of the solution represents the equivalent of 6 grains of calcium hydroxide or 10 grains of calcium chloride. It is administered intravenously or intramuscularly for conditions associated with calcium deficiency, such as tuberculosis, bronchial asthma, bronchitis or hay-fever. It is marketed in packages of 6, 25 and 100, 10-cc. ampuls.—*Am. Drug.* (Feb. 1935), 110. (T. G. W.)

Calcilinate (Carroll Dunham Smith Pharmacal Co., Orange, N. J.) are ampuls containing 0.09 Gm. of calcium. It is a sterile aqueous solution, less painful than calcium chloride and is tolerated to about twice the quantity. It contains 13.1% calcium or nearly 50% more calcium than calcium levulinate. It is administered intravenously or intramuscularly. It is indicated in calcium deficiencies. It is supplied in ampuls of 5 and 10 cc. in boxes of 6, 25 and 100.—*Drug. Circ.*, 79 (July 1935), 60. (T. G. W.)

Calcio-coramine (Gesellschaft für chemische Industrie, Basel) is a well-crystallized double salt of pyridine-β-carbonic-acid-diethylamide (coramine) and calcium rhodanate. It is soluble in water and has been shown by experiments on rabbits to be only slightly toxic. The circulatory and respiratory stimulant action of the coramine is increased by the calcium rhodanate, especially as far as the heart action is concerned. Calcio-coramine is found on the market in 400-mg. tablets. Dose 1–2 tablets three times a day.—*Pharm. Weekblad*, 72 (1935), 824. (E. H. W.)

Calcium "Eci" (Electrochemische Industrie, Ltd., Roermond) is a calcium gluconate $(C_6H_{11}O_7)_2Ca$, in powdered form. *Pharm. Weekblad*, 71 (1935), 825. (E. H. W.)

Calogran (Flint, Eaton & Co., Decatur, Ill.) is a granular effervescent form of calcium gluconate. It contains 50% of the gluconate. It is designed for real calcium therapy affording easy solubility and adequate dosage. It is indicated in all cases where calcium is indicated, such as edema, inflammatory conditions, exudative diathesis and weeping eczema. It is supplied in 5-oz. bottles.—*Am. Drug.* (Apr. 1935), 108. (T. G. W.)

Canfidrol-Solution, Canfidrol-Ampuls (Laborat. Farmacol. Reggiano, Correggio, Italy) contain calcium camphosulphonate and ephedrine hydrochloride; put up in containers of 15 cc. and in packages of 6 ampuls, 1 cc. each and 3 ampuls, 5 cc. each.—*Pharm. Presse*, 40 (1935), 279. (M. F. W. D.)

Carmacin "Tabloid" (Burroughs, Wellcome, & Co., Inc., New York, N. Y.) contain calcium carbonate, grains 12; magnesium carbonate, grains 8; sugar, grains 8; oil of peppermint, *q. s.* The antacid effect of calcium carbonate is augmented by that of magnesium carbonate, which also acts as a mild saline purgative, alkalizes the urine, and is a mild diuretic. It is suitable for treatment of hyperacidity, dyspepsia and heartburn. The antacid properties render it useful in acute

gastric catarrh, acute gastro-enteritis and gastric ulcer. It is supplied in glass tubes of 25 products.—*Drug. Circ.*, 79 (June 1935), 70. (T. G. W.)

Caspetol (E. R. Squibb & Sons, New York, N. Y.) is a palatable combination of Squibb's tasteless castor oil with 15% of a special light mineral oil with 3% of alcohol. It is marketed in 3-oz. bottles.—*Am. Drug.* (May 1935), 108. (T. G. W.)

Cavodol tablets contain a cod liver oil concentrate with a potency of 1000 vitamin A and 500 vitamin D units, reduced iron, colloidal copper, calcium iodide, berberine sulphate and extract of gentian. They are recommended for the treatment of avitaminosis and anemia. The adult dose is 1 to 2 tablets three times daily with water or milk. Children can be given half of the adult dose. Two tablets are equivalent to 1 tablespoonful of cod liver oil. The tablets are supplied in bottles of 100.—*Quart. J. Pharm. Pharmacol.*, 8 (1935), 318. (S. W. G.)

Ceanothyn (Flint, Eaton & Co., Decatur, Ill.) is a hydroalcoholic extract of the bark of the root of *Ceanothus americanus* containing the alkaloids of this drug in uniform solution. The preparation is claimed to be a reliable hemostatic, applicable to conditions of actual bleeding largely restricted to hemostasis where capillaries are involved. It is administered orally and is well adapted to routine prophylactic use in minor surgical procedure in throat and nose operations, in oral surgery and in urological and gynecological work. It is marketed in 1-pint bottles.—*Am. Drug.* (May 1935), 108. (T. G. W.)

Choloton for Injection (Chemisch Fabrik Promonta G. m. b. H., Hamburg 26) is a solution of albumin-free liver extract, extrahepatic bile duct and bile. It is supplied in ampuls and is used in liver and bile duct diseases.—*Deut. Med. Wochschr.*, 61 (1935), 1002. (H. R.)

Chondrocein (Christina Laboratories, New York, N. Y.) is a cartilaginous extract consisting chiefly of purified and chemically controlled scleroproteins extremely rich in disulphide and sulphydryl groups. The administration of these sulphur compounds has found a great value in the treatment of all forms of arthritis, sciatica, neuralgia and neuritis. In addition to the disulphide and sulphydryl groups, it contains scleroproteins which act as nonanaphylactic and non-specific agents; thereby stimulating cellular activity and leucocytosis. It is dispensed in the form of a sterile solution designed for intramuscular injection. It is marketed in packages of 12, 24 and 100, 2-cc. ampuls.—*Am. Drug.* (Feb. 1935), 106. (T. G. W.)

Chromosmon (Curta & Co.) is a dark blue liquid marketed in ampuls of 10 cc. It is a solution of methylene blue and glucose and is used in all cases of gas poisoning, as prussic acid, carbon monoxide, illuminating gas, etc.—*Pharm. Weekblad*, 72 (1935), 825. (E. H. W.)

Citrofinal is a new name for the sodium chloride-free kitchen salt *Citrovin* manufactured by Chem. Fabrik Bad Homburg, and recommended for use in salt-free diets.—*Pharm. Weekblad*, 72 (1935), 752. (E. H. W.)

Collosol Calcium (Crookes Laboratories, Inc., New York, N. Y.) is an 0.85% aqueous colloidal suspension of calcium oleate (representing 0.05% of metallic calcium) designed as an effective agent in calcium therapy. Its use is indicated in the treatment of tuberculosis especially when combined with iodine treatment. It has also been found of value in the control of hemorrhage (ante and post-operative) as a prophylactic in hay-fever and in the treatment of pelvic pains in women. It is administered intramuscularly, intravenously or orally. It is marketed in boxes of 6, 0.5- and 1-cc. ampuls, in 30-cc. rubber-capped bottles, and in 8- and 16-oz. bottles.—*Am. Drug.* (Feb. 1935), 108. (T. G. W.)

Collosol Iodine (Crookes Laboratories, Inc., New York, N. Y.) is a loose colloidal combination of hydriodic acid and protein suitable for administration either by the oral, subcutaneous or intravenous route. It is offered in oleaginous and in aqueous solution and also in ointment form. Collosol Iodine Oil may be rubbed into the skin without staining, it is non-irritating and is non-coagulative of tissues and it rapidly penetrates the tissues. Collosol Iodine Aqueous produces slow elimination of iodine and affords minimum danger of iodism. The oil is used by local absorption in localized rheumatoid arthritis and for enlarged glands and goiter. It is also used in the treatments of skin diseases, such as eczema, chilblains and ringworm of the scalp. The aqueous solution is used orally in arthritis and goiter and as a spray in catarrhal conditions. When injected subcutaneously, intramuscularly or intravenously it is of value in syphilis and in rheumatism. Collosol Iodine Oil is dispensed in 1-, 4-, 8- and 16-oz. bottles. The aqueous solution (0.2% iodine) is dispensed in 4-, 8-, 16- and 80-oz. bottles. The isotonic intravenous fluid (0.2% iodine) is dispensed in 10-cc. ampuls (6 to the package) and also in 4-oz. bottles. The intramuscular or sub-

cutaneous fluid (1% iodine) is supplied in 1-cc. ampuls and in 1-oz. bottles.—*Am. Drug.* (June 1935), 110. (T. G. W.)

Cortical-Liquid, Cortical-Ampuls (Istituto Opoterapico, Pisa) contain the aqueous total extract of the fresh cortex of the suprarenal glands; put up in containers of 40 cc. and in packages of 6 ampuls, 2 cc. each.—*Pharm. Presse*, 40 (1935), 279. (M. F. W. D.)

Cratægol Tablets (Carroll Dunham Smith Pharmacal Co., New York, N. Y.) are orange-colored sugar-coated tablets each containing 2 minums of cratægus compound, 1 minum of fluid-extract of apocynum, 1 grain of sodium nitrite, $^1/_{100}$ grain of gold and sodium chloride and $^1/_{100}$ grain of nitroglycerin. These tablets are indicated in high blood pressure with its attendant vertigo, nasal hemorrhage, flushed red hot skin and cardiacal complications. They are marketed in packages of 1,000 and 5,000.—*Am. Drug.* (Mar. 1935), 106. (T. G. W.)

Crystal Violet Jelly (Calco Chemical Co., Bound Brook, N. J.) is a 1% jelly of crystal violet in a water-soluble tragacanth base. It has been found to be a valuable agent in the treatment of burns. It is marketed in 4-oz. and 1-lb. glass jars.—*Am. Drug.* (July 1935), 76. (T. G. W.)

Cyclobis (Winthrop Chemical Co., Inc., New York, N. Y.) is composed of bismuth camphenilanate, an organic bismuth compound containing 30% of bismuth. It is insoluble in water, but gives a clear solution in oil; it is well tolerated; relatively non-toxic and does not produce tissue irritation at the site of the injection. It is administered intramuscularly only, generally given in courses, alternating with the arsenicals. It is indicated in all stages of syphilis and is well adapted for the treatment of congenital syphilis, used in conjunction with the arsenicals. It is supplied in boxes of five 2-cc. ampuls of the 10% oily solution.—*Drug. Circ.*, 79 (July 1935), 29. (T. G. W.)

Cysteine Hydrochloride (E. R. Squibb & Sons, New York, N. Y.) is a preparation of the hydrochloride of the sulphydryl compound, cysteine, $CH(COOH)(NH_2)CH_2SH$, buffered with sodium borate, so as to produce a 0.5% solution having the p_H 4.0. It is recommended as a wet dressing for wounds, stimulating granulation and epithelial proliferation. It is marketed in 0.5- and 5.0-Gm. ampuls in packages of five.—*Am. Drug.* (Feb. 1935), 108. (T. G. W.)

Darmo-Stop-Tablets (Fa. Brady and Schmidgall, Vienna, 12th dist.) contain in each tablet 0.50 Gm. basic calcium aluminum tannate in chocolate, 2 in a package.—*Pharm. Presse*, 40 (1935), 279. (M. F. W. D.)

Deriphyllin Oral (Chemisch-Pharmazeutische A.G. Bad Homburg, Frankfurt a. M.) is a solution of theophylline-oxyamine containing 0.412 Gm. per cc. It is used as a diuretic and cardiac tonic.—*Deut. Med. Wochschr.*, 61 (1935), 1002. (H. R.)

Dermabella Skin Oil (Fabrik für pharm. Spezialitäten, Homöopathie und Biochemie G. A. Reinecke, Hannover), a virgin cold-pressed olive oil perfumed with natural products, is used for sunburn, body and skin care, and as a massage oil.—*Pharm. Zentralh.*, 76 (1935), 380. (E. V. S.)

Devegan (Winthrop Chemical Co., Inc., New York, N. Y.). Tablets containing acetyl-aminohydroxyphenylarsonic acid; a small amount of boric acid; and a substance obtained by subjecting carbohydrates to a partial transformation by mild oxidation and hydrolysis. A destructive agent against the flagellate and cystic forms of *Trichomonas*. It furnishes a culture medium for the lactobacilli normally present in the vagina and reëstablishes the normal vaginal flora and thereby aids in preventing infection by foreign organisms. It is indicated in the treatment of *Trichomonas vaginitis* and of leukorrhea due to mixed and non-specific bacterial infections. It is issued in boxes of 25 tablets.—*Drug. Circ.*, 79 (June 1935), 25. (T. G. W.)

Dibroluur (Society for Chemical Industry, Katwijk, Netherlands) is bromdiethylacetylurea. —*Pharm. Weekblad*, 72 (1935), 825. (E. H. W.)

Dicalcium Phosphate with Viosterol (E. R. Squibb & Sons, New York, N. Y.) is the trade name for tablets, each of which contains 9 grains of dicalcium phosphate, 6 grains of calcium gluconate and viosterol (Squibb) of the potency of 660 vitamin D units (1934 standard). The calcium-phosphorus ratio is 1.625. Its use is indicated in the treatment of mild rickets, in supplying calcium during pregnancy and lactation and in other conditions where calcium therapy is desirable. It is supplied in bottles of 50 tablets.—*Am. Drug.* (Apr. 1935), 108. (T. G. W.)

Diffundol (Diffundol G. m. b. H., Frankfurt a. M.) is an ointment containing soda salt ointment, ethereal oil, rectified oil of turpentine, sulphur compounds and Formoxyl hydrate. It is used as an antirheumatic.—*Deut. Med. Wochschr.*, 61 (1935), 1002. (H. R.)

Dinitrenal Capsules (Drug Products Co., Inc., Long Island City, N. Y.) are capsules each containing alpha dinitro-phenol sodium (100 mg.), suprarenal and charcoal. It is claimed to be a metabolic stimulant which accomplishes controlled reduction in weight, if not due to lack of thyroid secretion. It is used in the treatment of obesity and should only be used under the supervision of a physician. It is issued in bottles of 20 and 100 capsules.—*Am. Drug.* (Jan. 1935), 108. (T. G. W.)

Diotrast is the name applied in the United States to the substance known in Europe as *Perabrodil.* (*Quart. J. Pharm. Pharmacol.*, 5 (1932), 753.) It is 3:5-diiodo-4-pyridone-N-acetate of diethanolamine, and is used as a urographic contrast agent. It is a white odorless powder containing 51.8% of iodine, m. p. 246–247° C. It is supplied in 20-cc. ampuls containing a 35% solution, the dose intended for an adult, but it can safely be given to young children without toxic effects.—*Quart. J. Pharm. Pharmacol.*, 8 (1935), 318. (S. W. G.)

Diplosal (C. F. Boehring & Sons) is now produced as an ointment procurable in tubes and containing 5% diplosal. The diplosal is dissolved in oil and then worked up with other fatty constituents, the preparation being used in cases of muscular rheumatism to augment the internal therapy.—*Pharm. Weekblad*, 72 (1935), 752. (E. H. W.)

Dosarter is the trade name for "collampoules" containing colloidal arsenic, sodium silicate, sodium iodide, sodium salicylate, analgesin and thiosinamine. It is indicated in arteriosclerosis when it is administered hypodermically in 3-cc. doses. It is supplied in 3-cc. ampuls.—*Am. Drug.* (Mar. 1935), 106. (T. G. W.)

Drug Specialties and Nostrums—Certain, in Tea Form. The composition of some fourteen different tea mixtures expressed in proportionate relationship of the herbal constituents is given—W. Feyer. *Süddeut. Apoth.-Ztg.*, 75 (1935), 321; through *Chem. Abstr.*, 29 (1935), 4519.

Embrodex contains phenylethyl iodide 1%, undecylenic iodide 0.2% incorporated in a non-greasy emollient base, for external application. It is suggested for the treatment of rheumatism, sciatica, arthritis, chilblains, sprains, as a chest rub in bronchitis and as an antiseptic dressing for wounds and ulcers. The absorption of embrodex causes hyperemia, relieving congestion, and with the analgesic action of phenylethyl iodide gives relief from pain. Embrodex is applied 3 or 4 times daily to the affected part and rubbed gently until absorbed. It is supplied in small and large collapsible tubes, in 1-lb. tins, and in larger packings for hospitals.—*Quart. J. Pharm. Pharmacol.*, 8 (1935), 318. (S. W. G.)

Emmenin Liquid (Ayerst, McKenna and Harrison, Ltd., Montreal, Canada and Rouses Point, N. Y.) is an alcohol-soluble, ether-insoluble placental hormone prepared and biologically standardized by the technique employed by Dr. Collip of McGill University. It supplements the œstrogenic activity of the hypo-functioning ovary and is active when administered by mouth. It is recommended in dysmenorrhea, menstrual headache, menopausal symptoms, amenorrhea and in vomiting in pregnancy. It is marketed in 4-oz. bottles.—*Am. Drug.* (Apr. 1935), 108. (T. G. W.)

Endo-Mangalac (Endo Products, Inc., New York, N. Y.) is a standardized solution of endo-manganese proteinate which is superior to regular milk injections. It is indicated in pelvic infections, in neuritis, in furunculosis and in various forms of acne. It is administered intramuscularly. It is marketed in packages of 12, 25 and 100, 1-cc. ampuls and in packages of 12, 25 and 100, 2-cc. ampuls.—*Am. Drug.* (Feb. 1935), 106. (T. G. W.)

Endothyrin (Harrower Laboratory, Inc., Glendale, Cal., and New York, N. Y.) is the trade name for a standardized thyroid that is triple the U. S. P. strength. Its iodine content is 0.6% and it is virtually non-toxic. It is indicated in all conditions where total thyroid is given and it does the same work as one-third the usual dose. It is marketed in bottles of 50, 0.5-grain tablets.—*Am. Drug.* (Feb. 1935), 108. (T. G. W.)

Entacard (Reed and Carnrick, Jersey City, N. J.) is the trade name for enteric-coated tablets each containing 5 grains of sodium bicarbonate, $^1/_2$ grain of calcium carbonate, $^1/_4$ grain of potassium bicarbonate and $^1/_4$ grain of magnesium carbonate. It is claimed to afford systemic alkalinization without gastric disturbance and is therefore of value in nephritis, rheumatism, diarrhea and for other disorders conditioned upon a lowered alkalinity. It is marketed in metal boxes containing 75 tablets.—*Am. Drug.* (June 1935), 110. (T. G. W.)

Entoral (Eli Lilly & Co., Indianapolis, Ind.). Pulvules containing killed pneumococci 25,000 million; *H. influenzæ*, 5,000 million; streptococci, 15,000 million; *M. catarrhalis*, 5,000

million. An immunizing antigen administered orally which will produce heterophile antibody in sufficient amounts to increase the resistance of individuals to respiratory infections. One pulvule is given one hour before breakfast for seven successive mornings; thereafter, two pulvules taken each week throughout the season. For children under six years of age, one-half the adult dose is given. It is supplied in bottles of 20 pulvules.—*Drug. Circ.*, 79 (June 1935), 25. (T. G. W.)

Epherheumine (Kon. Pharm. Fabrieken, Brocades-Stheeman & Pharmacia, Netherlands) is a combination of 500 mg. acetylsalicylic acid and 15 mg. ephedrine hydrochloride, in tablet form.—*Pharm. Weekblad*, 72 (1935), 752. (E. H. W.)

Ephetonogen is a combination of ephedrine and adrenaline, containing in 1 cc. 0.0001 Gm. of adrenaline and 0.02 Gm. of ephedrine. It is indicated in diseases accompanied by bronchial spasm and in infectious toxic collapse. The advantage claimed for this combination is that the necessary quantity of adrenaline is much reduced, and adrenaline intoxication is avoided. In rhino-laryngology it may be administered by painting or spraying, or as an inhalant. The dose is 1 or 2 cc. daily. It is supplied in boxes of six 1-cc. ampuls.—*Quart. J. Pharm. Pharmacol.*, 8 (1935), 318. (S. W. G.)

Estrogenic Hormone (Reed and Carnrick, Jersey City, N. J.) is prepared from prenatal urine, in aqueous solution containing 500 rat units (approximately 1,500 international units) per cc. and in oil solution containing 2,000 rats units (approximately 6,000 international units) per cc. Also in oil solution of higher unitage. The aqueous solution is administered by subcutaneous injection and the oil solution by intramuscular injection. It is used for amenorrhœa and dysmenorrhœa associated with uterine hypoplasia; in menopausal disturbances; and certain cases of functional sterility. It is supplied in the aqueous solution (500 rat units) in boxes of 1 and 6, 1-cc. ampuls and in the oil solution (2,000 rat units) in boxes of 1, 3 and 6, 1-cc. ampuls.—*Drug. Circ.*, 79 (July 1935), 29. (T. G. W.)

Ethacreo (Sharp & Dohme, Philadelphia & Baltimore) is an elixir containing chloroform, creosote, terpin hydrate, calcium and sodium glycerophosphates. It is claimed to possess expectorant, tonic and mildly antiseptic action; identical in strength with Elixir Terpin Hydrate and Creosote, N. F. V, but differs in color and in the basic elixir which is used to make it more palatable. It is indicated in every type of cough, particularly obstinate coughs; also in the treatment of chronic coughs of long standing and in hoarseness. It is issued in 1-pint and 1-gallon bottles.—*Drug. Circ.*, 79 (July 1935), 28. (T. G. W.)

Femivir (Anglo-French Drug Co., Inc., New York, N. Y.) is a pluriglandular extract combining the hormones of the female reproductive glands with a small quantity of yohimbine. It is prepared from fresh glands and the extract is presented in the form of specially coated tablets which are easily absorbed. It stimulates the dormant female reproductive glands and produces sexual desires and is therefore used in sexual frigidity, amenorrhea and in sterility. It is marketed in bottles of 50 and 300 tablets and also in boxes of 12 ampuls for subcutaneous injection.—*Am. Drug.* (July 1935), 76. (T. G. W.)

Ferrodic iron granules contain colloidal ferrous phosphate in combination with glucose and chocolate. It is claimed that the iron remains in the ferrous condition indefinitely, and that it has a pleasant flavor free from the astringent taste of iron salts. Suspensions in water give no reaction for ionized iron, but the iron is rapidly dissolved in hydrochloric acid as in the stomach, and maximum absorption is ensured. The granules are recommended for administration to children and to those liable to gastric disturbance following the use of other iron compounds. A teaspoonful of ferrodic iron granules is equivalent in iron to 10 grains of Blaud's pill, or 4 teaspoonfuls of Parrish's chemical food. The dose is half to two teaspoonfuls taken alone or on bread and butter, or in hot or cold milk. Ferrodic iron granules are sold in $^1/_2$-lb. and 1-lb. screw-top tins.—*Quart. J. Pharm. Pharmacol.*, 8 (1935), 318. (S. W. G.)

Ferro-Salicylata (Wm. S. Merrell Co., Cincinnati, Ohio) contains in each fluidounce, 40 grains of natural sodium salicylate and 40 minums of tincture of ferric citrochloride in a palatable solution of ammonium citrate. It is an anodyne, hematinic and tonic and does not induce gastric disturbances. It is given in doses of one or two teaspoonfuls in water three or four times daily. It is used for the treatment of rheumatic conditions, anemias or debilitated conditions following prolonged illness; and in post-influenzal convalescence. It is supplied in pint bottles.—*Drug. Circ.*, 79 (June 1935), 68. (T. G. W.)

Flavicrine (Christina Laboratories, New York, N. Y.) is a thiazonium derivative of diamino-

alkyl-acridine, a dye possessing high bacteriostatic activity. It possesses low toxicity as compared to ordinary acridine dyes, is more permeable to inflamed tissues and acts equally well in acid and in alkaline urine. It is used in the treatment of gonorrhea and in renal and genito-urinary infections. It is administered intravenously in the form of a 2% solution. It is marketed in the form of a 2% solution in 5-cc. ampuls (6, 24 and 100 to the package).—*Am. Drug.* (July 1935), 76. (T. G. W.)

Gon A-Vee 16 (G. H. Sherman, M.D., Inc., Detroit, Mich.) is a combined antivirus (A-Vee) made from the common organisms as found in gonorrhea of the male and female tracts, incorporated into a suitable bland innocuous semi-tenacious base. It is claimed to be capable of conferring local immunity to the area injected and of controlling the mixed Neisserian infections. Used as a local injection for acute gonorrhea of the male and female. Two cc. is injected deep into the male urethra and 5 to 7 cc. injected at least twice weekly into the cervical canal of the female. It is supplied in packages containing five $^3/_4$-oz. tubes, one $12^1/_2$-cc. vial of Gonococcus combined vaccine and three semi-flexible metal catheters.—*Drug. Circ.*, 79 (June 1935), 24. (T. G. W.)

Gynocalcium M (Laboratories Cortial, Paris) is found on the market in the form of purple-colored tablets, each tablet containing 0.25 Gm. calcium lactate; 0.025 Gm. magnesium lactate; 0.025 Gm. Testes pulv.; 0.125 Gm. Ovaria pulv.; and 0.05 Gm. calcium lactophosphate.—*Pharm. Weekblad*, 72 (1935), 752. (E. H. W.)

Gynocalcium P (Laboratories Cortial, Paris) is found on the market in red colored tablets, each tablet containing 0.2 Gm. calcium lactate; 0.025 Gm. magnesium lactate; 0.02 Gm. Hypophysis Lobus ant. and 0.05 Gm. calcium lactophosphate. Both Gynocalcium M and Gynocalcium P are used for amenorrhoea and other disturbances.—*Pharm. Weekblad*, 72 (1935), 752. (E. H. W.)

Hexa-Chloride Compound (Pitman-Moore Co., Indianapolis, Ind.) is a urinary antiseptic, each fluidounce representing methenamine, 40 grains; ammonium chloride, 40 grains; tincture hyoscyamus, 40 minums; Zea mays, dry, 40 grains; triticum, 80 grains, and aromatics. It is so prepared as to increase the acidity of the urine and hence secure the full antiseptic action of the methenamine. It is used in all conditions indicating the administration of methenamine, including many forms of cystitis, certain gonorrheal conditions and other urinary infections. It is supplied in pint bottles.—*Drug. Circ.*, 79 (July 1935), 60. (T. G. W.)

Hexylresorcinol Crystoids (Sharp & Dohme, Philadelphia & Baltimore). Each crystoid contains 0.2 Gm. of crystalline hexylresorcinol, enclosed in a hard gelatin covering. It is used to control round worm (*Ascaris*) and hookworm (*Uncinaria*) infestations. It is marketed in packages of six vials, each vial containing five crystoids.—*Drug. Circ.*, 79 (June 1935), 24. (T. G. W.)

Hydronal (I. G. Farbenindustrie, Bayer) is colloidal aluminum hydroxide prepared by a special method and of such a grade that at 37° it allows a certain quantity of *N*/10 hydrochloric acid to remain in the gastric juice, so as to allow the activity of pepsin to proceed undisturbed. Two–3 tablets are given before meals as a prophylactic and 1–2 tablets are taken after meals in hyperacidity. The tablets contain 0.5 Gm. hydronal.—*Pharm. Weekblad*, 72 (1935), 825. (E. H. W.)

Idracafine (J. D. Riedel Chemical Factory) is a mixture of 0.5 Gm. Idragine (Acid. acetylsalicylicum, Riedel) and 0.05 Gm. caffeine in tablet form.—*Pharm. Weekblad*, 72 (1935), 752. (E. H. W.)

Idragine is the name given by A. G. Riedel to acetyl salicylic acid manufactured by them.—*Pharm. Weekblad*, 72 (1935), 752. (E. H. W.)

Injectable Liver Extract, Abbott (Abbott Laboratories, North Chicago, Ill.) contains in each cc. an extract derived from 50 Gm. of fresh, edible, mammalian liver by a process of fractionation and concentration which conserves the pernicious anemia factor. It is used for intramuscular injection in the treatment of pernicious anemia. It is issued in boxes of ten 1-cc. vials.—*Drug. Circ.*, 79 (July 1935), 29. (T. G. W.)

Iodaseptine (Laboratories Cortial, Paris) is a compound of benzomethylphenylester. It contains 42% iodine, is not toxic and does not give rise to local reactions. It is used in rheumatism, tuberculosis and arteriosclerosis. It is found on the market in 10% solution, in ampuls and in tablets containing 0.2 and 0.5 Gm. iodaseptine. Iodaseptine with salicyl contains 76 mg. of sodium salicylate per cc. It is put up in ampuls of 5 and 10 cc.—*Pharm. Weekblad*, 72 (1935), 752. (E. H. W.)

Iosicol (Factory for Chemical and Pharmaceutical Preparations of Pharmacist P. Bolder, Keulen, Netherlands) is a solution of 2 Gm. of potassium iodide in colloidal silicic acid solution. It is used in arteriosclerosis.—*Pharm. Weekblad*, 72 (1935), 753. (E. H. W.)

Jectovin (McKesson & Robbins, Inc., Bridgeport, Conn.) is a sterile neutral solution of vitamin A (100,000 units per cc.; U. S. P. X 1934 Revised) and vitamin D (12,500 units per cc.; U. S. P. X 1934 Revised) in sesame oil. It is rapidly absorbed when periodically injected intramuscularly in the gluteal regions. The dose is $^1/_2$ to 1 cc. weekly or semi-monthly. It is indicated in pregnancy, rickets, tuberculosis and in all cases of depletion of vitamin reserve as in chronic ailments or because of severe regulated dietaries. It is especially adaptable in conjunction with calcium and phosphorus therapy in the treatment of fractures with delayed knitting. It is supplied in vials of 5 cc.—*Drug. Circ.*, 79 (July 1935), 28. (T. G. W.)

Kataline (Society for Chemical Industry, Katwijk, Netherlands) contains phenacetine, dimethylamidoantipyrine, caffeine, quinine sulphate, and is sold in tablets containing 350 mg. of the mixture.—*Pharm. Weekblad*, 72 (1935), 825. (E. H. W.)

KLX tablets contain in each: herba capsellæ 0.05 Gm., cortex cinnamomi 0.05 Gm., folia matico 0.05 Gm., *Valeriana officinalis* 0.05 Gm., potassium iodide 0.3 Gm. They are recommended for the treatment of functional cases of menorrhagia and dysmenorrhœa. In ordinary cases one tablet taken three times daily for three days will be sufficient, but in severe cases the dose can be increased to 4 tablets.—*Quart. J. Pharm. Pharmacol.*, 8 (1935), 319. (S. W. G.)

Kolag (Kolag Co., New York, N. Y.) contains colloidal kaolin, finely powdered agar, sodium sulphocarbolate, lactose and aromatics. It is indicated in the treatment of colitis and allied intestinal disfunctions; its tendency is to produce normal bowel movement without catharsis; the emulsion form has the added lubricative powers of mineral oil. It is supplied as plain or alkaline powder in 4-oz., 8-oz. and 24-oz. sizes and in the emulsion form in pints.—*Drug. Circ.*, 79 (June 1935), 70. (T. G. W.)

Lactozym Alfa (Bacteriological and Therapeutic Laboratory of Prof. J. Mezzodroli, Bologna) is the normal lactic acid-forming proteolytic ferment of the stomach and intestines, dispensed in potable form in ampuls.—*Pharm. Weekblad*, 72 (1935), 753. (E. H. W.)

Liviron (Christina Laboratories, New York, N. Y.) is a concentrated liver extract with iron. It is a sterile aqueous solution containing a nitrogenous non-protein fraction G which Cohn, Minot and Murphy obtained from fresh mammalian liver. Each cc. of the solution represents approximately 33 Gm. of whole fresh liver, plus 4 mg. of physiologically active ferrous iron. It is employed intramuscularly in the treatment of pernicious and secondary anemia. It is supplied in packages of 12, 24 and 100, 1-cc. ampuls.—*Am. Drug.* (Mar. 1935), 106. (T. G. W.)

Luteal Ampuls (Istituto Opoterapico, Pisa) contain the aqueous total extract of the corpus luteum; sold in packages of 6 ampuls, 1 cc. each.—*Pharm. Presse*, 40 (1935), 278. (M. F. W. D.)

Magganon Asthma Powder (A.-G. für medizinsche Producte, Berlin N65) contains the alkaloids of ephedra, aristolochia, and aspidosperma, potassium iodide, and antipyretics. It is used for bronchial and cardiac asthmas.—*Pharm. Zentralh.*, 76 (1935), 353. (E. V. S.)

Mastal-Liquid, Mastal-Ampuls (Istituto Opoterapico, Pisa) are the aqueous total extract of fresh mammary glands put up in 60-cc. containers and in packages of 12 ampuls, 2 cc. each.—*Pharm. Presse*, 40 (1935), 279. (M. F. W. D.)

Merphenyl (Hamilton Laboratories, Inc., Hamilton, Ohio) is the trade name for a series of preparations containing basic phenylmercuric nitrate. These preparations afford new and effective agents for the control of pathogenic bacteria, fungi and yeast. The Merphenyl preparations include: *Merphenyl Nitrate Solution.*—A 1:1500 aqueous solution used as a general antiseptic and for injections of the vagina and cervix. It is supplied in 16-oz. bottles. *Merphenyl Nitrate Ointment.*—A 1:1500 ointment in an oxycholesterol base. It is a rapidly absorbed fungicide and antiseptic of value in a number of skin infections. It is supplied in 1-oz. tubes and in 1-lb. jars. *Merphenyl Nitrate in Glycerin.*—A 1:1000 solution used in mouth and throat infections. It is supplied in 2-oz. bottles. *Merphenyl Picrate Tincture.*—A 1:200 phenyl mercuric picrate solution, the solvent being a mixture of acetone, alcohol and water. It is an effective preparation for preoperative skin sterilization. It is supplied in 2-oz. bottles.—*Am. Drug.* (May 1935), 108. (T. G. W.)

Metamucil (G. D. Searle & Co., Chicago, Ill.) is the trade name for the mucilaginous con-

stituents of the seed of *Plantago ovata* held in dispersion with a specially prepared milk powder. It is recommended as a useful adjuvant in the treatment of constipation, coprostatis and colitis. It does not irritate the gastric or intestinal mucosa and does not interfere with the digestion. It is supplied in 6-oz. and 1-lb. containers.—*Am. Drug.* (June 1935), 110. (T. G. W.)

Minerasal (G. D. Searle & Co., Chicago, Ill.) is a granular effervescent mineral food and body alkalinizer containing 14 mineral salts required by the body cells in the proportions suggested by a study of the mineral content of human milk. It is neither diuretic nor laxative in action. Its use is indicated in the treatment of acidosis or hypoalkalinity, gastric hyperacidity, general debility. It is claimed to be of value in the treatment of peptic ulcer. It is supplied in 4-oz. screw-capped bottles (12 to the carton).—*Am. Drug.* (July 1935), 76. (T. G. W.)

Miosal-Liquid, Miosal-Ampuls (Istituto Opoterapico, Pisa) contain the aqueous total extract of fresh bovine muscles; put up in containers of 40 cc. and in packages of 12 ampuls of 2 cc. each.—*Pharm. Presse*, 40 (1935), 279. (M. F. W. D.)

Mucidan Cough Drops (Rhenania, Pharm. Abt. der Kali-Chemie AG, Berlin NW7) contain ammonium thiocyanate in combination with the saponins of primrose, thyme and polygala, and a calcium salt.—*Pharm. Zentralh.*, 76 (1935), 353. (E. V. S.)

Natrico Pulvoids (Drug Products Co., Inc., Long Island City, N. Y.) are enteric coated green tablets containing potassium nitrate, sodium nitrite, *cretægus oxyacantha* and nitroglycerin ($^1/_{250}$ grain per tablet). Their use is indicated for the prevention of cerebral and cardiac accidents and for the symptomatic treatment of hypertension. They are marketed in bottles of 100 tablets.—*Am. Drug.* (Feb. 1935), 110. (T. G. W.)

Neda Hair Tonic, Clinical (Neda-Werk Eduard Palm, München 13), a remedy to prevent loss of hair, contains dilute alcohol, tincture of cantharides, salicylic acid, tannic acid, pilocarpine hydrochloride and oil of bay.—*Pharm. Zentralh.*, 76 (1935), 353. (E. V. S.)

Neo-Trepol (Anglo-French Drug Co., Inc., New York, N. Y.) is a precipitated bismuth in an aqueous isotonic solution. It is administered by intramuscular injection for those forms of syphilis where the use of bismuth is indicated. It is marketed in packages of 6 and 12, 3-cc. ampuls.—*Am. Drug.* (Jan. 1935), 108. (T. G. W.)

Nupercainal (Ciba Co., Inc., New York, N. Y.) is an analgesic and antipruritic ointment containing 1% of alpha-butoxyloxycinchoninic acid diethyl-ethylenediamide (nupercaine) blended with lanolin and petrolatum. The prolonged anesthetic action makes the ointment especially valuable for the relief of pain and itching, occurring in affections of the skin and mucous membranes. It is indicated in burns, sunburn, ordinary eczema, cracked nipples, chapped skin, hemorrhoids and other painful and itching conditions of the skin. It is marketed in 1-oz. collapsible tubes and 1-lb. tins.—*Am. Drug.* (Feb. 1935), 106. (T. G. W.)

Olaxin ointment (Olaxin-Werke, Arzneimittelfabrik, Essen-Kray), a wound and healing salve for eczema, sores and cutaneous sufferings, is prepared from almond oil (28.0 Gm.), phenol (25.0 Gm.), lemon oil (1.5 Gm.), precipitated sulphur (10.5 Gm.), wax (10.0 Gm.) and vaseline (25.0 Gm.).—*Pharm. Zentralh.*, 76 (1935), 353. (E. V. S.)

Oliolase (Anglo-French Drug Co., Inc., New York, N. Y.) is an iodized oil (40% iodine) designed for radiological examinations. Its use is indicated in the Roentgenological visualization of the spinal canal, the female generative organs and other cavities of the body. It is also of value for intensive iodine chemotherapy without iodism. The administration for radiological examinations is performed according to a special technique; for iodine medication it is administered intramuscularly. It is marketed in boxes of 10, 1-cc. ampuls; 6, 2-cc. ampuls; and 4, 5-cc. ampuls; and in 12-cc. bottles.—*Am. Drug.* (Feb. 1935), 106. (T. G. W.)

Orgabroom (N. V. Organon, Oss, Netherlands) is a bromine preparation in the form of bouillon cubes, prepared with meat extract and vegetable products. Each cube contains 1.2 Gm. sodium bromide with vegetable and animal amino acids and peptones. The sodium chloride content is not more than 40 mg. per cube. Dose 1–2 cubes, one to two times a day.—*Pharm. Weekblad*, 72 (1935), 753. (E. H. W.)

Osnol is the new name for *Rheumosnal* (*Pharm. Zentralh.*, 75 (1935), 336).—*Pharm. Zentralh.*, 76 (1935), 354. (E. V. S.)

Otalgan is a 5% solution of phenazone in anhydrous glycerin, and is recommended for treatment of non-perforated otitis media, and all painful affections of the ear. Sufficient otalgan should be instilled into the ear to fill the acoustic passage. It should be warmed, and hot or moist

poultices should not be applied. Otalgan is a colorless liquid, and does not interfere with otoscopic examination. It is supplied in bottles of 6 and 10 cc.—*Quart. J. Pharm. Pharmacol.*, 8 (1935), 319. (S. W. G.)

Ovaria Siccata (N. V. Organon) is no longer prepared defatted, as it has been found that the active constituents (Progestine and Menformon) are very soluble in fats. The undefatted powder is grayer in color.—*Pharm. Weekblad*, 72 (1935), 825. (E. H. W.)

Panteric Tablets (Parke, Davis & Co., Detroit, Mich.) are enteric-coated and chocolate-coated tablets containing 5 grains of triple strength pancreatin. These are of value in intestinal indigestion and its consequences, such as underweight, fermentative colitis and certain forms of food allergy. They are marketed in bottles of 100 and 500 tablets.—*Am. Drug.* (May 1935), 108. (T. G. W.)

Pellitol (Pitman-Moore Co., Indianapolis, Ind.) contains resorcin 5%, bismuth subnitrate, bismuth subgallate, oil of cade, zinc oxide, calamine and echinacea in a special lanum-petrolatum base. It is a protective, anodyne and astringent, stimulating healthy granulation and reducing scar tissue to a minimum. It is used in subacute and chronic eczemas, burns, scalds, *pruritis ani* and *vulvæ* and all conditions in which the skin is broken or destroyed. It is issued in ounce collapsible tubes, and ounce, quarter-pound and pound jars.—*Drug. Circ.*, 79 (June 1935), 68. (T. G. W.)

Percainal (Gesellschaft für Chemische Industrie, Basel) contains 1% Percainum and is a convenient absorbing ointment constituent to which also is added Aqua Hamamelidis and solution of aluminum formate. It is used among other things to diminish the pain in burns, inflammation of the nipples, decubitis, intertrigo, anus fissures, sunburn, etc. It is found on the market in tubes of 20 to 40 Gm.—*Pharm. Weekblad*, 72 (1935), 825. (E. H. W.)

Peristaltine (Ciba Company, Inc., New York, N. Y.) is a preparation of water-soluble glucosides of cascara sagrada. It is claimed to produce a laxative effect in 8 to 10 hours, without irritation or disturbance of the digestive tract. It is administered orally or hypodermically. It is used in all types of chronic constipation; as a prophylactic in intestinal stasis to avoid distension before or after laparotomy. It is marketed in bottles of 15, $1^1/_2$-grain sugar-coated tablets and in cartons of 5 and 20, $2^1/_2$-grain (1.5 cc.) ampuls.—*Drug. Circ.*, 79 (June 1935), 24. (T. G. W.)

Per-Joodtheodural (Society for Chemical Industry, Katwijk, Netherlands) contains calcium salicylate with calcium theobromine, 417 mg., potassium iodide 83 mg., papaverine-HCl 30 mg. per tablet. The tablets are used in high blood pressure, arteriosclerosis, etc.—*Pharm. Weekblad*, 72 (1935), 826. (E. H. W.)

Pertussis Vaccine (Sauer) (Parke, Davis & Co., Detroit, Mich.) is a bacterial vaccine prepared according to the formula of Dr. Louis W. Sauer, of Northwestern University Medical School, who has used the vaccine successfully in hundreds of children during the past seven years. It is an effective immunizing agent against whooping-cough. The immunity is established in four months and lasts for five years. It is administered by intramuscular injection in each arm; three administrations being sufficient. It is supplied in an 8-cc. rubber-diaphragm-capped vial.—*Am. Drug.* (Jan. 1935), 108. (T. G. W.)

Phenandyne (Schieffelin & Co., New York, N. Y.) is the acetic acid ester of phenol. It is a clear colorless fluid insoluble in water. It is a powerful germicide, killing such micro-organisms as *Staphylococcus pyogenes*, pneumococcus, streptococcus and *bacillus coli*. It is a non-irritating, non-caustic analgesic and has proved of value in dental work. It is marketed in packages of 12, 3.5-Gm. bottles.—*Am. Drug.* (Feb. 1935), 106. (T. G. W.)

Phos-Cal (McKesson & Robbins, Inc., Bridgeport, Conn.) is a preparation containing approximately 20.0% calcium and 11.7% phosphorus, prepared from pasteurized milk by a special process which removes fats and casein but recovers the unaltered calcium-phosphorus milk minerals plus the globulin protein fraction as they occur in fresh milk. It is indicated in the treatment of calcium deficiencies and in all cases where increased calcium-phosphorus intake is indicated. It is issued as the powder in 8-oz. bottles, and as lozenges in bottles of 18 and 100.—*Drug. Circ.*, 79 (June 1935), 25. (T. G. W.)

Phytine (Ciba Co., Inc., New York, N. Y.) are tablets composed of calcium magnesium inosithexaphosphoric acid, and containing 12% calcium; 22% phosphorus; 1.5% magnesium in organic combination. It is indicated wherever calcium and phosphorus in a readily assimilable

form is desired; in rickets, osteomalacia, delayed union of fractures, asthma, vasomotor rhinitis, urticaria, tetany, spasmophilic expressions in young children; also useful in nervous affections, convalescence, tuberculosis, pregnancy and lactation. It is issued in bottles of 40, 4-grain tablets.—*Drug. Circ.*, 79 (July 1935), 62. (T. G. W.)

Plastosol is an antiseptic liquid plaster containing copper guaiacol sulphonate and penetrodine, dissolved in a volatile organic solvent. Penetrodine is a new iodine compound of the nature of an ethereal oily liquid which penetrates into crevices and has a stimulant antiseptic action. Copper guaiacol suphonate coagulates albumins, and acts as an astringent and styptic. Plastosol is suggested as a handy first aid dressing for wounds, and for use on operative wounds and varicose and other ulcers before the application of other dressings. It is supplied in bottles fitted with a flattened dropper with which it can be applied. Plastosol is issued in a standard size, and 4-oz. dispensary size bottles.—*Quart. J. Pharm. Pharmacol.*, 8 (1935), 319. (S. W. G.)

Postalan Hemorrhoidal Ointment (Fürstl. Fürstenberg, Hofapotheke, R. Baur in Donaueschingen) is prepared from ethyl *p*-aminobenzoate (5 Gm.), bismuth subgallate (5 Gm.), zinc oxydate (7.5 Gm.), extract of witch-hazel (1.25 Gm.), balsam of peru (1.25 Gm.), tannic acid (0.5 Gm.), menthol (0.5 Gm.), and simple ointment (29.0 Gm.).—*Pharm. Zentralh.*, 76 (1935), 354. (E. V. S.)

Proctoids are suppositories containing zinc oxide 10.00, boric acid 10.00, bismuth oxyiodide 1.67, bismuth subcarbonate 8.33, belladonna, powdered extract, 0.50, ephedrine sulphate 0.1, balsam of peru 1.0, cacao butter to 100. These suppositories are recommended for the treatment of painful and bleeding piles. They combine the astringent and antiseptic qualities of zinc oxide and boric acid, with the antiphlogistic properties of bismuth oxyiodide and the vasoconstrictive effect of ephedrine sulphate. It is an advantage to irrigate the rectum with hot saline or bicarbonate solution before the introduction of a suppository. Proctoids are of "torpedo" shape to facilitate their retention. They are supplied in boxes of 12.—*Quart. J. Pharm. Pharmacol.*, 8 (1935), 320. (S. W. G.)

Progravid (Renova, Laboratorium fur Medizin, Kottbus.) is a tablet containing 0.4 Gm. cerium oxalate, phenacetin and amidophenazone. It is used in pregnancy vomiting.—*Deut. Med. Wochschr.*, 61 (1935), 1003. (H. R.)

Prokliman (Ciba Co., Inc., New York, N. Y.) or "sistomensin Compound" is the name given to tablets containing sistomensin (ovarian hormone, Ciba), nitroglycerin, amidopyrine, caffeine-sodium-salicylate and peristaltine, Ciba. It is used in the treatment of disturbances connected with the menopause such as ovarian deficiency, depression or exaltation, tachycardia, insomnia and headache. It is supplied in bottles of 40 and 100 tablets.—*Am. Drug.* (Jan. 1935), 108. (T. G. W.)

Prolixal (Schering & Glatz, Inc., New York, N. Y.) is the trade name for "Elixir Alcalinus Salicylatis" a preparation designed for the treatment of colds. Each fluidounce contains 40 grains of sodium citrate, 16 grains of sodium salicylate, 8 grains of potassium guaiacol sulphonate, 24 grains of urotropin and 1.5 grains of extract of cascara, combined in an aromatized special elixir. It is marketed in 8-oz. bottles.—*Am. Drug.* (Feb. 1935), 110. (T. G. W.)

Proviron (Schering-Kahlbaum, Berlin) is a standardized male sex hormone. It is found on the market in ampuls.—*Pharm. Weekblad*, 72 (1935), 826. (E. H. W.)

Puerpral Fever-Serum ("Behringwerke" I. G. Farbenindustrie) is a concentrated streptococcus serum obtained from streptococcus puerpral sepsis.—*Deut. Med. Wochschr.*, 61 (1935), 1003. (H. R.)

Remonol (Seydel Chemical Co., Jersey City, N. J.) is resorcinol mono-acetate. It is a thick syrupy oily liquid soluble in alcohol, benzol, chloroform, acetone, and solutions of alkalies. It is insoluble in water. It is indicated for external applications in inflamed conditions of the skin, such as barbers' itch. It is usually applied in alcohol or acetone solution or in the form of an ointment. It is marketed in 1-lb. containers.—*Am. Drug.* (Mar. 1935), 106. (T. G. W.)

Rhinitol contains menthol 0.5, eucalyptol 0.5, chloral-camphor 0.1, chlorthymol 0.01, azulen 0.2, ephedrine 0.25, vasogen to 100. It is recommended as a prophylactic against the common cold. Vasogen is a chemically treated liquid paraffin which readily emulsifies with water, and it is claimed that this property increases the efficacy of rhinitol.—*Quart. J. Pharm. Pharmacol.*, 8 (1935), 320. (S. W. G.)

Rugar (McKesson & Robbins, Inc., Bridgeport, Conn.) consists of colloidal barium sul-

phate dispersed in an adhesive medium. It coats and paints the lining mucosa in clear outline, thus visualizing the folds of rugæ of the gastro-intestinal tract; and facilitates early diagnosis. It is used as a contrast medium which enables the early diagnosis of the diseases of the œsophagus, stomach and intestines. It is supplied in 10-oz. jars.—*Drug. Circ.*, 79 (June 1935), 68. (T. G. W.)

Ruthmol is a chloride-free table salt, composed of fruit extractives and mineral substances with a sodium and potassium base. It can be used as a substitute for common salt in all cases where a salt-free diet is prescribed, such as cardiac disease, with decompensation, renal disease, arterio-sclerosis, tuberculosis and obesity. It staste is indistinguishable from that of sodium chloride, and it possesses the same power of giving piquancy to otherwise tasteless insipid foods. Ruthmol is sold in containers of suitable shape for the table, and in 1-lb. jars.—*Quart. J. Pharm. Pharmacol.*, 8 (1935), 320. (S. W. G.)

Ryzamin-B (Burroughs, Wellcome & Co., New York, N. Y.) is a concentrated and purified fraction of rice polishings, in the form of a thick, palatable syrup. It has a minimum potency of 50 international units of vitamin B_1 per Gm. It is used as a dietary reinforcement for patients of all ages to stimulate appetite and promote utilization of food; also in the specific treatment of beriberi, sprue and other abnormal conditions due to a serious deficiency of vitamin B_1. It is supplied in tubes of $^1/_2$ oz. and jars of 8 oz.—*Drug. Circ.*, 79 (June 1935), 68. (T. G. W.)

Sanosin (Chemische Fabrik Perdynamin G. m. b. H., Berlin O.) is a tablet containing quinine hydrochloride and caffeine each 0.025 Gm., phenacetin 0.1 Gm. and amidopyrine 0.076 Gm. It is used as an antineuralgic and antipyretic.—*Deut. Med. Wochschr.*, 61 (1935), 1003. (H. R.)

Sarcoptol is a combination of colloidal sulphur with other antiseptic, antiparasitic and analgesic ingredients recommended for the treatment of scabies, seborrhœas, pruritis, eczema, acne and alopecia. It is non-toxic and non-irritating and does not stain the skin, linen or clothing. It is applied with friction until completely absorbed. In cases where the skin is unduly sensitive it may be diluted with 1 part of olive oil to 4 or 5 parts of the liquid. In scabies a single application with friction, preceded by a warm bath, usually effects a cure. Sarcoptol is supplied in 2-oz. and 4-oz. bottles.—*Quart. J. Pharm. Pharmacol.*, 8 (1935), 320. (S. W. G.)

Sav-Skin (The Doak Co., Cleveland, Ohio) is a protective ointment composed of zinc hydroxide cream. It is used as a protection against irritating substances such as liquids, fumes or dusts; helpful in the prevention of industrial dermatitis. It is supplied in 4-oz. and 1-lb. jars.—*Drug. Circ.*, 79 (July 1935), 60. (T. G. W.)

Scilloral (Asta A. G. Chemische Fabrik, Brackwede.) is a cardiac substance obtained from *Bulbus scilla*. It is supplied in capsules, liquid and suppository form.—*Deut. Med. Wochschr.*, 61 (1935), 1003. (H. R.)

Sedozym (Chemisch-Pharmazeutische A. G. Bad Homburg, Frankfurt a. M.) is a dry vitamin containing yeast extract with 50% calcium and ammonium bromide. It is used as a sedative.—*Deut. Med. Wochschr.*, 61 (1935), 1003. (H. R.)

Septicemine (Laboratories Cortial, Paris) is a crystallized combination of urotropin with iodine and benzomethyl (methyl benzoate?). It contains 33% iodine. It is found on the market in ampuls of 4 cc. containing a 10% solution, in tablets of 0.2 and 0.5 Gm. and in drops. Septicemine is employed in acute infections, influenza, broncho-pneumonia, septicemia, etc. The injections are administered intravenously or intramuscularly.—*Pharm. Weekblad*, 72 (1935), 753. (E. H. W.)

Silver-Col (McKesson & Robbins, Inc., Bridgeport, Conn.) contains 0.8% eucalyptol, 0.15% silver abietate dispersed in liquid petrolatum 80–85 Saybolt at 100° F. It is claimed to be a highly germicidal colloidal organic silver compound. It is indicated in the prophylaxis and treatment of specific urethritis, congested conditions of the nasopharynx; in gynecology, for topical application and urethral instillation; also for skin infections. It is marketed in 2-oz. bottles.—*Drug. Circ.*, 79 (July 1935), 62. (T. G. W.)

Sodium Racemic Lactate (Parke, Davis & Co., Detroit, Mich.) is a molar solution of sodium racemic lactate, a chemical found by Hartmann and Senn to be of distinct value in the correction of acidosis and for the alkalinization of the urine. It may be sterilized either by boiling or by autoclaving. It is administered intravenously, intraperitoneally or subcutaneously, and may also be used orally. It is supplied in 40-cc. ampuls in packages containing 1, 6 and 25 ampuls. —*Am. Drug.* (Feb. 1935), 106. (T. G. W.)

Soricin Sclerosing Solution (Wm. S. Merrell Co., Cincinnati, Ohio) is a solution composed of 5% Soricin-Merrell (sodium ricinoleate 97 to 98% with minute quantities of sodium oleate and sodium linoleate) in distilled water. The p_H of the solution is adjusted to approximately 8.0 to assure a stable chemical compound which may be relied upon to produce uniform clinical results in sclerosing varicose veins; a powerful hemolyzing agent forming a soft gelatinous clot which effectively but slowly organizes obliterating varicosities; when introduced into the vein it causes formation of a soft jelly-like thrombus which adheres to the lining of the vein resisting resolutions and absorption, thus an effective obliteration of the vein is produced. It is supplied in 20-cc. puncturable cap vials.—*Drug. Circ.*, 79 (July 1935), 28. (T. G. W.)

Sulisocol (Drug Products Co., Inc., Long Island City, N. Y.) is the trade name for "Hyposols" or (ampuls) containing a clear sterile aqueous isotonic solution of colloidal sulphur. The solution contains 1% of colloidal sulphur. It is administered intravenously or intramuscularly for the treatment of various forms of arthritis and of certain abnormal dermatological conditions. It is supplied in packages of 25 and 100, 1- and 2-cc. ampuls.—*Am. Drug.* (Mar. 1935), 106. (T. G. W.)

Sulphocide (The Columbus Pharmacal Co.) consists of soluble alkaline polysulphides with betanaphthol and aromatics in a special liquid soap. It is used as an antiseptic solution for the prevention and eradication of certain fungus and parasitic invasions. It is supplied in 3-oz. bottles.—*Drug. Circ.*, 79 (June 1935), 70. (T. G. W.)

Thiobisarson (Christina Laboratories, New York, N. Y.) is composed of the sodium salt of a bismuth derivative of pentavalent organic ester of aminosulphone arsonic acid containing approximately 36% bismuth and 13% arsenic. It is claimed to prevent leucopenia; to cause a rapid disappearance of the treponema from primary and secondary specific lesions. It is used intramuscularly in the treatment of primary, secondary and tertiary syphilis. It is supplied in boxes of 24 and 100, 2-cc. ampuls.—*Drug. Circ.*, 79 (July 1935), 62. (T. G. W.)

Thioglycerol Solution 1:50 (Abbott Laboratories, North Chicago, Ill.) is a solution of 1 part by weight of thioglycerol in 50 parts by volume of glycerin. It stimulates the growth of epithelial tissue; causes lymph to flow outward toward the wound; produces granulation and epithelial proliferation. It is used in sluggish wounds, due to burns, lacerations or other traumata; varicose ulcers, bed sores, skin grafting. It is issued in boxes of six, 5-cc. bottles and bottles of 50 cc.—*Drug. Circ.*, 79 (June 1935), 24. (T. G. W.)

Triglucon (McNeil Laboratories, Phila., Pa.) is the trade name for capsules representing a combination of iron, copper and calcium gluconates. Each capsule contains 0.032 Gm. of iron, 0.00064 Gm. of copper plus a sufficient quantity of calcium gluconate. It is an effective alterative and tonic for use in simple and nutritional anemias. It is supplied in both capsules and tablets in bottles of 100, 500 and 1,000.—*Am. Drug.* (Apr. 1935), 108. (T. G. W.)

Urginin (The Calco Chemical Co., Inc., Bound Brook, N. J.) is a mixture of two non-water-soluble glucosides, scillonin-A and scillonin-B, derived from squill. Each tablet contains 0.5 mg. and each cc. of solution contains 1 mg. Its cardiac action is essentially similar to that of digitalis. It is useful in cardiac decompensation, in the cardiac arrhythmias, in cardiorenal edema. It is issued in bottles of 100, 500 and 1,000 tablets and in solution in bottles of 1 oz., 6 oz and 12 oz.—*Drug. Circ.*, 79 (July 1935), 29. (T. G. W.)

Urinine (Rathkamp Company of Batavia) is the name given to a mixture of vegetable drugs used in the treatment of catarrh of the bladder, kidney and bladder stones. What these East Indian drugs are is not stated. Dr. J. Blomberg, The Hague, is the Netherlands agent.—*Pharm. Weekblad*, 72 (1935), 753. (E. H. W.)

Verodigen (C. F. Boehringer and Sons, Mannheim) is a digitalis preparation. It comes on the market in 0.8-mg. ampuls, corresponding to 0.1 Gm. digitalis leaf. Previously Verodigen was only obtainable in tablet form due to the fact that the solution does not keep well. In the new package it occurs in powdered form, *i. e.*, 0.8 mg. of Verodigen mixed with 100 mg. of glucose. Beside this an equal number of ampuls of double distilled water are enclosed in which the powder may be dissolved just previous to the injection.—*Pharm. Weekblad*, 72 (1935), 753. (E. H. W.)

Vibeta (Dr. Georg Henning, Berlin) is a preparation which is claimed to contain vitamin E. In 1926 Evans and Burr demonstrated that a diet of food free from vitamin E resulted in sterility. They therefore assumed the presence of an antisterility factor which they named vitamin E. One of the richest materials in vitamin E was wheat germ oil. The administration of this oil to women

subject to having miscarriages appeared to result in a favorable reaction. The firm of Dr. G. Henning has a similar preparation on the market which was investigated by P. Schoorl in the laboratory of Prof. Greyns at Wageningen, and in which no antisterility factor could be demonstrated.—*Pharm. Weekblad*, 72 (1935), 754. (E. H. W.)

Virapaine (Dr. E. Donath, Pressburg) is an ointment containing bee-poison. It comes in two strengths "normal" and "forte" and is used in the treatment of rheumatism.—*Pharm. Weekblad*, 72 (1935), 754. (E. H. W.)

Viscysate (Ernst Bischoff Co., Inc., New York, N. Y.) is a dialysate of *Viscum album* (Mistletoe). It is claimed to be a vasodilator acting upon the small blood vessels and thereby permitting easier circulation. It reduces high blood pressure without disturbing digestion or the nervous system; also gives relief in *angina pectoris* and may be used prophylactically. It is supplied in bottles of 30 cc. and in bottles of 25 and 50 tablets.—*Drug. Circ.*, 79 (July 1935), 60. (T. G. W.)

Vistonic Syrup (Fa. Syngala, G. m. b. H., Vienna, 16th dist.) contains copper chlorophyll, iron and manganese glycerophosphates, quinine, caffeine and extract of strychnine; put up in packages of 115 Gm.—*Pharm. Presse*, 40 (1935), 279. (M. F. W. D.)

Vistonic Tablets (Fa. Syngala, G. m. b. H., Vienna, 16th dist.) contain copper chlorophyll, iron and manganese glycerophosphates, quinine, caffeine and 0.0025 Gm. extract of strychnine per tablet; put up in packages of 20 tablets.—*Pharm. Presse*, 40 (1935), 279. (M. F. W. D.)

BACTERIOLOGY

Antimeningococcic Serum—Protection of Mice against Meningococcus Infection by Polyvalent. Mice were injected with suspensions of meningococci (0.5 cc./20 Gm.) to find several virulent strains. These strains were then used to test the efficacy of various sera. It was found that intravenous injection of serum was no more efficient than intraperitoneal, so the latter method was used. The sera were most efficient when injected (0.5 cc.) 4 hours previous to intraperitoneal injection of the meningococci. Ordinarily high agglutinating power corresponded to high bactericidal power of the serum, but not always. Many of the polyvalent commercial sera gave good protection, even in dilutions of 1:100. Several experimental antitoxins also gave good protection. Normal horse sera showed great variation, but were not effective when diluted. Serum E, which was 5 years old, was the least effective. Tables, references.—S. E. BRANHAM. *Pub. Health Repts.*, 50 (1935), 768; through *Squibb Abstr. Bull.*, 8 (1935), A-933.

Antistreptococcic Serums—Application to, of a New Method of Titration by Neutralization of the Antibodies in Vitro. The use of animals for the titration of streptococcus serums presents several difficulties. Some samples isolated from human infections frequently lose their pathogenic power on animal experimentation. Animals show varying power of resistance and the problem is further complicated by the existence of multiple races of antigens. The authors have applied their principle of finding the maximum volume of serum which is deprived of its antibodies by a known weight of dry antigen. Varying volumes of serum are placed in contact with a constant weight of streptococcic antigen and the presence of liberated antibodies is detected by the precipitation produced by a streptococcic extract. The method is similar to that employed with pneumococcic serum (*Compt. rend.*, 200 (1935), 2039). Results obtained by this method compared favorably with those obtained on rabbits *in vivo* and permit the foreseeing of the activity of the serum and the survival of the course of the immunization with animals.—LOUIS COTONI and JACQUES POCHON. *Compt. rend.*, 201 (1935), 100. (G. W. H.)

Bacterial Cells—Microscopic Method of Distinguishing Dead from Living. Neutral red was used in distinguishing, microscopically, between dead and living cells. Cells of *Escherichia coli*, *Schizosaccharomyces pombe* and a yeast isolated from ale were considered dead whenever the cytoplasm proper was tinged, even slightly, with stain. The concentration of neutral red varies with the organisms. In the case of *Escherichia coli*, a concentration of 0.005% was adopted. This concentration is harmless even to the youngest and most sensitive cells, and the organism grows readily in broth containing neutral red in that concentration.—GEORGES KNAYSI. *J. Bacteriol.*, 30 (1935), 193. (A. H. B.)

Bacteriophage—I. Studies on the Nature of. Bacteriophage can, apparently, be extracted wholly or in part, unharmed, from aqueous solutions by ether. The rate and completeness of extraction are influenced by agitation and by time. Unless there is a prolonged period of contact,

some bacteriophage remains in the water phase. This residual bacteriophage may be restored to the original potency by serial transfer.—J. D. LEMAR and J. T. MYERS. *J. Infect. Diseases*, 57 (1935), 5. (A. H. B.)

Bacteriophage—II. Studies on the Nature of. Incubation, autoclaving, secondary incubation and oxidation of bacterial broth cultures by hydrogen peroxide yielded lytic filtrates, gave good results when such organisms as *E. coli*, *E. typhosus*, *S. enteritidis* and *Staphylococcus aureus* were grown in broth for forty-eight hours, autoclaved twenty minutes at 15 lbs. pressure, again incubated for forty-eight hours at 37° C. and oxidized for forty-eight hours at 37° C. by 15 cc. of 3% hydrogen peroxide. The lytic agent could be removed from water by extraction with ether. It was filterable and transmissible in series. It produced plaques on solid media.—J. D. LEMAR and J. T. MYERS. *J. Infect. Diseases*, 57 (1935), 11. (A. H. B.)

Bacteriophage—Use of, in the Treatment of Urinary Infections. Wehrbein's experience with the technique of phage application showed that the phage must be absolutely and quickly effective before it is used. It should lyse a billion microörganisms per cc. in 3–5 hours and prolonged incubation should show no second growth. The phage should be placed in as large a quantity and in as concentrated a form as possible in the infected area. If the kidney pelvis is infected the pelvis should be actually filled with the phage solution. If the bladder only is infected at least 50 cc. should be placed into the empty bladder. All antiseptics must be avoided. If the first application of the phage is unsuccessful, it is useless to repeat. Of the 34 cases treated by phage and followed completely, 10 were acute pyelitic cases and of these 7 were cured through 1 application. The other 3 were improved but not cured. Of the 24 chronic and subacute cases of pyelitis only 5 were cured, 13 were benefited and 6 were failures. An appendix by Louis Nerb concerns the preparation of phages. Bacteriophages produced by heat were found to have a higher titre and be more potent than that produced by cold.—H. L. WEHRBEIN. *Am. J. Surg.*, 29 (1935), 40; through *Squibb Abstr. Bull.*, 8 (1935), A-993.

Bacterium Typhi Flavum—Study of the So-Called. The results of a study of 19 strains of the so-called *Bacterium typhi flavum* are given. It is suggested that any relation of the *Bacterium typhi flavum* to enteric infections is unproved and that its appropriate place is in the genus Chromobacterium.—J. C. CRUICKSHANK. *J. Hygiene*, 35 (1935), 354. (A. H. B.)

Chloramine-T and Calcium Hypochlorite—Some Observations on the Germicidal Efficiency of. The reduction in killing time was about 55% for each doubling of the concentration of Chloramine-T. The p_H range studied was from 6.0 to 8.8, and it was found that increasing the acidity markedly reduced the killing time. "Available chlorine" was not found to be a direct measure of the germicidal efficiency of the calcium hypochlorite studied.—D. B. CHARLTON and M. LEVINE. *J. Bacteriol.*, 30 (1935), 163. (A. H. B.)

Cholera Group of Vibrios—Antigens of. By preparing the serum with suspensions boiled or steamed for 2 hours to destroy the common H antigen, bacteriological proof of "cholera" or a cholera carrier should rest on the isolation of a non-hæmolytic vibrio with the specific O antigen of subgroup I.—A. D. GARDNER and K. V. VENKATRAMAN. *J. Hygiene*, 35 (1935), 281–82. (A. H. B.)

Colds—New Explanation of. The fact that outdoor workers, seamen and artic inhabitants rarely have colds has led practitioners to doubt the influence of cold on sickness. F. Munk has shown that there is a difference in potential between the nasal mucous membranes and the moistened palm of the hand, and that exposure of the feet to cold lowers the potential difference. Since all organisms have an electrical biological optimum and minimum, and since various irritations reduce the potential of the mucous membranes of the air passages, the virulence of the organisms is allowed to increase, thus beginning infections.—J. B. L. *Schweiz. Apoth.-Ztg.*, 73 (1935), 369. (M. F. W. D.)

Diphtheria Anatoxin—Purification and Concentration of. Sodium 7-amino-1,3,6-naphthalenetrisulphonate and citric acid at about p_H 4 rapidly and completely precipitated the active principles of diphtheria toxin and anatoxin, and allowed recovery, in a purified and concentrated condition, of about 75% of the original toxin and 95% of the original anatoxin.—H. GOLDIE. *Compt. rend. soc. biol.*, 119 (1935), 518; through *Squibb Abstr. Bull.*, 8 (1935), A-924.

Diphtheria Cultures—Culture Media Used for Routine with a Suggested Modification of Loeffler's Blood Serum Medium. Media used should be of a composition and reaction which would support luxuriant growth and permit the development of what are termed "typical forms"

of *C. diphtheriæ* to facilitate the examination of cultures. *S. aureus* produces sufficient acid from the dextrose in Loeffler's medium in 18 hours to influence greatly the luxuriance of growth, morphology and staining of *C. diphtheriæ*. The following formula gives a more typical and more luxuriant growth of *C. diphtheriæ* in mixed throat cultures than Loeffler's blood serum:

Hog or human serum	800	cc.
Glycerol	40	cc.
Sodium sulphide (sodium monosulphide) dissolved in 10 cc., of cold water	1.50	Gm.
Bouillon concentrate	1.60	cc.
Bouillon concentrate—		
Proteose peptone	1.25	Gm.
Dipotassium phosphate	1.25	Gm.
Cystine	0.5	Gm.
Water	160	cc.

Requires from 5 to 10 cc. of normal sodium hydroxide solution per liter of the mixture.—Ross L. LAYBOURN. *Am. J. Pub. Health*, 25 (1935), 796. (A. H. B.)

Diphtheria Toxin—Skin Reaction of. The cutaneous reaction to pure diphtheria toxin was used to determine susceptibility to diphtheria. The test did not always correspond with the routine Schick test and it was a little hard to be sure of a positive reaction.—G. ANDRIEU and A. TOURNIAIRE. *Compt. rend. soc. biol.*, 119 (1935), 35; through *Squibb Abstr. Bull.*, 8 (1935), A-924.

Disinfectants—Testing of, in the Presence of Organic Matter. This paper develops a method in which a suspension of yeast is used for testing disinfectants which introduce fæces as added organic matter and causes an equivalent reduction in disinfectant activity, and yields consistent results.—L. P. GARROD. *J. Hygiene* (British), 35 (1935), 219. (A. H. B.)

Ergot Cultures, Saprophytic—Alkaloidal Content and Activity of. Ergot cultures were grown by inoculating various nutrient media with the fungus mycelium, and the alkaloidal content of the artificial cultures was then studied in relation to the character of the medium, p_H and influence of light. The nutrient medium base consisted of 2% agar with 0.1% monopotassium phosphate and 0.025% magnesium sulphate. Its composition was varied in the proportion of carbohydrate and protein by the addition of 10% dextrose, 5% maltose, 5% mannit and (or) 1% asparagine, 3% gelatin, 2% peptone and 1% leucine. The alkaloidal content of the different cultures was determined colorimetrically by the use of *p*-diethylaminobenzaldehyde. The influence of light on alkaloidal content was negligible, but variations in the composition of the nutrient media caused wide fluctuations in alkaloidal content. Leucine proved of little value as a source of protein. The combinations dextrose-leucine and maltose-leucine produced cultures of very low alkaloidal content. Germination did not occur on mannit-leucine medium. Peptone gave good results in combination with all three carbohydrates, especially with maltose. Of the carbohydrates, maltose gave the best results in any of the combinations studied. In general, well-developed cultures possessed high alkaloidal contents, but the parallel between alkaloidal content and mycelial growth did not apply in all cases, an exception being found in the combination dextrose-asparagine. The alkaloidal contents estimated by the Broom-Clark method were not in agreement with the values obtained by the colorimetric method.—R. JARETZKY. *Arch. Pharm.*, 273 (1935), 348. (L. L. M.)

Extra-Bacterial Substances in Cultures—Production of. On saccharose media bacteria of the subtilis group produce abundantly a non-stainable extra-bacterial substance, capable of multiplication without intervention of bacteria. The extra-bacterial substance spreads out from the subtilis colonies on the surface of nutrient agar plates, forming a halo around the colonies. The properties of the extra-bacterial substance and the growth phenomena, especially the extension of the halo on the agar surface, strongly suggest that the extra-bacterial substance contains living organisms. Morphological observations give further support to this conclusion.—L. DIENES. *J. Infect. Diseases*, 57 (1935), 44–45. (A. H. B.)

Extracts of Drug Plants—Action of Aqueous, on Bacterium Coli and Aspergillus Niger. Extracts of 46 plants were examined. The freshly powdered plant was extracted 1 hour with water at 50° C. (1 part of plant and 2 parts of water). The extracts were filtered, the p_H determined, germ content and action toward *B. coli* and aspergillus determined. The plant residues were ob-

served as to the manner of the decomposition. The germ content was determined as follows: Mix 1 cc. of the extract with standard II- Nähr agar (Merck) in a petri dish and with the aid of a Wolfhügel plate count the organisms after 24 hours (37° C.); repeat the count after an additional 24 hours. Results show extracts in which the number of organisms decreased rapidly after 24 hours; in many the growth was strongly retarded; in most cases many organisms were present; a few became sterile after days or weeks, a few putrified and the majority molded. As a rule the p_H of the extract decreased sharply. *The Action of the Plant Sap on B. coli.*—5 cc. of the extract was kept with 1 drop of a 24-hour bouillon culture of *B. coli* for 48 hours at 37° C. and then at room temperature. The control tubes contained 5 cc. bouillon and 1 drop of culture. A dilution series of 2.5 cc. of extract plus 2.5-cc. bouillon and 1 drop of culture was treated in the same manner. Sterilized ($^3/_4$ hour at 100° C.) and non-sterile extracts were so treated. The tests showed that after some days, and in a few cases weeks, a great portion of the extracts (33) were sterile. In no case can any relationship between p_H and sterility be revealed. The death of the organisms apparently is due to definite plant constituents. *Aspergillus niger.*—In like manner the action on these spores was studied. From a thriving culture on a beer yeast agar slant was prepared a suspension with physiological salt solution. To 5 cc. (or a dilution of 2.5 cc. + 2.5 cc.) of the plant extract was added a drop of the spore suspension. The tubes were incubated as before. Only a few extracts hindered the growth of the spores.—H. SCHINDLER and T. MÖBUS. *Apoth.-Ztg.*, 50 (1935), 559–561. (H. M. B.)

H. Pertussis—Phases or Types of. By absorption and agglutination tests *H. pertussis* is a uniform species without any type variations. It has, however, different phases of existence as shown by absorption phenomenon.—J. A. TOOMEY, K. RANTA, L. ROBEY and J. E. MCCLELLAND. *J. Infect. Diseases*, 57 (1935), 56. (A. H. B.)

Immunizing Preparations. Antibodies are obtained from human or animal urine during convalescence from infectious diseases. The urine (after filtration and dialysis) may be treated with an albumin-precipitant, *e. g.*, lead subacetate, phosphotungstic acid, mercuric chloride, sulphosalicylic acid, formalin, alcohol, or ammonium sulphate, and the antibodies recovered from the precipitate, or the antibodies may be extracted from the urine by absorbents, *e. g.*, aluminum hydroxide, kaolin, Fuller's earth, silica gel, calcium carbonate or calcium phosphate, or urine, after extraction with ether or similar solvent to remove impurities, may be concentrated or mixed with an inert medium, and dried. Precipitates made with heavy metal salts are treated with hydrogen sulphide to remove said metals and the remaining solution may be further purified by dialysis; precipitates made with other than heavy metal salts are dialyzed to remove the precipitants and the remaining solid is extracted with sodium chloride solution or weakly alkaline Ringer solution to yield the antibody.—G. MADAUS, F. MADAUS and H. MADAUS (trading as Madaus & Co.). *Brit. Pat.*, 423,883. (Feb. 11, 1935); through *Chem. Abstr.*, 29 (1935), 4525.

Indole—Bacteriostatic Action of, on Gram-Negative Enteric Bacilli and on Certain Cocci. Small amounts of indole inhibited the growth of many enteric bacilli. Its effectiveness varied greatly with different species and even with different strains of the same species, but not appreciably for individual cultures on repeated tests. The indole content of intestinal material may play an important rôle in determining the character of the intestinal flora. Members of the Escherichia-Aerobacter group and both *Staph. aureus* and *Staph. albus* were equally resistant, while some of the bacilli and some of the cocci were equally sensitive.—R. P. TITTSLER and L. A. SANDHOLZER. *J. Infect. Diseases*, 57 (1935), 68. (A. H. B.)

Koch's Phenomenon—The Production of, with Various Strains of Tubercle Bacilli. In tuberculous animals intracutaneous injection of dissociated strains of tubercle bacilli (R and S forms) produced Koch's phenomenon, which is a marked necrosis, in a definite and uniform manner. Animals with generalized tuberculosis R strains, excited in the majority of cases an intense Koch's phenomenon, while S strains either failed to produce the phenomenon or produced it only in an atypical form.—W. PAGEL. *J. Path. Bacteriol.*, 41 (1935), 95. (A. H. B.)

Oxybenzoic Acid Esters—Researches with, for Sterilization of Eye Drops. Various eye drop solutions were prepared using as the diluent a 0.05% solution of Nipasol (propyl ester of *p*-oxybenzoic acid). The solutions were transfered to sterile glass-stoppered bottles. The solutions were sterile after preparation. Each of the eye solutions was then inoculated with a loopful of cultures of *Pyogenes aureus*, *Bacterium coli* and *Aspergillus-Art.* At intervals, 1 cc. of the eye solution was plated on about 10 cc. of nutrient bouillon and incubated. In one to three days the

solutions were found to be sterile again. No spore-bearing cultures were used. A series run in the same manner using a 0.2% solution of Nipagin (methyl ester of *p*-oxybenzoic acid) were sterile within 24 hours. A series of the same eye drops inoculated with suspensions of Mesentericus and Aspergillus spores was not sterile after 4 days. Another series of eye drops was prepared using a 0.1% and a 0.15% solution of "Nipa-Sterilisator I" (a combination of *p*-oxybenzoic acid esters) and each of the sterile solutions inoculated with spore bearing material as above. After 14 days at room temperature the solutions were not yet sterile. A second series prepared exactly the same but sterilized in steam at 100° for 30 minutes was sterile in all cases. A 0.3% solution of "Nipa-Sterilisator I" and 30 minutes steam at 100° merely inhibited but did not destroy native earth spores. More extensive work must be carried out to determine whether the combination of heat and "Nipa-Sterilisator I" affect injuriously other medicaments used in eye solutions.—J. THOMANN. *Pharm. Acta Helv.*, 10 (1935), 103. (M. F. W. D.)

Pleuro-Pneumonia Contagiosa Boum—Study of the Morphology and Life Cycles of. The causal organism of *pleuropneumonia contagiosa boum* is not a filterable virus *sensu stricto*, but typically and constantly forms a relatively enormous branching mycelium which owes its filterability to the constant and early production of filter-passing forms ("conidioids"), with polygenethodism, extreme plemorphism and a protean faculty of rapidly changing its shape.—A. W. TURNER. *J. Path. Bacteriol.*, 41 (1935), 29. (A. H. B.)

Pneumococcus—Solubility of, in Saponin. With saponin in 1:20 concentration, and cholesterol in 1:5,000 to 1:500,000 concentration lysis often appears within a few minutes and is usually complete within thirty minutes at room temperature. The bacterial suspension becomes completely clarified and transparent. No intact bacteria are to be found on microscopic examination in the case of complete lysis.—S. J. KLEIN. *J. Bacteriol.*, 30 (1935), 47. (A. H. B.)

Rocky Mountain Spotted Fever. Results of Ten Years' Prophylactic Vaccination. Preparation of Rocky Mountain fever vaccine makes use of the virus-laden adult Rocky Mountain wood ticks which after feeding for three to five days on guinea pigs, are sterilized exteriorly. They are then thoroughly comminuted mechanically with sterile sand in lots of 500 in a small amount of physiological salt solution containing either 2% of phenol alone or the same percentage of a phenol-formalin mixture. After grinding, sufficient of the preservative is added to bring the total volume to 100 cc. In seven days 300 cc. of physiological salt solution is added and the product centrifuged to throw down the tick tissue and sand. The resultant supernatent fluid is the vaccine. No method of potency standardization has been devised. It is considered usable if four of six guinea pigs that receive 1 cc. each are fully protected against a subsequent injection of 1 cc. of guinea pig passage-virus (blood). The recommended minimum dosage is two injections of 2 cc. each for adults.—R. R. PARKER. *J. Infect. Diseases*, 57 (1935), 78. (A. H. B.)

Scarlet Fever Toxin and Antitoxin—Testing of, by the Rabbit Intradermal Method. This paper describes a method of titrating scarlet fever toxins and sera on the skin of rabbits with mixtures of toxins and antitoxins which are heated to 50° C. for two hours and injected intradermally into rabbits, the test proving reliable within a 1:2 ratio. A pre-injection given intravenously with a small quantity of an antitoxic serum a day before the intradermal injections, improves the reactions and the number of animals which fail to give readings is reduced.—G. A. H. BUTTLE and A. S. R. LOWDON. *J. Path. Bacteriol.*, 41 (1935), 115. (A. H. B.)

Skatole—Bacteriostatic Action of, on Gram-Negative Enteric Bacilli. It is evident from the results of this study that small amounts of skatole, from 1:3,000 to 1:6,000 inhibited the growth of gram-negative enteric bacilli. The average antiseptic potency of skatole is approximately twice that of indole.—R. R. TITTSLER, L. A. SANDHOLZER and E. T. CALLAHAN. *J. Infect. Diseases*, 57 (1935), 57. (A. H. B.)

Smallpox and Diphtheria—Simultaneous Immunization against. The simultaneous immunization against diphtheria and smallpox is a practical, effective and safe procedure.—CHARLES S. STERN. *Am. J. Pub. Health*, 25 (1935), 1035. (A. H. B.)

Staphylococcus Toxin. Toxins of high lytic activity were obtained by growing certain strains of staphylococcus in an atmosphere of 10–24% carbon dioxide. The toxin dissolves blood and tissue cells, coagulates plasma and dissolves fibrin. It has high antigenic qualities.—J. TRAVASSOS. *Memor. inst. Butantan* (S. Paulo), 8 (1933–1934); *Rev. sud-americana endocrinol. inmunol. quimioterap.*, 18 (1935), 442–443. (A. E. Meyer)

Sterility—Visible Test for. As the result of work by G. Gosio and others in the (Italian)

Public Health Laboratories it was shown that schizomycetes when growing in a medium containing minute amounts of tellurium or selenium, although usually colorless, develop a reddish or brownish black tint according to whether selenium or tellurium is present, owing to the reduction of their respective compounds. Further investigation showed that with selenium this might occur through the action of the medium but with potassium tellurite on all the ordinary culture media (broth or agar, with glucose or with glycerin) there was never any reaction in the absence of bacterial life. This was therefore put into practice in the case of lecithin preparations, vaccines and opotherapeutic products, since it is impossible to be sure, by the ordinary methods, that, for example, every ampul in a batch is sterile. In the presence of potassium tellurite a brown color shows definitely the growth of bacteria and the development of no color shows that the preparation is safe. This test has been in use for 25 years with invariable success, and it has the great advantage that the patient or the doctor can see at once if the preparation is unfit for use.—NEPPI. *Terapia* (Dec. 1934); through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 289. (S. W. G.)

Tetanus Antitoxin—Persistance of, in Man. In a group of twelve persons, the tetanus antitoxin level, persisting two years after a primary series of three doses of tetanus toxoid, did not fall appreciably during the last year. A secondary stimulus of 1 cc. of toxoid given to these persons within a week effected a definite increase *in titre*, which persisted at significantly high levels after a month. Antitoxin titres similarly attained in a previous group are shown to persist after a year at or above the level of 0.1 unit per cc. of serum in nine of the total group of ten persons.—P. A. T. SNEATH and E. J. KERSLAKE. *Brit. Med. J.*, 3893 (1935), 290. (W. H. H.)

Typhoid Fever Vaccine—Effectiveness of, in Control of Typhoid Fever. Analysis of the incidence of typhoid fever for several years, in the army, navy and several communities compared with the incidence of typhoid vaccination has shown that typhoid vaccine offers a very considerable protection against typhoid infection and is a useful adjunct to a sanitation program, but that it cannot be relied upon to protect against mass infection nor grossly unsanitary conditions. In the discussion following the paper, it was revealed that the vaccine given after exposure to the disease, decreases the severity and duration of the infection, and that the tendency is away from mixed vaccines. Paratyphoid A does not occur in the U. S. and paratyphoid is a relatively mild infection so that there is no advantage in the use of combined paratyphoid A and B and typhoid vaccine.—R. W. TODD. *New Orleans M. and S. J.*, 88 (1935), 30; through *Squibb Abstr. Bull.*, 8 (1935), A-1016.

Whooping-Cough—Control of, with Serum and Vaccine. Convalescent serum from cases of whooping-cough has been used with definite benefit in the prophylaxis, but doubtful in the treatment of pertussis. A preliminary description is given of a skin test which can be used both to diagnose whooping-cough in an early stage, and also to pick out those children who are susceptible to the disease. The pertussis skin test is further evidence that children can be immunized against whooping-cough by the giving of a suitable vaccine. Children who give a negative skin test can be made to give a positive skin test by the injection of the vaccine.—D. PATERSON, R. H. BAILEY and R. G. WALLER. *Lancet*, 49 (1935), 361. (W. H. H.)

BOTANY

Anthracene Oils. Used for the Defence of Crops. A general discussion of the physical and chemical characteristics of anthracenic tar oils, of their insecticidal action and of their possible harmful action on plants.—M. RAUCOURT. *14me Congrès de Chimie Industrielle, Paris*, Oct. 21–27, 1934, 6 pp. (A. P.-C.)

Brazilian Flora—Mydriatics and Myotics from. Various native plant drugs are enumerated and described for both external and internal application.—F. W. FREISE. *Süddeut. Apoth.-Ztg.*, 75 (1935), 333; through *Chem. Abstr.*, 29 (1935), 4519.

Cinchona Plant in Russia. According to some authors *Cinchona succirubra* at an age of two and a half years contains 4.083% and at an age of 3 years 4.121% of quinine. According to other authors *Cinchona ledgeriana* at an age of 1 year contains 2.18% of quinine and 2.64% of other alkaloids; at an age of one and a half years it contains 4.49% of quinine and at an age of 2 years 5.15% of quinine. Some authors have stated that the quinine content of very young plants may be equal to 6%. A series of experiments was carried out in various regions of Southern Russia with various types of cinchona and the quinine content obtained from these plants gave an average

of about 2% of quinine. On the basis of the results obtained the author hesitates to state whether the culture of cinchona in Russia is justified.—G. K. KRIER. *Soviets. Pharm.*, 3 (1935), 19. (A. S.)

Digitalis—Proportion of Digitoxin in. Digitalis was cultivated at Valperga and gave plants of medium size, the second-year leaves averaging 25 cm. by 7 to 10 cm. When sections were treated under the microscope with a mixture of one drop of picric acid solution and one drop of 10% sodium hydroxide, in two minutes the orange color developed by the cells containing the glycosides could be observed. A quantity of liquid extract was prepared according to the Italian Phar. and the digitoxin was estimated by the method therein described. It contained 0.22%, the Phar. requirement being 0.20%.—E. BERTONASCO. *Boll. chim.-farm.*, 74 (1935), 114; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 285. (S. W. G.)

Sandal—Spike Disease of. A review of a series of transmission experiments carried out with the insect fauna associated with healthy and spiked sandal plants. These experiments were carried out since 1931 and new ones are still in progress.—ANON. *Perfumery Essent. Oil Record*, 26 (1935), 305. (A. C. DeD.)

Vermifuge Grains of the Combretaceæ of Madagascar. A botanic history and a botanic and histologic description of the leaves and fruit of *Quisqualis indica*, L. are given.—L. MAHEN and R. WEITZ. *Bull. sci. pharmacol.*, 42 (1935), 202. (C. T. I.)

Ylang Oils—Classification of Commercial. The botanic source of ylang ylang oil, and of its poor relation, cananga oil, is *Cananga odorata*, a tree which is widely cultivated in certain parts of tropical Asia. The tree attains a height of 60 feet or more. Of recent years the French growers in Reunion have introduced the practice of stopping the growth to produce a smaller tree from which the flowers can be more easily picked. It is propagated by seedlings. Growth is rapid and by the third year a crop of the beautifully perfumed yellowish green flowers is obtained. These flowers must be allowed to ripen to a full yellow color, to develop their full fragrance, before being picked. This may take 20 days. Commercially the oils from *Cananga odorata* fall into three main types, Manila ylang, Bourbon ylang and cananga. Each oil is discussed.—F. ATKINS. *Perfumery Essent. Oil Record*, 26 (1935), 251. (A. C. DeD.)

CHEMISTRY

GENERAL AND PHYSICAL

Aluminum Subacetate—Molecular Solubility of. The literature shows great disagreement on the question of the kind of solution formed by aluminum subacetate. Some hold it forms true solutions; others insist that colloidal solutions are formed. From conductivity and freezing point depression measurements, the author concludes that aluminum diacetate forms a true and not a colloidal solution.—C. ROHMANN. *Pharm. Ztg.*, 80 (1935), 493. (G. E. C.)

Glass Electrode—Measurements with the. The method of potential measurement employing the glass electrode are reviewed. The types of these electrodes and the various factors influencing the accuracy of determination are discussed. The theories of the glass electrode are considered. Use of the Lindemann electrometer as a null-instrument in a compensating circuit is recommended.—G. KILDE. *Dansk Tidsskr. Farm.*, 9 (1935), 129. (C. S. L.)

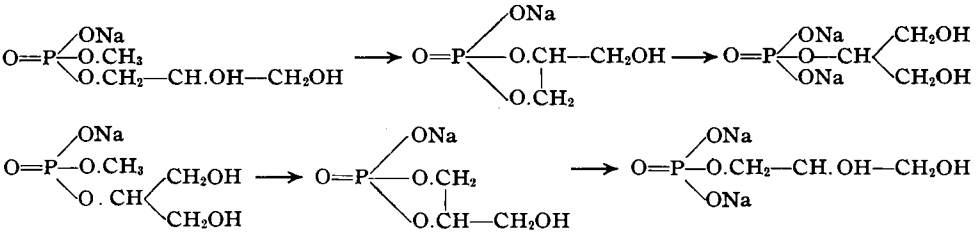
INORGANIC

Heavy Water—Research on the Content of, in Mineral Waters. A series of mineral waters from different medical sources was analyzed. The samples were carefully distilled, and their refractive indices determined to check their purity. The examinations showed that the heavy water content did not differ from that of ordinary water.—K. HANSEN, E. RUSTUNG and J. HVEDING. *J. pharm. chim.*, 21 (1935), 538. (M. M. Z.)

Hydrogen Peroxide—Decomposition of, in Presence of Glass Wool and Copper Sulphate. The decomposition of a solution of pure hydrogen peroxide in water, filtered free from all dust particles into perfectly dust-free quartz containers, is extremely slow, even appreciably alkaline solutions of the order of p_H 9. The addition of glass wool increases the rate of decomposition, which does not further increase on addition of more glass wool. Copper is adsorbed from dilute solutions of copper sulphate by glass wool, which becomes a greenish color, and the addition of this coppered wool greatly increases the rate of decomposition of hydrogen peroxide. The author gives

figures for the distribution of copper between copper sulphate and glass wool; and states that the decomposition of hydrogen peroxide in the presence of glass wool is a reaction of the first order, whereas that with coppered glass wool is of zero order.—K. C. BAILEY. *Sci. Proc. Roy. Dub. Soc.*, 21 (1935), 153; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 260. (S. W. G.)

Orthophosphoric Acid—Migration Phenomena in the Course of Hydrolysis of the Three Mixed Di-esters. Shifting of the α- and β-Glycerophosphates. The difference in yields ($^2/_3$ and $^1/_3$, respectively) of the two transpositions which accompany the hydrolysis of the isomeric -methyl and -methyl glycerophosphates according to the equation



is explained as follows: Although in both cases the same di-ester α-β-monoglycerophosphate is formed, it may be formed more readily in the first than in the second case because of a more favorable spatial arrangement.—OCTAVE BAILEY and J. GAUMÈ. *J. pharm. chim.*, 22 (1935), 23–32. (S. W. G.)

Silver-Mercury Complex. A solution was prepared containing 10 Gm. of silver nitrate, 100 cc. distilled water, 20 cc. nitric acid (d. 1.334), and this was added to 200 cc. of an aqueous solution containing 15 Gm. of mercuric cyanide in 200 cc. of distilled water. The precipitate formed was filtered, washed and dried. A study of this compound indicated that it was a complex type. Two molecules of water of hydration are retained regardless of the solvent used, while both silver nitrate and mercuric cyanide are anhydrous salts. The complex is insoluble in ether, yet mercuric cyanide is soluble. On addition of sodium hydroxide, there is first obtained a white precipitate (silver cyanide), then a yellow precipitate (basic nitrate of mercury); while silver nitrate alone yields a brown precipitate.—J. BOUGAULT and E. CATTELAIN. *J. pharm. chim.*, 21 (1935), 581. (M. M. Z.)

Sodium Perborate—Note on. Official perborate of soda being $NaBO_3 + 4H_2O$ should be a definite chemical substance. However, a difference has been shown to exist between samples prepared by a French company and those of a Swiss company. The Swiss perborate on solution produces a perfectly clear solution, whereas the French perborate gives a solution containing a light flocculent precipitate which eventually settles out. Titration of the available oxygen showed no appreciable difference in the two samples. Temperature caused both solutions to deteriorate, the French sample being more stable. The Swiss perborate under the microscope showed small clear crystals, the French showed opalescent crystals.—A. MIRIMANOFF. *Pharm. Acta Helv.*, 10 (1935), 122. (M. F. W. D.)

ORGANIC

Alkaloids

Cinchona Alkaloids—Modified. Part II. The action of sulphuric acid on quinine and quinidine is reported. Two distinct groups of products were obtained: apo-bases (demethylated or phenolic bases) and isomerides of quinine and quinidine (undemethylated bases). In addition to apoquinine (previously reported), two other bases were obtained: *isoapoquinine* [m. p. 275°, $(\alpha)_D^{15°}$ −261.7° (c = $M/40$ in alcohol)] and *hydroxydihydroapoquinine* [m. p. 281–284°, $(\alpha)_D^{15°}$ −205.4° (c = $M/40$ in $N/10$ sulphuric acid)]. The former was obtained in the mother-liquors of the acid sulphate, obtained in the process of purification of apoquinine. The latter is produced when pure apoquinine is boiled with 60% sulphuric acid. From quinidine, in addition to *l*-isoapoquinidine (previously reported), the authors obtained *apoquinidine* [m. p. 172° $(\alpha)_D$ +208.6° (c = 1 in alcohol)] and a third isomeride provisionally named *base A*. No hydroxydihydroapoquinidine analogues with the apoquinine product were isolated. The undemethylated bases recovered from quinine so far yielded only one crystalline product [m. p. 183–185°, $(\alpha)_D^{15°}$ −201.9° (c = 0.811 in alcohol)] identical with apoquinine methyl ether (previously reported) and beta-

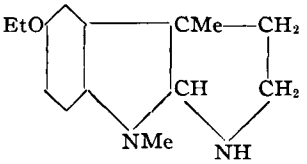
isoquinine of Suszko. From quinidine, *beta-isoquinidine* [m. p. 142° $(\alpha)_D^{17°}$ −9.7 (c = 1.4224 in alcohol)] which was shown to be isoapoquinidine methyl ether; methyl ether of the new apoquinidine [m. p. 181°—anhydrous crystals from ether, 90–100°—monohydrate in rhombic plates from aqueous acetone; $(\alpha)_D^{15°}$ +193.2° (c = 0.7815 in alcohol); the hydrochloride has m. p. of 267° and $(\alpha)_D^{15°}$ +174.7° (c = 0.902 in water)]. The latter differed from alpha-isoquinidine of Domanski and Suszko, particularly in specific rotation. A possible third and dextro-rotatory isomeride of quinidine was obtained in small yields.—T. A. HENRY, W. SOLOMON and E. M. GIBBS. *J. Chem. Soc.*, (1935), 966–971. (G. W. F.)

Ergot—Active Principles of. In experiments involving the use of pregnant cats, the available salts of ergotoxine and ergotamine were found to fall far short of being carriers of the full oxytocic activity of ergot. The activity of crude pharmacopœial extracts of the drug is far more prompt and intense, and entirely out of proportion to the alkaloidal equivalents of such extracts when calculated in terms of ergotoxine or ergotamine, thus indicating the existence of a very important hitherto unidentified source of activity. This important activity is shown to reside in the "total specific alkaloidal fraction" of the drug. Removal of the hitherto known alkaloids from this fraction left the greater part of the oxytocic activity behind. The new and more important oxytocic substance was isolated and found to be similar in certain fundamental respects to ergotoxine and ergotamine, differing mainly in being much more soluble and absorbable than the well-known ergot alkaloids. Because of its chemical and pharmacological properties, the newly isolated substance was temporarily designated as "X-alkaloid." Its relationship to the results obtained by currently used methods of bioassay received appropriate consideration.—MARVIN R. THOMPSON. *J. Pharmacol.*, 54 (1935), 161. (H. B. H.)

Ergot—Chemistry and Pharmacology of. A review.—K. W. MERZ. *Apoth.-Ztg.*, 50 (1935), 472–474, 493–497. (H. M. B.)

Peyote—Alkaloids of. The powdered "mescal buttons" are extracted with 70% alcohol, the solvent is evaporated under vacuum, the alkaloids in the residue are liberated by addition of ammonia and extracted first with ether and then with chloroform; the solvents are evaporated and the residue is dissolved in water; the brown, strongly alkaline solution is neutralized exactly with sulphuric acid, the precipitated resins are filtered out, the filtrate is concentrated and the crystals obtained, consisting of sulphates of mescaline and anhalonidine, are decolorized by bone char; the filtrate is treated with barium chloride and filtered, and anhalonine hydrochloride crystallizes in the filtrate. The latter is treated with an alcoholic solution of chloride of mercury; the chloromercurate which separates is recrystallized, decomposed by hydrogen sulphide, and filtered; the solution is extracted with ether, the extract is neutralized with hydrochloric acid, concentrated in vacuum, and the oily mass which separates soon crystallizes. It consists of the hydrochlorides of peyotline, anhalonine and lophophorine, which are separated by fractional crystallization.—G. TOMASO. *La Chimica*, 10 (1934), 408–416; through *Chimie et Industrie*, 34 (1935), 138. (A. P.-C.)

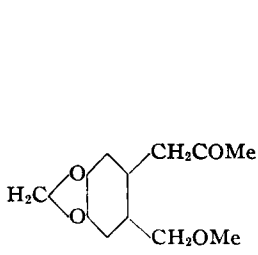
Physostigmine (Eserine)—Experiments on the Synthesis of. Part XI. The later phases of synthetical investigations are described. One of the more promising methods of synthesizing eserine is: *dl-nor*eserethole → *l-nor*eserethole → *l*-eseretholemetho-salt → *l*-eserethole → *l*-eseroline → eserine. *dl-Nor*eserethole, on controlled methylation with methyl *p*-toluenesulphonate, yielded crystalline *dl*-eserethole (m. p. 79–80°). It was found that this was identical with product of Hoshino and Kobayashi by direct comparison of specimens. The latter authors described their base as $C_{16}H_{22}ON_2$, while King and Robinson found it to be $C_{15}H_{22}ON_2$:



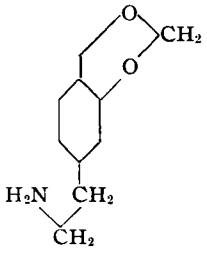
FREDERICK E. KING and ROBERT ROBINSON. *J. Chem. Soc.*, (1935), 755–759. (G. W. F.)

Protopine and Allied Alkaloids—Synthetic Experiments on. Part II. A new synthesis of the berberine ring-system and of a ring homologue of the apomorphine alkaloids is reported. This is more simple but less flexible than any synthesis previously described. I and II are reacted to form

III. This, when treated with phosphorus pentachloride, produces double ring closure with elimination of water and methyl alcohol and simultaneous dehydrogenation to yield 25% of a berberine analogue (IV).



I



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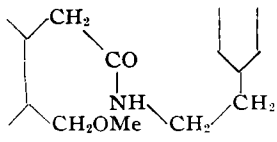
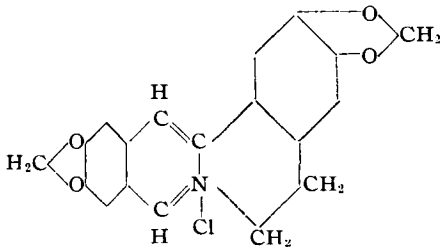
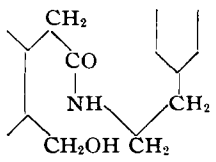


III



IV

The compound V, prepared from VI and VII, when treated with $POCl_3$, produced, upon reduction, the substance VIII containing the apomorphine skeleton modified by the presence of an extra methylene group in the central ring.



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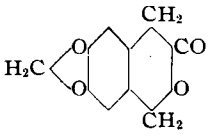
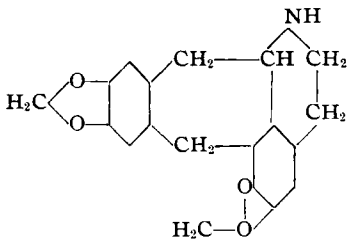


VI



VII

THOMAS S. STEVENS. *J. Chem. Soc.*, (1935), 663–667. (G. W. F.)

Quinine, Quinidine, Cinchonine and Cinchonidine—Specific Rotatory Power of the Salts of. Addition of hydrochloric acid to these bases forming first the mono- then the dihydrochlorides shows a progressive increase in rotatory power which can be explained on the basis of the ionization of the salts. There are four asymmetric carbons in these bases. It is concluded that quinine and quinidine are epimeric and are identical on carbons 1 and 2 but are optically inverse on carbons 3 and 4. Cinchonine and cinchonidine are identical on 1, 2 and 4 but different on 3. Sterically the methoxyl and the vinyl chains of quinine and cinchonidine can be represented as parallel and in the same direction, while the chains of quinidine and cinchonine are parallel but in the opposite direction. This explains the high antimicrobic activity of quinine, the different properties of the four alkaloids and the well-known influence of the modification of the lateral chains on the pharmacodynamic properties.—CHARLES LAPP. *Compt. rend.*, 201 (1935), 80. (G. W. H.)

Strychnine and Brucine. Part XXXIII. Methoxymethyl*chano*dihydrostrychnanic acid was found to be resistant to facile dehydrogenation. Likewise methoxymethyl*chano*dihydro-

strychnone was found to be resistant. These reactions indicate the veracity of the formula previously reported for methoxymethyldihydro*neo*strychnine.—T. M. REYNOLDS and ROBERT ROBINSON. *J. Chem. Soc.* (1935), 935–940. (G. W. F.)

Yohimbine—An investigated commercial yohimbine consisted principally of a base having the same melting point and optical rotation as *iso*-yohimbine. The yobyrine which Mendlik and Wibant obtained by dehydrogenation of yohimbine (*Rec. des Trav. Chim. des Pays Bas*, 50 (1935), 91) has the formula $C_{19}H_{16}N_2$ and is identical with that obtained by Barger and Scholz (*Helv. Chim. Acta*, 16 (1933), 1343). Catalytic hydrogenation of yobyrine $C_{19}H_{16}N_2$ yields decahydroyobyrine $C_{19}H_{26}N_2$, whereas tetrahydroyobyrine $C_{19}H_{20}N_2$ yields octahydroyobyrine $C_{19}H_{24}N_2$.—H. P. WIBANT and A. H. P. VAN GASKE. *Rec. des Trav. Chim. des Pays Bas*, 54 (1935), 85; through *Pharm. Zentralh.*, 76 (1935), 460. (E. V. S.)

Essential Oils and Related Products

Abies Sibirica—Composition of Ethereal Oil of. The work is summarized by the author as follows: 1. The ethereal oil of *Abies sibirica* studied was found to correspond by its physicochemical properties to the average norms and was found to contain up to 32% of borneol in form of borneol acetate. 2. Besides borneol this oil contained: santene, *l*-alpha pinene, *l*-beta pinene, camphene, *l*-alpha phellandrene and dipentene. All these compounds are found in amounts harmonizing with the corresponding fractions. 3. In the third fraction of the carbohydrate portion of the oil of *Abies sibirica* there is apparently found an unknown carbohydrate; this carbohydrate was nitrated and this nitrated product was found to possess different properties than the nitrated products of the other carbohydrates of this oil.—V. V. WILLIAMS and A. S. ONISCHENKO. *Soviets. Pharm.*, 2 (1935), 15. (A. S.)

Aromatics—Noteworthy New Special. A review.—B. REGRUB. *Riechstoff-Ind. Kosmetik*, 10 (1935), 79–83. (H. M. B.)

Estragon and Hyssop—A Survey of Production and Characteristics of. A review of the cultivation, distillation and chemistry of the oils. The constants for oil of estragon (*Artemesia dracunculus* L.) were found to be: spec. grav. at 15° 0.926–0.966; optical rotation + 3°20′ to +4°12′; refractive index at 20° 1.5112–1.5201; saponification value 2.8–17.7. The constants for oil of hyssop (*Hyssopus officinalis* L.) were found to be: spec. grav. at 15° 0.940–0.956; optical rotation −16°18′ to −18°20′; saponification value 4.7–12.1; refractive index at 20° 1.4800–1.4829; ketone content (*l*-pinocamphone) was about 45%.—ERNEST S. GUENTHER. *Am. Perfumer*, 30 (1935), 238–240. (G. W. F.)

Gamboge—Contribution to the Chemistry of. The author investigated the gum resins from various trees of the Family *Garcinia*, especially *Garcinia Hanburyi*, attempting to isolate the active constituents. The material was extracted with ether, the resinous portion being obtained as a slimy residue. Attempts at separation with various solvents gave no crystalline products. Separation with dilute soda solutions and alkalies gave three fractions. In soda 84% of the pure resin (mostly acids) went into combination. Alkali took up 12% of apparently phenolic compounds. The balance consisted of an ester which was separated into an alkali-soluble and an alkali-insoluble portion upon saponification. All resin constituents are yellow in color: the acid constituents dissolve in alkali with a yellow color, the phenolic constituents with a red color. The soda-soluble portion when treated with acetic acid and sodium acetate gives prisms or triangular plates (yellow) of acetyl-α-cambogic acid, which liquefy at 163° and are completely melted at 190°. The acid has the formula $C_{31}H_{36}O_7$ and appears to be unsaturated. After splitting off the acetyl group the α-cambogic acid shows the formula $C_{28}H_{32}O_5\begin{cases}\text{COOH}\\ \\ \text{OH}\end{cases}$. This can also be identified in the resin. In the alkali-soluble portion the investigation for esters was fruitless and in the third fraction only one ester was found of which the products of hydrolysis could not be identified. The laxative properties of acetyl-α-cambogic acid determined with mice, and compared with that of the total resin as well as that of the gum-resin showed the latter to have the strongest action, the gum portion evidently increasing the laxative properties of the resin.—MARTHA FURRER (Dissertation, Basel). *Pharm. Ztg.*, 79 (1934), 1082; through *Pharm. Weekblad*, 72 (1935), 828. (E. H. W.)

Leaf Oils of the Washington Conifers. VII. Juniperus Occidentalis. This tree grows in

northwestern United States, seldom at elevations of less than 6,000 feet. Steam distillation of leaves and branches yielded 0.36% of oil. Aldehydes, ketones and primary alcohols were absent or nearly so. Composition was found to be about as follows: bornyl acetate, 40; borneol, 11; alpha-phellandrene, cymene and probably camphene, 35; acetic acid, 0.2; phenols, 0.5; compounds of higher boiling point and loss, 14.—E. V. LYNN and LOUIS FISCHER. *J. Am. Pharm. Assoc.*, 14 (1935), 613. (Z. M. C.)

Oil of Citronella. The following comparative figures are given for the production of oil of citronella:

Year	Netherlands Indies (Mostly from Java)	Ceylon
1929	879 tons	532 tons
1930	818 tons	546 tons
1931	893 tons	542 tons
1932	996 tons	576 tons
1933	1529 tons	657 tons
1934	1783 tons	692 tons

The author calls attention to the differences between East Indian and Ceylon citronella oil. Java oil has a lower specific gravity and a higher citronellal and total geraniol content than the Ceylon oil. A great deal of the Ceylon oil is adulterated. The author recommends that oil of citronella be included in the Netherlands Phar.—P. A. ROWAAN. *Pharm. Weekblad*, 72 (1935), 853. (E. H. W.)

Oil of Myrtle—Survey of. A review of the botany, cultivation, constants and chemistry of oil of myrtle (*Myrtus communis* L.).—ERNEST S. GUENTHER. *Am. Perfumer*, 30 (1935), 287–288. (G. W. F.)

Photochemical Notes. No. 113. An Unusual Peppermint Oil. Report is made of a sample of peppermint oil distilled in 1930. In a little more than a year it had acquired a distinct orange tint, was cloudy and had a resinous sediment. Physical and chemical constants were determined for crude oil, rectified oil and first cohobate. Because density (0.962, 0.9145 and 0.9179) varied from official oil (0.896 to 0.908) the opinion of others was sought. The A. M. Todd Company asked for a sample and reported findings. These are tabulated with U. S. P. requirements, for easy comparison. Comments are quoted. Fritzsche Brothers submitted two opinions and both are quoted. A sample of the rectified oil was saponified and the saponified oil distilled with steam and collected in fractions. Redistillation showed that three larger fractions had densities greater than U. S. P. limit. Fraction 200° to 220° placed in a freezing mixture yielded menthol and acetylation revealed 97.8% alcohol computed as menthol. There was no thymol or carvacrol or pulegone. The only thing that can be done with such an oil under present U. S. P. standard is to blend it with other oils that are relatively light.—SISTER M. FRANCIS XAVIER. *J. Am. Pharm. Assoc.*, 24 (1935), 543. (Z. M. C.)

Salvia Sclarea—Accumulation of Ethereal Oil in, of Central Asia. *Salvia Sclarea* belonging to the family of Labiatæ is a plant which lives a few years and which is found in a wild state. Because of its ethereal oil content it is at present cultivated in France, Italy and to some extent in Germany, Russia and other countries. The ethereal oil consists of linalol combined in form of acetic and formic ethers, of free linalol, and of slight amounts of a free acid and a substance having a carbonyl group. It has been found that the chemical make-up of this ethereal oil is dependent on climatic conditions, on the stage of development of the plant, on the method of collection of the plant, and on the method of its dry distillation. The author attempted to determine the relation of the chemical make-up of the ethereal oil to the stage of development of the plant, its age and type, under conditions found in Central Asia. Experiments were carried out in Samarkand where the plants of 1, 2 and 3 years of age were studied. The plants were grown from seeds collected of wild plants, and represented a mixture of about 7 types. The results obtained have shown that the main mass of the ethereal oils accumulates in the flowers and the region neighboring immediately upon them, and only a negligible amount of these oils is found in the remaining parts of the plant. The total amount of the ethereal oil is dependent on the state of development, type and age of the plants. The maximum amount of ethereal oil was found in plants two years of age at the end of blooming, while the minimal amount is found in plants three years of age during the first period of their development.—T. K. GAPONENKOV. *Soviets. Pharm.*, 4 (1935), 31. (A. S.)

Stone Fruit Flavors. Stone fruits (genus *Prunus*) are subjected to hydraulic pressure in the cold, concentrated *in vacuo* and preserved with sugar or alcohol. The extracts may be fortified with synthetics. For peach essence, the following may be used: gamma-undecalactone, acetaldehyde, ethyl acetate, butyrate and valerate, iso-amyl acetate and butyrate, vanillin, anisaldehyde, sweet orange oil, cardamom oil, neroli oil and benzaldehyde or bitter almond oil S. A. P. The latter may be obtained from the kernels by maceration and steam distillation. Synthetics used for peach are also applicable to other stone fruits with the exception of γ-undecalactone. Ethyl butyrate and isoamyl butyrate are suggestive of apricots; ethyl acetate and benzoate as well as isoamyl formate and ethyl œnanthate are used in cherry essences. The latter two and a trace of oil of clove are used for plum.—H. STANLEY REDGROVE. *Am. Perfumer*, 30 (1935), 285, 310. (G. W. F.)

Terpenes—Recent Progress in the Chemistry of. A review with references.—J. L. SIMONSEN. *J. Chem. Soc.* (1935), 781–785. (G. W. F.)

Trachyspermum Copticum Linc.—Accumulation of Thymol in. 1. The amount of ethereal oil which may be obtained from *Trachyspermum copticum* Linc. is dependent on the stage of development of the latter; the maximum amount is obtained in the most mature and the minimum in the least mature plants. 2. The ethereal oil accumulates chiefly in the upper portions of the plant; if the latter is represented by 100%, the amount found in the middle portion of the plant is equal to 30.6% and that in the lower portion of the plant to 10.5%. 3. The ethereal oils obtained in this manner contain among the phenols chiefly thymol and a limited amount of carvacrol. 4. The phenol content and consequently the thymol content in the ethereal oil depends on the state of development of the plant. 5. The thymol can be obtained not only from the oil expressed from the seeds, but also from the juice expressed from the entire plant.—T. K. GAPONENKOV. *Soviets. Pharm.*, 3 (1935), 17. (A. S.)

Violet Odor—Natural. A continuation of the work which appeared in *Perfumery Essent. Oil Record*, 26 (1935), 100, is given. Violet-leaf oil, ionone and irone are discussed.—F. K. DONOVAN. *Perfumery Essent. Oil Record*, 26 (1935), 303. (A. C. DeD.)

Fixed Oils, Fats and Waxes

Carqueja (Baccharis Genistelloides Pers.)—Contribution to the Study of a Medicinal Plant of Widespread Use in Argentina. The resin of carqueja has an acid value of 116, saponification value of 182, ester value of 66 and an iodine number (Hubl) of 74.93. The Phar. of Brazil uses carqueja alone and in combination with other plants for its stimulation of the biliary function and the activity of the liver.—C. CROCCO and H. BASSO DASTUGUE. *Ann. Farm. Bioquim.*, 5 (1934), 51–60; through *Chimie et Industrie*, 33 (1935), 918. (W. A. P.)

Castor Oil—Refining. A brief review of work carried out during the past few years on the refining of pharmaceutical and lubricating castor oil, and more particularly of the author's process in which the pressed oil is treated with caustic soda without prefiltration, the presence of the albuminous matter favoring the separation of a coarse-grained soap stock which readily settles out.—R. HEUBLUM. *Mat. grasses*, 27 (1935), 10,463, 10,482–10,483. (A. P.-C.)

Cod Liver Oil—Medicinal, Obtained by Steam Methods. Vitamin Content. After a review of the work of Poulsson and of Schrader (*Pharm. Ztg.*, 49 (1934), Nos. 53 and 54) S. concludes: (1) for internal use the oil obtained by steam methods is the best since it has been shown that vitamins absorbed by the liver tissues are freed by the heat without destroying their action, (2) that a vapor of steam is necessary to remove the bad smelling free acids and (3) that oxygen in the air and not the temperatures is destructive to vitamin A. It appears likely on these grounds that there may be a loss of vitamin A when the oil is used in salves or emulsions.—E. SCHWEISZINGER. *Apoth.-Ztg.*, 50 (1935), 779–780. (H. M. B.)

Coula Edulis—Seed Oil of. The physical and chemical constants and the composition of coula oil (from *Coula edulis* baillon) are given and compared with those of olive and tsubaki oils. Coula oil contains 87.1% of oleic acid and is a good source for the preparation thereof.—A. STEGER and J. VAN LOON. *Rec. trav. chim.*, 54 (1935), 502; through *Squibb Abstr. Bull.*, 8 (1935), A-971.

Gossypol—Effect of, on Color of Cottonseed Oil. Cotton seeds contain an oil-soluble poisonous dye, gossypol (I). The effect of I on the color of cottonseed oil (II) was studied. As the concentration of I in II was quadrupled, the color intensity was doubled. Heating the solu-

tions intensified the color to a maximum at 90–120° after which it decreased to a minimum at 120–150° and thereafter again increased. The amount of unchanged precipitable I decreased with increasing temperature. The color and I-content of heated solutions decreased on standing, the decrease being greater for the solutions heated to lower temperatures and containing a greater initial amount of unchanged I. The changes in the color of the solutions was shown to be due mainly to the heating and only little if at all to oxidation. It appears, therefore, that the color of II is largely dependent on the I-content, although the other factors may play a part.—M. PODOLSKAJA. *Fettchem. Umschau*, 42 (1935), 96; through *Squibb Abstr. Bull.*, 8 (1935), A-929.

Halibut Liver Oils—Characters of. The natural variations of halibut liver oils, particularly in vitamin content, are very great. These variations are partly seasonal and partly depend on the region in which the fish is caught. Therefore, it is the practice to standardize the oils for sale to a definite vitamin A content. This may be done either by mixing strong and weak halibut liver oils to give the desired vitamin content or by diluting a strong halibut liver oil with a fish liver oil, such as cod liver oil, or even with a vegetable oil. It is important in laying down standards for the natural oil to be sure that the material tested is genuine halibut liver oil and nothing else, since, if any other oil is added the product cannot be described as natural halibut liver oil. When testing halibut liver oil, it is recommended that the Rosenmund-Kuhnhenn pyridine dibromide method be used, since this method gives more consistent results when a high proportion of cholesterol is present.—N. EVERS and W. SMITH. *Pharm. J.*, 134 (1935), 417. (W. B. B.)

Parinarium Laurinum—The Highly Unsaturated Acid of the Kernels of. The kernels yield 44% of a butter-like solid having a high refractive index and iodine value. An acid, crystallizing in large plates (m. p. 83.4°), was obtained by crystallization from petroleum ether. It becomes transformed by atmospheric oxygen (less in refrigerator) to an amorphous material. It was found to absorb 4 molecular proportions of hydrogen and upon potassium permanganate oxidation it yielded somewhat less than one molecular proportion each of azelaic and propionic acids and a quantity of oxalic acid. The formula $CH_3.CH_2.(CH{:}CH)_4.(CH_2)_7.CO_2H$ is assigned. It is thought to be the first *conjugated* acid of the tetraene series to be reported from a vegetable or animal source.—E. H. FARMER and E. SUNDERLAND. *J. Chem. Soc.* (1935), 759–761. (G. W. F.)

Parinarium Macrophyllum—The Highly Unsaturated Acid of the Kernels of. The oil constitutes 70% of the kernels, or 4% of the nuts. A highly unsaturated acid (m. p. 45.5–46.5°) was obtained by fractional crystallization from petroleum ether. Its identity with alpha-elæostearic acid was confirmed. W. B. BROWN and E. H. FARMER. *J. Chem. Soc.* (1935), 761–763. (G. W. F.)

Sapucainha Oil—Constituents of. Sapucainha oil was obtained from the seeds of the Brazilian plant *Carpotroche Brasiliensis* Endl. (*Flacourtiaceæ*) and showed as constants: d_{20}^{20} 0.9503; m. p. 22°; f. p. 13–15°; $[\alpha]D_{20}^{20}$ +54.2° (c = 5, in chloroform); acid no. 17, sap. no. 195, iodine no. 101. Saponification yielded a small quantity of phytosterol, m. p. 121°, and crude fatty acids with constants: m. p. 43°; $[\alpha]_D^{20}$ +56.4°; (c = 0.4136, in chloroform); acid no. 214; iodine 109. Chaulmoogric acid was obtained by repeated recrystallization from 70% alcohol; m. p. 68°; $[\alpha]_D^{20}$ +62.9°; acid no. 199.4; iodine no. 92.9; amide, m. p. 102°, $[\alpha]_D^{15}$ = +61.9°; (c = 5 in chloroform). Hydnocarpic acid was obtained from the mother solutions of the first acid by precipitation from 90% alcohol with alcoholic lead acetate and was recovered from the lead precipitate (?). It had as constants: m. p. 58°; $[\alpha]_D^{20}$ +64.5°; acid no. 211.4; iodine no. 97.1; amide, m. p. 105–106°, $[\alpha]_D^{15}$ +61.4°.—T. KARIYONE and Y. HASEGAWA. *J. Pharm. Soc. of Japan*, 54 (1934), 28–29. (R. E. K.)

Sarcostigma Kleinii—Oil of. The bark, fruit and seed oil of *Sarcostigma kleinii* have been used in the treatment of rheumatics, leprosy, scabies, abscesses and hemorrhoids. Prolonged use, however, affects the eyes and overstimulates the nervous system. In spite of the therapeutic use of the plant, the chemistry of the oil has not been studied. The following constants were determined for the seed oil: solidification point 20°; $d_4^{29.5}$ 0.9274; viscosity (Engler viscosimeter) E_{30} 7.14; $[\alpha]_D^{27}$ 1.0606; n_D^{40} 1.4649–1.4651 depending on the refractometer; acid number 11.89, which is rather high and may be due to the fact that the seeds were kept for several months before extraction; saponification number 196.6; Reichert-Meissl number 0.55; Polenske number 0.19; acetyl number 0; Hehner number 93.8–94.6, depending on the method; thiocyanate number 49.48; iodine number 69.16–72.63, depending on the method; and hexabromide number 0. The oil contained a small amount of unsaponifiable matter which gave a sterol reaction; the crystalline

form resembled phytosterol, the acetate melting at 132–134°.—P. S. VARMA, N. N. GODBOLE and A. GANGADHARAN. *Fettchem. Umschau*, 42 (1935), 88; through *Squibb Abstr. Bull.*, 8 (1935), A-939.

Glycosides, Ferments and Carbohydrates

Adonis Vernalis—Method of Extracting Active Principles of. The use of 0.5–1.0% of acetone in water instead of pure water in the usual (Hoffman-LaRoche) extraction of the active glucosides gives a larger yield.—G. TONI and P. FARINI. *Arch. farmacol. sper.*, 49 (1935), 186; through *Chem. Abstr.*, 29 (1935), 4517.

Æsculus Turginata, Blume—Saponin of the Seed of. The author endeavored to apply Winterstein's method of preparing the saponin æscinin from *Æsculus hippocastanum* to the Japanese species *Æsculus turginata*. A saponin was isolated from the seeds of the latter species but only after some modification in the procedure. The resultant compound was not identical with Winterstein's saponin and was named *Japoæscinin:* $C_{65}H_{104}O_{30}$; m. p. about 200°; freely soluble in water, producing foam; positive Liebermann reaction. Mineral acid readily hydrolyzed it to the pro-sapogenin: $C_{59}H_{94}O_{25}$; m. p. 210°; dibromide prepared in methanol, dec. 175°. Further hydrolysis in alcoholic solution with mineral acid yielded Japoæscigenin; $C_{35}H_{58}O_7$; m. p. 258°; probably isomeric with Winterstein's æscigenin, m. p. 309°; 4 active hydrogens by Zerewitinoff's method. The prosapogenin is very difficultly hydrolyzed and much of it is recovered unchanged even after 50 hours refluxing with 5 to 10% hydrochloric or sulphuric acid. However, the genin is readily saponified, yielding tiglic acid and *Japoæscigenol:* $C_{30}H_{52}O_6$; m. p. 307°; alcoholic solution neutral; 5 active hydrogens by Zerewitinoff's method indicating 5 hydroxyl groups, the remaining oxygen atom probably constituting a bridge; positive Liebermann reaction; one double bond. Two atoms of bromine react, but the product separated is a monobromide: $C_{30}H_{51}O_6$ Br, m. p. 196°. Acetylation gives a tetra-acetate, m. p. 198°. Apparently a tertiary hydroxyl group was eliminated as a molecule of water.—T. MATSUKAWA. *J. Pharm. Soc. Japan*, 55 (1935), 82–84.

(R. E. K.)

Cardiotonic Drugs—Investigation of. Unreported sources were sought among folk-medicines for cardioactive principles like the digitalis glucosides. Variations in the potency of commercial adonis are not attributable to the temperature at which the drug is dried. Assuming a value of 100% to represent the activity of the over-ground portions of this herb, the activity was found to be distributed between the plant parts as follows: buds, 53%; whole blossoms, 48%; petals, 26%; roots, 26%. Alcoholic extracts were made in a Soxhlet apparatus of the herb and roots, respectively, of *Adonis vernalis* L., *A. autumnalis* L., *A. æstivalis* L., *A. wolgensis* Stev., *A. pyrenaica* DC., *Knowltonia vesicatoria, Eranthis hiemalis* Sal. The relative potencies of these extracts were determined by the 24-hour method of Straub. On the basis of color reactions, the active constituents of all the species of adonis investigated are chemically similar, but by the same sign are unlike the constituents of *Eranthis hiemalis*. By appropriate treatment, the latter drug was resolved into a fatty acid, a resin acid, an active water- and chloroform-soluble fraction (Eranthin-A), and an active water- and alcohol-soluble, but chloroform-insoluble fraction (Eranthin-B). Both active fractions represented the glucoside in an impure state. The two glucosides are not members of the adonis group, since both of them gave reactions of the digitalis type. The results of different extraction methods applied to *Gratiola officinalis* L. indicate that the cardiac activity is less readily extractable from *G. officinalis* than from *Digitalis purpurea*. The susceptibility of the frog to both *G. officinalis* and *D. purpurea* is similar, using spring or autumnal frogs, but no parallel could be drawn between the cumulative actions of the two drugs. Contrary to Montpellier, gratiolin (m. p., 268–269° C.) possesses no cardiac activity. Gratioligenin and gratiogenin are likewise without activity. A cardioactive glucoside was isolated from *G. officinalis* which the author designated gratiotoxin. In crude form it was soluble in alcohol, glacial acetic acid, pyridine and chloroform, but soluble in water with difficulty. Potencies of alcoholic Soxhlet extracts were determined for: *Boviea volubilis* Harv., *Orinthogalum longebracteatum, Ornithogalum umbellatum* L., *Paris quadrifolia* L., *Polygonatum verticillatum* (L.) All., *Sansevieria Kirkii* (Bak.), *Semele androgyna* (L.) Kth., *Veltheimia viridifolia* (L.) Jacq., *Veltheimia viridifolia* (L.) Jacq. In frogs, *Paris quadrifolia* elicits no toxic symptoms of any form. In the last group of drugs, *Boviea volubilis* (bulb) was sufficiently active to warrant chemical study. The result of the chemical study was the isolation of two highly active glucosides of the scillaren type. The isolation pro-

cedure and color reactions of both glucosides are given.—R. JARETZKY. *Arch. Pharm.*, 273 (1935), 334. (L. L. M.)

Digitalis Purpurea—Digitoxin Content of. *D. purpurea* from Canavese contains 0.22% of digitoxin.—E. BERTONASCO. *Boll. chim. farm.*, 74 (1935), 114; through *Chem. Abstr.*, 29 (1935), 4516.

Digitalis Purpurea and Lanata. A discussion concerning chemistry and relation between the different glucosides of both species.—ARTURO STOLL. *Farm. Moderna*, 46 (1935), 287. (A. E. M.)

Honeysuckle—Investigation of Some Species of. The article consists of several tables of experimental data on *Lonicera Xylosteum* L. and *L. alpigena* L., which are reviewed in detail and conclusions stated. The first table shows the results of studies on the fruits of the above species, the second compares the fruits of the above with those of *L. nigra* and the third gives data on the reducing sugar present. The berries of *L. Xylosteum* and *L. alpigena* contain an abundance of reducing sugar, a small amount of glucosides hydrolyzed by invertin and some products hydrolyzable by emulsin. The reducing sugar in the berries contains glucose, identified by the author as the *p*-methyl glucoside. In *L. Xylosteum* this glucose represents 43% of the reducing sugar, and in *L. alpigena* it represents 36%.—C. BEGUIN. *Pharm. Acta Helv.*, 10 (1935), 109. (M. F. W. D.)

Labiatæ—Tannins in. The author found 10% and over of tannins in *Thymus vulgaris* L., *Mentha piperita*, L., *Lavandula officinalis*, Chaix., and others; 5% and over in *Marrubium vulgare*, L., *Rosmarinus officinalis*, L., *Salvia officinalis*, L., *Hyssopus officinalis*, L., *Origanum vulgare*, L., *Origanum majorana*, L., *Thymus serpyllum*, L., *Orthosiphon stamineus*, Benth. and others, and less than 5% in *Melissa officinalis*, L.—*Scientia Pharm.*, 10 (1935), 23; through *Pharm. Tijdschr. Nederland.-Indië*, 13 (1935), 54. (E. H. W.)

Microsechium Helleri, Tand (Pseudosechium Rand)—Constituent of. This member of the Curcubita family is used in Mexico as a means of catching fish by throwing discs of the root in the water and in a short time the fish come to the surface stunned and may then be caught. The drug has a bitter taste and produces a dust which causes sneezing and tears; in water a froth is produced which indicates a saponin body. From the drug 0.75% glycoside is produced as a white body with a bitter taste, easily soluble in water and alcohol, insoluble in ether, chloroform and petroleum ether. It is prepared by the precipitation of the alcohol extract with tannin, decomposing the tannate with lead oxide and precipitation of the alcohol solution of the crude glycoside with ether, by repeated solutions and precipitations with alcohol and ether, respectively, the pure compound is formed; or the drug is boiled with alcohol and precipitated from the cold alcohol solution by addition of ether. Examination of the glycoside indicates that it possesses a saponin-like action, dissolves red corpuscles, acts as a strong protoplasmic poison, produces intense local irritation, acts on the eyes, produces suppuration of the undercellular tissues and abscesses and increases the permeability of the blood vessels.—G. HEYL and O. VOLLAND. *Apoth.-Ztg.*, 50 (1935), 310–312. (H. M. B.)

Persica Vulgaris (Peach Tree) and Persicoside—Study of. The authors have isolated a heteroside ("persicoside") from the 5-year old bark of *Persica vulgaris*. This heteroside differs from that obtained by the Japanese workers, since on hydrolysis C. and R. obtained glucose and hesperetol. *Extraction of Glycoside.*—Boil the dried powdered bark with 90% alcohol, distil off the alcohol until a syrupy residue remains, dissolve in warm water, shake out with ether and set the remaining aqueous layer in a cool place. Brown crystals appear, and these may be purified from boiling water. The crystals are colorless, odorless, shiny and needle-like. They are soluble in strong alcohol and the melting point is 258–260°. From the elemental analysis, the formula $C_{22}H_{24}O_{11}$ is proposed.—C. CHARAUX and J. RABATE. *J. pharm. chim.*, 21 (1935), 495. (M. M. Z.)

Sophoricoside. New Heteroside from Fruits of Sophora Japonica. The heteroside was extracted from the dried fruits with boiling alcohol, the alcohol was distilled off until a syrupy residue remained, and this was extracted with ether. The aqueous portion was allowed to stand until the solid separated. The solid was removed and recrystallized from ether. The glycoside crystallized in white prisms, which are slightly soluble in water and insoluble in organic solvents. It is odorless and gives a yellow color with sodium hydroxide. On hydrolysis with acids, there is obtained glucose and a phenolic compound, which the workers named sophoricol, but it was later

shown to be identical with genisteol, isolated by Perkin and Newbury from *Genista tinctoria*.—C. CHARAUX and J. RABATE. *J. pharm. chim.*, 21 (1935), 546. (M. M. Z.)

Sugars—Crystalline Structure of. Part I. Preliminary data on sugars and glycosides is reported. The cell dimensions for beta-methylarabinoside, alpha-methylfucoside and alpha-methylgalactoside-6-bromhydrin are reported: (in Å.)

	Arabinoside	Fucoside	Bromhydrin
d_{100}	8.10	9.96	10.58
b	7.74	7.87	7.81
c	5.89	5.72	2 × 5.62

E. G. COX, T. H. GOODWIN and A. I. WAGSTAFF. *J. Chem. Soc.* (1935), 978–984. (G. W. F.)

Verbena Officinalis L.—Constituents of. Verbenalin, a crystalline glucoside from *Verbena officinalis* L., and cornin, a glucoside from the root cortex of *Cornus florida* L. are identical. Both glucosides have been assigned the same molecular formula, $C_{17}H_{24}O_{10}$, by different investigators; both possess strong reducing properties; both are split by the enzyme emulsin, and upon hydrolysis yield *d*-glucose. For cornin, the melting point and specific rotation are, respectively, 182–183° C. and $[\alpha]_D^{25°} = -180.6°$; for verbenalin, they are 181.56° C. and $[\alpha]_D^{25°} = -180.52°$. There was no depression of the melting point by mixed melting point determination.—B. REICHERT. *Arch. Pharm.*, 273 (1935), 357. (L. L. M.)

Other Plant Principles

Ch'ai Hu (Bupleurum Falcatum L.)—Constituents of Roots of. This ancient drug is used as antipyretic and expectorant. From 13.6 Kg. of dried material is obtained 3.5 Gm. of an essential oil, b_2 130–157°, d_{20}^{20} 0.9194. From the portion which is non-volatile and insoluble in water are obtained: a new alcohol, bupleurumol, melting at 163–164°; and oleic, linoleic, palmitic, stearic and lignoceric acids.—YOUH-FONG CHI and CHI-MING MA. *J. Chinese Chem. Soc.*, 3 (1935), 78; through *Chem. Abstr.*, 29 (1935), 4515.

Coriaria Japonica, A. Gray. (IV)—Poisonous Constituents of. It was shown previously that coriamyrtin was not a glucoside although hydrolysis with acids produced a substance which reduced Fehling's solution. The dihydro derivative (colorless needles, m. p. 255.5°, $[\alpha]_D^{20}$ +25.2° in chloroform; negative Riban reaction) of coriamyrtin, obtained by catalytic hydrogenation, is converted by boiling dilute sulphuric acid into an isomer which forms a crystalline tolylosazone, m. p. 202–203°. This indicates either an α-hydroxy-ketone or -aldehyde group in the molecule. Like picrotoxinin, coriamyrtin and dihydrocoriamyrtin form acetone when treated with alkali. Chlorine substitutes one atom of hydrogen to form the mono derivative: m. p. 204–205°, white prisms.—T. KARIYONE and K. KASHIWAGI. *J. Pharm. Soc. Japan*, 54 (1934), 31–32. (R. E. K.)

Daphne Genkwa—Constituents of. The Chinese drug, Yuen hua, *Daphne genkwa*, Sieb. et Zucc., has been in medical use since 160 B. C.; it is also called Chojisakura or Fujimodoki in Japan. Nakao has already recorded the presence of a vesicating substance in the drug. Further investigation shows that it contains the following constituents: sitosterol, $C_{27}H_{46}O$, m. p. 136–137° C.; apigenin, $C_{15}H_{10}O_5$, m. p. 352° C.; genkwanin, a new flavone, $C_{16}H_{12}O_5$, m. p. 206° C.; and benzoic acid. Genkwanin is found to contain one methoxyl group, and its molecular structure is further discussed.—M. NAKAO and K. F. TSENG. *J. Shanghai Sci. Inst.*, 1 (1933), 1; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 265. (S. W. G.)

Hydrangea Paniculata—On the Constituents of, and on Hydrangin. *Hydrangea paniculata* grows wild in the hilly regions of Japan and is used as a glue in the manufacture of paper. The authors extracted the flowers and flower stalks with benzene and obtained an alcohol-soluble, crystalline product from the extract. This product proved to be umbelliferone: $C_9H_6O_3$; m. p. 224°; bluish fluorescence in the aqueous solution; sublimed without decomposition; monomethyl ether by diazomethane, m. p. 114°; identical with synthetic umbelliferone and its derivatives. Bondurant and later Schroeter isolated a substance called Hydrangin from *Hydrangea arborescens*, a native of the United States. In view of the close botanical relationship between the two species the authors believe that Hydrangin is identical with umbelliferone.—A. ASHIMOTO and T. KAWANA. *J. Pharm. Soc. Japan*, 55 (1935), 44. (R. E. K.)

Phytochemical Notes. No. 108. A Phytochemical Study of the Seed of the Digger Pine.

Samples of ground seed, of seed coats and of endosperm were extracted with selective solvents. Data are tabulated. Then a petroleum-ether extract consisting chiefly of fatty oil was prepared and cold alcoholic percolate was concentrated. From saponification, iodine and thiocyanogen values, percentages were calculated: 4.3% saturated fatty acids, 50.5% oleic acid and 45.2% linoleic acid. Further study of the oil after fractionation indicated hexoic acid, nonoic acid and azelaic acid, and fatty acids of 16 and 18 carbon atoms. These data indicate that the first double bond is at the 9–10 position, also that this or a second double bond is in the 6–7 or 9–10 position from the end. Had malonic acid been isolated this would indicate only oleic and linoleic acids. Malonic acid formed must have been lost during purification. Study of the soap solution indicated saturated fatty acids 5.5%, oleic acid 51%, linoleic acid 43.5%. Lead soap of the liquid fatty acids and of the solid fatty acids were prepared and studied. Methyl esters of the supposedly saturated acids were distilled and constants determined. Presence of palmitic acid was indicated in a mixture of two esters and two others yielded stearic acid. Further study of liquid fatty acids seemed to indicate dihydroxy stearic acid. Experiments to see if there were volatile fatty acids gave negative results.—JOSEPH SEMB. *J. Am. Pharm. Assoc.*, 24 (1935), 609. (Z. M. C.)

Plants, Toxic—Chemical Problems Connected with the Study of. Investigation and Isolation of the Active Principles. I. Alkaloids. These may be extracted easily by exhaustion with a mixture of equal parts of alcohol, ether and ammonia in the case where the base is free and soluble in organic solvents. In other cases, the alkaloids may be first set free by using a weak acid. The solvent is evaporated and the residue dissolved in a weak acid. They may be purified by the process of alternately rendering soluble the free base in an organic solvent and the salts in an aqueous solvent. The separation of the various alkaloids may be accomplished by their different degrees of basicity. Crystallization and sublimation under low pressure may be of great aid. II. Glucosides. The biochemical method of Bourquelot is employed. Extract with boiling alcohol (96°), evaporate, and dissolve the residue in water. Keep half of the solution for comparison and add yeast to the other half. After complete inversion, destroy the yeast with heat, cool and add emulsin. A variation in the rotatory power in the dextrorotatory direction indicates the presence of glucoside. The method of separation varies with the case. For example, the aqueous solution may be purified with lead acetate. The greater part of the glucosides remain in solution. Entirely eliminate the lead, and, after filtering, concentrate to a syrupy consistence and dissolve in alcohol. Complete the purification by successive crystallizations from a warm solution of ethyl acetate. One may also add a sufficient quantity of calcium sulphate and calcium carbonate to the purified solution to obtain a dry powder which may be extracted directly with ethyl acetate. Finally, certain plants were extracted directly with ethyl acetate without other previous operation. III. The bitter principles may be extracted with chloroform after treatment of the plant with petroleum ether to eliminate fat.—C. RIMINGTON. *J. South African Chem. Inst.*, 17 (1934), 44–47; through *Chimie et Industrie*, 33 (1935), 918–919. (W. A. P.)

Uvaria Catocarpa—Constituents of. The fruits of *Uvaria catocarpa* (Diels) (Fam. *Anonaceæ*) are used in the local medicine of Madagascar under the name of Senasena or Senanasena, finding use as stomachics, febrifuges, sedatives, tonics and disinfectants. Analysis of the fruits showed: *A. Seeds.*—(1) Fats. Saponifiable 13.96%; unsaponifiable 0.2445%; containing 0.075 phytosterol; total glycerides 19.30%. Empirical formula of the separated crystallized fatty acid $C_{18}H_{19}O_7$. (2) Carbohydrates: reducing sugars (glucose) 1.05%; hydrolyzable sugar (as cane sugar) 0.4089%; starch 16%. (3) Organic acids. (*a*) Non-volatile: oxalic, citric, malic; (*b*) volatile: acetic and formic. (4) Resin. Semi-liquid, dark brown and bitter, 4.40%. (5) Proteins: albumins, globulins and alkali albumins. Total nitrogen 1.89% (corresponding to 11.80% protein). *B. Pericarp.*—(1) Fats. Saponifiable 1.92%; unsaponifiable 0.422% containing 0.0774 phytosterol; total glycerides 3.04%. (2) Carbohydrates: reducing sugars (glucose) 1.35%; hydrolyzable sugars (sucrose) 0.1425%. (3) Organic acids. (*a*) Non-volatile: oxalic, citric and malic; (*b*) volatile: acetic, formic and butyric. (4) Resin: solid, brownish black, acrid taste, 5.63%. (5) Proteins: albumins, globulins and alkali-albumins. Total nitrogen 1.545% (corresponding to 9.65 proteins). (6) Volatile oil. Yellowish green, fragrant odor D. 0.9244; refr. ind. 1.5231 at 18°. (7) Glucosides. A glucoside was found which was hydrolyzable by emulsin. This ferment is present in the pericarp. *C. Entire Fruit.*—Inorganic constituents. Ash, 1.56% containing Cu, Fe, Mn, K, Na, P, S and As.—J. M. COISNARD. Dissertation (Paris); through *Pharm. Tijdschr. Nederland.-Indië*, 13 (1935), 51. (E. H. W.)

Unclassified

Coumarins—Improved Method for the Synthesis of, by v. Pechmann's Method. A solution of the phenol and beta-keto-ester in absolute alcohol is saturated with hydrogen chloride at room temperature (cooling with ice-water) and kept in a well-stoppered flask for 20 hours. It is then poured into water and the coumarin collected after an hour. One recrystallization from dilute alcohol is usually sufficient. This method avoids sulphonation of aromatic nuclei, prevents saponification of the beta-keto-ester, gives an improved yield (90%) and purer products. In cases where little or no reaction can be obtained with concentrated sulphuric acid (phenol, beta-naphthol, quinol), the new method also gives bad results.—HERBERT APPEL. *J. Chem. Soc.* (1935), 1031–1032. (G. W. F.)

Heptane and Its Solutions—Chemistry of. No. 6. Solubility of the Halogens in Heptane. The heptane was prepared from hydrocarbon of Jeffrey pine oil. Details of preparation are given and various experiments reported. Thirty experiments on solubility of chlorine in heptane are tabulated, showing temperature, grams dissolved, grams hydrogen chloride found in 100 cc. of solution. Other tables show solubility of bromine and iodine. Reactibility with other elements was tried. Of the first group, lithium, sodium and copper were used. Over night, lithium and sodium almost completely disappeared. A solution of chlorine in heptane added to finely powdered copper reacted with phenomenon of flame. When solution was kept in an ice-bath for several hours there was no flame but loss of color of chlorine indicated reaction. Flame is produced when chlorine gas is in contact with phosphorus, copper, boron and silicon in powder. Chlorine in heptane solution gives like phenomena with red phosphorus and powdered copper. Trial of chlorine hydrate upon red phosphorus and powdered copper gave negative results. Of the second group calcium, cadmium, magnesium and lead were tried. Calcium yielded bubbles with chlorine and bromine, magnesium and cadmium were little affected, lead decolorized all three. Of group three, aluminum was found to react with all three. References to earlier reports are appended.—JOSEPH SEMB. *J. Am. Pharm. Assoc.*, 24 (1935), 547. (Z. M. C.)

Iodoform and Thymol Iodide—Preparation and Properties of. The pharmacopœial requirements concerning iodoform, and its preparation from acetone, potassium iodide and sodium hypochlorite are dealt with. Illustrations of its different crystalline forms are given. Two methods of preparing thymol iodide have been investigated. It has been shown that the substance resulting from direct iodination is different from that produced when a hypochlorite is used as the intermediary. With the latter a certain amount of chlorination is also brought about. The B. P. C. sets the standard of 40% iodine content, but some commercial samples fail to meet this requirement.—N. GLASS. *Pharm. J.*, 134 (1935), 785. (W. B. B.)

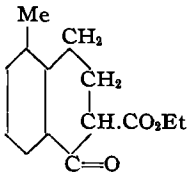
Isopropyl Nitrite—Note on. Isopropyl nitrite was tried as a substitute for sweet spirit of nitre because of the ease with which ethyl nitrite (the active constituent of sweet spirit of nitre) volatilizes. Isopropyl alcohol was tried because of its high purity, low cost, low toxicity and because it permitted extemporaneous preparation. The official method for ethyl nitrite invariably leads to the production of some acetaldehyde; using the same method but substituting isopropyl alcohol, appreciable quantities of acetone, a more undesirable by-product, would be produced.—C. L. M. BROWN. *Pharm. J.*, 134 (1935), 793. (W. B. B.)

Pharmaceutical and Phytochemical Products—Directions for the Preparation of. The following products are discussed on the bases of (1) name, (2) chemical formula and molecular weight, (3) raw materials, (4) apparatus, (5) time, (6) directions, (7) yield, (8) properties, (9) tests, (10) chemical reactions involved and (11) references: (*a*) paraformaldehyde, (*b*) *d*-glucose, (*c*) sodium thiosulphate, (*d*) zinc lactate, (*e*) milk sugar, (*f*) casein, (*g*) isoborneol, (*h*) aconitic acid, (*i*) veratrol, (*j*) mucic acid and (*k*) benzoyl peroxide.—C. A. ROJAHN. *Apoth.-Ztg.*, 50 (1935), 910–916. (H. M. B.)

N-Phenyl-Piperazine—Derivatives of. Although it is a cyclic compound, N-phenyl-piperazine, $C_6H_5\langle \begin{matrix} CH_2CH_2 \\ \\ CH_2CH_2 \end{matrix} \rangle NH$, first prepared in 1933 from aniline and dibromo-diethylamine, shows the characteristic reactions of an aliphatic secondary amine. Physiologically, from experiments upon frogs and rabbits, it is found to provoke a reflex hypersensibility analogous to that of strychnine. It reacts with ethylene oxide to form N-β-oxyethyl-N'-phenylpiperazine, $R.CH_2CH_2OH$, which was identified by its salts and its acetyl and benzoyl derivatives. The benzoyl

derivative of the new alkylamine showed slight anesthetic properties. With 40% formaldehyde the amine gave diphenylpiperazyl methane, $R.CH_2R$, and with phosgene solutions the N.N'-diphenylpiperazine carbonyl, R.CO.R (R = $C_6H_5N\langle^{C_2H_2}_{C_2H_2}\rangle N-$). It also reacts with a variety of halogen compounds, including ethyl bromo-acetate, benzyl chloride and 2:4-dinitro-chlorobenzene. The product with the last-named substance, phenyl-N-2:4-dinitro-phenylpiperazine, $R.C_6H_3(NO_2)_2$, is photo-sensitive.—V. PRELOG and Z. BLAZEK. *Coll. Czech. Chem. Communications*, 6 (1934), 549; through *Pharm. J.*, 134 (1935), 649. (W. B. B.)

Picrotoxin—Part I. The constitution of picrotic acid and the C-skeleton of picrotoxin and picrotin is reported. By applying the Dieckmann reaction to the ethyl ester of an acid, $C_{12}H_{14}O_4$, obtained by hydrolytic fission of picrotic acid, the beta-ketonic ester (I) resulted. Thus the acid must have the formula (II), indicating that picrotic acid must have the structure (III) rather than (IV), and the C-skeleton (V) for the lactones, picrotoxin and picrotin.



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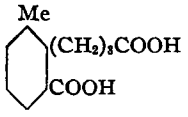

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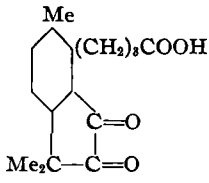

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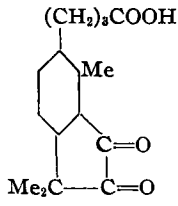

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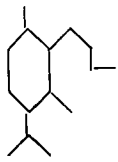
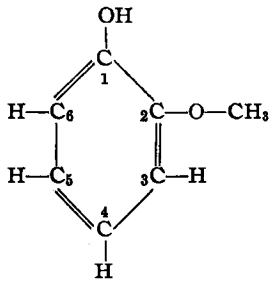


V

DONALD MERCER, ALEXANDER ROBERTSON and ROBERT S. CAHN. *J. Chem. Soc.* (1935), 997–1000. (G. W. F.)

Potassium Guaiacol Sulphonate. Though a very stable compound it is popularly believed to be absorbed as an entire molecule. Guaiacol, the basic substance, has the following structure:



With the above numbering of carbon atoms four guaiacol sulphonic acids are possible, the 1, 2, 3, the 1, 2, 4, the 1, 2, 5 and the 1, 2, 6. From each one of these acids, as well as by replacement of the H of the OH group, salts may be formed. The only important sulphonates in the present consideration are those in which the metal enters the sulphonic acid group. Much confusion has arisen in the nomenclature by different writers in the use of terms such as ortho, meta and others to indicate position of substituents. The present investigation was prompted by the questions of difference in therapeutic activity, choice of most active form and distinguishing tests for it, and which form is most commonly sold. Available literature yielded no thorough pharmacological study but references are made to reports that have been made tracing the history briefly. The 1, 2, 6 compound

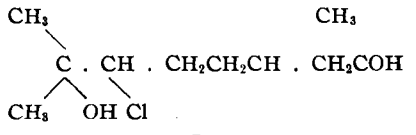
has been recognized by New and Nonofficial Remedies 1918 to 1934 editions; Svenska Farmakopen, 1925; Phar. Hungarica, IV, 1934; British Pharm. Codex, 1934; Deutsches Arzneibuch, prior to 1936; Merck's Index, IV, 1930. From the various sources studied, it is concluded that up to 1926, products on the market were mixtures of the 1,2,4 and the 1,2,5 compounds with varying amounts of the basic one. It seems certain that the 1,2,6 compound has not been made. Seven different sources gave substantially the same product. Tests and data, upon which the conclusions are based, are enumerated. The proportion of the 1,2,4 to the 1,2,5 is approximately 3 to 1.—A. H. CLARK and ERNST KIRCH. *J. Am. Pharm. Assoc.*, 24 (1935), 564. (Z. M. C.)

β-Santonin—Properties of. β-Santonin, a stereoisomeride of santonin, has been obtained from samples of Artemisia from the N.W. Frontier of India, and occurs as colorless prisms m. p. 216–218° C.; $[\alpha]_D^{19°\ C.}$ −137.2°; the oxime having m. p. 224° C. On reduction with palladinized charcoal and hydrogen in acetic acid, β-santonin gives tetrahydro-β-santonin-a, m. p. 207–208° C.; and tetrahydro-β-santonin-b, m. p. 125–126° C.; both the above on reduction with zinc and hydrochloric acid give deoxytetrahydro-β-santonin, m. p. 75–76° C., and this substance on dehydrogenation with selenium gives 1-methyl-7-ethylnaphthalene. β-Santonin treated with sulphuric or hydrochloric acid forms *l-desmotropo*-β-santonin, m. p. 253° C., $[\alpha]_D^{20°\ C.}$ −101.7°, and this on treatment with potassium hydroxide gives *l-isodesmotropo*-β-santonin, m. p. 194° C., $[\alpha]_D^{20°\ C.}$ −136.8°, identical with *l-desmotropo*-santonin obtained by treating santonin with sulphuric acid; reduction of this substance with zinc and acetic acid gives *d*-santanous acid, m. p. 177–178° C., $[\alpha]_D^{22°\ C.}$ +75°, the ethyl ester having m. p. 117° C.; $[\alpha]_D^{20°\ C.}$ +75°. *l-Desmotropo*-β-santonin reduced with zinc and acetic acid gives *d*-β-santanous acid, m. p. 174° C.; $[\alpha]_D^{20°\ C.}$ +54.9°, and treatment of this acid with barium hydroxide gives a *d*-β-santanous acid, m. p. 152° C.; $[\alpha]_D^{20°\ C.}$ +60.9°, together with 1,4-dimethyl-β-naphthol.—G. R. CLEMO. *J. Chem. Soc.* (1934), 1343; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 264. (S. W. G.)

Sapogenins—Spectrographic Observations on Various. The absorption spectrograms of hederagenin, oleanolic acid and α-ursolic acid are very similar and show neither maxima nor minima. It is therefore difficult to distinguish these compounds by this means. β-Ursolic acid is sharply differentiated from the α-acid by its absorption spectrum which has 2 maxima between 3500 and 4000 mμ. Taraligenin has a curve identical with that of oleanolic acid. Kotake reported that taraligenin and panaxsapogenin are identical, and Kitasato subsequently established the identity of panaxsapogenin with oleanolic acid. But Winterstein supposed that taraligenin represented a mixture of oleanolic acid and hederagenin. The authors subjected their taraligenin to fractional crystallization from chloroform-methanol according to Winterstein, but obtained no hederagenin. From their spectrographic examination as well as this result they believe that taraligenin and oleanolic acid are very closely related, if not identical.—S. KUWADA and T. MATSUKAWA. *J. Pharm. Soc. Japan*, 54 (1934), 32–34. (R. E. K.)

Tannin Esters. Water-soluble metal-albumin-tannin ester compounds are prepared by dissolving tannin esters (other than acetyltannin esters), which still contain free phenol groups and are saponifiable at ordinary temperatures by normal sodium carbonate solution only with difficulty, in such quantity of aqueous alkali or alkali-reacting alkali salt that the solution is still weakly acidic and treating with aqueous metal-albumin solutions. The compounds are used therapeutically in solution or in powdered form. Among examples, benzoyltannin is made by heating a mixture of tannin, natrium benzoicum and diphenyl ether in a water-bath, diluting largely with water, filtering, washing and vacuum-drying at 30–40°. A solution of the product is added to an aqueous solution of argentum proteinicum and the solution evaporated.—H. COHN and C. SIEBERT. Brit. Pat., 423,057 (Jan. 24, 1935); through *Chem. Abstr.*, 29 (1935), 4524.

Tiemann's Irone—Synthesis of. Reaction of hypochlorous acid upon rhodinal resulted in the formation of hydroxy-chloro-rhodinal (I); treatment with acetone and an alkaline agent resulted in dimethyl-hydroxy-chloro-undecenone (II); dehydration and cyclization, accomplished by phosphoric acid in ether produced irone (III).



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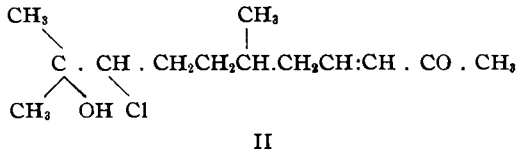

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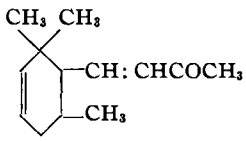

III

The synthetic product had a boiling point of 140° at 12 mm., density (15.15) = 0.940, $\alpha_D = -21$. The optical rotation is inverse to the natural product (+40; +33).—ALBERT VERLEY. *Am. Perfumer*, 30 (1935), 235–236. (G. W. F.)

BIOCHEMISTRY

Anterior Pituitary—Growth Hormone of. A review of pertinent literature, with discussion.—H. N. EVANS. *J. Am. Med. Assoc.*, 104 (1935), 1232. (M. R. THOMPSON)

Anterior Pituitary and Anterior Pituitary-Like Substances. A review of pertinent literature, with discussion.—EMIL NOVAL. *J. Am. Med. Assoc.*, 104 (1935), 998. (M. R. THOMPSON)

Biochemistry—Inorganic, Note on. Of the ninety-two known elements, thirty-six have been found associated in one way or another with some form of living matter. Biological elements are classified into certain groups, including in the first two groups invariable primary elements such as hydrogen, carbon, nitrogen and phosphorous, found in all forms of life and concerned with physical structure, and invariable secondary elements, calcium, magnesium, sodium, potassium, iron, sulphur and chlorine, which occur in smaller quantities than those in the first group. Manganese is essential for farm crops and also for growth in milk-fed rats. Copper plays other parts in animal life besides association with hemoglobin, notably in pigments such as hemocyanin in molluscs and in the *ink* of the octopus, which is of melanin nature. It has also been suggested that copper is associated with the vitamin B-complex in its action on the body. There is evidence that hormones may be associated with inorganic ions. The best known example is thyroxin with iodine. The intake of calcium and phosphorus plays an important part in the healing of rickets; it has been found that reducing the Ca/P ratio from 4–1 to 2–1 is equivalent to giving 0.7 unit of vitamin D. Also, there is a preference of high calcium diets over those of low calcium content for manifesting parathyroid activity. Magnesium appears to be connected with tetany, renal damage and the activation of the enzyme phosphatase.—F. J. DYER. *Pharm. J.*, 134 (1935), 563. (W. B. B.)

Blood Urea—Estimation of. Take 5 cc. of oxalated blood (potassium oxalate), add 5 cc. of 10% trichloracetic acid. Centrifuge for three minutes at full speed or filter. Titrate 5 cc. of the clear supernatant liquid with 5% mercuric chloride, using 20% sodium carbonate as indicator. Add mercuric chloride until one drop of titrated solution turns one drop of indicator brown in three seconds. *Calculation:* Let x = number of cc. of mercuric chloride used. Then 40x = 60 + y mg. urea/100 cc. of blood.—C. M. DOUGLAS. *Practitioner* (1935), 378; through *Pharm. J.*, 134 (1935), 423. (W. B. B.)

Calcium—Availability of, in Foods Containing Oxalates. A preliminary report of work to be undertaken on the occurrence of oxalates in foods and their effect in the diet of the rat.—E. F. KOHMAN and N. H. SANBORN. *Ind. Eng. Chem.*, 27 (1935), 732. (E. G. V.)

Calcium in Serum—Volumetric Determination of. The 0.2-cc. sample is treated with 0.5 cc. of cold saturated ammonium oxalate solution, and, after standing over night, diluted with 1 cc. of water and centrifuged for 15 minutes at 3000 r. p. m. The precipitate is washed three times with 3 cc. of ammonia solution, made by diluting 2 cc. of concentrated ammonia to 100 cc. It is then dissolved in 0.5 cc. of 4 *N* sulphuric acid on a water-bath, cooled and treated with 2 cc. of 0.001 *N* tetravalent cerium sulphate. After 3 minutes, a few drops of 1% potassium iodide solution are added and a little 0.25% starch solution, and the mixture titrated with 0.001 *N* sodium thiosulphate containing 0.048% of sodium hydroxide. The cerium sulphate solution, which is preferred to potassium permanganate as a sharper and more accurate end-point is given, is prepared by dissolving 1 Gm. of the finely powdered salt in 100 cc. of water with 30 cc. of concentrated sulphuric acid, and diluting to 750 cc. It is standardized against the 0.001 *N* thiosulphate, diluted to volume and restandardized.—F. RAPPAPORT and D. RAPPAPORT. *Mikrochemie*, 15 (1934), 107; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 281. (S. W. G.)

Follicle Hormone Derivatives. Acyl octahydrofollicle hormones are obtained by treating the acyl derivatives of the isomeric dihydrofollicle hormones with hydrogen in the presence of catalysts, whereby 6 further hydrogen atoms are taken up by each molecule. The starting materials may be obtained by hydrogenation of the acyl derivatives of the follicle hormone Among examples, (1) monobenzoyldihydrofollicle hormone in alcoholic solution is hydrogenated at 140° under 100 atmospheres pressure in the presence of a catalyst obtained by reducing a mixture of nickel oxide and copper oxide, and (2) diacetyldihydrofollicle hormone is hydrogenated at 180° and 100 atmospheres in the presence of cyclohexanol and a nickel-chromium catalyst. The compounds obtained have a physiological effect similar to that of male sex hormone. The benzoyl derivative may be saponified to yield the octahydrofollicle hormone, $C_{18}H_{30}O_2$.—SCHERING-KAHLBAUM A.-G. Brit. Pat., 423,287 (Jan. 29, 1935); through *Chem. Abstr.*, 29 (1935), 4524.

Hormones from Urine. For concentrating sexual hormones in urine, the urine is substantially saturated with a highly soluble sulphate such as ammonium sulphate which is capable of producing a salting-out effect, the mixture is allowed to stand until it separates into two layers, and the supernatant layer, which contains substantially all the hormone in concentrated form, is recovered.—H. LANGECKER (to Schering-Kahlbaum A.-G.). U. S. Pat., 2,001,255 (May 14, 1935); through *Chem. Abstr.*, 29 (1935), 4524.

Hormones in Pregnancy Urine—Investigation of the New Biologic Test for. Kanter, Bauer and Klawan have recently (1934) reported experiments on a new biologic test for hormones in pregnancy urine in which they intimate the usefulness of the female bitterling in the diagnosis of pregnancy. They used the lengthening of the female ovipositor as a criterion of positive reaction, and suggested a method of standardizing the bitterling to avoid erroneous results. In the present study, the test consisted of placing a mature female bitterling in a 2-liter bowl containing 1500 cc. of water. Six cc. of the urine to be tested was added to each bowl. The fish were observed at 24-hour intervals for 72 hours. Elongation of the ovipositor to at least 25 mm. was taken as a positive reaction, a length of 15 mm. was considered a moderate enlargement (doubtful), about 10 mm. was called slight enlargement (probably negative), and a negative reading was an ovipositor measuring 5 mm. or less. Forty-six fish were placed in individual aquariums. Five groups of urine were tested. After 48 hours, most of the fish had either reacted positively, or not at all, and the 72-hour reading showed little or no variation from the 48-hour reading. Only 9 of 21 urines from pregnant women gave definitely positive reactions. Of 7 from normally menstruating non-pregnant women, 4 gave positive reactions. One male urine of 4 tested was positive, and a later specimen from the same male gave positive reactions in every one of the 6 fish tested. Urines from women who had passed the menopause were positive in 1 of 3 cases. Boiled urines from pregnant women were positive in some instances and negative in others. It was concluded that the biologic reaction is not a specific test for pregnancy. The studies are being continued.—I. S. KLEINER, A. I. WEISMAN and H. BAROWSKY. *J. Am. Med. Assoc.*, 104 (1935), 1318. (M. R. THOMPSON)

Humoral Medicine and Chemistry. The humors, like the cells, consist chiefly of colloids, among which take place all vital reactions and phenomena of growth, nutrition and senility. The harmfulness of pathogenic agents is related to the production of plasmatic precipitates. In harmful colloidal reactions, the precipitates which are formed are flocculates; and it is by flocculation that the colloidal state (which governs life) is destroyed, and this destruction produces disease and death. In many sick people humoral instability is a primary cause of flocculation; the latter then occurs at the slightest cause, and in order to cure such patients a greater stability must be imparted to their blood plasma. The means used to consolidate the colloidal state are few in number and were discovered empirically. To date one of the most remarkable, magnesium thiosulphate, proposed by the author, has been of inestimable value in this respect.—AUGUSTE LUMIÈRE. *14me Congrès de Chimie Industrielle, Paris,* Oct. 21–27, 1934, 15 pp. (A. P.-C.)

Hydrochloric Acid—Determination of, in Stomach Contents. The author discusses the reaction of Günzburg which has been used to determine the hydrochloric acid content of gastric juice. This is the phloroglucin-hydrochloric acid reaction. The various concentrations of acid, the presence of other constituents in the gastric juice, etc., are discussed especially as to their effect on the reaction. The author then suggests a new reaction. Two hundred mg. of resorcin and 200 mg. of vanillin are dissolved in boiling water. Upon cooling a portion of these substances crystallize out. This suspension of minute crystals is kept in a wide-mouth bottle through the cork of which a dropping tube is inserted. A drop of the reagent is evaporated to dryness. A drop

of the stomach content is then added to the residue, the presence of hydrochloric acid causing a beautiful violet color. The reaction was obtained with normal gastric juice as well as with an artificial gastric juice having the following composition: 99% water, 0.3% pepsin, 0.15% NaCl, 0.05% KCl, 0.005% $CaCl_2$ and traces of phosphates and iron salts. Experiments were made with gastric juice containing a variety of concentrations of hydrochloric acid (0.03*N*; 0.02*N*; 0.01*N*; 0.005*N*; 0.0025*N*; 0.0015*N*). All concentrations of hydrochloric acid give a reaction except those of 0.0015*N* and less. Since the reaction is positive with concentrations above 0.0015*N* a rough estimate of the hydrochloric acid content in a given sample may be obtained by preparing a series of dilutions of the sample and submitting them to the test. All of the strong acids give a positive reaction: even boric acid gives a weak violet color. The organic acids react as follows: oxalic acid—a distinct color: malic and tartaric acid—a weak violet color; formic, acetic, propionic, butyric, caprylic, caprionic, valeric, citric, cinnamic and lactic acids gave negative reactions. Since lactic acid occurs occasionally in the stomach in certain pathological conditions concentrations as high as 0.1 and 0.2*N* were tried. The result was negative. The obtaining of a violet color with the reaction then depends largely upon the presence of an inorganic acid, and the inorganic acid in gastric juice is hydrochloric acid.—M. WAGENAAR. *Pharm. Weekblad*, 72 (1935), 837. (E. H. W.)

Insulin—Sulphur in. In studying the constitution of insulin with respect to sulphur content, Freudenberg and Wegmann found that the compound was a protein containing two cystine residues in a peptide-like structure to which were attached peripheral, apparently smaller sulphur-containing groups in disulphide formation. The molecule broke up into an SH compound (Ins SH) and a smaller fragment (HSR) when hydrogenation split the —S—S— bond. Considering the intact insulin as Ins S—SR, it split into the inactive portions Ins SH + HSR. Oxidation of the hydrogenated insulin with hydrogen peroxide in the presence of cysteine gave a new, active, insulin-like compound, represented by the structure Ins S—S—Cys. The HSR residue obtained by hydrogenation of insulin, therefore, was not cysteine. SH-Glutathione could be substituted for cysteine, but thioglycoclic acid could not, indicating that the effect of cysteine and SH-glutathione was not due to their buffer action. Regeneration of insulin occurred under the above conditions after inactivation by alkali. Thus alkaline inactivation also involved hydrolysis of the —S—S— group. This was further indicated by the liberation of hydrogen sulphide on acidification after alkaline treatment, and by the marked change in optical rotation on inactivation of insulin by hydrogenation or alkali. Ultraviolet irradiation inactivated insulin with evolution of hydrogen sulphide, and oxidation of the inactive product in the presence of cysteine gave an active compound again. Alkali inactivation also produced some ammonia together with hydrogen sulphide and this ammonia apparently was due to decomposition of insulin and did not occur as an impurity of the alkali. Other isolated facts about insulin were as follows: the van Slyke determination of free amino nitrogen was questionable since it is known that organic sulphur (cystine, thioglycolic acid) can reduce nitric acid to nitrogen and thus give high values; iodoacetic acid at p_H 7.4 destroyed the activity of insulin so slowly that no reciprocal action with an SH-group was observed; hydrogen persulphide markedly and rapidly attacked the action of insulin, whether by oxidation or hydrogenation was not known, and gave a very toxic compound causing destruction of the skin and depilation at the site of injection; ketene also inactivated insulin. The molecular weight of insulin was apparently 9,000–18,000.—K. FREUDENBERG and T. WEGMANN. *Z. physiol. Chem.*, 233 (1935), 159; through *Squibb Abstr. Bull.*, 8 (1935), A-964.

Iron—Colorimetric Micro- and Submicro-Method for the Determination of. 8-Hydroxyquinoline which has met with such success in inorganic analysis has been adapted to the quantitative determination of small amounts of iron. The color obtained in alcoholic solution is very intense greenish black. Before the iron is precipitated, calcium is separated with oxalate. The determination itself is made in a photoelectric colorimeter.—LAVOLLAY. *Soc. Chim. biol.*, 17 (1935), 432; through *Pharm. Weekblad*, 72 (1935), 691. (E. H. W.)

Milks—Biological Equilibrium and Disequilibrium of Commercially Modified. Cow milk, in spite of its low iron content and the rapid disappearance of its antiscorbutic activity under various commercial treatments for ensuring its preservation, constitutes a food of which the biological equilibrium can readily be brought out by experiments on pigeons. The unbalance of the biological equilibrium of milk powders increases with the degree of skimming of the milk. As carried out in the manufacture of condensed milks, addition of very large quantities of sugar upsets

the equilibrium of very high fat milks; on the other hand, it compensates biologically a partial skimming. Addition of whey, sugar and starches attenuates the biological disequilibrium of skimmed milk, especially of concentrated buttermilk.—RAOUL LECOQ. *14me Congrès de Chimie Industrielle, Paris*, Oct. 21–27, 1934, 5 pp. (A. P.-C.)

Nutritive Value of Foods—Action of Some Commercial Practices on. More or less prolonged action of a dry heat of 180° can change very considerably the nutritive value of foods; when, however, the change is confined to the sugar portion of a mixture (*e. g.*, caramelization), the change in nutritive value is less marked. As practiced in the canning industry, a wet heat of 112° produces only a slight decrease in the vitamins B and C contents. An alkaline reaction (*e. g.*, obtained by addition of baking powder) tends to increase the destruction of vitamins, while an acid reaction exerts a protective action.—RAOUL LECOQ. *14me Congrès de Chimie Industrielle, Paris*, Oct. 21–27, 1934, 5 pp. (A. P.-C.)

Sex Hormones. II. Estrus-Producing Hormones. Natural and synthetic compounds which can cause the production of estrus in addition to other activities of the female sex hormones are discussed. Structural formulas for nine of the compounds are given, indicating the relationship between their physiologic activities and chemical constitution.—C. R. ADDINALL. *Merck Report*, 44 (1935), 7. (S. W. G.)

Sugar in Blood—Volumetric Determination of. The method of Hagedorn and Jensen is adapted for use with one-fifth the original quantity of blood or plasma. The sample of 0.02 cc. is carefully measured into Wassermann tubes containing 1 cc. of *N*/50 sodium hydroxide, and 1 cc. of 0.45% zinc sulphate solution is added to each tube. These are heated in the water-bath for 3 minutes, cooled and filtered into Hagedorn-Jensen tubes. The Wassermann tubes are washed 3 times with 1 cc. of hot water which is poured through the filter, 2 cc. of phosphate-ferricyanide solution is added to each tube, and the mixture heated for 20 minutes in the water-bath. After cooling, 1 cc. of a 2.5% solution of potassium iodide in 20% zinc sulphate is added, followed by 1 cc. of 20% phosphoric acid and a little 0.25% starch solution. The contents are then titrated with 0.001*N* sodium thiosulphate containing 0.048% sodium hydroxide. The phosphate-ferricyanide solution is made by mixing, just before use, equal parts of a 0.09% solution of potassium ferricyanide, and a solution containing 2.1% of secondary and 6.375% of tertiary potassium phosphate.—F. RAPPAPORT and R. PISTNER. *Mikrochemie*, 15 (1934), 111; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 282. (S. W. G.)

Testicular Hormone, Crystalline. David, *et al.*, have now prepared very active crystals from testicular extracts and suggested calling the crystalline preparation testosterone (I). I had an activity, compared to capon units, of about 10γ, and had a uniform crystallographic structure as well as constant physical properties. In the infantile castrated rat, I had a weaker action than an equivalent number of capon units of unpurified testicular extracts, and if a completely inactive extract prepared from testicles or other starting materials such as urine was injected with I, the relative growth of the seminal vesicles was the same as obtained with aliquot amounts of crude testicular extract. Thus there must have been a second substance in the crude extracts which was an activator for I. This was also true to a certain extent for dehydroandrosterone, but not for androsterone. To illustrate the difference between I and androsterone, the melting points were 154–154.5° and 181–183°, respectively; the specific rotation in alcohol, +109° and +96°, respectively; and the capon unit, +10γ and 70–100γ, respectively.—K. DAVID, E. DINGEMANSE, J. FREUD and E. LAQUEUR. *Z. physiol. Chem.*, 233 (1935), 281; through *Squibb Abstr. Bull.*, 8 (1935), A-983.

Urine and Blood Serum—Determination of Indoxyl Content of. The author has applied the Heitz-Boyer and Grigaut indoxymeter to the determinations obtaining satisfactory results using the Jolles reaction. The apparatus contains glass tubes 14 mm. in diameter and graduated into 5, 6, 16, 20 and 22 cc. To the urine is added 10% of a solution of basic lead acetate, and filtered. Five cc. of the filtrate is put into the tube which is then filled to the 6-cc. mark with a 5% alcoholic thymol solution. Hydrochloric acid (Sp. Gr. 1.17), containing 3 Gm. ferric chloride per litre, is then added until the 16 cc. line is reached. After standing thirty minutes the tube is filled to the 22-cc. mark with chloroform. The tube is then shaken, allowed to stand five minutes and matched in the indoxymeter with the proper color disk. When the indoxyl content of blood serum is determined, the serum is first treated with 20% of its volume of trichloracetic acid and then the procedure above is followed.—A. GRIGAUT. *Bull. Biolog. Pharm.*; through *Pharm. Weekblad*, 72 (1935), 939. (E. H. W.)