PHARMACEUTICAL ABSTRACTS

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ABSTRACTORS

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DISPENSING (*Continued*)

Medicine Dropper—U. S. P. XI Official. The official dropper of the U. S. P. XI has been shown to deliver smaller drops than the 0.05 Gm. required by the specifications. The diameter of the tip which consistently will deliver drops of the required size within the permitted limits of 10% has been found to be 3.3–3.4 mm.—S. E. HARRIS and W. G. CHRISTIANSEN. *Am. J. Pharm.*, 108 (1936), 303. (R. R. F.)

Pharmaceutical and Phytochemical Preparation—Procedures for the Preparation of. A series of articles offering procedures for preparation of potassium bromide, potassium bicarbonate, sodium ammonium phosphate, phenol, phenyl salicylate, zinc phenolsulfonate, picric acid, lead stearate, zinc stearate, methyl acetylsalicylate, manganese sulfate, potassium perchlorate, mercuric chloride, xylose, rottlerin, piperine, sodium β-naphthalenesulfonate, β-naphthol and magnesium citrate.—C. A. ROJAHN. *Apoth. Ztg.*, 51 (1936), 1095, 1169, 1258. (H. M. B.)

Sweet Almond Oil—Emulsion of, Easy Production of. Mix intimately 0.5 Gm. of magnesium carbonate and 1.5 Gm. of gum arabic, and add with stirring 20 Gm. of syrup, 30 Gm. of almond oil and 40 Gm. of water. The magnesium carbonate permits of decreasing the proportion of gum arabic and gives great stability to the emulsion. Addition of magnesium carbonate to castor oil, on the contrary, prevents emulsification.—R. STEA. *Scienza Farm.*, 3 (1935), 142–144; through *Chimie & Industrie*, 35 (1936), 1137. (A. P.-C.)

Syrup of Cherry, N. F. VI—Vehicle Value of. Attention is directed to the two fruit syrups of the N. F. and their excellent flavor and keeping qualities. Prescriptions with syrup of cherry as a vehicle are given for iron and ammonium citrate, tincture of ferric chloride, diluted hydrochloric acid, syrup of hydriodic acid, urea, ethyl carbamate and ephedrine sulfate. Its incompatibilities are discussed as are those of syrup of wild cherry. The authors believe that this syrup should replace syrup of wild cherry because it is more palatable, it has fewer incompatibilities and acrid medication is sometimes very well disguised by it. The authors concluded that it is not as good for bitter alkaloidal preparations as aromatic syrup of eriodictyon or as good for salty medicine as syrup of glycyrrhiza. Alkalinity, even that of a slight degree, is the most important incompatibility.—BERNARD FANTUS and H. A. DYNIEWICZ. *J. Am. Pharm. Assoc.*, 25 (1936), 701. (Z. M. C.)

Syrup. Glycerophosph. Co. B. P. C. Results of experiments by the authors show that the deposit which occurs in Syrup. Glycerophosph. Co. B. P. C. appears to be entirely due to the calcium glycerophosphate in the formula. A table is given, which supports the contention that when calcium glycerophosphate is left out of the above-mentioned syrup, no deposit occurs. Potassium citrate is said to be useful to ensure a permanent product, by preventing bacterial decomposition.—E. and P. QUANT. *Pharm. J.*, 137 (1936), 227. (W. B. B.)

PHARMACEUTICAL HISTORY

Apothecaries of 1809. Apothecaries in the district of Madgeburg Collegii medici in the year 1809.—S. WOLF. *Apoth. Ztg.*, 51 (1936), 1198–1199. (H. M. B.)

Bären Apothecaries of Stralsund—From the History of. PETER POOTH. *Apoth. Ztg.*, 51 (1936), 870–873. (H. M. B.)

Carl Wilhelm Scheele—150th Year after the Death of. Historical review. OTTO ZEKERT. *Pharm. Monatsh.*, 17 (1936), 105–107. (H. M. B.)

Drug Standardization. The text of an interesting address presented as a part of the program at the golden anniversary of the South Dakota Pharmaceutical Association. The history of drug standardization is traced briefly and points of importance to an interprofessional group are discussed.—E. R. SERLES. *J. Am. Pharm. Assoc.*, 25 (1936), 618. (Z. M. C.)

Louis Hébert, First Pharmacist in North America.—A very interesting historical and biographical paper about Louis Hébert, Canadian pioneer and pharmacist.—THEODORE J. BRADLEY. *J. Am. Pharm. Assoc.*, 25 (1936), 625. (Z. M. C.)

Pharmaceutical Latin in 1685. Some notes taken from the works and records of Richard Browne, a physician well known in England in the late seventeenth century.—ANON. *Chem. and Drug.*, 125 (1936), 38. (E. V. S.)

Pharmaceutical Science—Development of. The article is a reprint of a lecture on the history and development of pharmacy beginning with the earliest records.—A. GIRARDET. *Schweiz. Apoth.-Ztg.*, 74 (1936), 369, 397, 409. (M. F. W. D.)

Pharmacognostic Institute—40 Years of, in Zagreb (Jugoslavia). A review including a biographical sketch of Julius Domac, the founder of the institute.—A. Vrgoč. *Pharm. Monatsh.*, 17 (1936), 129–133. (H. M. B.)

Pharmacy—Central European, an Old. A short description of the oldest remaining pharmacy in the old town of Prague, Czechoslovakia.—J. G. F. Druce. *Pharm. J.*, 136 (1936), 683. (W. B. B.)

Pharmacy—Early Days of, in the West. The foreword of the paper written by L. D. Havenhill describes it very well: "Dr. Moore traces the gradual growth of merchandising in the drug stores of the middle west in an interesting manner and shows that what is familiarly known as the 'drug business' is marked as something different from merchandising in general, and that it is founded on the 'Spirit of Service,' a fundamental trait in the pharmacist."—John T. Moore. *J. Am. Pharm. Assoc.*, 25 (1936), 705. (Z. M. C.)

Pharmacy—Oldest, in Europe. The Franciscan Pharmacy in Dubrovnik, Jugoslavia, disputes with that of Padua, Italy, the claim of being the oldest in Europe. No documents exist to prove the precise date of the foundation of this pharmacy, but relics indicate that it was already in existence in 1318, when the present monastery, within the city walls, was erected. The present pharmacy, owned by the friary, is unique in Jugoslavia and perhaps in the world.—Anon. *Chem. and Drug.*, 124 (1936), 784. (E. V. S.)

Pharmacy through the Ages. This radio talk given on "The Apothecary Hour" of Purdue University touches on the following points; herbalists and their herbs, herb doctors in our day, faith in herbs, plant lore and superstition, ancient herbal doctors, Chinese and Indian herbals, Egyptian gods and goddesses of medicine, schools of herbalists, Assyrian and Sumerian herbals, Greek herbals and herbalists.—C. O. Lee. *J. Am. Pharm. Assoc.*, 25 (1936), 632. (Z. M. C.)

Prescription—Evolution of the. So far as England is concerned, the writing of prescriptions for the benefit of the apothecary may be reckoned to have begun about the time of the great dispensarian quarrel at the end of the seventeenth century. The two preceding centuries had placed at the service of both physicians and apothecaries a good array of compounded medicines in the official formularies that were published. Gradually during the eighteenth century a change in the contacts of the physician and apothecary appears to have taken place, and the advent of the written prescription became usual. To obtain an insight into extemporaneous prescribing, it is necessary to consult actual prescriptions. A number of these prescriptions are given by the author.—W. Kirkby. *Pharm. J.*, 136 (1936), 679. (W. B. B.)

Valerius Cordus—Botanist and Pharmacognocist. Historical—Rudolf Kress. *Apoth. Ztg.*, 51 (1936), 1227–1229. (H. M. B.)

Vienna Apothecaries 1564–1770—Order of. Historical.—Josef Noggler. *Pharm. Post.*, 69 (1936), 286–287. (H. M. B.)

Pharmaceutical Education

Limited Enrollment Selective Plan. The author describes a plan adopted by the School of Pharmacy of Howard College whereby it is hoped to eliminate the probability of a student spending four years in the College with the odds definitely against his success in the practice of the profession. Excellence of past scholarship and evidence that the prospective student has traits of character which will bring success will be important factors in selection. The number of new students accepted will be determined by requirements of the territory served.—A. Richard Bliss, Jr. *J. Am. Pharm. Assoc.*, 25 (1936), 715. (Z. M. C.)

Pharmacy—Future of. The question is discussed from both economic and educational standpoints. The economic phases of future pharmacy relate principally to educational necessities. If responsibilities of practicing medicine, dentistry or pharmacy do not differ much, then there should be equality of education qualitatively and quantitatively. The first step in the program would be improving the personnel by advancing the minimum course to five years. Reasons for this step are discussed at some length.—Frederick J. Wulling. *J. Am. Pharm. Assoc.*, 25 (1936), 719. (Z. M. C.)

Pharmacy School in China. A description of courses given in Pharmacy at Cheeloo University, Tsinan, Shantung, N. China.—W. P. Pailing. *Pharm. J.*, 137 (1936), 209. (W. B. B.)

PHARMACEUTICAL LEGISLATION

Danish Narcotic Law. A new and more drastic narcotic law was enacted in Denmark, March 6, 1936 (cf. *Arch. Pharm. og Chemi*, 43 (1936), No. 17). The author discusses the new requirements from the viewpoint of those preparations of the Danish Phar. and Dispensatory and of the Danish Apothecaries Control Laboratory which now come under control. Among compounds newly included are: all esters of ecgonine and its salts, dihydromorphine and its salts, all esters of hydrated morphine, morphinone, codeinone or hydroxycodeine, and salts of these esters, genomorphine and other morphine derivatives with pentavalent nitrogen, all derivatives of *l*-ecgonine which might be used industrially for its preparation, thebaine and its salts. To aid pharmacists in interpretation of this law, in which classes of substances are chemically designated, the author, in a following article reviews briefly the chemistry of the phenanthrene and ecgonine alkaloids.—E. V. CHRISTIANSEN. *Arch. Pharm. og Chemi*, 43 (1936), 434, 441. (C. S. L.)

MISCELLANEOUS

Absorbent Bandages—Cotton Fabric Suitable for. A mass of unorganized, tangled, dry-assembled cotton fibres substantially free from natural waxes and oils but otherwise substantially normal have their constituent fibres crushed together at the points of crossing to produce fibre-to-fibre bonds which unite the material into a self-sustaining strip.—WARNER EUSTIS and JOSEPH E. NOONAN, assignors to KENDALL CO. U. S. pat. 2,044,937, June 23, 1936. (A. P.-C.)

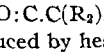
Acetylsalicylic Acid. This is one of a series of articles covering items official in the Belgian Pharmacopœia IV. The author discusses the synonyms, structural formula, history, preparation, physical and chemical properties, identity reactions, requirements, tests, uses and substitutes for acetylsalicylic acid.—V. EVRAAD. *Pharm. Tijdschrift*, 14 (1936), 3. (E. H. W.)

Acne Lotions. *Acne vulgaris* for the past 40 years has been among the first three ranking diseases of the skin in point of number. The chemical treatment requisites are: 1. keratolytic 2. antiseptic, 3. astringent, 4. emollient, 5. keratoplastic. The original prescription of H. D. Bulkley consisted of potassii sulfurati and zinci sulfatis, aa, dram 1, aquæ rosarum, ounces 4. This is better prepared by dissolving the salts separately and mixing the solutions. The valuable part of this lotion is the hydrogen sulfide produced, much of which escapes as a gas. This may be avoided by bottling the solutions separately and mixing a small quantity immediately before use. Increased concentration seems to give better clinical results up to solutions consisting of 50 parts of the salt and 48 of water. The result is a solid or semi-solid which varies with different batches of the sulfurata and experimentation is necessary with each new batch to ascertain the optimum quantity. Sulfur preparations which do not contain hydrogen sulfide are popular although they lack the physiological and chemical needs. A typical formula (Kummerfeld's) is: precipitated sulfur 4, camphor 1, granular acacia 2, lime water 50, rose water *q. s.* 100.—F. GUSTAFSON. *Am. Perfumer*, 33 (1936), No. 2, 75–76. (G. W. F.)

Advertising—Fallacious. A radio talk by a member of the staff of the school of Pharmacy of Purdue University. "The Apothecary Hour" comes weekly and this talk on advertising contains much information of interest to the public.—C. J. KLEMME. *J. Am. Pharm. Assoc.*, 25 (1936), 629. (Z. M. C.)

Antipruritic Lotions. These lotions are used to allay generalized or local itching, tingling, smarting or burning of the skin. Causes and bases of treatment are discussed. Twelve formulas are offered.—A. RICHARD BLISS, JR. *Drug. and Cosmetic Ind.*, 39 (1936), 312–313. (H. M. B.)

Australian Oils. An abstract from an address given by A. R. Penfold.—ANON. *Perfumery Essent. Oil Record*, 26 (1936), 364. (A. C. DED.)



Barbituric Acid—Production of. A barbituric acid having the formula $O{:}C.C(R_2).C{:}O$, in which R is a member of the group consisting of hydrogen and alkyl, is produced by heating, in the presence of an aliphatic alcohol having more than three carbon atoms and its alkali metal alcoholate, urea and a compound of the formula $O{:}C(OR_1)C(R_2)COR_1$, in which R has the same meaning as above and R_1 is a member of the group consisting of ethyl and the radical of the aliphatic alcohol used.—PAUL HALBIG and FELIX KAUFIER, assignors to DR. ALEXANDER WACKER GESELLSCHAFT FÜR ELEKTROCHEMISCHE INDUSTRIE, G. m. b. H. U. S. pat. 2,051,846, Aug. 25, 1936. (A. P.-C.)

Chamomiles—Cosmetic Uses for. Chamomile flowers yield an essential oil, blue in color, 0.35 to 0.5%, as well as bitter substances. Externally the flowers are employed in many bath preparations and in dermatological conditions. The official English chamomile, *Anthemis nobilis*, is cultivated in Belgium, but also in England. *Matricaria chamomilla*, the "wild" or "German" chamomile has precisely the same applications as the "true" or "Roman" chamomile. Formulas are given for the following cosmetics: liquid chamomile extract, thickened chamomile extract, solution of chamomile extract, concentrated chamomile extract, chamomile cold cream, non-greasy cream, skin paste, wrinkle paste, complexion water, hair wash, liquid powder, bath extract and tablets (plain and effervescent), and a chamomile pack.—ANON. *Chem. and Drug.*, 124 (1936), 703. (E. V. S.)

Color Problems in Cosmetics. A continuation of an article which appeared in the *Perfumery Essent. Oil Record*, 27 (1936), 120.—M. LOVAT HEWITT. *Perfumery Essent. Oil Record*, 27 (1936), 165. (A. C. DeD.)

Copper Fungicides. A product which is non-injurious when applied as a fungicide to growing vegetation consists of a water-insoluble complex, copper-zinc silicate gel composition, which is devoid of the characteristic of base-exchange and in which the ratio of zinc to copper is at least 1–20.—ALWYN C. SESSIONS, assignor to CALIFORNIA SPRAY-CHEMICAL CORP. U. S. pat. 2,051,910, Aug. 25, 1936. (A. P.-C.)

Cosmetic Emulsions. A series of articles discussing the technical problems of cosmetic emulsions.—M. LOVAT HEWITT. *Perfumery Essent. Oil Record*, 27 (1936), 238, 287. (A. C. DeD.)

Cosmetics Matched. A table showing the proper shades of powder, rouge, lipstick, eyebrow pencil and eyeshadow to be used by women, based on the color of the hair, complexion and the color of the eyes, is given.—ANON. *Drug and Cosmetic Ind.*, 39 (1936), 190–191. (H. M. B.)

Crystallized Hormone Esters—Production of. Crystallized esters of follicle hormones are obtained from raw hormone oils and solutions containing the follicle hormones by treating the material with a caustic alkali, acylating the alkali metal compounds of the hormones in aqueous solution and crystallizing out the acylated product.—ERWIN SCHWENK and FRIEDRICH HILDEBRANDT, assignors to SCHERING-KAHLBAUM A.-G. U. S. pat. 2,054,271, Sept. 15, 1936. (A. P.-C.)

Divinyl Ether—Stabilizing. About 1% or less of an aromatic amine such as *N*, *N'*-diphenyl phenylene diamine is added to divinyl ether as stabilizing agent.—RANDOLPH T. MAJOR and WILLIAM L. RUIGH, assignor to MERCK AND CO. U. S. pat. 2,044,800, June 23, 1936. (A. P.-C.)

Divinyl Ether—Stabilizing. Inhalation anesthetics containing divinyl ether are stabilized with a relatively nontoxic aryl amine such as phenyl-α-naphthylamine and contain an alcoholic antifreeze ingredient such as ethanol.—RANDOLPH T. MAJOR and WILLIAM L. RUIGH, assignors to MERCK AND CO. U. S. pat. 2,044,801, June 23, 1936. (A. P.-C.)

Dyestuffs Used in Pharmacy. I. Basic Dyes. Although the basic dyes include members of the most diverse molecular structure, they share a very large number of specific properties. In aqueous solution their particle size is large, and solution is facilitated by the use of boiling water, or the addition of alcohol, acetic acid or pyridine. With the exceptions of methylene blue and bismarck brown, they are readily soluble in alcohol. They have a strong affinity for animal substances and for crude tannin-containing vegetable fibres. The stearates and, in some cases, the free bases impart a strong color to oils and fatty bodies. They may all be mixed together without fear of incompatibility but precipitate those substances which have a large, negatively charged ion, such as soaps, tannins or tartar emetic. All materials and solutions containing basic dyes are rapidly decolorized in sunlight, and should be stored in the dark. These dyes are sensitive to the presence of salt, and are diluted to "type" by the manufacturers with dextrin. They tend also to precipitate on negatively charged surfaces such as are often provided by filters, measures and bottles. Quite unlike acid dyes, they often exhibit a color, in the solid state, altogether different from the true color given in solution, and as they act as precipitants for acid dyes, it is imperative to avoid the presence of an acid in the formula. Yellow-red, acridine dyes, rhodamine dyes, yellow-violet and dull shades are also discussed.—A. ALBERT. *Pharm. J.*, 136 (1936), 624. (W. B. B.)

Dyestuffs Used in Pharmacy. II. Acid Dyes. In contradiction to basic dyes, acid colors possess much the same tint in powdered form as that which they show in solution. In aqueous solution their particle size is usually distinctly smaller than that of basic dyes, and difficulty is seldom experienced in effecting solution. As a class they are far less readily soluble in alcohol than basic dyes, and are insoluble in oils and fats. They have a strong affinity for animal fibres, and for crude vegetable fibres such as hemp and jute; and, what is most remarkable, members of a certain sub-section, known as "direct dyes," have the unexpected property of dyeing cotton, linen and viscose rayon (artificial silk). All acid dyes may be mixed together without incompatibility arising, but they will immediately precipitate any basic dye that is introduced into the solution. Technical grades of these dyes are diluted with either sodium sulfate or common salt, and any incompatibility which these simple ions may cause should be avoided. The low toxicity of acid dyes has led to their use medicinally for injection into various parts of the body and even into the blood stream, to measure the rate of secretion of the various body fluids and the circulation of the blood. There are no proven antiseptics among the acid dyes, but individual dyes have been found to exercise protective, trypanocidal, coagulant, anti-coagulant, diagnostic or anti-carcenogenic powers of such magnitude as to render the whole group of the greatest pharmaceutical and medical interest. Sub-groups of the acid dyes, such as "direct" acid dyes, weakly acid phthaleins and pseudo-acid dyes, are briefly discussed.—A. ALBERT. *Pharm. J.*, 137 (1936), 101. (W. B. B.)

Emulsions—General Properties of. The theories of emulsions are thoroughly discussed, together with their preparation and analysis.—R. RUYSSEN. *Pharm. Tijdschrift*, 13 (1935), 185. (E. H. W.)

Face Powder Manufacture. Part II. A continuation of an article which appeared in the *Perfumery Essent. Oil Record*, 27 (1936), 106.—HAROLD SILMAN. *Perfumery Essent. Oil Record*, 27 (1936), 174. (A. C. DeD.)

Fenugreek. A brief description of its uses and composition.—G. IGOLEN. *Parfums de France*, 14 (1936), 151–154. (A. P.-C.)

Hair Preparations in Review. The original hair creams were the once popular lime creams and the mucilaginous variety based on a good grade of gum tragacanth. The chief trouble with liquid creams is that they have a great tendency to separate on standing. They consist chiefly of almond, olive or other suitable oils emulsified with lime water and sometimes with the additional slight stabilizing influence of glycerin. The trouble appears to be that the calcium oleate formed by the action of the lime water and the oils is not really an efficient emulsifying agent. Solidified lime creams are quite simple to make owing to the fact that they are not emulsions but merely mixtures of oils and waxes. Concrete brilliantines are of a very similar nature, being mixtures of oils and waxes, but these are frequently tinted green or some other pleasant color and perfumed to match. The manufacture of a tragacanth hair cream depends upon the choice of raw materials of high grade. The quality of tragacanth used plays an important part in the manipulation of these creams, the gum should be free from adulterants and as nearly colorless as possible. Formaldehyde is frequently used in the proportion up to 0.2%. Some of the most useful preservatives are the esters of *p*-hydroxybenzoic acid, the methyl ester of which may be used up to 0.2%. Mineral oils are sometimes added to tragacanth creams, but the quantity should be very high; such oil should be of a fairly high viscosity. The emulsified varieties of hair cream comprise two main varieties, (*a*) water-in-oil emulsions, and (*b*) oil-in-water emulsions. The water-in-oil type is compounded very much on the lines as an ordinary cold cream, except that it is more fluid in character and contains a higher proportion of mineral oil; beeswax is commonly used in this type of preparation as it tends to stabilize the emulsion and it also fulfils the function of a stiffening agent. The oil-in-water type unless absolutely correctly compounded is in great danger of separating, giving an upper oily layer and a lower aqueous layer. The use of lanolin absorption bases are not practicable in the type of emulsion, but lanolin itself in these hair creams can sometimes be used, but mainly glyceryl monostearate, diglycol stearate, triethanolamine soaps and proprietary products, such as lanette wax, are the products on which one has to rely. Typical formulas of each preparation are given.—H. WENTWORTH AVIS. *Perfumery Essent. Oil Record*, 27 (1936), 319. (A. C. DeD.)

Insecticide. A diaryl thioxine is used as the essential active ingredient.—LLOYD E.

SMITH, dedicated to the free use of the Public in the United States. U. S. pat. 2,049,725, Aug. 4, 1935. (A. P.-C.)

Insecticide and Fungicide. A readily atomizable liquid consists of a polar organic carrier liquid such as one comprising naphthenic acid or phenol and a liquid organic sulphur compound recoverable from petroleum and its refining products and including mercaptans or disulphides.—THERON P. REMY, assignor to TEXAS CO. U. S. pat. 2,045,925, June 30, 1936. (A. P.-C.)

Lipid Balance in Creams. Fats are referred to as *lipids* and those of the skin include lecithin, cholesterol and unsaturated fatty acids especially linoleic acid in the isomeric form known as vitamin F. Biochemically the fat pattern of the skin is lecithin cholesterol unsaturated oil in the ratio 1:1:3. The ideal cleansing cream is one that does not remove the desirable fats or, if it removes them it does so without altering their proportion in the skin and to accomplish this the cream should contain lecithin, cholesterol and unsaturated oil in the above ratio and should contain 240 vitamin F units per gram; a nourishing cream only 120 vitamin F units.—MARY IMOGENE SHEPHERD and DOROTHY C. MCMATH. *Drug and Cosmetic Ind.*, 39 (1936), 44–45, 48. (H. M. B.)

Magnesium Trisilicate—Notes on. For the purpose of investigation of magnesium trisilicate (so-called) the following tests were selected: Basicity, silica and magnesium, and methylene blue test. The author states that there is no method for preparing a really definite and uniform compound of this magnesium salt. Tables are given which show the results of analyses of twelve different substances prepared by various methods. Commercial supplies of magnesium trisilicate are also said to show great variation in fineness of powder and physical character.—N. GLASS. *Pharm. J.*, 136 (1936), 721. (W. B. B.)

Medication—Recent Progress in. A review.—JOHN C. KRANTZ, JR. *Drug and Cosmetic Ind.*, 39 (1936), 49–51. (H. M. B.)

Nail Polish. The problems in and factors controlling nail polish manufacture are discussed.—WM. VAN OSTROM and R. J. ANDERSON. *Drug and Cosmetic Ind.*, 39 (1936), 52, 64. (H. M. B.)

Nicotinium Salts. For the production of insecticidal products, nicotine or oily bases from tobacco, or salts of these, are caused to react with an inorganic ester of a "long-chain-alkyl" radical such as octadecyl bromide, dodecyl bromide or the like, forming products such as octadecylnicotinium bromide, dodecylnicotinium bromide and didodecylnicotinium bromide. The products may be mixed with various other substances to form pulverulent, aqueous or emulsified insecticidal compositions.—STEPHEN H. OAKSHOTT, assignor to IMPERIAL CHEMICAL INDUSTRIES, LTD. U. S. pat. 2,048,885, July 28, 1936. (A. P.-C.)

Night and Day Creams. Vanishing cream is the ideal type of day cream and may be described as an oil-in-water emulsion composed mainly of stearic acid dispersed in water, the emulsifying agent being a soap (such as potassium, sodium or triethanolamine stearate) formed *in situ* during the process of manufacture. Outstanding difference between a vanishing cream and a true soap is that in the former only a relatively low proportion of the stearic acid is saponified. The degree of saponification is one of the chief factors determining the comparative hardness of the cream, the others being (*a*) the type of alkali employed and (*b*) the proportion of stearic acid present in the formula. The selection of a first grade triple-pressed, odorless, white stearic acid is one of the most important factors in the purchase of raw materials for vanishing creams. Glycerin also should be of good quality—clear, colorless and quite free from any noticeable odor. Other possible ingredients include cocoa butter, mineral oil, cetyl alcohol, quince seed mucilage, diethylene glycol, butyl stearate and traces of cellulose derivatives such as tylose. Quince seed mucilage imparts a pleasant "silky" feeling to the skin, but the quantity used must on no account be overdone. Diethylene glycol has been suggested to replace the more usual glycerin. Butyl stearate which imparts a smooth soft feeling and also improves penetration has an advantage over glycerin since glycerin is of a hygroscopic nature and on days of excessive humidity it is likely to absorb atmospheric moisture, producing a wet, sticky sensation on the skin to which the cream has been applied; and on low humidity, taking the moisture from the skin. The most commonly used alkalis are potassium hydroxide, sodium hydroxide and triethanolamine which produce a cream of good consistency, attractive color and the required degree of pearliness or "sheen." Vanishing creams exhibited a distinct liability to form mold growths, and for this reason should incorporate some such preservative as 0.05% of formaldehyde or about 0.15% of methyl parahydroxybenzoate.

The first step in the process of a vanishing cream is to melt the stearic acid with other oils or fats in one pan and the alkali, glycerin and water in another. The contents of the two pans are introduced into the mixing machine when both are at a temperature of 80° C. and after saponification has been effected, stirring should be continued for a few minutes. The heat is then shut off and the cream turned over at regular intervals, to prevent the formation of too thick a crust on the surface. When quite cool, the cream is covered and left over night to be re-worked and perfumed the following morning. Some typical formulas are given. The night creams are chiefly of an emollient, water-in-oil character designed to "nourish" the skin and render it soft and supple. Night creams were formerly based on the old-fashioned cold cream type formula. Up-to-date improvements in methods of manufacture, together with the wider variety of raw materials now available, have led to a rather different type of night cream, based on the use of such ingredients as lanolin, absorption bases, triethanolamine, stearic acid, emulsifying waxes of a proprietary nature, and so forth. Absorption base creams are probably the best of all creams for night application, pure and simple; while preparations made up with diglycol stearate or triethanolamine and stearic acid are likely to give greater satisfaction in the "all-purpose" type, which must obviously be suitable for cleansing and massage as well as for their emollient properties. Several formulas are given.—S. P. JANNAWAY. *Perfumery Essent. Oil Record*, 27 (1936), 313. (A. C. DeD.)

Opium—Turkish Government Monopoly. A large proportion of the "druggist" opium now coming into this country is of quite a different appearance from that seen in the past. It is understood that in the Turkish Government factor the collected opium is milled and then pressed into molds, so that they are able to export twenty-five to thirty case lots which are uniform throughout the whole consignment.—ANON. *Pharm. J.*, 136 (1936), 623. (W. B. B.)

Petitgrain Oils from French Guinea. Oil of Petitgrain Bigarade is obtained by distilling the leaves and twigs of the bitter species of *Citrus Aurantium* Risso. The principal distillation begins in November. Oil of Petitgrain "Lemon" is obtained from the distillation of leaves and twigs either of *Citrus Limomum* Risso, originating from Italy, or of native lemon trees (Galle). Oil of Petitgrain "Tangerine" is obtained by distilling leaves and twigs of tangerine trees (*Citrus nobilis* Lour.). Oil of Petitgrain "Sweet Orange" is not much used as it is little known, but it can be useful in perfumery. Oil of Petitgrain "Cedrat" is obtained by distilling the leaves and twigs of the cedrat trees. The physical and chemical constants of these various oils of petitgrain are given.—B. L. TRABAUD. *Perfumery Essent. Oil Record*, 27 (1936), 356. (A. C. DeD.)

Pharmacy—Economic Problems of. A discourse on some of the economic problems with which pharmacy is confronted at the present time.—R. MACDONALD. *Pharm. J.*, 137 (1936), 85. (W. B. B.)

Phosphorus Paste. Formulas for phosphorus paste for the destruction of vermin are requested by the Pharmaceutical Institute in Stockholm and replies cite four such formulas. Comments on keeping qualities indicate but a short period of usefulness.—ANON. and A. ROOS. *Farm. Revy*, 35 (1936), 372. (C. S. L.)

Phytosterol—Products Containing. Raw unsaponified material containing phytosterol such as an acetone extract of soybean lecithin is subjected to the action of alcohol, and the phase containing the greater proportion of phytosterol is separated, subjected to saponification and the products containing phytostearol are extracted from the saponification product by a phytosterol solvent such as alcohol.—ALBERT SCHWIEGGER, assignor to HANSEATISCHE MÜHLENWERKE A.-G. U. S. pat. 2,046,345, July 7, 1935. (A. P.-C.)

Pine Oil Disinfectants. A review of the production and composition of the various types of pine oils and of the physico-chemical and biological factors which should be considered in the selection of pine oils as disinfectants.—Y. R. NAVES. *Bull. Inst. Pin* (1936), 83–87. (A. P.-C.)

Plants in Nature, Art and Myth. Historical review.—THEODOR TENNER. *Pharm. Monatsh.*, 17 (1936), 147–148. (H. M. B.)

Pyrethrin Concentrate—Process of Preparing Purified. Pyrethrum oleoresin is dissolved in a liquid water-miscible organic acid having the general empirical formula $C_nH_{2n+1}COOH$. A small quantity of water is added to the acid solution to precipitate inactive material which is removed mechanically, and the concentrated active material is separated from the acid solution by addition of a large proportion of water.—FREDERICK B. LAFORGE and HERBERT L. J. HALLER, dedicated to the free use of the Public in the United States. U. S. pat. 2,050,974, Aug. 11, 1936. (A. P.-C.)

Rhapontic Rhubarb—Detection of, in Rhubarb Preparations. The proposals before the British Pharmacopœia Commission indicate that the Addendum to the British Pharmacopœia 1932 may define rhubarb more exactly than previous B. P. monographs and may include an ultraviolet fluorescence test for the powdered drug. As a result of investigations by the author, it is evident that it is the practice of many manufacturers to use at least a proportion of rhapontic rhizome in the manufacture of rhubarb galenicals, and since most pharmacopœias definitely exclude the rhapontic variety, these preparations, where official, have not been prepared in accordance with pharmacopœial instructions. In view of the big difference in price between official and rhapontic rhubarb, this is distinctly to the prejudice of the purchaser. Furthermore, the reputation of rhubarb as a drug has been built up for centuries on the Chinese varieties. If pharmacologists could tell us that the action of the rhapontic is equal to that of the Chinese, there is no reason why it should not be admitted to the pharmacopœias, but, so far as public statements go, the rhapontic contains more tannins and is less active than the Chinese. Some authorities state that two or three times the dose of the rhapontic must be given as compared to the Chinese, in other words that it is from one-third to one-half as active. Attempts made to isolate the fluorescent principle are described. Rhaponticin was extracted, purified and examined for certain of its physical constants including its ultraviolet adsorption. The adsorption-fluorescence reaction as described is stated to be due to the rhaponticin present in rhapontic rhubarb.—S. K. CREWS. *Pharm. J.*, 136 (1936), 720. (W. B. B.)

Rotenone—Production of, and of Related Substances from Natural Products. The natural raw materials containing rotenone and related substances are distilled under a high vacuum.—IMPERIAL CHEMICAL INDUSTRIES, LTD. Belg. pat. 411,998, Dec. 31, 1935. (A. P.-C.)

Seed Grain Disinfectant. The active ingredient of a fungicidal preparation is hydroxyphenylhydrazine.—WILHELM BOURATH and EWALD URBSCHAT, assignors to WINTHROP CHEMICAL Co. U. S. pat. 2,054,062, Sept. 15, 1936. (A. P.-C.)

Sicilian Citrus Oils Industry—Control of. The full terms of the Italian Royal Decree Law of April 20, 1936, which were published in the *Gazetta Officiale* (September 2, 1936) are given. It will be seen that no lemon oils may be distilled directly from crushed fruit or juice, fresh or fermented. An attempt is made to raise the general standard of "machine" oils. "Sfumatrice" machines, which work only the separated peel, are not included in the regulations, but only the more economical rasping machines which, in various ways, treat the whole fruit, are largely used. Terpenes have been removed entirely from the market; those produced in the preparation of terpeneless oils must be consigned to an authorized body, which will not return them to the market as such, and none, nor any other common adulterants, may be imported.—ANON. *Perfumery Essent. Oil Record*, 27 (1936), 349. (A. C. DeD.)

Skin Tonics and Lotions. A comprehensive review including skin tonics, astringent and foundation lotions, cleansing milks, beauty milks, liquid powders and wet whites, anti-wrinkle, freckle and acne lotions is given.—S. P. JANNAWAY. *Perfumery Essent. Oil Record*, 27 (1936), 248. (A. C. DeD.)

Soapless Shampoos. A good shampoo must have high detergent power of removing all traces of grease and dirt, be easily and completely washed out of the hair leaving it soft, clean and lustrous, not be irritating, be neutral and give a good lather. Use of new detergents is discussed.—JOSEPH KALISH. *Drug and Cosmetic Ind.*, 39 (1936), 316–317. (H. M. B.)

Sodium Morrhuate and Quinine Solutions. Quinine alkaloid is dissolved in morrhuic acid to produce quinine morrhuate, and the latter is dissolved in normal sodium hydroxide.—FREDERICK R. GREENBAUM. U. S. pat. 2,046,116, June 30, 1936. (A. P.-C.)

Specialized Cosmetics. Face packs are heavy pastes, made from inert powders, water, glycerin and sometimes gum mucilage or a little mineral or sulfonated oil. One of the best types of mud pack is based on Fuller's earth added in small portions to a thin oil-in-water emulsion, until a paste of the requisite consistency is obtained. The emulsion should be almost entirely water, and should contain about 5% of glycerin or diethylene glycol. In compounding "all-purpose" or "four-purpose" creams it is useful to incorporate a very small proportion of an inert power material, such as zinc oxide, titanium dioxide or colloidal clay. This helps to keep the resulting product smooth in character instead of greasy. The chief difficulty in the preparation of powder creams is to produce a homogeneous mixture that can be applied easily and uniformly to

the face without "dragging." Acne lotions vary considerably in constitution. Triethanolamine lotions have been proved to be very useful in the treatment of skin blemishes, particularly those due to an accumulation of sebaceous matter and dirt in the pores, owing no doubt to their excellent cleansing properties. Foot powders are designed for the relief of perspiring and malodorous feet, and should therefore at the same time absorb perspiration and deodorize it. Zinc stearate and magnesium stearate are used to impart the necessary adhesiveness; while zinc peroxide, salicylic acid and alum are of interest and importance as deodorizing materials. Baby powders and bath dusting powders are compounded very similar to foot powders, except that special ingredients such as alum and salicylic acid are omitted, while a small proportion of zinc stearate or magnesium stearate is added. Alcohol, witch-hazel, glycerin and water form the basis of typical after-shave lotions. Small additions of menthol, tincture of benzoin, alum, boric acid and mild antiseptics are also employed. Typical formulas of each type preparation are given.—S. P. JANNAWAY. *Perfumery Essent. Oil Record*, 27 (1936), 351. (A. C. DeD.)

Stabilized Foam Suitable for Carrying Antiseptic Drugs. A method of producing a stable and tenacious self-developing foam consists of adding a neutral activating agent of the group comprising glycerin, mannitol and invert sugar, to a borate or boric acid, whereby the latter is able to produce a distinctly acid reaction, and admixing the activated compound with a base comprising gum karaya and a carbonate adapted to react with said activated compound to liberate a gas. The product is suitably used in treating body cavities with antiseptics such as methyl, propyl or benzyl esters of *p*-hydroxybenzoic acid, etc.—CLAUSS B. STRAUCH. U. S. pat. 2,043,633, June 9, 1936. (A. P.-C.)

Study Trip in Germany. The author discusses storage conditions for drugs and precautions for preservation as observed in German apothecaries. He lists Swedish preparations seen on the shelves and describes the German apothecary shop of to-day from the viewpoint of arrangement, management, staff, laboratory, advertising, etc. Special mention is made of the Hochschul Apotheke in Berlin, the Schützen Apotheke in Munich and the Bären Apotheke in Stralsund. Visits to the works of a number of the larger German pharmaceutical manufacturers are briefly described.—K. A. BERGGREN. *Farm. Revy*, 35 (1936), 369, 385, 397, 409. (C. S. L.)

Suntan, Sunburn and Safety. A lengthy discussion on what is required for a good anti-sunburn cream and the formulation of such productions is given.—M. LOVAT HEWITT. *Perfumery Essent. Oil Record*, 27 (1936), 322, 358. (A. C. DeD.)

Triethanolamine—Suggested Uses of. Triethanolamine is a syrupy, almost inodorous liquid, alkaline to litmus, but not irrating to the skin even when rubbed into it. It readily unites with fatty acids to form soaps which are much less irritating to the skin than the soaps of the fixed alkalis and are much easier to use as emulsifiers. These emulsions are permanent in air, and as the aqueous medium is in the continuous phase, the emulsion is readily diluted with water if too thick. Triethanolamine and similar organic amines have come largely into use in the preparation of hair creams and other toilet preparations, and have almost completely replaced the old-fashioned emulsions made with fixed oils and lime water. In spite of its obvious advantages, it has not yet replaced in pharmaceutical formulas the soaps of the fixed alkalis.—W. N. KNIGHT. *Pharm. J.*, 137 (1936), 129. (W. B. B.)

PHARMACOLOGY, TOXICOLOGY AND THERAPEUTICS

PHARMACOLOGY

Acetylcholine—Intra-Arterial. The authors record their observations on the intra-arterial injection of acetylcholine, their conclusions being as follows: Intra-arterial injection of the drug in diseases of the peripheral arteries enables the practitioner (1) to distinguish organic from functional diseases; (2) to localize the lesion when the disease is organic; and (3) to determine the state of the collateral circulation. The elements of diagnosis are essentially pain, redness and oscillography. The method is simple and without risk, so that it is of considerable value in diagnosis and treatment. Therapeutic doses of eserine do not prolong the vasodilator effect of acetylcholine, while atropine partially inhibits its action. Acetylcholine does not appear to have any effect when given subcutaneously or intramuscularly. Intravenous injections are also ineffectual in doses of 0.02 to 0.04 Gm. Large doses are dangerous, owing to their effect on the heart.—A. BATTRO and A. LANARI. *Rev. Arg. de Cardiol.* (March–April 1936), 31; through *Brit. Med. J.*, 3951 (1936), 656A. (W. H. H.)

Acetylsalicylic Acid—Influence of Magnesium Oxide on Antipyretic Action and Toxicity of, in Rabbits. Quantities of acetylsalicylic acid and magnesium oxide, which have no antipyretic action, when administered separately, have a marked antipyretic action when administered together. The toxicity of acetylsalicylic acid is not influenced by magnesium oxide. The toxicity of a mixture of 50% of each is half as great as the toxicity of the amount of acetylsalicylic acid which is required to produce the same therapeutic effect.—DAVID R. CLIMENKO. *Proc. Soc. Exptl. Biol. and Med.*, 34 (1936), 807. (A. E. M.)

Anterior Pituitary—Clinical Manifestation of Dysfunction of. Experiment gives belief in existence of 5 separate hormones of anterior pituitary: *Somatotrophic*, dealing with dwarfism and gigantism. *Gonadotropic*, more effective than principle in pregnancy urine, which is believed to arise from chorionic tissue rather than anterior hypophysis, urinary titer test important also as indicating mole and metastases. *Lactogenic* hormone, causing mammary activity, rather than that of corpus luteum. *Thyrotropic* hormone, exerting action only in presence of thyroid gland. *Interrenotropic* hormone, interrelation of adrenal and pituitary. In addition experiments on metabolic hormones, dealing with relation to carbohydrate, fat and protein metabolism. Work is only beginning as other hormones are foreshadowed.—HERBERT MCLEAN EVANS. *J. Am. Med. Assoc.*, 104 (1935), 464. (M. R. T.)

Bile Salts—Effect of Varying p_H of, on the Normal Gall Bladder. The p_H has no influence on the toxicity of bile salts if it remains within physiological limits.—HANS G. ARONSOHN and EDMUND ANDREWS. *Proc. Soc. Exptl. Biol. and Med.*, 34 (1936), 763. (A. E. M.)

Bismuth Absorption—Rate of, in Experimental Animals following Peroral Administration. The free acidity and p_H of the gastro-intestinal tract of the guinea pig shows a sufficient similarity to the human tract to suspect that comparable results may be obtained in the human. Bismuth in the form of potassium bismuth tartrate, sodium bismuth tartrate and bismuth oxychloride, when administered perorally, is deposited in the liver, kidney and spleen of experimental animals. The highest concentration of any of these substances in the liver occurs at the end of a twenty-four-hour period. The highest concentration of any of these substances in the spleen occurs at the end of a twenty-four-hour period. The highest concentration of these bismuth preparations in the kidney occurs between the twelve- and forty-eight-hour period. Bismuth administered to pregnant pigs was found in detectable amounts in the fetal livers and placentas but not in the fetal kidneys. It is felt that the results of this experiment are of sufficient importance to warrant the continued experimentation with the peroral administration of soluble bismuth compounds.—GEORGE E. CLARKE and HOMER F. MARSH. *J. Pharmacol. and Exper. Therap.*, 57 (1936), 399. (H. B. H.)

Caffeine—Site of Action of, as a Respiratory Stimulant. Cats and dogs, anesthetized either with phenobarbital sodium, chlorbutanol or by decerebration by the method of Pollock and Davis, were used as experimental animals. It was found that the sino-aortic nerves are not essential for the respiratory stimulation provoked by caffeine. The stimulatory effect of caffeine upon respiration appears to be mainly, if not entirely, due to a central action.—D. H. LEMESSURIER. *J. Pharmacol. and Exper. Therap.*, 57 (1936), 458. (H. B. H.)

Cardiac Principles—Potency of Eleven Crystalline, from Plants. Report is made of some comparative studies of some digitalis-like substances. The substances were convallatoxin, B-antiarin, ouabain, cymarin, scillaren A, digoxin, digitoxin, erythrophlein sulfate, thevetin, uzarin and gitoxin. Comparisons were made by the cat unit, the frog minimal systolic dose and the cat minimal emetic dose. Convallatoxin and B-antiarin were found to be more powerful than ouabain. The cat unit of thevetin should be revised to 0.92 ± 0.035 mg. per Kg. instead of 0.85 as previously reported. Emetic action and cardiac action are not in direct proportion. Uzarin has the least cardiac action but is a very efficient emetic. Duration of action has the following order, from high to low: digitoxin, digoxin, cymarin, convallatoxin, erythrophlein, B-antiarin, ouabain, thevetin, scillaren A and uzarin. Gitoxin is so little soluble that its cardiac action could not be determined with accuracy. Chemical structure in relation to pharmacological activity is discussed.—K. K. CHEN, A. LING CHEN and ROBERT C. ANDERSON. *J. Am. Pharm. Assoc.*, 25 (1936), 579. (Z. M. C.)

Chinese Gelsemium, Ta-ch'a yeh—Alkaloids of. The alkaloid koundine from *Gelsemium elegans*, when injected into mice, causes muscular weakness and inhibition of respiration, 250 mg.

per Kg. being fatal.—T. Q. CHOW. *Chin. J. Physiol.*, 10 (1936), 79; through *Physiol. Abstr.*, 21 (1936), 468. (E. V. S.)

Coriamyrtin—Pharmacological Action of. This paper presents evidence as to the toxicity and general pharmacological effect of coriamyrtin in keeping with the paper by Maloney (*J. Pharmacol. and Exper. Therap.*, 57 (1936), 361). It was found that sodium amytal can detoxify 45 minimal fatal doses of coriamyrtin in the rabbit. Similarly sodium amytal can detoxify 40 minimal lethal doses of picrotoxin. Coriamyrtin or picrotoxin can detoxify 1¾ but not 2 minimal lethal doses of sodium amytal in the rabbit.—E. E. SWANSON and K. K. CHEN. *J. Pharmacol. and Exper. Therap.*, 57 (1936), 410. (H. B. H.)

Coriamyrtin—Studies on the Pharmacological Action of. Coriamyrtin is a glucoside derived from *Coriaria myrtifolia* L. The minimal convulsive dose (M. C. D.) and the minimal lethal dose (M. L. D.) of coriamyrtin for frogs by injection into the dorsal lymph sac was 1 and 10 mg. per Kg. The M. C. D. and M. L. D., 0.3 and 1 mg. per Kg. subcutaneously for rats; 0.14 and 0.4 mg. per Kg. for rabbits intravenously. Rapid detoxification of coriamyrtin takes place in the body and cumulative effects are insignificant. Extended over a period of four hours one rabbit tolerated 9.6 or 2.4 times the M. C. D. and M. L. D., respectively; another 9.5 or 2.38 times the M. C. D. and M. L. D.; a third 4.6 or 1.1 times the M. C. D. and M. L. D., respectively. In anesthetized cats and rabbits the blood pressure under coriamyrtin is but slightly affected; the respiration is powerfully stimulated both as to rate and volume. During a strong convulsion the volume may sometimes be reduced. In unanesthetized rabbits rectal temperature under coriamyrtin drops 2° to 2.5°. From local application the heart of the turtle is unaffected; in the frog the rate of contractions is slowed and arrest in systole may occur in large concentrations. There is no strong chemical fixation of the drug to the heart muscle of cold-blooded animals. Asphyxia is induced earlier in the mouse intoxicated with coriamyrtin than in the normal mouse. Results on rats are inconclusive. Coriamyrtin has no distinct effect on the pupil or on the intraocular tension of the eyes of cats, rabbits and dogs when locally applied. In the rabbit the blood sugar is increased 13% above normal values. Coriamyrtin convulsions are predominantly clonic but there is an admixture of the tonic type at the peak of a severe seizure. In barbiturate intoxication coriamyrtin exhibits a high degree of antidotal effectiveness. It is more toxic, but less enduring and effective than picrotoxin and necessitates closer watchfulness.—A. H. MALONEY. *J. Pharmacol. and Exper. Therap.*, 57 (1936), 361. (H. B. H.)

Corpus Luteum Hormone in the Human Placenta. The authors, the former of whom three years ago reported the presence of corpus luteum hormone in the human placenta, have now found that (1) it is absent there during the first three months of pregnancy; (2) it increases during the fourth and fifth months; (3) it attains a maximum in the seventh and eighth months; and (4) at term it is present in inconsistent and much diminished amounts. Correlating these findings with the known protective action of corpus luteum hormone or nidation, the authors remark that the first is consistent with the occurrence of abortion after ovariotomy during the first three months, and the third explains the continuance of pregnancy in some cases of removal of the ovaries late in pregnancy—the placental corpus luteum hormone is able to supplement and even replace that formed in the ovary. Using injections of corpus luteum hormone prepared from the placenta (six to eight months) the authors have successful results in preserving pregnancy in those who before had habitually aborted, and also the treatment of hemorrhages in the young and metropathia and longstanding amenorrhea, 300,000 mouse units of follicular hormone, followed by ten injections of the corpus luteum hormone from the placenta of six to eight months, led to regular return of the menses.—C. EHRHARDT and H. FISCHER-WASELS. *Zentralbl. f. Gynäk.* (April 4, 1936), 787; through *Brit. Med. J.*, 3943 (1936), 268C. (W. H. H.)

Digitaloids—Further Pigeon Bio-Assays and Diuretic Tests of. Introduction of new products and a diuretic test prompted the present report. Products tests were verodigen, glucosides of *Digitalis lanata*, digoxin, urzinin, thevetin and digiglusin. Some details of experimental work are given and doses compared. Comparative fatal and clinical doses and effect of urine flow are discussed. Digitalis, digitan and digoxin produced anuric effects in pigeons in agreement with similar known effects of digitalis in normal human subjects and some other mammals but in contrast to a diuretic effect claimed for cats, which respond either abnormally or too variably. Urine flow as an end-point in estimating the potency of digitalis products has nothing to offer as a bio-assay method, being too variable and unnecessarily complex and difficult as compared with the

easier and simpler pigeon-emesis method.—A. J. LEHMAN. *J. Am. Pharm. Assoc.*, 25 (1936), 611. (Z. M. C.)

Drugs—Absorption of Certain, from the Human Skin. A brief historical statement introduces the report. Vehicles used were petrolatum, lard and hydrous wool fat. Drugs used included methyl salicylate, 25% with the bases; iodine as U. S. P. VII tincture, U. S. P. X compound solution and three ointments; potassium iodide in 25% ointments; and quinine hydrochloride in 25% ointments. Human subjects were used. The technic of application is described and findings tabulated and discussed. Time of appearance and duration of the drugs in the urine are reported. Twenty-four-hour urines were tested quantitatively. Of the drugs investigated, methyl salicylate is absorbed most rapidly and in greatest amount. Slight differences manifested by ointments with different bases indicate no real therapeutic differential effect on absorption. Iodine is absorbed more slowly and less effectively from ointments than from alcoholic solutions. Aqueous solutions of iodine, ointments of potassium iodide and ointments of quinine hydrochloride are not absorbed in detectable quantities. The properties of the drug itself rather than the ointment vehicle are the chief determining factors in absorption from the skin.—A. RICHARD BLISS, JR. *J. Am. Pharm. Assoc.*, 25 (1936), 694. (Z. M. C.)

Ergometrinine—Action of. Ergometrinine nitrate was found to have only 1/100 the oxytocic activity of ergometrine. It inhibited the isolated rabbit's intestine, and 4 mg. per Kg. caused in the cat a fall of blood pressure accompanied by bundle branch block, nodal tachycardia and nodal rhythm.—K. K. CHEN, E. E. SWANSON and C. C. HARGREAVES. *Proc. Soc. exp. Biol. N. Y.*, 34 (1936), 183; through *Physiol. Abstr.*, 21 (1936), 372. (E. V. S.)

Estrin—Biologic Assay of International Standard, and of Certain Commercial Preparations. A thorough biologic assay was made of International Standard Estrin. It was found that the rat unit, *i. e.*, the amount necessary to produce a positive reaction in 50% of a large group of spayed rats, was as follows: Single injection in oil, 1.3 gamma; multiple injection in oil, 1.5 gamma single injection, aqueous, 3.8 gamma; multiple injection, aqueous, 0.74 gamma; multiple injection, emulsion, 0.76 gamma. An assay of certain commercial estrogenic preparations indicated, for oil solutions, that the biologic activity, per International Unit stated by the label to be present, corresponded with the activity of the International Standard. For aqueous preparations, the biologic activity, per International Unit stated by the label to be present was only one-sixth to one-seventh as great as the biologic activity per International Unit of the International Standard material.—FRED E. D'AMOUR and R. G. GUSTAVSON. *J. Pharmacol. and Exper. Therap.*, 57 (1936), 472. (H. B. H.)

Ethylene Glycol—Pharmacological Studies on. The minimum lethal dose of ethylene glycol varies from 3 to 9 cc. per Kg. body weight according to the experimental animal used. Its properties are such that it can be used as a solvent and administered in reasonable doses without fear of immediate or delayed toxic action.—A. MANCINI. *Boll. Soc. Ital. Biol. Sper.*, 10 (1935), 964; through *Chimie & Industrie*, 36 (1936), 117. (A. P.-C.)

Fungicidal Action of Chemicals. A new method is described for bringing the chemicals to be tested into contact with various fungi. The inside of culture tubes is lined with a collodion membrane incorporating the chemical. When this is dry, the culture medium is run in and allowed to set, and then infected with the fungus. It was shown by various methods that diffusion of the chemical incorporated in the membrane occurred slowly through the medium, and effective fungicidal action was demonstrated when the calculated concentration of the fungicide could not exceed 1:10,000, whereas by the usual methods for contamination of the medium a concentration of 1–150 or 1:50 was necessary for the same result. The implications of this method are discussed, it being held that the skin resembles the culture medium in that it allows diffusion through it of substances such as salicylic acid, which may subsequently be demonstrated in the urine. It is suggested that the similarity of behaviour of skin and of the culture medium toward the chemical in the collodion membrane should render this method a reliable one for testing the efficacy, in the laboratory, of various fungicides.—H. SHARLIT. *Arch. Dermatol. Syph.*, 31 (1935), 217; through *Quart. J. Pharm. Pharmacol.*, 9 (1936), 321. (S. W. G.)

Insulin—Comparative Action of, and the Hypoglycematic Principle of the Jejunum on the Depancreatized Dog. A depancreatized dog was injected with insulin and with the white, powdered principle obtained from the jejunal mucous membrane of the cow (*Compt. rend.*, 202 (1936), 1949). Two series of experiments were carried out with each principle. With equivalent

doses, the effects on the same animal were essentially equivalent. They differ, however, on certain points. The depression with insulin appears more rapidly but the total deleveling is less strong. In addition, if the slow effects on the glycemia and glycosuria are examined, the action of the jejunal principle appears more prolonged. It should be noted that the jejunal extract used contains more impurities than insulin which may play a part in the general direction of the curves.—FRANCIS RATHERY, ANDRE CHOAY and PIERRE DE TRAVERSE. *Compt. rend.*, 203 (1936), 206.

(G. W. H.)

Liver Extracts—Hypodermic Injection of. The author employed several proprietary liver extracts in various conditions hypodermically with the following results. In the first and second stages of nephrosis and nephritis there were marked diuretic effects, increase in the elimination of chlorides, diminution of edema and body weight, fall of the blood pressure and the amount of azotemia, and the improvement in the excretion of water. In chronic nephritis and renal sclerosis there was no appreciable action on the diuresis, azotemia and blood pressure. In chronic hepatitis accompanied by retention of water, if not in a too advanced stage, there might be marked increase in diuresis and sometimes of the excretion of chlorides. There was no obvious effect on the course of the edema and ascites, especially in advanced cases. The patients frequently showed an improvement in their general state, subjective condition, digestion, somnolence and hemorrhages. There was sometimes an improvement in the jaundice, but the treatment had no effect upon the venous and arterial blood pressure or the course of glycemia. In a case of hypertension with renal lesions but associated with ovarian insufficiency and obesity, there was a moderate fall of arterial pressure. In cardiac disease the effects were slight and inconstant. The greatest diuretic effects were obtained sometimes with relatively small doses, and sometimes only with large doses. Toxic effects were rare even when large doses were used for several days.—D. BOLOGNESE. *Il Policlinico, Sez. Med.*, May 1 (1936), 236; through *Brit. Med. J.*, 3942 (1936), 210B.

(W. H. H.)

Lobeline Camphosulphonate—Pharmacological Studies of. Lobeline camphosulphonate possesses marked stimulant action on the respiration. The stimulant dose is about 0.33 to 1.33 mg., while the toxic dose is about 3.3 mg. per Kg. body weight. This salt exerts its action through the (carotid sinus) reflex.—A. MANCINI. *Boll. Soc. Ital. Biol. Sper.*, 10 (1935), 965; through *Chimie & Industrie*, 36 (1936), 117. (A. P.-C.)

Oestrone—Comparative Assay of, in the Rat and the Mouse. The activity of œstrone dissolved either in oil or dilute alcohol was determined upon rats and mice. As an illustration, when the units of œstrone were based on 4 injections in oil administered over 36 hours, the rat unit was found to be 36 times greater than the mouse unit. On the other hand, when the injections were given at similar intervals in an aqueous alcohol medium, the rat unit was equal to only 10 mouse units. When œstrone was administered either in a single dose or in 12 injections of oil at hourly intervals, its potency was considerably reduced in both species. In the case of the benzoate, rat assays showed that the potency was of a similar order when the hormone was given in single injections or in 4 injections over 36 hours. In both the rat and the mouse the benzoate is more potent than œstrone when both are administered in a single dose in oil. When œstrone is given in 4 doses, however, its potency is considerably greater than that of benzoate given in one injection.—A. A. HAIN and J. M. ROBSON. *J. Pharmacol. and Exper. Therap.*, 57 (1936), 337.

(H. B. H.)

Pharmacology for Pharmacists. The 13th, 14th and 15th articles of a series dealing with (1) *stomachics* including pepper, ginger, calamus, absinthium orange, condurango, gentian, taraxacum, quassia, columbo, cinchona and nux vomica; (2) *cholagogues* such as oxgall and peppermint; (3) *purgatives* (cathartics, laxatives) including rectal agents as glycerin, agents acting on the large intestine including sulfur, phenolphthalein, dioxyanthraquinone, frangula, rhubarb, senna and aloes and those acting on the small intestine such as ricinus, croton oil, jalap, colocynth, gamboge, podophyllin and calomel; (4) *carminatives;* (5) difficultly resorbed inorganic and organic substances such as sodium sulfate, magnesium sulfate, tartaric acid, cream of tartar, tamarind manna, agar agar and paraffin oil.—H. FÜHNER. *Apoth. Ztg.*, 51 (1936), 999, 1110, 1179. (H. M. B.)

Phenobarbital Sodium and Pentobarbital Sodium—Effects of Daily Administration and Abrupt Withdrawal of, in the Albino Rat. The twenty-four-hour abstinence irritability of rats as measured by their struggle response to an uncomfortable situation was determined on the first day and then weekly during a seven-week period of daily injections of phenobarbital sodium at 5

and 15% M. F. D. or pentobarbital sodium at 5, 15 and 30% M. F. D. and then on the second, fourth, sixth and ninth day after permanent withdrawal. No increase in abstinence irritability to either drug was found. On the contrary, the irritability decreased progressively, especially with the larger doses and this extended to a considerable degree into the withdrawal period. Rats, therefore, do not become addicted to phenobarbital sodium or to pentobarbital sodium in the sense of increased irritability following upon withdrawal of the drug, but tend rather to show evidences of some cumulation of depressive effect. The courses of injections induced only a very minor degree of tolerance to the maximal effects of pentobarbital sodium as indicated by the struggle response of the rats one hour after injection but the duration of the somnifacient action appeared to be markedly shortened at the end of the injection period.—EUGENE J. STANTON. *J. Pharmacol. and Exper. Therap.*, 57 (1936), 245. (H. B. H.)

Piperazine Phenylquinolinecarboxylate—Pharmacological Studies on.—Piperazine phenyl quinolinecarboxylate is very soluble in water, can be sterilized by heating at 120° C. and has a low coefficient of toxicity (minimum lethal dose 1.5 to 1.6 Gm. for a 1.6-Kg. rabbit, injected intravenously). Administered to rats and rabbits, it produces no functional or anatomical changes.—A. MANCINI. *Boll. Soc. Ital. Biol. Sper.*, 10 (1935), 966; through *Chimie & Industrie*, 36 (1936), 117. (A. P.-C.)

Potassium—Rôle of, in Epinephrine Action. These studies were made upon dogs anesthetized usually with nembutal. It was found that potassium effects all the changes in the systems studied that are produced by epinephrine. This potassium effect is obtained after decerebration, bilateral adrenalectomy, atropine and ergotoxine. The authors point out that potassium is responsible for the typical changes ascribed to epinephrine. Upon vagal stimulation potassium is liberated from the heart. One of the functions of the adrenal glands is to maintain a constant distribution of potassium.—W. J. R. CAMP and J. A. HIGGINS. *J. Pharmacol. and Exper. Therap.*, 57 (1936), 376. (H. B. H.)

Spinal Anesthetics—Threshold Anesthetic and Lethal Concentrations of Certain, in the Rabbit. A method of inducing spinal anesthesia in the rabbit has been described. The intraspinal minimal sensory anesthetic concentrations of the six local anesthetics have been found to be: pantocaine, 0.05%; nupercaine, 0.07%; panthesine, 0.5%; tutocaine, 0.5%; metycaine, 0.86%; and procaine hydrochloride, 0.9%. The intraspinal minimal lethal concentrations of the six local anesthetics have been found to be: nupercaine, 0.8%; pantocaine, 1.5%; metycaine, 3.5%; panthesine, 4.0%; tutocaine, 6.0%; and procaine hydrochloride, 6.0%. From these percentage figures the following therapeutic ratios have been determined: metycaine, 4.0; procaine hydrochloride, 6.6; panthesine, 8.0; nupercaine, 11.4; tutocaine, 12.0; and pantocaine, 30.0. The order of incidence of irritation, beginning with the most irritant anesthetic, has been found to be: nupercaine, pantocaine, tutocaine, metycaine, panthesine and procaine hydrochloride. Acute or immediate death during spinal anesthesia in the rabbit appeared to be due, primarily, to respiratory depression. Delayed death was associated with permanent motor paralysis, and, for pantocaine, also, with permanent sensory anesthesia.—RAYMOND N. BIETER, R. W. CUNNINGHAM, OA LENZ and J. J. MCNEARNEY. *J. Pharmacol. and Exper. Therap.*, 57 (1936), 221. (H. B. H.)

Strychnine. VI. Variation in Physiological Action of C.P. Strychnine. Report is made of the biological testing of 27 lots of strychnine obtained from five wholesale distributors. Details of procedure are given and results are tabulated. It was found that these samples of C.P. quality showed marked differences in toxicity. Differences were so large that their use in economic poisons give serious variation in results. The differences are not associated with determinable changes in chemical or physical properties. Recrystallization did not change lethal efficiency.—JUSTUS C. WARD, JAMES C. MUNCH and F. E. GARLOUGH. *J. Am. Pharm. Assoc.*, 25 (1936), 590. (Z. M. C.)

Sulfur—Treatment of Gonorrhœa Complications with. The author has treated 132 cases of gonorrhœa with intramuscular injections of a suspension of sulfur in oil, the composition being: precipitated sulfur, 1; guaiacol, 5; camphor, 10; eucalyptol, 20; and oil of sesame, to make 100 parts. The injections were given at intervals of four to six days and the dosage was increased gradually from 0.5 cc. to a maximum of 4 cc. In preliminary tests some patients were given intramuscular injections of a 1% suspension of precipitated sulfur in oil of sesame, while others were given intramuscular injections of the mixture already referred to minus the sulfur. This latter preparation provoked no local or general reaction, whereas the 1% suspension of sulfur in oil of

sesame appeared to have the same action as the five-ingredient mixture. After four hours, or even longer, pain often developed at the site of injection. A rise of temperature occurred usually from six to eight hours after an injection, and the fever generally passed off in twelve to twenty-four hours, although in some cases it lasted several days. The response to the smaller doses was, as a rule, limited to fever, whereas the larger doses were apt also to make the patient lose weight and feel exhausted. In fifty-seven of the sixty-eight cases of epididymitis the course of the disease was shortened, but only ten cases of acute protatitis were benefited. In sixteen of the twenty-nine cases in which the joints were involved the results were satisfactory. The author concludes that such sulfur treatment is most effective when it provokes considerable hyperpyrexia; both the local and general symptoms respond more promptly to this treatment than to vaccines or to local antiphlogistic measures.—G. GULDBERG. *Nord. Med. Tidsskrift* (April 4, 1936), 553; through *Brit. Med. J.*, 3942 (1936), 210B. (W. H. H.)

Sympathicolytic Power—New Method of Demonstrating. It has been shown that adrenaline and the corresponding ethylamine derivative have the same mechanism of reaction, but that proportionately to the effects on the vasoconstrictors, the latter acts more strongly on the adrenalino-sensitive vasodilators than the former. Experiments on dogs have shown that sympathicolytic substances such as bulbocapnine, which cannot transform into hypotension the hypertensive action of adrenaline, are able to reverse the hypertensive effects of the corresponding ethylamine derivative.—RAYMOND-HAMET. *Compt. rend.*, 203 (1936), 208. (G. W. H.)

TOXICOLOGY

Alkaloids—Action of Bromoacetates on. Strychnine salts, warmed in aqueous solution with sodium bromoacetate in the presence of excess phosphate buffer, in a few minutes lose their toxic properties. The final product is not precipitated by picric acid and 200 times the fatal dose can be injected into guinea pigs before the production of convulsions. This is due to the blocking of the basic nitrogen. Colchicine, although losing its characteristic reactions, does not lose its toxicity.—LEO ESPIL and GABRIEL MANDILLON. *Compt. rend.*, 202 (1936), 2177. (G. W. H.)

Barbital Derivatives—Toxicity of. Seven of the most used barbital compounds have been studied: barbital, phenobarbital, dial, amytal, neonal, phanodorn and pentobarbital. The rabbit was the test animal and both oral administration and intraperitoneal injection were used. Approximate minimum lethal doses are summarized together with some previously reported. Some of the doses differ markedly from those in the literature. Time required to produce anesthesia was studied and the results are discussed. The duration of narcosis was studied also. A number of interesting observations are made. The general ratio of efficiency to toxicity is about the same for the seven compounds, except that amytal and phenobarbital seem to be exceptionally safe by oral administration.—IVOR JONES and E. V. LYNN. *J. Am. Pharm. Assoc.*, 25 (1936), 597. (Z. M. C.)

Barbiturate-Coriamyrtin Antagonism. Coriamyrtin has a minimal convulsive potency of 0.14 mg./Kg. and a minimal lethal potency of 0.4 mg./Kg., both intravenously in the rabbit. In barbiturate poisoning, doses of 1.5–2 mg. per Kg. were used. In sodium amytal poisoning with 1.5 times the lethal dose 100% recoveries were obtained, at twice the M. L. D. 33% recovered. Nembutal poisoning could be counteracted to the limit of 1.7 times the lethal dose with 80% recoveries. Pernoston gave at 2.1 lethal doses 60% recoveries. The action of coriamyrtin is as quick as that of picrotoxin but of shorter duration.—A. H. MALONEY. *Proc. Soc. Exptl. Biol. and Med.*, 34 (1936), 591. (A. E. M.)

Bile—Toxic Effect of Various Concentrations of, on Dog Gall Bladder. Increased concentration of bile causes cholecystitis and occasionally peritonitis in the dog.—EDMUND ANDREWS and HANS G. ARONSOHN. *Proc. Soc. Exptl. Biol and Med.*, 34 (1936), 736. (A. E. M.)

Bile Salts—Relative Toxicity of Different, on the Normal Gall Bladder. Desoxycholic acid has the strongest toxic action.—EDMUND ANDREWS and HANS G. ARONSOHN. *Proc. Soc. Exptl. Biol. and Med.*, 34 (1936), 765. (A. E. M.)

Dermatitis from Stocking Finishes. Dermatitis frequently reported, due to clothing, chiefly caused by dyes used. Recently found that dermatitis is caused by finishes used in rayon hose. Recommend that new stockings be washed before being worn, and that manufacturers should test new finishes for toxicologic effects before they are adopted for use.—ANON. *J. Am. Med. Assoc.*, 104 (1935), 52. (M. R. T.)

d-Glucono-*p*-phenetidin—**Study of the Toxicity and Antipyretic Action of.** Synthetic modifications of acetophenetidin have been studied in an attempt to increase the antipyretic and analgesic action or to reduce toxicity. Work on glucono-phenetidin was found to have lower antipyretic action and lower toxicity than acetophenetidin. Details of experimental work are reported. Findings conform with previous investigations on antipyretics, that is, that toxicity and therapeutic activity decrease with an increase in the size of the substituted radical. The most effective compounds have the ethyl or acetyl grouping.—HERBERT A. BRAUN and GEORGE F. CARTLAND. *J. Am. Pharm. Assoc.*, 25 (1936), 615. (Z. M. C.)

Hydrocyanic Acid Poisoning—Methods for the Treatment of. The investigation related to treatment of intoxication by inhalation, which is much more difficult than that of digestive poisoning. The various methods which gave encouraging results can be grouped as follows: (1) Use of sulfur compounds (thiosulfate, sodium tetrathionate, colloidal sulfur). (2) Use of colloidal selenium and tellurium preparations. (3) Use of heavy metal preparations; nickel and cobalt chlorides are very active; colloidal iron, ferric chloride, colloidal hydrated iron oxide, manganese chloride and sodium vanadate are less active; but the possibility of the use of heavy metals is limited by their own toxicity. (4) Use of preparations which produce methemoglobin (methylene blue, and especially sodium nitrite); a mixture of this salt with sodium thiosulfate and the inhalation of amyl nitrite vapors are particularly active; methemoglobin crystals do not give reliable results. (5) Use of aldehyde and ketone preparations, and more particularly glucose and dioxyacetone (oxanthine). (6) Use of alkali carbonates and bicarbonates; in certain cases these have proved very effective. This treatment and the use of glucose are particularly recommendable as they are absolutely harmless.—E. FLURY. *Arbeitsschutz* (1935), 315; through *Chimie & Industrie*, 36 (1936), 309. (A. P.-C.)

Mercury Poisoning—Comparison of the Antidote Value of Various Substances in. Immediately after ingestion of the poison, protein solutions, sodium thiosulfate and sodium methanalsulfoxylate are equally effective. In progressed poisoning only the latter compound is of value.—ROGELIO E. CARRATALÁ and CARLOS GUERRA. *Semana méd.* (Buenos Aires), 43, I (1936), 1668. (A. E. M.)

Morphine Toxicity and Narcosis—Influence of Certain Salts on, in Mice and Rats. Synergism and antagonism have many possibilities. Reference is made to some of the work previously done. Bancroft's work was based on the theory that anesthesia or narcosis results when the colloids of cells of nervous tissues are abnormally reversibly dispersed or coagulated and he believes morphine produces its effects by reversibly coagulating cell colloids. The cells in the morphine addict are over-coagulated and morphinism should yield to drugs that disperse cell colloids. Continuing this theory, it was found that sodium tartrate would prolong the effect of morphine and sodium thiocyanate had the opposite effect. Experimental work along this line is reported. Results are tabulated and discussed. Though the study was not exhaustive and was limited to rats and mice, under the conditions used, there was no evidence of any marked increase or decrease of the action of morphine itself either in the case of added peptizer (sodium sulfocyanate) or added coagulators (mono-sodium phosphate and sodium chloride).—J. M. ORT and W. G. CHRISTIANSEN. *J. Am. Pharm. Assoc.*, 25 (1936), 593. (Z. M. C.)

Phenolphthalein—Accidental Overdose of, in a Child without Ill Effects. Child took 96 grains as chocolate laxative tablets, which produced vomiting and diarrhœa, but no blood was found in urine or feces. Other literature confirms findings that overdoses do not produce harmful disturbances in man unless person has allergic sensitiveness to phenolphthalein.—WILBERT SACHS. *J. Am. Med. Assoc.*, 104 (1935), 44. (M. R. T.)

Thallium. XIII. Symptoms and Systematic Action on Cattle. The report covers two points: the rate of acceptance of grain poisoned with thallium as sulfate and effects produced from graduated doses. Most of the studies of toxicology of thallium involve accidental poisoning, questionable doses, human subjects and the rather readily soluble acetate. Experimental work is reported in detail and includes post-mortem examinations. It was concluded that thallium-sulfate-poisoned steam-rolled oats may be taken in lethal quantities by cattle when this bait is fed after a 24-hour period of fasting. The minimum lethal dose for cattle is approximately 25 mg. of thallium per Kg. of body weight. There is no consistent effect on temperature or pulse, but respiration is depressed. A 25 mg. per Kg. lethal dose would imply that an 800-pound cow would have to eat $2^1/_2$ pounds of a bait containing 8 mg. of thallium per Gm. to kill. Normal infestation

of ground squirrels or prairie dogs requires less than one pound of bait to the acre. This means the cow would have to pick up all the exposed grain from more than 2 acres to get a killing dose.—JUSTUS C. WARD. *J. Am. Pharm. Assoc.*, 25 (1936), 687. (Z. M. C.)

THERAPEUTICS

Adrenaline in Asthma. The authors have obtained excellent results from the use of inhalations of adrenaline hydrochloride in asthmatic children. An atomizer is used which is specially constructed to deliver a spray of a 1% solution without risk of the fluid entering the mouth of the patient and being swallowed accidentally. Delivered by such a nebulizer, the drug gives the same measure of relief as when injected hypodermically but without the unpleasant reactions which may occur in the latter case. The authors state that some of their child patients have been using this apparatus for more than a year without ill effects; some have been treated four to six times daily for six weeks at a time. Only with prolonged spraying for periods of from three to four minutes have symptoms such as nervousness, tremor or tachycardia appeared. If the inhalations are given as frequently as every hour or less there may be an uncomfortable dryness of the mouth and throat; this can be minimized by rinsing the mouth with water, immediately after inhalation. The authors advise that the inhalation procedure should be continued when the symptoms become barely detectable; frequently at such times an inhalation of short duration will prevent a more severe attack. If attacks occur at specific intervals the inhalation of a small amount of adrenaline hydrochloride one hour before an attack is likely to occur will often abort it entirely.—J. B. GRAESER and A. H. ROWE. *Amer. J. Dis. Children* (July 1936), 92; through *Brit. Med. J.*, 3951 (1936), 656D. (W. H. H.)

Burns—Modern Treatment of. The treatment of burns and scalds resolves itself into general measures to prevent shock, such as warm baths and the hypodermic injection of morphine; and local treatment to allay the pain and lessen the possibilities of shock and subsequent collapse. Carron oil, the old universal remedy, relieves pain by adhering to the surface of the burn and preventing access of air, but fails to combat the danger of shock, and may even provide a good medium for bacterial growth. The introduction of the tannic acid treatment is now generally adopted owing to its superiority. Tannic acid precipitates the proteins in the injured tissue forming a firm coagulum over the surface. Pain is relieved; there is little danger of shock; it forms a slough which is greatly resistant to septic action. The dressing, in the form of a spray, consisting of a 2.5 or 5% solution in water, or as a compress or jelly, should be repeated until the burnt surface has ceased to be moist and red, and has become hard and brown or black in color. In the compress or jelly, add an antiseptic such as acriflavine or 0.5% of phenol as preservative. A suitable jelly formula is: tragacanth, 5; tannic acid, 2–5; glycerin, 3; alcohol, 1; mercury perchloride, 1 to 1500 (or phenol 0.5%); distilled water, 88. The advantages of a jelly are that it is easily applied to such parts as the eyes, ears and nose and that it need not be made extemporaneously. Healing is usually complete in 10 to 14 days and in the absence of further interference the formed black coagulum readily peels off, leaving a clean, normal surface. As with picric acid, all blisters should be incised and dead epithelium removed before its application. If necessary to soften the coagulum due to infection, apply hypertonic saline dressings, usually 2 or 3% sodium chloride solution. Zinc and boric ointments are also used to promote healing, however, the area may become gangrenous if old and rancid zinc preparations are used. The use of a benzocaine type compound has been suggested for desensitization and the following formula is offered: anhydrous lanolin, 30; olive oil, 33; spermaceti, 10; propyl-*p*-aminobenzoate, 2; water 25.—ANON. *Chem. and Drug.*, 124 (1936), 731. (E. V. S.)

Cevitamic Acid in the Treatment of Infantile Scurvy. Report on efficacy of cevitamic acid in infantile scurvy. In addition the cevitamic acid content of blood serum was made both before and after treatment. Treatments are useful in severe cases in which the infant is unable to retain the usual fruit juices.—ARTHUR F. ABT and I. M. EPSTEIN. *J. Am. Med. Assoc.*, 104 (1935), 634. (M. R. T.)

Chemical Constitution and Physiological Action. A review dealing with the chemical structure of theo derivatives of cyclopentane-phenanthrene and serving as the basis a ring structure of cyclo-pentano-perhydro-phenanthranene. These derivatives include (*a*) the *Sterines:* cholesterin, ergosterin, stigmasterin; all of which give as "Abbau" substance 3-hydroxy-nor-allocholanic acid, (*b*) scymonol gives cholanic acid, (*c*) bufotalin, (*d*) digitoxigenin, strophanthidin,

uzarigenin, (*e*) the sex hormones, folliculin, corpeus luteum hormone and androsterone and (*f*) vitamin D.—HERMAN BANDEL. *Apoth. Ztg.*, 51 (1936), 1270–1273. (H. M. B.)

Cod Liver Oil—Tissue Response to Subcutaneous Injection of. Subcutaneous injection of fish liver oils into rabbits produces a marked stimulation of phagocytes, fibroblasts and young capillaries. Liquid paraffin and olive oil are relatively inert. The vitamin A content of the oils is not responsible for this reaction. The cellular stimulation produced by cod liver oil appears to be of a nature to facilitate the process of healing of wounds.—J. DAVSON. *Lancet*, 231 (1936), 737. (W. H. H.)

Cyclopropane Anesthesia. The author discusses the chemistry, physics and pharmacology of cyclopropane and reviews the accounts which have been published of this anesthetic from Canadian and other sources. With the aid of a supply of the gas sent from America he has carried out animal investigations, self-administration, and a small number of surgical anesthesias. His findings in the main support those of other observers—namely, that cyclopropane is a powerful anesthetic which must be used with due care, but that it is safe owing to the high degree of oxygenation permissible; it is without damaging effects upon the circulatory or respiratory systems. Clinically he has found the percentage of cyclopropane required to vary from 7 to 25, averaging 15% cyclopropane to 85% oxygen. He considers that the gas is a valuable anesthetic, and hopes that further supplies will soon be available from German sources.—H. KILLIAN. *Zentralbl. f. Chir.* (July 11, 1936), 1634; through *Brit. Med. J.*, 3949 (1936), 572C. (W. H. H.)

Dialkyl Barbituric Acids—Relation of Structure of, to Length of Their Action. Over fifty dialkyl barbituric acids have been studied. A number of new derivatives have been prepared for the study. The length of action, effectiveness, depth of anesthesia and toxicity were determined by the intraperitoneal injection of solutions of the sodium salts in white rats. A table giving minimum anesthetic and minimum lethal doses is given. The authors found that the actual amount of the alkyl ethyl barbituric acid required to produce anesthesia had no direct bearing on the length of action, nor did the molecular weight of the alkyl group determine the length of action.—H. A. SHONLE, J. H. WALDO, A. K. KELTCHAND and H. W. COLES. *J. Am. Chem. Soc.*, 58 (1936), 585. (E. B. S.)

Dioxyanthranol as a Substitute for Chrysarobin. 1,8-Dioxyanthranol differs from chrysarobin by the lack of the methyl group. It is recommended as an effective and desirable substitute for chrysarobin, and can be used in very low concentrations, from 0.1% to 2%. It is used as an ointment or paint in psoriasis and fungus affections of skin, producing only a localized dermatitis and no constitutional symptoms. Involution was achieved in from 1 to 4 months depending on severity of case. Found that applications should be continued for some time after disappearance of last lesion to prevent relapse.—HERMAN BEERMAN, *et al.* *J. Am. Med. Assoc.*, 104 (1935), 26. (M. R. T.)

Histidine Treatment of Peptic Ulcer. The experiments from which the histidine treatment of peptic ulcer arose are open to serious objections. The authors have performed further experiments on cats and pigs, which do not substantiate the theoretical basis of the treatment. Published reports on the use of histidine in clinical practice afford no proof that it has a specific action on peptic ulcer.—H. C. BARRY and H. W. FLOREY. *Lancet*, 231 (1936), 728. (W. H. H.)

Histidine Treatment of Peptic Ulcer. Ambulatory treatment with injections of histidine gives at least as good result as ambulatory treatment with a diet-alkali régime; a remission has been obtained in three-quarters of the patients, and of these 60% have secured a normal radiogram. The treatment should be reserved for simple, uncomplicated cases, and it is contraindicated in active or recurrent hemorrhage, in deep or callous ulcers and in cases of pyloric stenosis, either because it is ineffectual or because other methods of treatment are desirable. The two other indications are in stoma-ulcer, and in patients in whom other methods have failed. Relapse appears to be uninfluenced by a single course of injections. It should be regarded at present as an adjunct to simple diet-alkali treatment; it is most useful as an ambulatory method, but adequate after-treatment should be enforced on the usual simple meals, interpolation of "feeds," antacids. The mode of action is obscure, and the current theories probably untenable.—E. BULMER. *Lancet*, 231 (1936), 734. (W. H. H.)

Insomnia—Drugs Used in the Treatment of. The hypnotics are divided into 2 main classes: (1) the halogen-containing products including chloral hydrate, potassium bromide, lubrokal, sodium bromide, sedobrol, voluntal (urethane of trichlorethyl alcohol), α-bromisovalerianyl

urea (including bromural, bromuresan, magnal) beridormin, adalin, tildin, profundol, abasin, neodrom, noctal, pernocton, tectidon, eunarcon, avertin, sulfonal and trional, and (2) halogen-free compounds such as paraldehyde, amylene hydrate, urethane, allyl-isopropyl acetyl carbamid (sedormid), diethylallylacetimide (novonal) and the barbituric acid derivatives. Composition and uses are reviewed.—ERICH HERMANN. *Apoth. Ztg.*, 51 (1936), 1225–1227, 1241–1243. (H. M. B.)

Magnesium Sulfate as a Sedative in Coughs. Doses of 1.5 to 2 cc. of a 15 % magnesium sulfate solution were used subcutaneously or intramuscularly. Children with asthma, whooping cough and spastic coughs of unknown origin were treated. Only 2 failures occurred in 60 cases. The effect usually lasts for days. Besides a certain somnolence on the first day, no by-effects were observed.—ALFREDO VIDAL FREYRE. *Semana méd.* (Buenos Aires), 43, II (1936), 537. (A. E. M.)

Medicinal Therapy—Progress in. A review dealing with substances acting on the circulation including work done on the chemistry of the constituents of *Digitalis purpurea*, analeptics acting centrally, and the purine group.—K. Koch. *Apoth. Ztg.*, 51 (1936), 1194–1197. (H. M. B.)

Pituitary—Lactogenic Factor of. Isolated from anterior pituitary in pure form, it is called "prolactin" or "galactin." Biologic tests show especially lactation in mammals and growth of crop-glands in pigeons. Used therapeutically to stimulate secretion of mammary glands in women in whom lactation had failed to develop adequately by the 6th day post-partum.—OSCAR RIDDLE. *J. Am. Med. Assoc.*, 104 (1935), 636. (M. R. T.)

Posterior Hypophysis. Posterior pituitary extract contains two substances: pitressin causing pressor activity and pitocin, the oxytocic action. Both act as antagonists to insulin and neither has been prepared free of the other. They are used clinically in treatment of post-partum hemorrhage.—E. M. K. GEILING. *J. Am. Med. Assoc.*, 104 (1935), 738. (M. R. T.)

Protamine-Insulin—Clinical Studies. Those diabetic patients who have used regular insulin for some time before beginning protamine-insulin often show an acute diabetic disturbance that may last from three to five days. Loss of control of some degree may immediately follow any slight change in unit dose, or in time of protamine-insulin injection. Failure to secure satisfactory control with the new insulin may result from frequent changes in time of injection or in unit dose. In the group of patients now reported, it was found that the protamine-insulin had a unit value somewhat less than U-40. Usually four to eight units more were required with the protamine-insulin solution. Since the zinc and the calcium combinations have been used there is evidence that these are more nearly the same in unit value as regular insulin of U-40 strength. Observations indicate that an interval between protamine-insulin injections of twelve hours gives satisfactory results, rather than giving the dose in relation to meals. Change from protamine-insulin to regular insulin and back again to the protamine can be done without serious disturbance in control. All patients have expressed a feeling of increased endurance and relief of periodic fatigue soon after beginning protamine-insulin, even before satisfactory control is obtained. Hypoglycemia may be difficult to correct because of the continued absorption of insulin, and may appear at the beginning of the change to protamine-insulin, when regular insulin is taken at one or more periods. Subnormal values for blood sugar may be found without definite symptoms. This may require more frequent blood sugar tests, especially in patients with some cardiovascular complication. The more even blood sugar control should give greater safety for these patients in that there should not be the rapid drop in blood sugar that was occasionally found with regular insulin. Patients using protamine-insulin should be warned of the necessity of keeping the preparation in the icebox after mixing, and to shake the bottle before each withdrawal of dose. The combinations of insulin with protamine buffer, together with either zinc or calcium, give a more even blood sugar control throughout the full twenty-four hours than has been possible with regular insulin alone in the severe diabetic. Clinical observations for longer times will give the full picture of value for these new preparations, but the controls secured in the months they have been used offer great hope for the future.—B. SMITH. *Calif. and West. Med.*, 45 (1936), 144. (W. H. H.)

Rectal Narcotic. A water-free composition which is liquid at room temperatures contains tribromoethyl alcohol together with butanol or propanol or other suitable aliphatic oxygen-containing compound such as a primary alcohol containing 3 or 4 carbon atoms, a dihydric alcohol containing at least 3 carbon atoms, a polyhydric aliphatic alcohol containing at least 3 hydroxyl

groups and 4 carbon atoms, an ether of an aliphatic alcohol, an alkyl-, hydroxyalkyl- or alkoxy-alkyl-ester of an aliphatic acid, a ketone, hydroxyketone or acetal (the compositions thus formed being stable to light and to heating).—ERICH GOTH, assignor to WINTHROP CHEMICAL CO. U. S. pat. 2,048,066, July 21, 1936. (A. P.-C.)

Testosterone—Increasing the Effectiveness of. Testosterone acetate and testosterone propionate are many times more effective than the free hormone, and their action is so prolonged that injection can be restricted to twice a week without loss of effectiveness. Of the two compounds, the propionate has a more intense and more prolonged action than the acetate.—A. S. PARKES. *Lancet*, 231 (1936), 674. (W. H. H.)

Threadworms—Hexylresorcin Treatment of. The author gives an account of experiments with hexylresorcin in the treatment of threadworms. Of forty children between the ages of 2 and 14 admitted to a hospital in Stockholm eighteen were found to harbor threadworms. Regularly repeated examinations for the ova during a long period showed that their appearance was most erratic, and it became evident that only after many repeated examinations could a clear bill of health be given in this respect. The author's opinion of the phenol derivative hexylresorcin, advocated as a vermifuge by Lamson, Brown and Ward, is guardedly favorable. The routine procedure recommended is as follows: On the day before treatment is instituted the child is given a mild laxative once or oftener, and the evening meal is light. On the first, third, fifth and seventh days the drug is given early in the morning in coated pills, which must be swallowed promptly without being bitten. An hour or two later licorice powder is given, and the child may drink freely, but must take no food for four or five hours, after which a light meal may be taken. The dosage of the drug is 0.1 Gm. for every year of life, the maximum dose at the age of 10 and onwards being 1 Gm. On the second, fourth, sixth and eighth days an irrigant enema, administered in the evening, is followed by a hexylresorcin enema in a strength of 1 in 1,000 to 2,000. This treatment should always be repeated after an interval of a fortnight; and in badly infested cases a third course should be given after another interval of a fortnight. It is advisable to give the first course in hospital if the child is heavily infested and is so young that there may be difficulties in swallowing the pills, which must never be chewed. In nine of the thirteen cases treated with hexylresorcin and repeatedly tested for threadworms for six weeks after treatment, recovery could be claimed. On account of the irritant action of this drug it should not be prescribed in the presence of such disturbances of the digestive tract as gastritis, enterocolitis, etc.—R. SPAAK. *Nord. Med. Tidsskrift* (June 6, 1936), 951; through *Brit. Med. J.*, 3947 (1936), 448c. (W. H. H.)

Vitamin A in the Local Treatment of Wounds. In the treatment of injuries affecting a very large area, special reference is made to the requirements of war surgery. The author considers that the method which consists of excising the wound, filling it with pure vitamin A oil or ointment (vulnovitan), and immediately applying a plaster-of-paris dressing does constitute a real advance. In septic surgery cases, the use of vulnovitan accelerates the healing process and simplifies the treatment.—S. SANDOR. *Lancet*, 231 (1936), 738. (W. H. H.)

NEW REMEDIES

SYNTHETICS

Calcium Levulinate G. L. is a sterile aqueous solution of the calcium salt of levulinic acid, having the formula $Ca(C_5H_7O_3)_2$. For intravenous injection it is supplied in 10-cc. ampuls of a 10% solution, each ampul containing the equivalent of 0.148 Gm. of calcium. For intramuscular injection it is supplied in 2-cc. ampuls of 15% solution. It is recommended in all conditions requiring urgent or intensive calcium therapy. Calcium levulinate G. L. is supplied in boxes of six 2-cc. ampuls (15%) and in boxes of three 10-cc. ampuls (10%).—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 332. (S. W. G.)

Deriphyllin is 1,3-dimethylxanthine in combination with an oxyamine, and is recommended as an effective, well-tolerated diuretic and cardiac tonic. Besides its specific action on renal epithelium, increasing diureses, it also acts as a vaso-dilator, which makes it of use in affections due to coronary spasm. It is claimed to give relief in cases of asthma, due to cardiac decompensation. Increased urine elimination begins about an hour after the injection, and in the first twelve hours 2,000 cc. or more is eliminated. Deriphyllin is supplied in 1-cc. ampuls for intravenous injection, or deep intramuscular injections, the dose being 1 to 2 cc. It is also supplied in drop bottles

for oral administration in doses up to 20 drops 3 or 4 times daily. The treatment should be accompanied by a salt-free diet. Deriphyllin is supplied in boxes of 6 and 25 ampuls, and in drop bottles of 10 and 30 cc.—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 333. (S. W. G.)

Nyktogen (E. Taeschner, Potsdam) is marketed in tablet form containing in each 0.35 Gm. of bromisovalerianylcarbamide-diethylmalonyl urea. Its diethylbarbituric acid content is 62%.—*Pharm. Weekblad*, 73 (1936), 984. (E. H. W.)

Per-Abrodilforte (Bayer, I. G. Farbenindustrie A.-G., Leverkusen a. Rh.) is a 50 % solution of 3,5-diiodo-4-pyridine-N-acetyl diethanolamine. It is marketed in ampuls containing 20 cc., and used intravenously in pyelography.—*Pharm. Zentralh.*, 77 (1936), 520. (E. V. S.)

Rectidon (J. D. Riedel-E. de Haen A. G., Berlin) is a rectal hypnotic occurring as the 10% solution and as small plugs. It is the sodium salt of secondary amyl-β-bromallyl-malonylureide, $C_{12}H_{17}O_3N_2Br$, a colorless, odorless, crystalline powder, easily soluble in water.—*Pharm. Monatsh.*, 17 (1936), 140. (H. M. B.)

Resyl (Ciba) is the glycerin ether of guaiacol and is used as an expectorant.—*Pharm. Weekblad*, 73 (1936), 894. (E. H. W.)

Solucamphre is a 14% solution of *d*-camphorsulfonate of diethylenediamine. It is recommended in preference to camphor in oil for sustaining cardiac activity, in cases of emergency, syncope cardiac failure, etc., and stimulating respiration. The dose is 1 to 3 injections daily of 5 cc., subcutaneously, or intramuscularly; in cases of urgency 2 to 5 cc. intravenously. The injections are painless, nontoxic and produce no local reaction. It can also be administered orally, in a dose of 50 to 100 drops daily in sweetened water. Solucamphre is issued in boxes of 6 ampuls of 2 or 5 cc., and bottles of 20 cc.—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 335. (S. W. G.)

Sympatol Liquid (C. H. Boehringer Sons, A. G., Nieder-Ingelheim) is put up in packages of 10, 25 and 100 Gm. containing a 10% solution of *p*-methylaminoethanolphenol tartrate.—*Pharm. Presse*, 41 (1936), 383. (M. F. W. D.)

Specialties

Activatid Tablets (Karl Horn A. G., Frankfurt) for pains and fever contain aceto-phenetidin 0.13 Gm., lactyl-phenetidin 0.13, acetylsalicylic acid 0.2, caffeine 0.03 and codeine phosphate 0.01.—*Pharm. Monatsh.*, 17 (1936), 149. (H. M. B.)

Adoloretten (F. J. Kwizda, Korneuburg) contain in each 0.235 Gm. dimethylaminophenyl-dimethylpyrazolone, 0.20 Gm. acetophenetidin, 0.05 Gm. caffeine sodiobenzoate, and 0.02 Gm. amylurea. The packages contain 6, 12 or 20 tablets.—*Pharm. Presse*, 41 (1936), 383. (M. F. W. D.)

Afluin Powder-Osip (Apotheke Siegmund, Poysdorf) contains powdered burnt alum, silver proteinate, medicinal charcoal, diamino-10-methylacridine chloride, etc., and is marketed in packages of 25, 50 and 100 Gm.—*Pharm. Presse*, 41 (1936), 259. (M. F. W. D.)

Amygdagon (Chem. Fabrik Bika, Stuttgart) is an intestinal disinfectant in tablet form consisting of amygdalin tannate, salol, hexamethylenetetramine, etc.—*Pharm. Monatsh.*, 17 (1936), 134. (H. M. B.)

Anara Plugs (Sanabo-Chinoin, G. m. b. H., Vienna, 12th dist.) contain 0.35 Gm. phenylaminopropane dissolved in ethereal oil and dispersed on cotton. The packages contain one small roll.—*Pharm. Presse*, 41 (1936), 383. (M. F. W. D.)

Antebrine-Musonaat is a soluble salt of the antimalarial, atebrine dimethanosulfonate. It is used as a subcutaneous or intravenous injection in doses of 375 mg., corresponding to 300 mg. of atebrine, dissolved in several cc. of water.—*Pharm. Weekblad*, 73 (1936), 981. (E. H. W.)

Apondon is a combination of ergocholine and thyroid, to be used for fat reduction by means of regulated thyroid action. It is claimed to bring about a uniform weight reduction, without by-effects, and is well tolerated by those susceptible to thyroid. It can also be used safely in fat-reduction treatment of children. The dose recommended is 2 to 4 globules daily, but the dose may be increased up to 6 globules. Apondon is supplied in packages containing 25 globules.—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 332. (S. W. G.)

Arantil Perles (Bayer, I. G. Farbenindustrie A.-G., Levenkusen a. Rh.), for toothaches of various types, painful ear infections, facial neuralgia, migraine and headaches, contain a combination of pyramidon, novalgin and a chemical complex, pyramidon diethylallylacetamide.—*Pharm. Zentralh.*, 77 (1936), 476. (E. V. S.)

Arbuz Tablets (Dr. Schwab, München) are put up in packages of 60 and 100 tablets containing the dried milky sap of *Carica papaya* L.—*Pharm. Presse*, 41 (1936), 383. (M. F. W. D.)

Ardigal Liquid (Boehringers Sons, Mannheim-Waldhof) is put up in 30- and 100-cc. packages containing a 5% aqueous solution of the complex acetylsalicylic acid hexamethylenetetramine silver.—*Pharm. Presse*, 41 (1936), 383. (M. F. W. D.)

Aristosan (Pharmazeutikon A. G. for Chem. pharm. products, Berlin-Schöneberg) for rheumatism, myalgia, lumbago, neuralgia, etc., consists of a combination of glucose (0.16 Gm.), a thiazine derivative (0.15 Gm.), formic acid and sodium formate (0.002 Gm.).—*Pharm. Monatsh.*, 17 (1936), 149. (H. M. B.)

Arsaphen Tablets (B. Fragner and Interpharma G. m. b. H., Prague) contain acetyl-*p*-oxyphenylarsinic acid for lues and similar disorders where arsenic therapy is indicated.—*Pharm. Monatsh.*, 17 (1936), 135. (H. M. B.)

Arsen-Helpin-Ampuls (Landshoff and Meyer A.-G., Berlin-Grünau) consist of 1.5 cc. containing 0.025 Gm. of monomethyldisodium arsenate which is dissolved in a lecithin-glycerin emulsion called Helpin and is administered intramuscularly.—*Pharm. Monatsh.*, 17 (1936), 135. (H. M. B.)

Aseptol Suppositories (O. Siegmund, Poysdorf, N. Oe.) contain silver proteinate and cacao butter put up in packages of 45.—*Pharm. Presse*, 41 (1936), 382. (M. F. W. D.)

Becobon (Dr. Behre and Co., Bremen), an analgesic and sedative, is a combination of caffeine, citric acid, lithium carbonate and dimethylaminophenazone. It is marketed in cachets.—*Pharm. Zentralh.*, 77 (1936), 476. (E. V. S.)

Becocrin (Dr. Behre and Co., Bremen), a hair tonic, is an alcoholic extract of *Urtica urens* and pilocarpus, with the addition of quinine salts, tannic acid and nutrient salts.—*Pharm. Zentralh.*, 77 (1936), 413. (E. V. S.)

Becopect (Dr. Behre and Co., Bremen), an expectorant, is a percolate of *Thymus vulgaris*, *Thymus Serphyllum*, *Castanea vesca*, drosera and senega with the addition of sugar and flavoring agents.—*Pharm. Zentralh.*, 77 (1936), 427. (E. V. S.)

Belladonna-Exclud Suppositories (R. Reisz, Rheumasan Fabrik, Berlin) contain 0.06 Gm. belladonna leaves, papaverine, ephedrine and strontium iodate, etc. The packages contain 6 or 10 pieces.—*Pharm. Presse*, 41 (1936), 383. (M. F. W. D.)

Bellucyst Dragees (Laboratorium Reumella, Berlin O), an urinary antiseptic, contain santal oil, salol, extract of herniaria and medicinal yeast.—*Pharm. Zentralh.*, 77 (1936), 305. (E. V. S.)

Bioglandon Capsules (Dr. Behre and Co., Bremen), a reducing preparation, is a combination of extracts of fucus, aloes, frangula and petroselinum, phenolphthalein, sodium sulfate and silicea in homeopathic dilution.—*Pharm. Zentralh.*, 77 (1936), 413. (E. V. S.)

Bonoprotan Ampuls (Oesterr. Serum-Ges., G. m. b. H., Vienna, 9th dist.) contain the biologically active proteins of milk with a chemotherapeutic addition. They are put up in packages of 1–5-cc. ampul or 5–1-cc. ampuls.—*Pharm. Presse*, 41 (1936), 382. (M. F. W. D.)

Calcium Resorpta Powder (Gehe & Co., Dresden) contains calcium lactate, sodium phosphate, etc., in packages of 50 and 100 Gm.—*Pharm. Presse*, 41 (1936), 383. (M. F. W. D.)

Calcozym (Münchener Pharmazeutische Fabrik, München 25) is a calcium-vitamin B-yeast powder (vitamin yeast containing calcium lactate and glycerophosphate, and tribasic calcium phosphate having a 40% total calcium content). It is indicated for use in calcium therapy for tetanus, asthma, urticaria, Basedow's disease and similar disorders.—*Pharm. Zentralh.*, 77 (1936), 491. (E. V. S.)

Calmobrol Tablets (F. J. Kwizda) contain sodium and strontium bromates, meat and vegetable extracts. The packages contain 10 or 30 tablets.—*Pharm. Presse*, 41 (1936), 382 (M. F. W. D.)

Ceadon (J. D. Riedel, de Haen A. G., Berlin) is aloin dioxychloranic acid. It is marketed in white dragees which contain 0.1 Gm. of the compound, corresponding to 0.05 Gm. of extract of aloe. The tablets are employed in cases of constipation.—*Pharm. Weekblad*, 73 (1936), 982. (E. H. W.)

Cerocol is colloidal cerium oxalate supplied in tablets each containing 0.05 Gm. of the substance. The tablets are tasteless and disintegrate immediately upon the tongue. It is recommended for the prevention of vomiting due to travel sickness, tuberculosis, whooping cough, gas-

tric ulcer, X-ray and radium treatment, etc. The dose is two tablets, which are supplied in boxes of 12.—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 332. (S. W. G.)

Chromate-Ascro Soap. (F. Eichler, Düsseldorf) contains 2% of chromic acid and 3% of arsenous acid in soap.—*Pharm. Presse*, 41 (1936), 383. (M. F. W. D.)

Collumol (Dr. Baljet, Arnhem) is a colloidal aluminium hydroxide.—*Pharm. Weekblad*, 73 (1936), 982. (E. H. W.)

Colsul is a 1% solution of elementary sulfur. It is prepared in two forms, a solution in olive oil, and an aqueous colloidal solution adjusted to p_H 3. It is recommended for the production of pyrexia, in the treatment of mental disorders and other conditions such as arthritis, which benefit from pyrexia. The injections may be given to patients of all ages, and the dosage of both forms is 0.5 cc. increased at each injection by 0.5 cc. to a maximum of 5 cc., or until a sufficient degree of pyrexia has been attained.—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 332. (S. W. G.)

Cuscutine pills contain Ext. Cuscutae 20, Ext. Sennae 10, Ext. Hyoscyamus 0.5, aloin 30, excipient to 100. Each pill weighs 1.6 grains. They are recommended as a mild but active laxative which can be administered even during pregnancy and lactation. The dose is 1 or 2 pills taken with the evening meal. Cuscutine pills are supplied in tubes of 50 and 500.—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 333. (S. W. G.)

Dermichthol Salve (Oesterr. Ichthyol Ges. Reith bei Seefeld, Tirol) contains leukichthol, salicylic acid, carbolic acid, basilicon ointment and oil of dwarf pine needles.—*Pharm. Presse*, 41 (1936), 259. (M. F. W. D.)

Dolomo Tablets (Labopharma, Dr. Laboschin G. m. b. H., Berlin-Charlottenburg), for various aches and pains, are prepared from quinine, caffeine, dimethylaminophenazone, phenacetin and magnesium carbonate.—*Pharm. Zentralh.*, 77 (1936), 476. (E. V. S.)

Dulcargan is the silver salt of boric acid, silver borate, $Ag_2B_4O_7$. It has a silver content of 58.1% and is obtained in high purity, in crystalline form. The preparation contains a slight excess of boric acid. It is water-soluble and the solution can be sterilized. Dulcargan is used in conjunctivitis and other affections of the eye. Dulcargan may be rubbed into a fine powder with petrolatum or other neutral ointment bases.—*Pharm. Weekblad*, 73 (1936), 982. (E. H. W.)

Duolets (Dr. Baljet, Arnhem) are tablets containing 0.25 Gm. of acetylsalicylic acid and 0.3 Gm. of colloidal aluminium hydroxide (Collumol). By the addition of the latter they are better tolerated by persons having sensitive stomachs.—*Pharm. Weekblad*, 73 (1936), 982. (E. H. W.)

Enterofagos (Laboratory for Medical Chemistry and Applied Biology, Berlin-Grunewald) are ampuls containing 2 cc. of a mixture of polyvalent intestinal bacteriophages which are materials of an unknown nature occurring in the intestines and are given for intestinal disorders in doses of one ampul three times a day with water or lukewarm bouillon before eating.—*Pharm. Monatsh.*, 17 (1936), 136. (H. M. B.)

Entero-vioform (Gesellschaft für chemische Industrie, Basel.) is an internal intestinal antiseptic and disinfectant marketed in tablets. Each tablet contains 0.25 Gm. vioform (iodochloroxychinolin) and a little sapamine (*p*-stearylaminophenyltrimethylammonium sulfomethylate). The latter is used technically in the form of a soap and serves to emulsify the vioform, thus forming an even layer on the intestinal wall. Besides internally, orally, entero-vioform may also be used rectally by mixing 4–8 tablets first with a little cold water and then with 200–300 cc. of hot water and using the resulting solution as a clyster.—*Pharm. Weekblad*, 73 (1936), 982. (E. H. W.)

Espil (von Heyden, Dresden) is a red colored liquid consisting of a 5% solution of Adhaegon, a protein derivative having a specific action. The solution is aromaticized and contains a sweetener. It has the property of loosening mucous on the mucous membranes and reflectively excites the bronchial muscles. It is used as an expectorant in bronchitis, lung abscesses, pneumonia, etc. Dose, one teaspoonful 3 to 4 times a day.—*Pharm. Weekblad*, 73 (1936), 983. (E. H. W.)

Estoform is a combination of the orthoformic ester $HC(OC_2H_5)_3$ with extracts of *Prunus virginiana* and senega, in a glycerin-alcohol base. The mixture contains 10% of pure ester, which has been proved to be non-toxic. Estoform is recommended as an antispasmodic, for the treatment of bronchitis, asthma and coughs. The dose is 2 to 4 teaspoonfuls three times daily, but in asthma, up to 6 teaspoonfuls can be administered at night. It should be well diluted with water, and taken preferably with meals. Estoform is supplied in 4-oz. bottles.—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 333. (S. W. G.)

Etoscol Ampuls (E. Tosse & Co., Hamburg.) are suspensions of bismuth salicylate and gallate in oil. They are used for intragluteal injection.—*Pharm. Weekblad*, 73 (1936), 983. (E. H. W.)

Eulagen is an aperient containing cascara and aloin in appropriate doses. The pills contain no narcotics, and are free from belladonna and strychnine. They are recommended as an ideal laxative for prolonged use. The dose is 1 or 2 pills at bedtime, and, if necessary after breakfast. Eulagen is supplied in packings of 50 and 500 pills.—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 333. (S. W. G.)

Fömal I Tablets (Physiolog. pharm. Laboratorium W. Frost, Dresden), for nervous disorders, is a sixth dilution containing calcium phosphate, colloidal ferric phosphate and *Lycopus virgin.* Mich. Fömal II tablets contain in addition a fourth dilution of adrenaline. They are used to relieve heart pains, labor in breathing and symptoms of anxiety.—*Pharm. Zentralh.*, 77 (1936), 414. (E. V. S.)

Fructamin (Nordmark-Werke, Hamburg 21) is a preparation of the entire vitamin C complex containing the natural protective material. It occurs in liquid form (100 cc. containing 50 mg. vitamin C complex), in tablets containing 15 mg., and in ampuls containing 25 mg. per cc. It is used for hemophilia, chest and intestinal bleeding, caries, chronic infectious diseases and scorbutic conditions.—*Pharm. Zentralh.*, 77 (1936), 476. (E. V. S.)

Globichthol (Ichthyolgesellschaft, Cordes Hermani & Co., Hamburg) is the name given to vaginal suppositories containing Ichthyol-Hell.—*Pharm. Weekblad.*, 73 (1936), 983. (E. H. W.)

Haemocavine Suppositories (Dr. H. Remmler, Berlin) contain bismuth-oxyiodogallate, resorcin, zinc oxide, ethyl amidobenzoate and balsam of Peru. They are used for hemorrhoids.—*Pharm. Weekblad.*, 73 (1936), 983. (E. H. W.)

Hexopert (Dr. Behre and Co., Bremen), an antirheumatic and antineuralgic ointment, consists of mustard oil, turpentine, eucerin and various phosphates in petrolatum.—*Pharm. Zentralh.*, 77 (1936), 414. (E. V. S.)

Hormolantin (Labopharma, Dr. Laboschin G. m. b. H., Berlin-Charlottenburg), for infantilism, oligo- and dysmenorrhea, and climacteric disturbances, is prepared from the anterior pituitary and contains the unspecific gonadotropic hormone. It occurs in double ampuls standardized according to the method of Aschheim-Zondek and equivalent to 100 or 500 units.—*Pharm. Zentralh.*, 77 (1936), 414. (E. V. S.)

Hucomine Salve (van Humin-Chemie, Leipzig) contains the same humin combinations and humus colloids as the following tablets. It is used, in combination with the tablets, for local application in painful regions.—*Pharm. Weekblad*, 73 (1936), 983. (E. H. W.)

Hucomine Tablets (van Humin-Chemie, Leipzig) are prepared from neutral humin combinations and humus colloids, combined with methenamine and urea. They are employed in metabolic illnesses and rheumatic affections. Dose, one tablet, before meals, three times a day.—*Pharm. Weekblad*, 73 (1936), 983. (E. H. W.)

Iliren (Bayer, I. G. Farbenindustrie A.-G., Levenkusen a Rh.) is an adrenaline-free suprarenal cortex preparation. The preparation is marketed in enteric coated pills containing the equivalent of 0.3 Gm. of the fresh cortex. They are used in deficient convalescence following infectious diseases such as grippe, pneumonia and typhus, and for psoriasis and moist chronic eczemas.—*Pharm. Zentralh.*, 77 (1936), 491. (E. V. S.)

Iodan Pencils (O. Siegmund, Poysdorf, N. Oe.) contain iodine, cetaceum and cacao butter. They are put up in packages of 10 pieces of 18 Gm.—*Pharm. Presse*, 41 (1936), 382. (M. F. W. D.)

Jerrofan (Asthmosana, R. M. Mayer, Bad Reichenhall), for atomizing in cases of asthma, contains adrenaline, ephetonine, papaverin, psicaine, eumydrine and hypophysine in a stable and standardized solution.—*Pharm. Monatsh.*, 17 (1936), 153. (H. M. B.)

Kamillaesthin Paste (Chem.-pharm. A. G., Bad Homburg, Frankfurt a. M.) contains chamomile extract, and *p*-aminobenzoic acid ester in an ointment base. The packages contain 10 Gm.—*Pharm. Presse*, 41 (1936), 382. (M. F. W. D.)

Karwendol (Karwendel G. m. b. H., Laupheim, Wüttemberg) is a tar oil preparation from bituminous primitive rock with over 10% combined sulfur.—*Pharm. Presse*, 41 (1936), 259. (M. F. W. D.)

K L X Tablets (F. W. Plumhoff, Berlin-Steglitz), for menorrhagia, contain in each tablet

0.05 Gm. each of cinnamon bark, matico, valerian and capsella herb, and 0.3 Gm. of potassium iodate.—*Pharm. Zentralh.*, 77 (1936), 414. (E. V. S.)

Larostidin Tablets Roche (Hoffmann La Roche A. G., Basle) contain in each 0.10 Gm. histidine hydrochloride. They come in packages of 25.—*Pharm. Presse*, 41 (1936), 382. (M. F. W. D.)

Leuk-Ichtan Salve (Oesterr. Ichthyol-Ges. m. b. H., Tirol) contains 10% leukichtan, 10% cod liver oil and 80% zinc ointment. It is put up in 20 Gm. packages.—*Pharm. Presse*, 41 (1936), 382. (M. F. W. D.)

Loveroid is a liver extract prepared from ox livers by a low temperature process, to which an assimable form of iron is added. It is recommended from the treatment of anemia, and general debility.—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 334. (S. W. G.)

Luvasyl (Georg Henning Chem. Pharm. Werke, G. m. b. H., Berlin-Templehof) is a chemical combination of phenylethylbarbituric acid and 0.03 gm. ethylenediamine and is used to combat epilepsy.—*Pharm. Monatsh.*, 17 (1936), 138. (H. M. B.)

Magsorbent is synthetic hydrated magnesium trisilicate ($Mg_2Si_3O_8.nH_2O$), a white, tasteless, insoluble powder. It is recommended as an antacid, for the treatment of dyspepsia, hyperacidity and peptic ulceration. It is claimed to have a sustained antacid action, and to be a comprehensive and vigorous adsorbent. Magsorbent is supplied as a powder, and as tablets, each containing 7 grains of active substance with a little sugar. The dose suggested is 1 to 2 teaspoonfuls of the powder stirred in a little water, or 1 to 3 tablets well masticated before being swallowed. The tablets are supplied in tins of 65 and 250. The powder is issued in 2 oz. and 5 oz. cartons.—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 334. (S. W. G.)

Multivite Pellets contain in each, in a concentrated form, vitamin A 3,000 units, vitamin D 600 units, vitamin C 100 units, with vitamin B, equivalent to 2 Gm. of yeast They are recommended as a convenient method for administering balanced amounts of the four vitamins, to overcome all-round vitamin deficiency in the modern diet and for collateral treatment in severe infections. The dose for adults is 2 to 4 pellets daily, for children 1 to 2 pellets. Multivite pellets are supplied in tins of 60.—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 334. (S. W. G.)

Myokombin (C. F. Boehringer and Sohne G. m. b. H., Mannheim-Waldhof) are 1-cc. ampuls containing in each 0.5 mg. kombetin (strophanthin Boehringer) and 0.07 mg. novocaine. They are used intramuscularly in strophanthin therapy.—*Pharm. Zentralh.*, 77 (1936), 492. (E. V. S.)

Neo-Olesal (Bayer, I. G. Farbenindustrie, Leverkusen) is bismuth dimethyl-endomethylene-hexahydrobenzoate containing 30% bismuth, insoluble in water, but soluble in oil. Ampuls contain 10% of the compound in an oil solution.—*Pharm. Monatsh.*, 17 (1936), 138. (H. M. B.)

Nerm is an antiseptic jelly for the treatment of burns and wounds. It contains tannic acid 5.0; mono-chloro-*m*-xylenol 0.5; glycerin 2.0; potassium ricinolate 1.0; oils of eucalyptus, citronella, pulgium and lavender, 0.24; and tragacanth jelly to 100.0. Nerm is also recommended for the treatment of insect bites, stings, broken chilblains and chapped hands. It is supplied in tubes, and it should be spread well over the injured surface and allowed to dry. The part can be bandaged loosely if necessary.—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 334. (S. W. G.)

Nesenil Tablets (Chem. Fabrik H. Sternberg, Dresden), for hypertonia, arteriosclerosis and neurasthenia, contain in each theobromine sodium acetate 0.1 Gm., bismuth iodide 0.06 Gm., papaverine 0.01 Gm., digitalis leaf 0.01 Gm., sodium silicate 0.03 Gm., extract kola 0.03 Gm., extract viscum 0.03 Gm. and cocoa.—*Pharm. Zentralh.*, 77 (1936), 428. (E. V. S.)

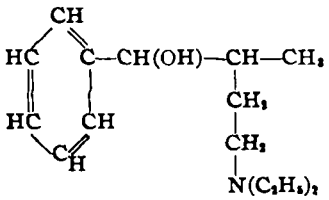
New Remedies. The following remedies have recently made their appearance: **Eulykol,** esters of phenylethyl hydnocarpate; **Fangat,** volcanic mud from the Eifel mountain range in Germany; **Measles Immune Globulin (Human),** a potent placental extract for intramuscular injection; **Pulvis Acidus Tablets,** containing betaine hydrochloride and indicated in hypochlorhydria; **Recresal,** calcined sodium dihydro-orthophosphate.—*Pharm. J.*, 136 (1936), 698. (W. B. B.)

New Remedies. Remedies that have recently made their appearance on the market include the following: **Alphidine,** a new probably allotropic form of iodine; **Durnojel,** copper guaiacol sulfonate 0.2, acriflavine 0.05, benzamine borate 0.1, perfumed jelly vehicle to 100; **Mapharside,** a comparatively stable compound containing the equivalent of 38.3 % of arsenic trioxide; **Trisan,** used in the treatment of asthma.—*Pharm. J.*, 137 (1936), 243. (W. B. B.)

Oleochrysine Lumiere is an oily suspension of calcium aurothioglycerylsulfonate (CH_2.-SAu.CHOH.$CH_2SO_3)_2Ca$. As supplied for use it has a gold content of 35%, and a calcium content of about 4.52%. The compound is water-soluble but is supplied suspended in oil, so that the absorption is gradual and prolonged. It is claimed that the calcium content increases the tolerance to gold therapy, reducing the risk of reaction to a minimum in the treatment of pulmonary tuberculosis, chronic rheumatism, lupus erythematosus, psoriasis, etc. The dosage suggested is 0.10 Gm. increasing gradually to 0.30 Gm., given by intramuscular injection every fifth day. Oleochrysine is supplied in ampuls containing 0.10, 0.20 and 0.30 Gm. in 2 cc.—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 334. (S. W. G.)

Oxoid Liver Extract is a liver extract prepared for injection, each batch being standardized by clinical tests on suitable patients. It is suggested for use when a quick response is required in pernicious anemia. It is supplied in 2-cc. ampuls in boxes of 6 and 12, and in 10-cc. and 20-cc. bottles.—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 335. (S. W. G.)

Par-Isalon contains isalon, theobromine, caffeine and phenyldimethylpyrazolone. Isalon is a pure substance, belonging to the adrenaline-series, having the formula



It is suggested for the treatment of bronchial asthma, and it is claimed that it is well tolerated over long periods, and has no deleterious effects, as found with ephedrine. Par-isalon is supplied in tablets, and 2 tablets three times daily is the dose, or 2 to 3 tablets during the attack. The tablets are supplied in tins of 30 tablets.—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 335. (S. W. G.)

Pilula Jodovi (Verway & Co.) are made from the phosphate-lipoidal portion of the egg yolks obtained from eggs laid by systematically fed hens. They contain iodine in combination with kephalin and lecithin. The content of organically combined iodine in these pills is 40 to 50 γ. *Pharm. Weekblad*, 73 (1936), 984. (E. H. W.)

Pilulæ Arsen-Ferrowey contain in addition to 100 mg. of ferric saccharate 1 mg. of arsenious acid.—*Pharm. Weekblad.*, 72 (1936), 984. (E. H. W.)

Pilulæ Arsen-Ferrowey Compositæ contain 100 mg. ferric saccharate,1 mg. arsenious acid and 5 mg. extract of nux vomica.—*Pharm. Weekblad*, 73 (1936), 984. (E. H. W.)

Pilulæ Ferrowey contain 100 mg. of soluble ferric saccharate per pill. Dose 3 pills three times a day $^1/_2$ hour before meals.—*Pharm. Weekblad*, 73 (1936), 984. (E. H. W.)

Pillæ Ferrowey Compositæ contain, besides 100 mg. of ferric saccharate, 5 mg. extract of cinchona and 5 mg. extract of nux vomica per pill.—*Pharm. Weekblad.*, 73 (1936), 984. (E. H. W.)

Puraeton "E" (Kruft, Coblenz) in powders consists of acetophenetidin-aminopyrine-calcium-monobenzylphthalate-ephedrine 0.41 Gm., caffeine with theophylline sodium-sodium acetate 0.12 Gm. and potassium guaiacolsulfonate 0.15 Gm. and is used for asthma, bronchitis and colds.—*Pharm. Monatsh.*, 17 (1936), 139. (H. M. B.)

Pyrasumman Tablets (Dr. F. Heise G. m. b. H., Berlin-Karlshorst), an analgesic, contain in each caffeine calcium salicylate 0.1 Gm., dimethylaminophenazone 0.15 Gm. and phenacetin 0.25 Gm.—*Pharm. Zentralh.*, 77 (1936), 476. (E. V. S.)

Radiosclerine Tablets (Radiosclerin Gesellschaft, Berlin) contain radium chloride mixed with a mixture of salts designated as biochemical salts. Each tablet contains 1.31×10^{-8} mg. radium chloride, which is controlled by Dr. Fernau of the radium division of the general hospital at Weenen. The tablets are dissolved in water for use. Dose 1 to 2 tablets three times a day, in arteriosclerosis, hypertonicity and rheumatism.—*Pharm. Weekblad*, 73 (1936), 984. (E. H. W.)

Rheuma-Sensit Fluid (Sensit G. m. b. H., Berlin SW), an antirheumatic, is a liquid potas-

sium soap containing 10% of combined salicylic acid, 5% of alcohol and a 10% mixture of camphor, menthol and oils of castor, peppermint and eucalyptus.—*Pharm. Zentralh.*, 77 (1936), 521. (E. V. S.)

Rheumitren Liquid (Chem. Fabr. Promonta, Hamburg) contains triethanolamine salicylate, salicylaldehyde, sulfur, benzoic acid, isopropyl alcohol, chloroform and water; and is marketed in packages of 40 Gm.—*Pharm. Presse*, 41 (1936), 259. (M. F. W. D.)

Rhinasthman Tablets (Temmler-Werke, Berlin-Johannisthal), for bronchial asthma, vasomotor rhinitis and hay-fever, contain in each ephedrine hydrochloride 0.01 Gm., dimethylaminophenyldimethylpyrazolone 0.1, nitroglycerin solution, D.A.B.6, 0.0125, extract lobelia 0.00075, codeine phosphate 0.0005, calcium theobromine, 0.025, extract belladonna 0.01 and calcium carbonate 0.12.—*Pharm. Zentralh.*, 77 (1936), 492. (E. V. S.)

Rhizinum Tincture Reinecke (Georg A. Reinecke, Fabrik pharm. Präparate, Hannover) is a solution prepared from witch hazel, hydrastis, camphor, eucalyptus, menthol and boric acid. Three to five drops of the preparation is placed in the nose for rhinitis, pharyngeal catarrh and similar disorders.—*Pharm. Zentralh.*, 77 (1936), 477. (E. V. S.)

Ricifin (Dr. O. Schwarzhaupt, Hamburg) is a 50% castor oil emulsion aromatized with peppermint oil.—*Pharm. Zentralh.*, 77 (1936), 477. (E. V. S.)

Sedin contains in the form of soup tablets, potassium bromide 0.4 Gm., sodium bromide, 0.4 Gm., ammonium bromide 0.2 Gm., sodium chloride 0.1 Gm., combined with vegetable extract. It is recommended as a nerve sedative, for the treatment of epilepsy, neurasthenia and neuroses. The usual dose is 1 or 2 tablets once or twice daily in a cup of hot water. Sedin is supplied in tins of 500, 100, 40, 20 and 10 tablets.—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 335. (S. W. G.)

Selvoral Powder (Bayer, L. G. Farben A. G., Leverkusen) is put up in packages of 50 and 100 Gm. of the calcium salt of glucohexicitric acid.—*Pharm. Presse*, 41 (1936), 383. (M. F. W. D.)

Stypven is Russell viper venom issued in rubber-stoppered bottles accompanied by ampuls of 0.5% phenol in distilled water, which is used as a solvent for the venom. The solution of the venom is recommended as a local application for the control of bleeding in hemophilics, after extraction of teeth or any external wound. It is applied to the bleeding surface on a pledget of cotton wool. The hemostatic properties of stypven may be found of use in general surgery, especially in nasal-oral operations followed by troublesome bleeding or oozing. Stypven is supplied in two sizes, 1 cc. and 5 cc.—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 336. (S. W. G.)

Transcusalve is an ointment containing salicylates, camphor, terebinthate and ethereal oils, pine-needle oil, concentrated liquors from the Kreuznach and Munchen springs, with sterilized kieselguhr in a lanolin base. It is recommended for the local treatment of arthritis, sciatica, gout, neuritis and fibrositis. A layer of ointment should be applied to the painful part, which is then wrapped in warmed wool. Transcusalve is supplied in collapsible tubes.—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 336. (S. W. G.)

Trimona (Apotheker H. Rochel, med-pharm. Präparate, Magdeburg-W) contains phenylquinoline carbonic acid, hexamethylenetetramine, sodium bicarbonate, dimethylaminophenazone, phenacetin and citrated caffeine. They are marketed in cachets and are indicated for use in gout, rheumatism, grippe and other catarrhal diseases.—*Pharm. Zentralh.*, 77 (1936), 428. (E. V. S.)

Trisan contains potassium iodide, chloral hydrate and soluble barbitone, with glycerin, alcohol, sugar and flavoring. It is recommended as an antiasthmatic, except where there is exophthalmic goiter. The dose suggested is 6 drachms in water at night until there is an improvement, then 3 drachms may be given. It can be given for a long time without losing its effect. Trisan is supplied in bottles of 4 fl. ozs.—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 336. (S. W. G.)

Tussipect is an expectorant prepared from the root of *Primula elatior*, standardized to contain a definite weight of the ammonium salt of primula-saponin. It is supplied as a syrup, and in more concentrated form as drops. Two teaspoonfuls of the syrup, or 15 drops of the concentrated preparation represent 4 mg. of the primula-saponin. Tussipect also contains tolu, tincture of orange and oil of aniseed. It is free from narcotics, and is claimed to be palatable, and easily digested. Tussipect syrup is supplied in 6-oz., 20-oz. and 80-oz. bottles, and the drops in 6-dr. drop bottles.—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 336. (S. W. G.)

Tyronorman Tablets contain purified and concentrated thyroid gland inhibitory substance,

free from iodine. They are standardized to contain in each tablet 10 antithyroid units, 6 tablets being one daily dose. They are suggested for the treatment of Basedow's disease and thyrotoxicoses. It is claimed to have no injurious properties. The treatment requires a certain length of time, with diet regulation. Tyronorman is supplied in packings of 18, and 100 tablets.—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 336. (S. W. G.)

Uretonon-Boonen (Promonta, Hamburg) contain the organ extract from the uterus of cattle. They are used for disturbances following uterus operation, and in dysmenorrhœa. Dose 1 tablet (boon) twenty minutes before each meal.—*Pharm. Weekblad*, 73 (1936), 984. (E. H. W.)

Vaccineurin neurotropic injection is a bacterial autolysate prepared from Streptococcus, and *Bacillus prodigiosus*. It is indicated in all diseases of the nerves, and in bronchial asthma. Vaccineurin is supplied in three series, and there are 6 injections in each series, each ampul containing 1 cc.—*Quart. J. Pharm. Pharmacol.*, 9 (1936), 336. (S. W. G.)

Vestine Tablets (A. G. Dr. Wander) are 2,6-diamino-5-phenyl-azopyridine hydrochloride. It is a red coloring matter which is used as a disinfectant for the kidneys and urinary passages. It is excreted unchanged in the urine; penetrates deeply into the kidney tissue and the mucous membrane of the bladder. It is extremely bactericidal and even in dilutions of 1:1,000,000 prevents the growth of bacteria. The dose is 2 to 3 dragées, 3 times a day, children 1–2 dragées per day.—*Pharm. Weekblad*, 73 (1936), 984. (E. H. W.)

Vicotrat A + D (Heyl and Co., Chem.-pharm. Fabrik A.-G., Berlin), a vitamin concentrate, is prepared from crude cod liver oil. It is marketed in small red gelatin perles, free from odor and taste. It is indicated for use in scrofula, dental caries, rickets and as a general nourishing remedy. *Pharm. Zentralh.*, 77 (1936), 477. (E. V. S.)

BACTERIOLOGY

Antitoxin Treatment in Scarlet Fever. A single dose of 10–20 cc. of scarlatinal antitoxin injected intravenously or intraperitoneally within the first three days of onset considerably modifies the course of both simple and septic scarlet fever. By this means, the average isolation period in hospital has been successfully reduced to about 2 weeks or less for children. The application of this routine to all definite cases of scarlet fever admitted to the hospital wards in the acute stage has been associated with a substantial and significant reduction of morbidity. Thus, otitis media has been reduced to one-third and nephritis to less than one-seventh of the incidence in untreated controls. The intraperitoneal route of injection of antitoxin in this disease has yielded results almost identical with those of intravenous. Since the technic of intraperitoneal injection at all ages is simple, and danger from shock is negligible, with adequate aseptic safeguards, the method is capable of wide practical application.—H. S. BANKS. *Lancet*, 231 (1936), 559. (W. H. H.)

Bacterial Agglutination—Important Factor in the Mechanism of Specific. Water, when included in the antigen preparation, inhibits agglutination.—C. R. DONHAM and C. P. FITCH. *J. Infect. Diseases*, 59 (1936), 6. (A. H. B.)

Chemicals—Bacteriological Examination of, Used for Preparation of Solutions for Injection. Typical preparations of twenty of the thirty-three chemicals official in the Danish Phar. 1933 which are used for preparations for injection are tested as to contamination with yeasts, molds or bacteria. Several specimens of each chemical were assembled from various Danish apothecaries. The bacterial cultures were made in agar media, both sterile filtered and autoclaved and both semi-fluid cultures and plates. The media for the tests for molds and yeasts was malt gelatin. Sterile dilutions were made to obtain 1, 5 and 10% solutions of the substances examined. No yeasts were found. In four tests *Penicillium glaucum*, in two tests *Aspergillus glaucum* and in one an unidentified *Aspergillus* were found. No anaerobes were found. In fourteen tests cocci grew, in 18 there were spore forming bacilli and in 11 tests non-spore forming bacilli were seen. None of the cocci were hemolytic streptococci, none of the spore bearers were typhoid or paratyphoid types (they were *Subtilis* and *Megatherium* forms). Tetanus was never found. In but two of the total 44 cases where growths were found (out of 133 specimens examined) were more than one type of organism found on the same substrate. In three cases the same type was found in more than one test. Nine plate tests showed growth. In 26 tests growths were found on sterile filtered agar; there were growths in but 10 tests on autoclaved

agar. In by far the majority of the tests the chemicals were found sterile.—E. JENSEN. *Arch. Pharm. og Chemi*, 43 (1936), 357, 391. (C. S. L.)

Diphtheria—Mediums for the Study of. For the isolation of diphtheria bacilli from nose and throat cultures the tellurite-cystine-blood-agar containing 10% defibrinated rabbit's blood, 0.044% potassium tellurite and about 0.01% cystine, was found to be highly selective and easy to prepare, with 98% of isolations of diphtheria bacilli from positive throat and nose cultures from cases and carriers.—M. K. MCGUIGAN and M. FROBISHER, JR. *J. Infect. Diseases*, 59 (1936), 22. (A. H. B.)

Hydrogen Sulfide Production—Differential Test in the Colon Group. Practically all excherichia as well as the "intermediate" strains produced hydrogen sulfide from cysteine, and 75% of the aerobacter strains also possess this characteristic.—R. VAUGHN and MAX LEVINE. *J. Bacteriol.* (July 1936), 65. (A. H. B.)

Irradiated Cod Liver Oil—Bactericidal and Photochemical Properties of. Ozonides of olive oil, emulsions of ozonide in salt solution and in serum and the vapor from ozonides are all germicidal. Bacteria are not only killed by the oxygen liberated from these oils but their growth rate may be retarded or dissociation may occur if the bacteria are subjected to sublethal doses.—F. A. STEVENS. *J. Bacteriol.* (July 1936), 47. (A. H. B.)

Mucin—Effect of, on Infections by Bacteria. Testicular extract inhibits the pneumococcidal power of rat blood. Mucin did prevent the destruction of the bacteria in the phagocytic system *in vitro*. Mucin does not interfere with phagocytosis but does inhibit the bactericidal properties of phagocytic cells. The viscosity and cohesive properties of the mucin appear to be important indices as to the effectiveness of mucin on bacterial infections.—W. J. NUNGESTER, L. F. JOURDONAIS and A. A. WOLF. *J. Infect. Diseases*, 59 (1936), 11. (A. H. B.)

Phenylmercuric Subnitrate—Bactericidal and Biological Properties of. Phenylmercuric subnitrate aside from being a powerful germicide, has the desirable quality of non-interference with antigenic properties or immunological substances and is relatively nontoxic.—K. T. SASANO and E. M. MEDLAR. *J. Infect. Diseases*, 59 (1936), 35. (A. H. B.)

BOTANY

Benzene Derivatives—Influence of Several, on Roots of Lupinus Albus. A study has been made of the effects of several benzene derivatives on the roots of *Lupinus albus*—namely, four phenols (phenol, cresol, resorcinol and pyrogallol); three acids (benzoic, salicylic and gallic); two amines (aniline and methylaniline). The effects have been expressed in changes of conductance and hydrogen-ion concentrations of the solutions as well as in the physiological influence on the plants. In general, all solutions increased in conductance except the acids, which decreased for varying periods of time and then increased. Except in the lowest concentrations of the acids, the ions lost to the solutions were not compensated for by the end of the experiment. Hydrogen-ion concentration became considerably less in all solutions except the most concentrated of the pyrogallol solutions. There seems to be an agreement between toxicity and complexity of structure in all of these compounds. Among the phenols studied, the order of increasing toxicity is phenol, resorcinol, cresol, pyrogallol. Among the acids studied, the order is gallic, benzoic and salicylic, and among the amines, aniline and methylaniline. There is some indication that rise in temperature increases the toxic effect in the case of phenol, cresol, aniline and methylaniline.—MARY CHRYSOSTOM. *Amer. J. Bot.*, 23 (1936), 461. (E. V. S.)

Coffee Seed—Disinfection of, by Chloropicrin. Two sets of tests carried out on adult insects and on seed infested with parasites at different stages of development, respectively, showed conclusively that the parasite was killed at all stages of development in 8 to 10 hrs. by 5 Gm. of chloropicrin per cu. m., in 4 to 5 hrs. by 10 Gm., in 3 hrs. by 15 Gm., in 2 hrs. by 25 Gm. and in 1 hr. by 50 Gm. These doses must not be exceeded, because any appreciable excess considerably decreases or even completely destroys the germinating power of the seed. The above-mentioned doses produce only a small and unimportant retardation in germination.—A. MALLAMAIRE. *Agron. Coloniale*, 24 (1935), 70–79; through *Chimie & Industrie*, 36 (1936), 174. (A. P.-C.)

Drugs—Cultivation of. The chairman's address to the British Pharmaceutical Conference consists of a general discussion subdivided into the following headings: Falling off in the use of drugs, changes in agricultural conditions, experimental cultivation and investigation required.—HAROLD DEANE. *Chem. and Drug.*, 124 (1936), 719. (E. V. S.)

Epirrhizanthes Elongata—Embryology of. A brief description with 17 figures of the embryological development of the Japanese plant confirming the work of Wirz (1910) and of Shadowsky (1911).—K. A. KARSMARK. *Farm. Revy*, 35 (1936), 453. (C. S. L.)

Tea—Cultivation of, in the Pacific Northwest. Two species of Japanese tea were cultivated and a report is made of the study of growth conditions and of an analysis of the leaves.—LOUIS FISCHER and FREDERICK F. JOHNSON. *J. Am. Pharm. Assoc.*, 25 (1936), 724. (Z. M. C.)

CHEMISTRY

GENERAL AND PHYSICAL

Atomic Weights—Sixth Report of Committee on, of the International Union of Chemistry. Reports on the following elements are given: carbon, potassium, chromium, arsenic, tellurium, terbium, europium, tantalum, radiogenic lead, radium and protactinium. Three changes have been made in the table of atomic weights. Tantalum and radium have been changed from 181.4 and 225.97 to 180.88 and 226.05. Protactinium, with atomic weight of 231, has been added to the table.—G. P. BAXTER, O. HONIGSCHMID and P. LEBEAU. *J. Am. Chem. Soc.*, 58 (1936), 541. (E. B. S.)

Willstatter's Nail. A nail 2 to 4 mm. in diameter and 8 to 10 cm. long and having a head 5 to 15 mm. in diameter is introduced into a funnel used for micro-filtrations under reduced pressure, the funnel being mounted as usual in a suction filtration flask. The head of the nail is covered with a small disk of filter paper on which the precipitate collects, especially along the periphery. After filtration the funnel is inverted and the disk removed by applying slight pressure on the point of the nail. The device is more stable than the Witt filtering plate and acts as a miniature Büchner funnel.—L. PALFRAY. *Documentation Sci.*, 4 (1935), 310; through *Chimie & Industrie*, 36 (1936), 311. (A. P.-C.)

ORGANIC

Alkaloids

Cinchonidine—Derivative of.—There is claimed as new methoxycinchonidine gluconate, forming an anhydrous white crystalline powder containing one molecule of water, forming aqueous solutions neutral to litmus, soluble in about nine parts of water and 75 parts of alcohol at room temperature.—THOMAS HAEGLAND, assignor to MERCK AND CO. INC. U. S. pat. 2,049,442, Aug. 4, 1936. (A. P.-C.)

Deltaline—New Alkaloid from Delphinium Occidentale S. Wats. The isolation of a new alkaloid, deltaline, from *Delphinium occidentale* is reported. This alkaloid is formulated: $C_{19}H_{34}ON(OCH_3)_2(OH)_3$ and is isomeric with delcosine. Deltaline has a melting point of 180–181°.—JAMES FITTON COUCH. *J. Am. Chem. Soc.*, 58 (1936), 684. (E. B. S.)

Erythrophloeum Guineense—New Alkaloids of. The author has isolated four new alkaloids from the bark. *Cassaine* ("cassa" is the native name of the tree) $C_{24}H_{39}NO_4$, white crystals, mol. wt. 405, m. p. 141°, $[\alpha]_D^{20°}$ in absolute alcohol −103°, in aqueous solutions of its salts −117°; almost insoluble in water and light petroleum, soluble in most organic solvents; several crystalline salts, all soluble in water, were prepared. *Cassaidine*, $C_{24}H_{43}NO_5$, mol. wt. 425, m. p. 113°; *nor-cassaidine*, $C_{23}H_{41}NO_5$, mol. wt. 411, m. p. 131°, much less soluble in organic solvents than cassaine; *homophloeine*, $C_{58}H_{90}N_2O_9$, amorphous, very similar to erythrophloeine in appearance and solubility. The following color reactions were observed:

	Sulfuric Acid	Sulfo-vanadic Acid	Sulfo-molybdic Acid
Cassaine	Pale-yellowish	Pale yellow, then very pale green	Very pale brown, then very pale blue which becomes deeper
Cassaidine and nor-cassaidine	Orange, then fiery red	Orange, then carmine red	Brownish, then deep chestnut, changing to violet and then dark brown

(*Continued from page 495*)

	Sulfuric Acid	Sulfo-vanadic Acid	Sulfo-molybdic Acid
Homophloeine	Yellowish, then pale dirty orange	Deep emerald green, then dirty brown	Immediate dark brown, then deep persistent blue, finally changing to bluish gray

These new alkaloids all have a cardiac action similar to digitalis, but partly resemble adrenaline and have a notable local anesthetic action which does not seem to be accompanied by the caustic and inflammatory effects on the tissues shown by erythrophleoine.—G. DALMA. *Ann. Chim. appl. Roma*, 25 (1935), 569; through *Quart. J. Pharm. Pharmacol.*, 9 (1936), 299. (S. W. G.)

Mitraphylline Alkaloid of Adina Rubrostipulata. The bark from which the extraction of mitraphylline was reported (*Bull. Acad. Med. Belg.* (1925), 403) has been identified as *Adina rubrostipulata* (K. Schum) which resembles *Mytragyne macrophylla* (Perrot and Lepr. Hiern).—L. MICHIELS. *J. pharm. Belg.*, 17 (1935), 1049. (S. W. G.)

Monolupine—New Alkaloid from Lupinus Caudatus Kellog. *Lupinus caudatus* was found to contain one alkaloid, monolupine, an amorphous compound having the formula $C_{16}H_{22}ON_2$ and characters of a C-methyl anagyrine. *Lupinus caudatus* is therefore distinct from *Lupinus palmeri* with which it has been confused.—JAMES FITTON COUCH. *J. Am. Chem. Soc.*, 58 (1936), 686. (E. B. S.)

Solanidine. Solanidine when heated with selenium for 28 hours at 320° C. gave phenanthrene. When heated for only 8 hours, it yielded chrysene and unidentified alkaloids which are possibly of the pyridine type. Solanidine methiodide heated at 325° C. yielded solanthrene and other products.—H. DIETERLE and H. ROCHELMEYER. *Arch. Pharm.*, 273 (1935), 532. (L. L. M.)

Essential Oils and Related Products

Carrot—Essential Oils of. A brief description of the cultivation and composition of carrots and of the composition of the various essential oils obtained from them.—G. IGOLEN. *Parfums de France*, 14 (1936), 177–181. (A. P.-C.)

Melaleuca Ericifolia—Linaloöl in Essential Oil of. Linaloöl has been found in four specimens of the essential oil of the leaves and terminal branches of *Melaleuca ericifolia* derived from three separate districts. The authors have not detected the presence of α-terpineol in the oil, as stated by Baker and Smith in 1922. The characteristic pleasant odor of the crushed leaves and the oil is due to linaloöl.—A. R. PENFOLD and F. R. MORRISON. *Proc. Roy. Soc.*, N. S. W., 69 (1936), 171; through *Quart. J. Pharm. Pharmacol.*, 9 (1936), 318. (S. W. G.)

Monarda Pectinata, Nutt—Phytochemical Study of. The volatile oil subheadings indicate the scope of this report: distillation of the volatile oil, separation of phenols, phenol portion of the oil, non-phenol portion of the oil. The phenols corresponded to 77.68% by volume. Thymol and carvacrol and nitrosocarvacrol were found. The report contains many details as to procedure and results.—JOSEPH B. BURT. *J. Am. Pharm. Assoc.*, 25 (1936), 682. (Z. M. C.)

Fixed Oils, Fats and Waxes

Linseed Oil—Oxidation Products of Unsaturated Acids of. The unsaturated acids from linseed oil were submitted to permanganate oxidation under Rollett's conditions, and the products fractionated. Di-, tetra- and hexa-hydroxystearic acids were isolated, and linusic and isolinusic acids, together with degradation products. The latter contained a dibasic acid $C_{12}H_{22}O_6$ and probably the lactonic acid $C_{12}H_{20}O_6$. Oxidation with lead tetra-acetate after the method of Criegee produced azelaic acid, indicating that oxidation of a tetra- or hexa-hydroxy-acid had taken place at the 12 and 13 linkage and two hydroxyl groups added on at the 9 and 10 linkage. Dihydroxystearic acid and sativic acid were oxidized with lead tetra-acetate, and both yielded azelaic acid. Sativic acid also yielded *n*-hexaldehyde, and dihydroxystearic acid yielded *n*-nonaldehyde, identified as the dinitrophenylhydrazones. The positions of the ethylenic linkages in linoleic acid

between the 9–10 and 12–13 carbon atoms is thus confirmed.—L. C. A. NUNN and I. SMEDLEY-MACLEAN. *Biochem. J.*, 29 (1935), 2742; through *Quart. J. Pharm. Pharmacol.*, 9 (1936), 318. (S. W. G.)

Ricinodendron Heudelotti—Oil of. The oil from the seeds of *Ricinodendron Heudelotti* Pierre, known as Essango oil, is used by the natives of the West Coast of Africa for food purposes. The yield of oil obtained from the whole nuts was 13.4%, or calculated on the air-dry kernels 48.8%; and it showed the following characters:—$n_D^{20°C.}$, 1.5054; $n_D^{74°C.}$, 1.4841, Reichert-Meissl value, 0.4; thiocyanate value, 86.6, saponification value, 193.1; acid value, nil; acetyl value, 194. The iodine value, determined by Wij's solution, varies according to the excess of reagent added, the true (maximum) iodine value being 192. The composition of the oil, calculated from the analytical figures, is given below, the content of elaostearic acid being determined by means of the absorption spectrum. Unsaponifiable matter, 0.5%; saturated fatty acids, 9.7%; 9-oleic acid, 16%; 9:12-linolic acid, 11%; linolenic acid, 10%; elaostearic acid, 46%; glycerol residue, 4.4%; volatile, 1.2%. Essango oil is closely related to Chinese and Japanese wood oils, which also come from Euphorbiaceæ, but unlike the latter, it is not poisonous. After heating to 280° C., and mixing with pigment, it gives a good film, equal to that obtained from a mixture of boiled linseed and wood oils.—A. STEGER and J. VAN LOON. *Rec. Trav. chim. Pays-Bas.*, 54 (1935), 988; through *Quart. J. Pharm. Pharmacol.*, 9 (1936), 319. (S. W. G.)

Glycosides, Ferments and Carbohydrates

Rabinobiose—Examination of. From the seed of *Rhamnus utilis* the author obtained two new compounds camphor *l*-rhamnoside (I) and a disaccharide, rabinobiose (II). Because the yield of methylfurfural from (II) after the oxidation with hypoiodide is very small, this indicated that (II) can only be *l*-rhamnosido-*d*-galactose. From (II) an acetochlor-compound and a form of β-methylglycoside compound were obtained in good crystalline form. Because rabinose was not yet isolated, its constituents must be looked upon in the following order: -*l*-Rhamnose, -*d*-Galactose, -*l*-Rhamnose.—G. ZEMPLEN and A. GERECS. *Chem. Zentr.*, 107 (1936), 556. (G. B.)

Other Plant Principles

Plumbagin—Synthesis of. Plumbagin, the active principle of *Plumbago europaea*, *P. zeylonica* and *P. rosea* has been synthesized by a method which proves it to be 2-methyl-5-hydroxy-1,4-naphthoquinone. It was obtained as yellow needles melting at 117–118°. Its isomer, 2-methyl-8-hydroxy-1,4-naphthoquinone, was also synthesized. It melted at 157–158°.—L. F. FIESER and J. T. DUNN. *J. Am. Chem. Soc.*, 58 (1936), 572. (E. B. S.)

Unclassified

Alcohols—Identification of, with Nitrophenyl Isocyanates. The preparation of carbamates by the action of nitrophenyl isocyanates upon various alcohols has been investigated. The reaction is carried out in petroleum ether solution, the product being recrystallized preferably from the same solvent. *m*-Nitrophenyl isocyanate and 3,5-dinitrophenyl isocyanate yield crystalline derivatives of definite m. p. by which the alcohol can be identified. The m. p. of the derivatives obtained by the action of 3,5-dinitrophenyl isocyanate, *o*-, *m*- and *p*-nitrophenyl isocyanates, and phenyl isocyanate with twenty-three different alcohols are given.—F. HOEKE. *Rec. Trav. Chim. Pays-Bas.*, 54 (1935), 505; through *Quart. J. Pharm. Pharmacol.*, 9 (1936), 301. (S. W. G.)

Alcohols—Purification of. The alcohol and impurities are dissolved in an anhydrous inert organic solvent. A polybasic organic acid anhydride capable of esterifying the alcohol is added in sufficient amount to form the mono-ester; the latter is reacted under anhydrous conditions with an anhydrous base to form with the free carboxyl group of the acid a salt which is insoluble in the inert solvent. The salt is filtered out, the ester salt is hydrolyzed and the alcohol is recovered.—KENNETH H. KLIPSTEIN and ARTHUR A. TICKNOR, assignors to THE CALCO CHEMICAL CO., INC. U. S. pat. 2,052,881, Sept. 1, 1936. (A. P.-C.)

Alkaline Earth Metal Aurothioglycolates. Salts such as calcium, strontium or magnesium aurothioglycolates are suitable for use by injection for therapeutic purposes. The calcium salt may be formed by reaction of gold and sodium chloride with thioglycolic acid and calcium chlo-

ride.—RAYMOND DELANGE, assignor to FABRIQUE DE PRODUITS DE CHIMIE ORGANIQUE DE LAIRE. U. S. pat. 2,049,198, July 28, 1936. (A. P.-C.)

Alkylbarbituric Acids—Tertiary. The synthesis of tertiary butyl, ethyl tertiary butyl and ethyl tertiary amyl barbituric acids is given. The yields obtained were very small. The tertiary butyl barbituric acid was found to be physiologically inert and the others were found to be less active than corresponding secondary isomers. Their commercial development is not recommended by the authors.—A. W. DOX and W. G. BYWATER. *J. Am. Chem. Soc.*, 58 (1936), 731. (E. B. S.)

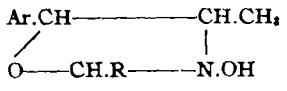
Arsenobenzene Derivatives, Vanadium Compounds of. A compound such as sulfarsphenamine is reacted upon in aqueous solution with a vanadium salt of acid reaction such as divanadyl tetrachloride to obtain a therapeutic product, which may be converted into a sodium salt with sodium hydroxide.—GEORGE W. RAIZISS and ABRAHAM I. KREMENS, assignors to ABBOTT LABORATORIES. U. S. pat. 2,049,662, Aug. 4, 1936. (A. P.-C.)

3,3'-Diamino-4,4'-dihydroxybenzene—Therapeutic Solutions of. As a solvent, there is used ethylene glycol or a mixture of glycerin with β-hydroxydiethyl ether, diethylene glycol or trimethylene glycol.—WILLIAM A. LOTT and ALFRED E. JURIST, assignors to E. R. SQUIBB AND SONS. U. S. pat. 2,047,275, July 14, 1936. (A. P.-C.)

4,5-Dimethylcytosine—Synthesis of. The synthesis of 4,5-dimethylcytosine from 2-ethylmercapto-4,5-dimethyl-6-chloropyrimidine is given. Excellent yield is reported. The authors believe this new pyrimidine derivative to be of physiological interest.—YUOH FONG CHI and YEH SHENGKAO. *J. Am. Chem. Soc.*, 58 (1936), 772. (E. B. S.)

2,4-Dinitrophenol—Pure Ethers of. Ethers sufficiently pure for therapeutic use are produced by the action of an alcohol such as isopropyl alcohol on dinitrochlorobenzene, in the presence of a caustic alkali, all traces of unreacted dinitrochlorobenzene being removed from the product by extracting with a hydrocarbon material of low boiling-point such as petroleum ether.—LAURENCE G. WESSON, assignor to VEADER LEONARD. U. S. pat. 2,048,172, July 21, 1936. (A. P.-C.)

Ephedrine—New Synthesis of. A short method is given in producing the hydroxylamine base (Ia) Ar-3,4-dimethylphenyl and (Ib) Ar-3,4-methylenedioxyphenyl. The same compounds exist in the form of their salts in acid solution, while the free base is quickly rearranged in the N acetyl (II) compound, $Ar.CH(OH)CH(CH_3)N(COCH_3)OH$. This compound is changed back to a new compound (I) in an acid solution, $Ar.CH(O.CO.CH_3)CH(CH_3)NH.OH$. The authors prove that ephedrine derivatives can be synthesized generally from compounds I and II using the so-called nitrone reaction. Although the free compound I condenses to the nitrone III, $Ar.CH(OCO.CH_3)CH(CH_3)N(\rightarrow O)—CH.R$, with the use of aldehydes, their production offers no difficulties in spite of the fact that the displacement of O by N in the acetyl group does not take place immediately. Further it has been proved that the tenacity of the acetyls: Ar and R groups depend on no further additional stimulation during the reaction. This is much easier accomplished during the formation of the isoeugenolmethylether derivative, than by the isosafrol derivative. Some of the nitrone of the a-group except those R-H and *m*-nitrophenyl compounds were acetylized to the nitrone IV, $ArCH(OH)CH(CH_3)N(\rightarrow O)—CH.R$. Contrary to this no b-groups were reactive enough to complete the reaction. The admission or the inadmission of the split up of the acetyl group was proved by the direct synthesis of the nitrone IV. Therefore the compound IV was acetylated with dilute sulfuric acid and heated, this replaced with aldehydes in a solution of a weak alkali. These nitrones were identical with those in I. Some nitrones of the type IV dissolve slowly in dilute hydrochloric acid solution, while the nitrones of the type III remain insoluble. The formula IV can perhaps be replaced by a new formula V.



So far only a few of the nitro (IV) type compounds were reduced to the aminoalcohol (VI) ($Ar.CH(OH)CH(CH_3).NH.CH_2.R$) compound with good yields. Whether these compounds belong

to the ephedrine or pseudoephedrine compounds was not positively decided by the authors.—V. BRUCKNER and A. KRAMLI. *Arch. Pharm.*, 273 (1935), 372; through *Chem. Zentr.*, 107 (1936), 50. (G. B.)

Harmol and Harmalol—Ortho-Alkyl Ethers of. Numerous examples are given, with details of procedure, for the production of compounds such as: *o*-propyl harmol, the hydrochloride of which melts at 259° to 261° C.; *o*-isopropyl harmol, melting at about 181° C.; *o*-butyl harmol melting at 220° C. and forming a hydrochloride which melts at 232° to 234° C.; *o*-butyl harmalol, melting at 173° C.; *o*-heptyl harmol, melting at 131° to 132° C. and forming a hydrochloride which melts at 228° C.; *o*-dodecyl harmol which melts at 119° to 120° C. and forms a hydrochloride melting at 208° C.; *o*-diethylaminoethyl harmol, melting at 167° to 168° C.; *o*-benzyl harmol, melting at 213° C. and forming a hydrochloride melting at 257° C.; *o*-propyl harmalol, melting at 196° to 197° C. and forming a hydrochloride melting at 232° to 234° C.; *o*-nonyl harmol, melting at 114° C. and forming a hydrochloride melting at 205° to 207° C., and *o*-amyl harmol, melting at 206° to 207° C. and forming a hydrochloride melting at about 192° to 194° C. Harmol or harmalol is acted upon by an alkylating agent such as an alkyl halide in the presence of a caustic alkali. Some of the products have an especially high amœbicidal efficiency.—FRANK L. PYMAN and H. L. LEVENE, assignors to BOOTS PURE DRUG CO., LTD. U. S. pat. 2,048,622, July 21, 1936. (A. P.-C.)

Heavy Metals and Sulfhydryl Groups—Compounds Containing, from Keratinates. Numerous examples are given of a method of making compounds containing heavy metals and sulfhydryl groups from keratinates, consisting of hydrolyzing a substance containing keratin with acid until converted into a gelatinous mass, reducing the product with zinc, neutralizing the reduced product until it gives only a slightly acid reaction, separating off the zinc compounds which form and washing these zinc compounds. After decomposing them with hydrogen sulfide and treating the resulting sulfhydryl keratinic acids in aqueous solution with a quantity which is equivalent to the sulfhydryl group content of the solution of a salt of copper, lead, arsenic, antimony, gold, silver or mercury, an organic precipitant is added to deposit the metal compound of the sulfhydryl keratinic acids. Compounds suitable for therapeutic purposes are obtained.—ERNST STURM and RICHARD FLEISCHMANN, assignors to CHEMISCHE FABRIK JOHANN A. WULFING. U. S. pat. 2,046,795, July 7, 1936. (A. P.-C.)

Insects—Chemistry of. The wooly aphis (*Eriosoma lanigerum* Hausmann) yielded 0.2% of an orange colored, fluorescent, crystalline coloring matter, lanigerin ($C_{17}H_{14}O_6$) (m. p. 274–276°) becoming crimson colored in alkaline solution. White pine chermes (*Adelges* (*Pineus*) *strobi* Börner) yielded considerable wax (m. p. 106.1–106.6°) and 0.8% of a dark purple brown, crystalline coloring matter, strobinin ($C_{30}H_{24}O_8$), m. p. 236–237° decomp., becoming orange-crimson in organic solvents and forming an emerald green derivative when extracted with alkali.—B. K. BLOUNT. *J. Chem. Soc.* (1936), 1034–1036. (G. W. F.)

Ketones—Condensation Products of, with Compounds of the Diaminoacridinium Series. For the production of pharmaceutical compounds, 3,6-diamino-10-alkylacridinium compounds are condensed with aliphatic hydroaromatic or aliphatic-aromatic ketones in the presence of caustic alkalis. During the condensation only one of the two amino groups takes an active part in the reaction. There are produced nearly colorless compounds which crystallize well and have no bitter taste. They are insoluble in water and alkalis and soluble in ether, benzene and acetone. Their readily soluble salts of inorganic acids, which are a very weak yellow color, yield, when diazotized, brown-yellow, very unstable diazo compounds. The condensation, which may be carried out in the presence of a solvent, such as water, alcohols, for instance, methyl, ethyl or propyl alcohol, or a mixture of water and an alcohol, occurs at ordinary temperature, but the most suitable temperature is about 40° to 60° C. As ketones there may be used acetone, methyl ethyl ketone, diethyl ketone, cyclohexanone, methyl-cyclohexanone, acetophenone, propiophenone, butyrophenone or tolyl methyl ketone. The end-point of the reaction can be recognized by the fact that the reaction mixture no longer yields the lilac to violet diazo reaction of the acridinium compounds used as starting material. The reaction is generally complete in about 3 hrs.—OTTO SIEVERS, assignor to WINTHROP CHEMICAL CO. U. S. pat. 2,044,892, June 23, 1936. (A. P.-C.)

Medicaments—Synthesis of, in Relation to the Natural Constituents. A lecture given at the University of Amsterdam, June 17, 1936, by Dr. C. G. van Arkel. The author discusses the analysis of the various drug constituents and their synthesis from a historical viewpoint. Among

the subjects discussed are the cocaine anesthetics, quinine, caffeine, various glucosides, vitamins and hormones.—*Pharm. Weekblad*, 73 (1936), 822–843. (E. H. W.)

Ortho-Tolidine—Positive Reaction of Glass upon. *o*-Tolidine and glass together can produce a yellow color, usually indistinguishable from the yellow produced when *o*-tolidine and "active chlorine" interact. Glass seems to acquire this power to produce yellow with *o*-tolidine through hydration. The safest plan in using glassware in the test for "active chlorine" is to introduce the *o*-tolidine reagent first into the glass vessel; if no yellow color develops within the time fixed for the test, the water to be tested may then be added. Soaking with hydrochloric acid (10 cc. concentrated acid to 100 cc. water) for increasing lengths of time up to 6 minutes as a maximum, rapidly reduced to an inappreciable value the activity of the glass toward *o*-tolidine.—DAVID WILBUR HORN. *Am. J. Pharm.*, 108 (1936), 324. (R. R. F.)

Phenylethylbarbituric Acid from Cyclohexenylbarbituric Acid—Distinction of. The phenyl groups of the first compound (A) (Luminal) are quite resistant to oxidation; this is not the case of the cyclohexenyl groups of the latter compound (B) (Phanrodorm). If some drops of potassium permanganate are added to a cold saturated solution of (A) acidified with diluted sulfuric acid, the permanganate solutions remain unchanged in the cold for 8 hours whereas under the same conditions with (B) it is decolorized in 2–3 minutes.—W. MOURSCHULZ. *Apoth. Ztg.*, 51 (1936), 1257. (H. M. B.)

2-Phenyl-4,5,6,7-tetrahydro-indazolones—Preparation and Physiological Properties of Some. These compounds were found to possess definite antipyretic activity and moderate toxicity. Experimental details of procedure and graphic formulæ of compounds are given.—JOHN LEE and W. G. CHRISTIANSEN. *J. Am. Pharm. Assoc.*, 25 (1936), 691. (Z. M. C.)

BIOCHEMISTRY

Adrenal Cortical Hormones—Method of Extracting. Mammalian adrenal glands are treated with a water-soluble solvent to extract the cortical hormone. The solution is concentrated to remove the solvent and leave an aqueous residue. The latter is extracted with petroleum ether to remove fat, and is then extracted with ethylene dichloride, and the ethylene dichloride extract is evaporated to remove the solvent.—GEORGE F. CARTLAND and MARVIN H. KUIZENGA. U. S. pat. 2,053,549, Sept. 8, 1936. (A. P.-C.)

Adrenal Gland Hormones. Fresh adrenal glands are extracted with a weak aqueous acid solution such as fifth-normal hydrochloric acid, and the filtered solution formed saturated with a salt such as sodium chloride to produce a precipitate; the precipitate is dissolved in alcohol, amyl alcohol added to effect precipitation and the precipitate collected and dried.—MAX A. GOLDZIEHER. U. S. pat. 2,048,545, July 21, 1936. (A. P.-C.)

Alkaloids—Biological Significance of, for Plants. A review of the theories offered indicates that the production of alkaloids for a plant can be immaterial, useful or disadvantageous; in general, they are not worthless secretions for plants but are built up under definite conditions and apparently somehow utilized; their nitrogen content indicates their utilization in protein synthesis. The question "What rôles do the individual alkaloids play in the life of the single plant?" is yet not satisfactorily answered.—TH. SABALITSCHKA. *Apoth. Ztg.*, 51 (1936), 1301–1306. (H. M. B.)

Bilirubin—Method of Making. Bile is treated with calcium hydroxide to form calcium bilirubinate. The water-soluble constituents of the bile are washed away, the calcium bilirubinate is acidified, dissolved, extracted with chloroform and washed with alcohol.—EARL A. PETERMAN. U. S. pat. 2,049,134, July 28, 1936. (A. P.-C.)

Blood—Chemical Examination of. A review.—E. JEKEL. *Pharm. Monatsh.*, 17 (1936), 133–134. (H. M. B.)

Blood Urea—Microdetermination of. Nessler's reagent, rendered insensitive to glucose and creatinine by the addition of hypochlorite, may be used for the microdetermination of urea in 0.2 cc. of blood. The reagent consists of 0.1 cc. of sodium hypochlorite solution containing 10 to 13% of available chlorine, freshly added to 20 cc. of Nessler's reagent. The solution of blood, after treatment with urease solution and tungstate, is centrifuged and an aliquot portion of the supernatant fluid treated with the Nessler-hypochlorite reagent. The yellow color produced is determined colorimetrically against that produced by adding standard solution of ammonium sulfate to the reagent. Six results ranging from 19.5 to 50.6 mg. of urea per 100 cc. of blood agree

closely with those determined by the usual æration or distillation methods. Fresh blood and well-cooled reagents are prerequisites of accuracy.—J. F. BARRETT. *Biochem. J.*, 29 (1935), 2442; through *Quart. J. Pharm. Pharmacol.*, 9 (1936), 324. (S. W. G.)

Carbon—Determination of Total, in Urine. Modification of Dennstedt's Method. Drying in vacuum over sulfuric acid causes a loss of carbon of about 10%, at 37° C. of 15%. Drying at 57° to 60° C. causes evaporation of the total acetone but because of the short time required (2 to 4 hrs.) no other loss occurs. Determination of acetone in the original sample and of the carbon in the dried residue gives accurate results.—N. E. INSUA. *Rev. Sud-Amer. Endocrinol.*, 18 (1935), 609–617; through *Chimie & Industrie*, 36 (1936), 34. (A. P.-C.)

Citric Acid—Determination of Small Amounts of, in Biological Material. When pentabromoacetone in petroleum ether solution is treated with aqueous sodium sulfide a reddish-yellow color develops in the aqueous layer. This phenomenon has been utilized as the basis of a spectrophotometric method for the determination of citric acid in quantities of 0.1 to 1.0 mg. The material is boiled with dilute sulfuric acid, treated with excess of bromine water in the cold, centrifuged and the liquid treated with potassium permanganate. After ten minutes the solution is decolorized with ferrous sulfate or hydrogen peroxide and the pentabromoacetone extracted with petroleum ether. The washed extract is shaken with sodium sulfide solution and the color of the aqueous extract, diluted with pyridine, is measured in a Pulfrich spectrophotometer. The details given must be followed closely. Examples are given of the application of this method to canine and human urine, blood, other animal tissues, saliva and plants. Added citric acid was recovered to the extent of 90 to 105% in most cases, and multiplicate analyses agreed well.—G. W. PUCHER, C. C. SHERMAN and H. B. VICKERY. *J. Biol. Chem.*, 113 (1936), 235; through *Quart. J. Pharm. Pharmacol.*, 9 (1936), 324. (S. W. G.)

Honeysuckle—Biochemical Researches on Some Species of (Lonicera) III. The article is a continuation of a series, this one being concerned with the variation in content of glucosides in the various organs during the course of the period of active vegetation. All of the parts—the leaves, bark, fruits and young branches—were collected from the same source and made into fluidextracts, 100 cc. representing 100 Gm. of fresh parts. All of the data is tabulated. Reducing sugars are more abundant in the leaves than in the buds and increase during the formation of the leaf, fall to a minimum during the flowering and fruiting, and rise in the autumn. The heterosides are apparently used up in the formation of the leaves and maturation of the fruit since they have disappeared nearly completely in the autumn. The reducing sugars vary little in the bark. In the fruits, between the formation and maturity, there is an accumulation of reducing sugars and a quick utilization of the holosides. The variations in the young twigs is insignificant. The variations of sucrose in the leaves may be taken as supporting the idea that it is the first product of chlorophyll assimilation.—C. BÉGUIN. *Pharm. Acta Helv.*, 11 (1936), 202. (M. F. W. D.)

Kaolin—Influence of Salts on the Adsorption of Hemoglobin by. In the concentration studied, the cations Na, K, Ba, diminished the adsorption of commercial hemoglobin by kaolin. The diminution is greater when the concentration of ions is greatest. The anion SO_4, does not influence the adsorption in a concentration of 0.1 *N* but diminishes it in a concentration of 1 *N*. The salts NaCNS and Na_3PO_4 strongly diminish the adsorption principally on account of increasing the p_H. There can be several causes of the diminution of the adsorption of hemoglobin in the presence of salts; changing if the capillary properties of the kaolin, chemical action of the salts on the protein, displacement of the isoelectric point, increase of the solubility, etc.—MLADEN PAIC and VALERIE DEUTSCH. *Compt. rend.*, 202 (1936), 1514. (G. W. H.)

Milk—Vitamin Content of, Process of Concentrating. A liquid equivalent to whey is produced from milk and is concentrated to about one-tenth of its original volume by evaporation at not over 95° C. The acidity is adjusted to a p_H of 6 to 7, the liquid is allowed to stand and is then filtered; the liquid is treated with about one-half to one-fourth of its volume of alcohol, and after allowing to stand, is again filtered. The alcohol is removed by evaporation at not over 95° C.; the liquid is allowed to stand at least 24 hrs., and is finally filtered to yield a concentrated vitamin-containing product free from solid matter.—CHARLES DICKENS. U. S. pat. 2,052,218, Aug. 25, 1936. (A. P.-C.)

Pine Needles—Antiscorbutic Properties of. The investigation was carried out on concentrated solutions prepared from infusions of pine needles in 0.2% hydrochloric acid (1 part of needles to 3 of dilute acid) concentrated on the water-bath at 45° to 50° C., the ratio of the con-

centrations of the two solutions being 1:17 to 1:25. The results indicated that these concentrates retained their antiscorbutic properties for a fairly long time (at least 11 months), after which their potency decreased appreciably, falling to about one-third of its original value (toward guinea pigs) in 6 months.—N. SHEPILEVSKAYA. *Voprosui Pitaniya*, 4, No. 3 (1935), 30–32; through *Chimie & Industrie*, 36 (1936), 356. (A. P.-C.)

Pituitary—Chromatophoric Principle of the Pars Intermedia of. Hormone found predominantly in the pars intermedia of the pituitary, intensifies skin coloration by marked expansion of melanaphores. It is found in both warm and cold-blooded animals, and is called "intermedin." Unaffected by pregnancy, it occurs independently in organism, without oxytocic and pressor factors of pituitary, is thermostable, but inactivated by ultraviolet rays, soluble in benzene, chloroform and alcohol.—BERNHARD ZONDEK. *J. Am. Med. Assoc.*, 104 (1935), 637. (M. R. T.)

Salicaceæ—Contribution to the Biochemical Study of. XI. On the Hydrolysis of Salicoside by the Fermenting Powder of the Leaves of Salix Purpurea. If to a solution of phenol glucoside one adds a little of the fermenting powder of the leaves of *Salix purpurea*, the hydrolysis is complete; if during the course of the reaction, one adds a small amount of methyl alcohol (or some other primary alcohol) one finds: (1) that the glucose already liberated does not react; (2) that the glucose which will be liberated by the continued hydrolysis is in a special form called "nascent glucose" and that it will combine with the alcohol in the presence of a specific enzyme as the fermenting powder. This reaction has been studied in detail and the differences in the reaction of glucose on methyl alcohol in the presence of emulsin are observed.—J. RABATÉ. *Bull. soc. chim. biol.*, 17 (1935), 572; through *Schweiz. Apoth.-Ztg.*, 74 (1936), 357. (M. F. W. D.)

Salicaceæ—Contribution to the Biochemical Study of. XII. Oxidation of Salicoside by the Fermenting Powder of the Leaves of Salix Purpurea. T. Weevers believes that the blackening of the leaves of Salicaceæ is due to autolysis and transformation of the saligenol to pyrocatechol which in turn is oxidized by the oxygen of the air in the presence of an oxidase contained in the leaves to a black product. Rabaté confirms the statement that the blackening is due to an oxidation accompanied by the absorption of oxygen; but it is not likely that the oxidation occurs through pyrocatechol; pyrocatechol may oxidize 3 times more easily than saligenol; on the other hand, on the oxidation of saligenol one obtains salicylaldehyde in the course of the darkening of the leaves, rather than the ferment oxidation of pyrocatechol; further, unoxidized saligenol can be recovered from fermented solutions and they do not contain pyrocatechol. He attempts to show that only the organs containing salicoside are susceptible to darkening while the organs which do not contain it do not darken. The nature of the black product is still unknown.—J. RABATÉ. *Bull. soc. chim. biol.*, 17 (1935), 602; through *Schweiz. Apoth.-Ztg.*, 74 (1936), 357. (M. F. W. D.)

Vitamin B—Chemistry and Physiology. A review of recent developments and conceptions.—R. SCHULER. *Drug. and Cosmetic Ind.*, 39 (1936), 179, 186. (H. M. B.)

Vitamine C—Chemistry and Physiology of. A review.—R. SCHULER. *Drug. and Cosmetic Ind.*, 39 (1936), 318–320. (H. M. B.)

Vitamin Concentrate from Asparagus. There is prepared an aqueous solution of the water-soluble portion of asparagus substantially equal in volume to the expressible juice of an equal amount of asparagus. The solution is concentrated by evaporation at about 70° C. to about one-tenth of its volume and, after allowing to stand for several hours, is filtered. The filtrate is mixed with one-fourth to one-half its weight of alcohol, allowed to stand and, after filtration, is evaporated to not more than one-half its volume to remove the alcohol and yield a concentrate of the water-soluble vitamin of asparagus substantially free from fibrous material, chlorophyll and asparagin.—CHARLES DICKENS. U. S. pat. 2,052,219, Aug. 25, 1936. (A. P.-C.)

Vitamin P. Vitamin P is the name proposed for the dietary factor preventing vascular permeability. The authors find that certain pathological conditions, characterized by permeability on fragility of the vascular wall, are readily cured by extracts of Hungarian red pepper (vitapric) or lemon juice, whereas ascorbic acid is without effect. The extracts are fractionated, and the active substance in the end fraction consisted of pure flavone or flavonol glycoside. Daily doses of 40 mg. (given intravenously) restored normal capillary resistance in man within two weeks. The decreased resistance of the capillary wall toward whole blood causes a vascular type of hemorrhagic purpura, and various septic conditions may arise from its permeability to

plasma protein.—ST. RUSZNYAK and A. SZENT-GYÖRGYI. *Nature*, 3479, 27; through *Chem. and Drug.*, 125 (1936), 112. (E. V. S.)

Vitamin Research—Most Recent Contributions to. A review dealing with Vitamin B_1 and D_3.—AWE. *Apoth. Ztg.*, 51 (1936), 1178. (H. M. B.)

Vitamins—Process for Obtaining. The antineuritic vitamin is adsorbed from a weak extract thereof upon Fuller's earth. The vitamin is extracted from the Fuller's earth by means of an acid solution containing an excess of a strong organic poly-nitrogenous base which is strongly adsorbed by the Fuller's earth and capable of replacing the vitamin adsorbed thereby.—ROBERT R. WILLIAMS and ROBERT E. WATERMAN, assignors to RESEARCH CORP. U. S. pat. 2,049,988, Aug. 4, 1936. (A. P.-C.)

ANALYTICAL

Alcohol—Determination of, in the Human Organism. The method of Martini and Nourrisson has been modified as follows: (1) distillation is carried out until the distillate measures 75% (instead of 20%) of the original volume; (2) oxidation is carried out under a reflux condenser (instead of in an open vessel). These modifications permit the recovery of over 99% of the alcohol present.—E. NICOLOFF and M. MARCOFF. *Ann. Méd. Légale Criminol. Police Sci.*, 16 (1936), 391–392. (A. P.-C.)

Alkaloids—Aminometry of. *I. Aminometric Estimation in Anhydrous Chloroform Solution.* In view of a recommendation made by Vorländer (*Ber. Dtsch. Chem. Ges.*, 66 (1933), 1789 and 67 (1934), 145) a procedure is outlined by which alkaloids may be estimated aminometrically under exclusion of aqueous and alcoholic solvents and all those conditions under which alkaloids are converted to bases. The practicability of the method has been demonstrated in a large number of alkaloids, drugs and alkaloidal preparations, as for example in the quantitative evaluation of ergot. Free alkaloids are estimated by titration with a 0.05*N* solution of *p*-toluene sulfonic acid in chloroform, prepared and standardized under definitely prescribed conditions. A 0.05% solution of dimethylaminoazobenzene in chloroform is used as indicator. The method is applicable to drugs and galenical preparations.—R. DIETZEL and W. PAUL. *Arch. Pharm.*, 273 (1935), 507. (L. L. M.)

***Cannabis Indica*—Detection of Small Quantities of, in Drug Mixtures by Filtered Ultraviolet Light.** While cannabis gives an intense fluoroscence many other drugs show no fluorescence at all. The use of extracts obtained with different solvents supplies a further means of differentiation.—JOSEPH KHOURI. *Ann. Méd. Légale Criminol. Police Sci.*, 16 (1936), 249–252. (A. P.-C.)

Carbon Dioxide—Determination of, in Air. Ampuls are prepared containing 0.01*N*, 0.1*N* and 0.25*N* barium hydroxide solutions to which has been added 0.1 Gm. of thymol blue, dissolved in 5 cc. of alcohol, per liter of each solution. One cc. of these solutions is equivalent to 0.112 cc., 1.12 cc. and 2.8 cc. of carbon dioxide, respectively. The samples of air are collected in liters or 500-cc. flasks in which the ampuls have been placed, the flasks are sealed, the ampuls broken and the color changes noted. Tables are given showing the equivalents of various dilutions of the standard solutions, the relative and absolute values of observed results, and the time to be allowed for indicator changes.—LOUIS MARICQ. *J. pharm. Belg.*, 18 (1936), 37–43. (S. W. G.)

Charcoal Tablets—Adsorptive Power of, Tested with Methylene Blue. The Tablettæ Carbonis Medicinalis of the Dispensatorium Danicum, 1934 are tested as to absorptive power with methylene blue. The powdered charcoal material is stirred for 5 min. in a 1% solution of methylene blue in water at 18–22° C. The content of methylene blue in the solution before and after treatment is determined by colorimetry or, more accurately, by titration with titanous chloride. The water content of the dyestuff and of the charcoal preparations is also determined. The tablets are found less absorptive than the ingredients by about 8–12%, in one case 19%. This is due to retarded development of active surface as a result of the compressing. No further decrease of activity on storage is observed. The absorption is partly dependent on the water content of the tablets and this should never exceed 20%. Some difficulties in the use of methylene blue for such tests are noted. The content of tetramethylthionine chloride in the dyestuff cannot be gaged accurately from ash and water determinations. The p_H of the solution markedly affects the absorption. If preparations contain acacia a false high absorption value is obtained due to precipitation of the methylene blue by acacia. Titanous chloride titration is the only accurate means

of determining the residual methylene blue in the solution.—L. NIELSEN and N. JENSEN. *Dansk Tids. Farm.*, 10 (1936), 185. (C. S. L.)

Copper—Unsuspected, in Domestic Water Supplies. II. A simple test has been devised for the detection of traces of copper in domestic water supplies that make use of combined air and water pumps along with copper pipes. The test takes advantage of the blue color developed when a white soap acts upon a water containing copper, the test showing one part per million, particularly when observed in white enamel vessels.—DAVID WILBUR HORN. *Am. J. Pharm.*, 108 (1936), 320. (R. R. F.)

Dinitrochlorobenzene—Determination of, in Air. The air to be tested is passed through an absorption flask with porous glass plates containing 10 cc. of alcohol; the alcohol is transferred to a volumetric flask and the absorption flask is rinsed repeatedly with 1 cc. of alcohol. To 5 cc. of the alcohol solution in a test-tube add 5 cc. of 10% caustic soda, heat 1 hr. on a water-bath at 40° C.; when saponification is complete dilute to 10 cc. with water, and compare colorimetrically with standards prepared as follows: prepare a solution containing 0.02 mg. dinitrophenol per cc. in 10% caustic soda, introduce suitable volumes in colorless glass test-tubes of the same diameter, add 10% caustic soda solution to make 5 cc. and then 5 cc. of alcohol. The prepared standards should contain from 0.001 to 0.01 mg. of dinitrophenol per cc.—B. A. RASHKOVAN. *Hig. Truda Tekh. Bezopasnoti*, 13 (1935), No. 6, 74–75; through *Chimie & Industrie*, 36 (1936), 308. (A. P.-C.)

Drugs—Volatile Oil Content of. The following method for the determination of volatile oil on a small scale is offered: "Place the powdered drug (200–500 Gm.) in a small retort of 1–2 liters capacity into which steam is conducted. The water vapor and volatile oil pass through a vertical bulb condenser and flow into a volumetric Florentine flask (100 cc.), which has previously been rinsed with distilled water, weighed wet and in which the oil separates. The water is allowed to flow off by means of the side tube. Stop the distillation when the water in the flask is no longer milky. Separate the oil from the remainder of the water by means of an attached tube provided with a stopcock which serves as a separatory funnel whereby the water is run off to the stopcock and the oil remaining in the flask is weighed." The per cent of oil by this method and of the German Pharmacopœia VI for the fruits of caraway (4 samples), coriander (4), fennel (1) and juniper (3) are compared and in every case the values obtained by the proposed method are higher than by the pharmacopœial method.—P. ROM. *Pharm. Monatsh.*, 17 (1936), 145–146. (H. M. B.)

Iodides—Determination of Small Quantities of. Application to the determination of small quantities of certain metals. The determination is based on the oxidation of iodides to iodates. Method: Add an excess of bromine solution (13 cc. of bromine and 20 Gm. potassium bromide in 1000 cc. of distilled water), shake, allow to stand for 10 minutes, place the flask in an ice-water mixture, add 5 cc. of 40% formaldehyde solution, then add sodium hydroxide solution, drop by drop, until the mixture is decolorized. Add 5 cc. of glacial acetic acid and 5 cc. of potassium iodide solution (1:5) and titrate with $N/10$ or $N/100$ sodium thiosulfate solution. Only ammonium salts and alkali cyanides interfere with the determination. The method may be applied to the determination of chromium exactly as for iodides. For silver, excess iodide is added, the silver iodide removed by filtration and the excess iodide determined as above. The removal of colloidal silver iodide is aided by precipitating barium carbonate in the mixture before filtering.—L. JEAN. *Bull. soc. chim. France* (April 1935); through *J. pharm. Belg.*, 18 (1936), 105. (S. W. G.)

Magnesium—Volumetric Microdetermination of. The reagents used are: (1) 0.05 N lithium picrolonate made by dissolving 6.6 Gm. of picrolonic acid in 500 cc. of 0.5 N solution of lithium carbonate. The solution should be neutral or slightly acid. It is filtered after standing over night, and standardized against methylene blue. (2) 0.01 N methylene blue prepared by dissolving 3.74 Gm. of chemically pure methylene blue (Merck) in water, diluting to one liter and standardizing against picric acid solution (see *Proc. Roy. Soc.*, N. S. W., 67 (1933), 240). The solution to be analyzed should be neutral or slightly acid. The presence of large amounts of alkali ought to be avoided, and barium, strontium and heavy metals should be absent. The samples to be analyzed have to be treated somewhat differently, according to whether (*a*) calcium is absent or calcium and magnesium are precipitated together, or (*b*) calcium and magnesium are determined separately on the same sample. Samples of type (*a*) are further differentiated, ac-

cording to whether (1) the concentration of alkali salts present does not exceed 0.01*N*, (2) the concentration of alkali salt ranges between 0.01*N* and 0.1*N* and alkali picrolonates have been precipitated or (3) the concentration of alkali salts present is above 0.1*N*. The author gives details of the method of testing samples falling into each of these categories and discusses the limitations of the method.—A. BOLLIGER. *Proc. Roy. Soc.*, N. S. W., 69 (1935), 68; through *Pharm. J.*, 137 (1936), 192. (W. B. B.)

Metals—Application of Specific Reactions to the Study of Toxic. Procedures are given for the identification of lead, copper, bismuth, thallium, zinc, iron, silver and chromium. The tests should not be made on the original samples when large amounts of chlorides or organic matter are present.—EUGENE IVANOFF. *J. pharm. Belg.*, 18 (1936), 59-62, 79-82. (S. W. G.)

Methenamine-Anhydromethylenecitric Acid—Analysis of. Earlier reports of methods for the analysis of Helmitol and similar preparations depended upon the quantitative determination of the methenamine. The author suggests a method for the determination of both the methenamine and the methylenecitric acid. The method is as follows: Weigh 344 mg. of the methenamine-anhydromethylenecitric acid in a 100-cc. beaker and add enough *N*/10 methylalcoholic sodium hydroxide (prepared by dissolving solid alkali in 100% methanol) to neutralize. When entirely in solution add 30 cc. chloroform and allow the precipitate to settle. When settled filter through a dry filter. Wash the beaker and filter with chloroform and collect the chloroform-methanol solution in a separatory funnel. Shake three times with successive 25-cc. portions of water and add 50 cc. of *N*/10 acid to the united aqueous extracts. Boil until the volume is about 50 cc. and titrate the excess acid with *N*/10 alkali using methyl red as indicator. The number of cc. of *N*/10 acid required multiplied by 3.5 is equal to the number of mg. methenamine per millimole of the compound. Dry the chloroform-washed filter and beaker at about 80°, until the odor of chloroform disappears. Transfer as much of the salt as possible to the beaker and wash the filter with water so that the total solution measures about 20 cc. Add 20 cc. *N*/10 alkali and warm 15 minutes *in* a boiling water-bath. Cool quickly and titrate the excess alkali with *N*/10 acid using phenolphthalein as indicator. The number of cc. of *N*/10 alkali used multiplied by 20.4 is equal to the number of mg. of anhydromethylenecitric acid per millimol. of the compound.—M. J. SCHULTE. *Pharm. Weekblad*, 73 (1936), 1107. (E. H. W.)

Methyl Alcohol—Presence of, in Certain Galenicals. Positive reactions for methyl compounds have been obtained, using Deniges' method, on testing the purified distillates from certain official preparations, notably those prepared from orange or lemon peel. The possibility of the reaction being due to some compound other than methyl alcohol has been investigated, but it has been shown that the compound giving the reaction is, in fact, methyl alcohol. It is suggested that the methyl alcohol is derived from the decomposition of pectin, present in orange and lemon peels.—R. W. RICHARDSON. *Pharm. J.*, 137 (1936), 249. (W. B. B.)

Micro-chemical Fluorescence Analysis—Special Use of. The article is a reprint of a lecture given before the Austrian Microchemical Association. The speaker outlines briefly the history of fluorescence analysis, describes some of the methods and mentions some applications. The methods are easily applied to micro-work and some examples of the limits of sensitivity of the method are given.—M. HAITINGER. *Scientia Pharm.*, 7 (1936), 66. (M. F. W. D.)

Morphine—Estimation of, in Dialyzed Aqueous Extracts of Unripe Poppy Seeds. The method given for the determination of the secondary alkaloids is as follows: 500 Gm. of Paverisat Bürger are evaporated, the residue is dried at 100° C. and pulverized. Weight, 12.24 Gm. The powder is digested for two hours with 50 cc. of 0.5% sulfuric acid, then filtered on a suction plate and washed with 10 cc. of the same acid. The filtrate, after adding 30 Gm. of sodium acetate, is allowed to stand over night in a refrigerator. The small quantity of precipitate that separates is removed by suction, after first adding 5 Gm. of ignited infusorial earth, and dried in an air-bath. The dried material is transferred to a Soxhlet apparatus and extracted for three hours with toluene. The toluene solution is evaporated in a tared platinum vessel, dried and weighed. The weight of secondary alkaloids thus determined amounted to 0.00024%. For the determination of morphine, a longer and more involved procedure gave for morphine, 0.0144%.—C. A. ROJAHN and W. FACHMANN. *Arch. Pharm.*, 273 (1935), 515. (L. L. M.)

Morphine Group—New Color Reaction of. The alkaloid to be tested is evaporated with ten drops of a reagent prepared by dissolving 0.1 Gm. of dimethylaminobenzaldehyde in 20 cc. of alcohol and 4 drops of sulfuric acid. Morphine, codeine, ethylmorphine, diacetylmorphine and

benzylmorphine give a red-violet residue, soluble, colorless in water and alcohol. Dilaudid, dicodid (dihydrocodeinone hydrochloride) and eucodal (dihydrooxycodeinone) give a red residue, soluble with yellow color.—JUAN A. SÁNCHEZ. *Semana méd.* (Buenos Aires), 43, II (1936), 425. (A. E. M.)

α-Naphthoflavone as Reversible Bromometric Indicator. In colloidal solution α-naphthoflavone gives a dark orange compound with free bromine. This sensitive reaction can be used for the bromometric titration in determining arsenic, antimony, tin, hydrazine and aniline. It can also be used for the argentometric determination of bromides.—R. UZEL. *Coll. Trav. Chim. Tchtcoslovaquie*, 7 (1935), 380-387; through *Chimie & Industrie*, 36 (1936), 282. (A. P.-C.)

Oleic, Linoleic and Linolenic Acids—Determination of. The following summary is given: 1. The method of Kaufmann (*Studien auf dem Fettegebeit. Verlag Chemie Berlin*, 1935) was applied to oleic, linoleic and linolenic acids and their esters individually and in mixtures. The variations which the interpretation of results must undergo when the details of the procedure are modified are given. 2. Exact absorption indices are obtained with oleic and linoleic acids, but results are less accurate with linolenic acid. 3. Mixtures of the acids may appear to have properties peculiar to pure compounds. 4. Kaufmann's method does not fully resolve the problem of accurately determining the unsaturated acids in fatty materials. 5. Catalytic reduction under pressure holds some promise. It eliminates the main errors inherent in all the iodometric methods as it is limited to the careful measurement of a variation in volume or pressure.—E. DELVAUX. *J. pharm. Belg.*, 18 (1936), 101, 131, 153. (S. W. G.)

Orthosiphon Stamineus Benth.—Constituents of. The presence of urea in extracts of the plant was proven by qualitative tests and a method was then devised for its quantitative determination by liberation of ammonia with urease.—R. DIETZEL and E. SCHMIDT. *Arch. Pharm.*, 274 (1936), 10. (L. L. M.)

Pyrethrum—Chemical Analysis of. Use of petroleum ether for the extraction of pyrethrum in the determination of pyrethrins originated with its use for the investigation of the properties and constitution of pyrethrins because it extracts less non-pyrethrin material. With the fresh plant it gives complete extraction, but with plants that have been stored for a few months the extraction is incomplete. Chloroform gives complete extraction on plants several months old, but also extracts considerable non-pyrethrin material which complicates the analytical procedure. The toxicity, however, remains unchanged on storage, showing that the insolubilization in petroleum ether does not affect the efficiency of the plant. A comparison was made of the results obtained by (1) the Seyl method (both without and with neutralization of the extract), (2) the Ripert method, (3) the semicarbazone method, and (4) the methoxyl method (for pyrethrin II). The methoxyl method was carried out essentially as follows: evaporate the solvent under vacuum, dissolve in pure absolute alcohol containing a sufficient amount of semicarbazide, let stand 36 hrs. at 30° C., evaporate the alcohol under vacuum, dissolve the residue in chloroform, wash repeatedly with water to eliminate uncombined semicarbazide, dry the chloroformic solution over anhydrous sodium sulphate, evaporate to dryness to constant weight, determine nitrogen by Pregl's method (micro Dumas), and calculate pyrethrins by weight from the average molecular weights of pyrethrins I and II. Ripert's method gives somewhat higher results for pyrethrin I than Seyl's; for pyrethrin II, Seyl's method without neutralization gives appreciably higher results than Ripert's, while with neutralization it gives practically the same results as Ripert's method. The methoxyl method gives higher results than Seyl's and still more so than Ripert's, showing the presence in the plant of methoxyl-containing substances other than pyrethrin II. In all cases the total pyrethrin content of the chloroform extract was higher than that of the petroleum-ether extract, but the sum of the pyrethrin contents of the petroleum-ether extract and subsequent chloroform extract was equal to that of the direct chloroform extract. A repetition of Graham's work (*Ind. Eng. Chem., Analyt. Edit.*, 8 (1936), 222) failed to confirm his findings; operating under unusual conditions (5 cc. of a concentrate containing 100 Gm. total pyrethrins per L., adding 1 L. of water in a 2-L. flask, and distilling till there remained only 75 cc. of water in the distillation flask) the loss amounted to only 17% of the total pyrethrins and concerned mainly pyrethrin I. In order to obtain the high loss reported by Graham (25%), it would be necessary to operate under very exceptional conditions such as are never used in the analysis of commercial pyrethrum products.—J. RIPERT. *Ann. fals.*, 29 (1936), 344-354. (A. P.-C.)

Rosin—U. S. P. XI Test for, in Balsam Peru. The authors claim that the U. S. P. XI

test for rosin is faulty in that petroleum benzin should be used instead of xylene, which latter solvent dissolves enough cinnamic acid to give a positive test with the copper acetate T.S. Petroleum benzin will detect quantities of rosin as small as one % in Balsam Peru.—S. PARNAS and R. E. SCHOETZOW. *Am. J. Pharm.*, 108 (1936), 389. (R. R. F.)

Sandalwood—Oil of, from French Oceania. A trial distillation of the wood of *Santalum eremophyla* Mitchelii from the Island of Raïvavaë yielded 3.61% of rather viscous, intensely yellow oil, having a slight santal-like odor resembling especially that of cedar and of licorice wood. Physical constants obtained were: specific gravity at 15° C. 0.9764, optical rotation −34° 45′, refractive index 1.0513, acid value 1.12, ester value 8.42, ester value after acetylation 91.18. These values are quite different from those reported by Bradfield and Simonsen (*Perf. Ess. Oil Rec.* (1933), 125–127).—ÉTABLISSEMENTS ANTOINE CHIRIS. *Parfums de France*, 14 (1936), 155. (A. P.-C.)

Santalum Freycineta—Oil of. Distillation of the wood of *Santalum freycineta* from New Caledonia yielded 4.2% of a viscous essential oil having a santal-like odor and the following characteristics: specific gravity at 15° C. 0.9782, optical rotation 4° 25′, refractive index 1.5130, acid value 1.68, ester value 22.44, ester value after acetylation 202. The corresponding values given by Gildemeister and Hoffmann for oil of *Santalum freycinatianum* Gand, from Tahiti, are: specific gravity at 15° C. 0.9748, optical rotation −8° 29′, refractive index at 20° C. 1.50848, acid value 2.0, ester value 5.1, ester value after acetylation 203.6, santalol 94.4%, soluble in 4 to 5 volumes of 70% alcohol.—ÉTABLISSEMENTS ANTOINE CHIRIS. *Parfums de France*, 14 (1936), 182. (A. P.-C.)

Strontium Bromide—Assay of. Strontium bromide is soluble 1 part in 0.5 part of water, 2 parts of alcohol and insoluble in ether. The determinations of iodine and bromates should be included in the monograph in the Belg. Phar. The method of the U. S. P. should be used to test for barium. The indicated temperature of 130° is not high enough for the desiccation which should be carried out in a double crucible. The water content should be determined by weighing the dried residue before carrying out the volumetric determination.—ANDRÉ BERNARD. *J. pharm. Belg.*, 18 (1936), 199–202. (S. W. G.)

Trimethyl Carbinol—Application of Denigès' Reagent to the Determination of. Three cc. of the reagent (mercuric oxide in concentrated sulfuric acid) are added to 0.1 cc. of the solution of trimethyl carbinol in isopropyl alcohol, and the turbidity or opalescence obtained after 10 min. at 50° C. is compared with that given by a series of standard solutions. The method is not applicable to concentrations of less than 0.5 mg. of trimethyl carbinol per 100 cc.—A. G. POUKIREV. *J. Prikl. Khim.*, 8 (1935), 1309–1312; through *Chimie & Industrie*, 36 (1936), 285. (A. P.-C.)

Ultraviolet Fluorescence—Use of, in Drug Identification and Analysis. A general discussion subdivided into production of ultraviolet light, methods of examination, recording of results and applications. The methods of examination may be qualitative (direct irradiation, microscopic examination, capillary analysis) or quantitative (trial and error, colorimetric methods, capillary analysis). The recording of results may be by spectroscopic, colorimetric or photographic methods. Applications are discussed regarding alkaloidal and non-alkaloidal drugs, oils and fats and inorganic substances.—E. M. WATSON. *Australas. J. Pharm.*, 17 (1936), 555. (E. V. S.)

Vanillin—Determination of, with 2,4-Dinitrophenylhydrazine. The sample of vanillin was dissolved in 20% alcohol. An aliquot of this was taken and diluted with water to about 90 cc. and the reagent slowly added with constant stirring. The reaction mixture was allowed to stand the indicated time and the precipitate collected in a weighed Gooch crucible, washed with 40 cc. of 2*N* hydrochloric acid, then with 10 cc. of water and finally dried to constant weight at 105° C. All of the reactions were carried out at room temperature. The filtrates from the reaction mixtures showed no turbidity after standing one hour. The reagent was prepared by triturating 0.4 Gm. of 2,4-dinitrophenylhydrazine with 21 cc. of concentrated hydrochloric acid and then diluting to 100 cc. with water. After standing 24 hours it was filtered just before use. By the foregoing method an average recovery of 99.44% was obtained.—NATHAN RUBIN and ALBERT BLOOM. *Am. J. Pharm.*, 108 (1936), 387. (R. R. F.)

Vinegars—Determination of Extracted Matter in. Tare an evaporating dish of about 7-cm. diameter containing 10 Gm. of washed and ignited sand. Add 25 cc. of the vinegar, evaporate

on a water-bath until a moist mass remains. Add 25 cc. of distilled water, mix, evaporate as above and repeat once again. Place the dish in a sulfuric acid vacuum desiccator, evacuate and weigh the dish and contents after 48 hours. The following indirect method is also given: Distil 100 cc. of the vinegar until about 50 cc. remain. Maintain the liquid at 100° and steam distil until the distillate is not acid to litmus. The residual liquid is diluted to exactly 100 cc. The density may be determined by use of a Westphal balance and the strength in extracted matter may be computed by reference to Akkermann's table.—R. VIVARIO and N. BERGER. *J. pharm. Belg.*, 18 (1936), 235–239, 261–264. (S. W. G.)

Volatile Oil—Estimation of, in Plant Material. An apparatus for the estimation of volatile oil in plant material is described. Statements in the B. P. C., 1934, regarding the essential oil content of Indian fennel fruit, stillingia root and chamomile flowers are criticized. English and American dried spearmints are compared.—W. A. N. MARKWELL. *Perfumery Essent. Oil Record*, 27 (1936), 325. (A. C. DeD.)

PHARMACOGNOSY

VEGETABLE DRUGS

Fennel and Kimmel—Increase in the Ethereal Oil Content of, on Storing. It was found that samples of fennel and kimmel on standing for several months had increased in volatile oil content. The increase was determined by placing 20- to 60-Gm. samples in paper sacs in the fall of 1935 after assaying them for oil content. In the spring of 1936 they were retested. All samples showed a higher oil content, the increase varying from 7.5 to 39.5% for fennel and from 100 to 600% for kimmel. This could not be accounted for in loss of moisture since the loss in weight of the drug from evaporation varied from only 1.6 to 3%. Thus it is evident that the yields of oils from these drugs may be greatly increased if they are stored for several months before distillation. No explanation for these results is offered.—L. KOFLER. *Scientia Pharm.*, 7 (1936), 106. (M. F. W. D.)

Poplar Bud—Studies on. The use of poplar bud dates into antiquity though the first American monograph did not appear until 1916. The present study was made in connection with the revision of N. F. VI. Of eleven commercial samples, eight were *Populus candicans*, two *P. balsamifera* L. and one *P. nigra* L. Morphological studies were made and histological means of differentiation enumerated. Morphological and histological characters of some unofficial poplar buds are also described. A method for determination of quality is suggested, and depends upon the alcohol-soluble extractive; 40% is advised as a suitable minimum. Comparative study of the alcohol-soluble extractive of leaf and flower buds showed the flower buds to be inferior. Probably the N. F. V limit of not more than 10% is too restrictive. The paper is illustrated.—GERSTON BRUCH and ELMER H. WIRTH. *J. Am. Pharm. Assoc.*, 25 (1936), 672. (Z. M. C.)

Psyllium, Ispaghula and Related Seeds. Two tables are given, the first summarizing the physical and macroscopical characters and the second containing the details of microscopical structure of the following seeds: *Plantago ovata*, *P. amplexicaulis*, *P. psyllium*, *P. arenaria*, *P. lanceolata* and *P. Cynops*. Netolitzky (*Anatomie der Angiospermen-Samen*, Berlin (1926), 296, 320) is given as a valuable reference.—E. W. SKYRME and T. E. WALLIS. *Quart. J. Pharm. Pharmacol.*, 9 (1936), 198–202. (S. W. G.)

Snake Bite—Botanical-Pharmacognostic Investigation of Drugs of a South American Remedy for. Three of the drugs described are, respectively: *Aristolochia pandurata* Jacq., *A. maxima* L., and *A. ringens* Vahl. A fourth drug consists of the cotyledons of *Simaga Cedron* Planch. The latter is indigenous to Central and South America. Its use against snake bite and fever is said to have been known by the natives and to be employed in increasing quantities today.—K. GAUCKLER. *Arch. Pharm.*, 273 (1935), 497. (L. L. M.)

Tragacanth Type Gums. I—Sources, Grades and Collection of Persian Tragacanth. Tragacanth is a gum which is obtained by incision from various species of Astragalus. The chief gum-yielding species are thorny shrubs found in the mountainous districts of Asia Minor, Syria, Armenia, Kurdistan, Iraq and Iran. The term Persian tragacanth is used by pharmacists to denote the better grades of tragacanth produced in Iran (Persia), Turkish Kurdistan and Iraq Kurdistan, which is an important source of tragacanth, is partly in Iran while the remainder, which was Turkish in pre-war days, is now divided by the "Brussels Line" into Turkish Kurdistan

and the Iraq province of Mosul. Statistics on the various grades of gums are given.—G. E. TREASE. *Pharm. J.*, 137 (1936), 206. (W. B. B.)

ANIMAL DRUGS

African Beeswax. Several samples from Gambia, Tanganyika and Kenya were examined. They all appeared to be free from adulteration and their constants fell fairly well within the limits of those of European beeswax. Only the ratio between acid- and ester-number was repeatedly larger than 1:4. The only objection to the use of African beeswax for certain purposes was its difference in color.—*Bull. Imperial Institute* (1935), 294; through *Pharm. Weekblad*, 73 (1936), 1056. (E. H. W.)

Endocrine Glands—Microscopy of Powdered. The author has listed the characteristic and important histological elements found in ovarian substance, corpus luteum, ovarian residue, thyroid and whole pituitary. Certain procedures were found helpful in examining these powders and detailed directions are given for methods using the watch glass, the use of embryological staining dishes and the smear method. A list of preferred stains and reagents is also given. A résumé of the salient features of each powder for diagnostic purposes, is given.—PAUL ALVIN MATTIS. *Am. J. Pharm.*, 108 (1936), 276. (R. R. F.)

PHARMACY

GALENICAL

Adrenaline Type Compounds—Stabilized Solutions of. Thiourea or a thiol or sulfhydryl compound of like effect is used as a stabilizing agent. Numerous examples are given in the specifications.—MORRIS S. KHARASCH, assignor to ELI LILLY AND CO. U. S. pat. 2,047,144, July 7, 1936. (A. P.-C.)

Digitalis Preparation. A stable, substantially non-aqueous, alcohol-glycerin extract of digitalis may also contain acetic acid and sodium acetate.—JOHN TORIGIAN, assignor to DRUG PRODUCTS CO. U. S. pat. 2,052,150, Aug. 25, 1936. (A. P.-C.)

Emulsions—Some Effects of Emulsifier Concentration on Globule Size and Viscosity in. The following conclusions are given: It is suggested that the irregularities in the viscosities of the unhomogenized emulsions are possibly due in part to (1) the varying sizes of the globules of disperse phase, and (2) absence of homogeneity in the emulsions themselves. Both of these factors, which must be considered productive of irregularity, are removed by homogenization. Incidentally, homogenization serves to distribute the emulsifier more evenly and rapidly throughout the emulsion than any hand or mechanical means of shaking is able to do. The drop in viscosity noticeable at the beginning of the curve for homogenized emulsions, which is the only outstanding irregularity in this curve, may be due to the relatively small amount of emulsifier present, by reason of which the emulsion must be less stable than the higher members of the series. This view is to some extent supported by the fact that the lower members of the series still tend to cream a little (which all the members of the unhomogenized series do), suggesting that in the early members there is insufficient emulsifier present to produce a stable emulsion with the globules tightly packed. The increase of viscosity noticed throughout the higher members of the series is probably in part due to the very tight packing of the small globules, and the small amount of free continuous phase, which has, of course, a much lower viscosity than the emulsions formed from it. Homogenization of all emulsions, in order to standardize them, is necessary before any investigation of physical properties, such as viscosity, can be entered upon.—CECIL L. WILSON and JOSEPH B. PARKE. *Quart. J. Pharm. Pharmacol.*, 9 (1936), 188–197. (S. W. G.)

Ferrous Chloride—Solution of. Starkenstein has shown that ferrous chloride is readily absorbed and that 200 mg. of iron per day brings about the rapid regeneration of blood coloring. Ferrous chloride rapidly oxidizes and as the trivalent form is of no value, the use of ferrous chloride has been limited. The author endeavored to devise a ferrous chloride preparation which had keeping qualities. He suggests the following: A solution is made by treating hydrochloric acid with an excess of powdered iron. The concentrated solution is rapidly filtered and a few drops of hydrochloric acid added. The iron content is then determined and the solution diluted with a concentrated glucose solution to a concentration of $1/_2$ w/v % $FeCl_2$ and 50 w/v % glucose. Such a solution kept in the light for a long time gave only a faint ferric reaction. If desired,

copper may be added in the form of copper sulfate in quantities of 0.01 to 0.1 mg. per gram of $FeCl_2$.—E. H. VOGELENZANG. *Pharm. Weekblad*, 73 (1936), 1172. (E. H. W.)

Ferrous Iodide—Syrup of. Among the conclusions drawn in regard to syrup ferrous iodide are the following: (1) The brown color is due to the liberation of free iodine. (2) The bleaching to a green tint is the reverse reaction, in which the iodine forms ferrous iodide. The sun's rays bring about this reverse action by converting the sucrose into invert sugar. (3) Levulose is an active reducing agent. It reduces the free iodine by a rather complex series of reactions to the original ferrous iodide. (4) The curious phenomenon observed (alternate darkening in the dark and bleaching in sunlight) indicates the progress of inversion of the sucrose. When the inversion is completed by sufficiently long exposure to sunlight, the quantity of levulose present is sufficient to permanently preserve the ferrous iodide. (5) It was also proven that immersion of the brown syrup in boiling water for one hour was effective as a means of bleaching.—ANON. *Pharm. J.*, 137 (1936), 251. (W. B. B.)

Fluidextract of Kola—Preparation of. A brief review of the kola-nut is given including the habitat, description and constituents. The author studied *Cola acuminata*, portioning the alkaloid according to the Ital. Pharm. V, found that it contained 1.90% of caffeine. Following the Belg. Pharm. V the percentage was 2%. The increase being due to the fact that the Belgium Pharmacopœia in portioning the alkaloid of kola, adds 2 Gm. of concentrated hydrochloric acid. This is done in the following manner: place in a glass container 7 Gm. powdered kola, 2 cc. acid (d. 1.18) and 2 Gm. water; boil for 10 minutes, and after cooling add 70 Gm. of chloroform and 4 cc. of ammonia, allow to stand for 1/4 hour shaking from time to time. Add 2 Gm. of tragacanth, shake, let settle. Decant 40 Gm. of this chloroformic solution, filter through a dry filter, wash the glass and filter with 5 cc. of chloroform and evaporate, the residue is taken up with 10 cc. of boiling water. At this point the Italian Pharmacopœia is followed. The author prepared a fluidextract by percolation, using alcohol at 60°. The caffeine in this fluidextract was portioned according to the method of the Belgium Pharmacopœia and found to be 1.175%. The following method was used: 7 Gm. each of fluidextract and water are mixed in a tared capsule, boiled down to 5 Gm., transferred to a separatory, washing 3 times with 1 cc. of water each time. Add 3 cc. of ammonia and 70 Gm. of chloroform and continue as above, without the addition of tragacanth. Preparing another fluidextract by means of percolation with alcohol at 60°, and adding 2 Gm. of acid, using the method of the Belgium Pharmacopœia, the extract contained 1.84% caffeine. Here also is evident how the addition of acid increased the percentage of free caffeine in the fluidextract. This shows that in kola the caffeine is found in part free and in a small part combined with all probabilities with tannin, and with a product of oxidation in a form so labile that a small quantity of acid is enough to make it free. The fluidextract belongs to a group of extracts rich in tannic acid and which give with salts of iron and mercury, with peptone, hemoglobin, alkaloidal solutions, glucosides, and with other extracts rich in alkaloids, a precipitate due to the formation of insoluble tannates. The following method was used: 40 Gm. of moistened hide powder were treated with 20 Gm. of fluidextract and heated gradually to the boiling point. An abundant precipitate of tannate was obtained. The alkaloids remained in solution. The solution when filtered gave a slight turbidity with ferric chloride.—MARY EMANUELLI. *Giorn. farm. chim.*, 84 (1935), 253. (A. C. DeD.)

Glycyrrhiza Glabra L.—Method of Extracting a Sweet Ingredient from. *Glycyrrhiza glabra* root is mixed with caustic soda solution and heated under conditions that prevent generation of vapor. A magnesium salt is added to precipitate non-sweet impurities and the precipitate is filtered out.—YUTAKA ITO, assignor to KANEGAFUCHI BOSEKI KABUSHIKI KAISHA. U. S. pat. 2,058,019, Oct. 20, 1936. (A. P.-C.)

Hamamelis—Extract of. It is suggested that in a future revision of the B. P. C., a 45% alcoholic extractive should be preferred for hamamelin, as such an extract has the advantage over a 90% alcoholic extractive in not being variable in color of manufacture, in containing the full tannin content of the drug, and in being readily soluble in glycerin. Hamamelin B. P. C., 1934 is not soluble in glycerin. Chlorophyll is not only a valueless constituent in a hamamelis extract but can cause great variation in the appearance and solubility of the dry extract unless very careful precautions are taken. The chief constituent, the tannin, does not require these precautions.—H. BERRY. *Pharm. J.*, 137 (1936), 247. (W. B. B.)

Hydrogen Peroxide—Stabilizing Solutions of. Acid pyrophosphoric acid esters derived from alcohols containing more than 5 carbon atoms, such as the dodecyl or linoleyl esters, may be used for stabilizing peroxide solutions and may be made by reaction of an alcohol or a sulfuric acid ester of an alcohol with pyrophosphoric acid or a water-soluble pyrophosphate.—KARL BUTZ, assignor to AMERICAN HYALSOL CORP. U. S. pat. 2,053,653, Sept. 8, 1936. (A. P.-C.)

Malt Extract—Manufacture of. Since a specification for malt extract appears in the B. P. for the first time, the article tends to explain the manner in which the manufacturer obtains a product of such standards. The first consideration is the choosing of a barley if he does his own malting, or the malted barley, care being taken that it is absolutely free from mold spores and broken corns. The second step is the grinding, as generally, the finer a malt is ground the better the yield. The grinding is usually done the day before it is used in the next step of mashing. In this case, where water, heat and time of setting is necessary, the manufacturer decides. The product is then finally evaporated *in vacuo* until the required specific gravity. Evaporation *in vacuo* tends to preserve the diastatic enzymes and the vitamin B content.—ANON. *Chem. and Drug.*, 124 (1936), 745. (E. V. S.)

Mucilage of Tragacanth—Apparent Viscosity and Suspending Power of, and the Evaluation of Tragacanth Gum. The following summary is given: 1. Mucilage of tragacanth has been shown to be a liquid of variable viscosity, the numerical expression of viscosity varying greatly as the conditions of experiment are varied. Any numerical values are of little utility unless the conditions of observation are expressed. 2. Eleven samples of tragacanth gum have been evaluated by means of the falling sphere viscometer and by the method of suspension; comparable results are obtained by both methods. The evaluation of a gum by means of the viscosity measurement of its mucilage under standardized conditions is a satisfactory indication of its value as a suspending agent for insoluble substances in the absence of soluble electro-positive ions. 3. A convenient and accurate method for the routine evaluation of tragacanth is to determine the apparent viscosity of a pharmacopœial mucilage by means of falling steel spheres of $^{5}/_{32}$ inch diameter in a cylinder, graduated and of the following dimensions: 4.5 cm. in diameter and 30 cm. in length. The determinations should be carried out at 20° C. All mucilages should be prepared under identical conditions; bulks of 600 cc. may be prepared in stoppered quart or 1-liter bottles by the dry bottle process, and allowed to stand with occasional shaking at 20° C. for 48 hours before viscosity determinations are made. A satisfactory minimum standard for the viscosity of 1.25% mucilage of a gum, when investigated by this standardized process, may be fixed at 60 poises.—HARRY BRINDLE and JACK M. ROWSON. *Quart. J. Pharm. Pharmacol.*, 9 (1936), 161-173. (S. W. G.)

Percolation Procedures—Theoretical and Practical Studies of. An improvement in percolation procedures must come along one of two paths—a modification of the extraction to produce a greater efficiency by varying most advantageously the steps of the procedure keeping intact the general principles of percolation, and secondly, increasing the efficiency by modifying the apparatus. Any changes must have as their aim economy of time, work and menstruum, at the same time maintaining the pharmaceutical standards of quality. The problem is studied under the following six headings: (1) the percolator form—researches will be carried out to determine the most suitable percolator form which shall then be used throughout the remainder of the work; (2) the moistening and swelling—the effect of the amount of the moistening liquid on the course of the extraction will be studied; various studies have already been made on the time of swelling; (3) the packing of the mass in the percolator—the manner of packing the material in the percolator should have an effect on the course of the extraction; (4) maceration in the percolator—the efficiency of the extraction should be dependent on the duration of this phase; (5) the displacement and speed of percolation—it is necessary to consider the displacement since the mixing of fresh menstruum with the extraction liquid in the percolator may work disadvantageously; in a similar manner, a too rapid rate of percolation may be wrong; (6) the expression—this step has no longer been used; its effect on percolation requires a critical study. The following factors influencing the extraction have not been taken up in this paper: degree of fineness of the drug, composition of the menstruum, temperature and pressure, both applied and reduced. The authors have used throughout the same drug in the same size powder at the same temperature and the usual pressure of percolation; the same mixture for a menstruum is used throughout. There is a general discussion including a definition of percolation, the choice and characterization of the

drug to be used (cinchona), extraction of cinchona with the Swiss Phar. V menstruum, details of the percolation study and the test methods employed. The form of the percolator is taken up along with a brief review of the literature on the types of percolators, and a theoretical consideration leading to the selection of the percolator to be used. A careful comparison of all factors involved led to the selection of the American form of percolator (only slightly conical) as best suited. Under moistening of the drug is considered literature, theoretical consideration of the absorption of liquids by the cells, and the significance of the swelling and percolation studies. As a result of this work the authors found the most satisfactory results to be obtained when the drug was moistened with $^1/_4$ its weight of menstruum, when two hours were allowed for swelling, and when it was packed in the percolator without any pressure.—J. BÜCHI and K. FEINSTEIN. *Pharm. Acta Helv.*, 11 (1936), 121. (M. F. W. D.)

Percolation Procedure—Theoretical and Practical Studies of. A continuation of an earlier article (*Ibid.*, 11 (1936), 121) considering topics 3 and 4 of their outline, namely, the packing of the percolator and flow of menstruum, and maceration in the percolator. In each case the existing literature is reviewed. The authors describe their processes in detail and record the results of analysis of various fractions of percolate in tables and charts. As a result of their work on the packing of the percolator, they conclude that the extraction of alkaloids is most complete if the moistened powder is packed loosely in the percolator in portions and only the top layer packed with a slight pressure. The free passage of menstruum is to be avoided, the most advantageous rate for cinchona bark being 10 drops/min. for 500 Gm. of drug. A series of studies in which the maceration period in the percolator was limited to 0, 6 and 12 hours show that while the 12-hour maceration period yielded an extract containing the largest percentage of alkaloids and total extractive, the 6-hour period gave the best results with the amount of menstruum found previously to give the most economical extraction ($6^1/_2$ times the weight of drug). The percolation of the drug without a maceration period gives the weakest percolate and is not suitable for the preparation of fluidextracts but may be used for tinctures since larger volumes of solvent are used. The authors have selected the 6-hour maceration period for their future work.—J. BÜCHI and K. FEINSTEIN. *Pharm. Acta Helv.*, 11 (1936), 209. (M. F. W. D.)

Soaps—Liquid. Some German Methods of Manufacture. The manufacture of liquid soap is done by two methods: 1. By solution of a soft soap; 2. By emulsification. 1. The starting material is a 40% potash soap; dissolve the required quantity in half the required amount of hot distilled water, and add the alcohol, glycerin, coloring and perfume. A typical formula is as follows: potash soap, 1000; distilled water, 750; glycerin, 50; alcohol, 90%, 250; terpineol, 6; benzyl acetate, 2; geranium oil, 1; aubepine, 1. To color the liquid soap about 0.5 Gm. of household soap, yellow, may be added to each 100 Kg. The finished product should be allowed to stand eight to fourteen days to settle, the clear portion decanted and filtered. 2. The emulsification process is generally adopted for large scale manufacture. A batch can be made from cocoanut oil, 31.5 Kg.; castor oil, 10 Kg.; potash lye, 20.5 Kg.; sugar, 22 Kg.; distilled water, 200 Kg. The cocoanut oil is melted in a double pan and heated to 85° when the castor oil is added, then potash lye is run into the pan in a fine stream. After thorough mixing, one-third of the water is added in small portions, the whole being well-stirred. After the addition of the first portion of water an emulsion is formed which is yellowish white in color, and, when first formed, has a matt or dull appearance which becomes shining after a short time. More water is added in small portions, and the emulsion stirred after each addition until it becomes shining in appearance. It is not advisable to add more than one-third of the water as an excess may retard, or even prevent, saponification. When a perfect primary emulsion is formed the pan is covered and allowed to stand for one hour, with only occasional stirring. The alkalinity of the soap is tested by dissolving samples in neutral alcohol (95%) and adding a few drops of phenolphthalein. An appreciable red color should develop. If the soap is too "sharp" either palmitic or ricinoleic acid should be added, and the whole allowed to stand for a time. To weak soaps dilute potash lye is added. When the soap has been adjusted, the rest of the water is added, then the sugar, perfume and coloring. The finished liquid soap is allowed to stand in a closed vessel in a cool place for about two weeks, and the clear liquid decanted. In most cases filtering can be avoided, but the better qualities are filtered, a Seitz flotation filter being the most suitable.—ANON. *Pharm. J.*, 137 (1936), 205. (W. B. B.)