VOL. VI, No. 4 APRIL 1940

PHARMACEUTICAL ABSTRACTS

Published by the American Pharmaceutical Association,
2215 Constitution Ave., Washington, D. C.

EDITOR: A. G. DUMEZ, 32 S. Greene Street, Baltimore, Maryland

ABSTRACTORS

CONTENTS

CHEMISTRY

ANALYTICAL (*Continued*)

Pharmaceutical Investigations—New Indicator for. A mixture of alizarin sulfonic acid and methylene blue is suitable for investigation of the purity of distilled and twice-distilled water and for the alkalimetric and acidimetric determinations of alkaloids in drugs. The mixed indicator shows a light green color in acid medium changing to bright violet in alkalis.—E. PERES. *Magyar Gyógyszerésztud. Tars. Ert.*, 14 (1938), 26–29; through *Chimie & Industrie*, 40 (1938), 710. (A. P.-C.)

Phenolphthalein—Determination of, in Tablets and Compressed Pills. The general methods used in the determination of phenolphthalein are critically reviewed, and the following procedure is recommended. Extract the weighed sample with acetone in a soxhlet, evaporate to dryness, add a measured volume of 0.1*N* sodium hydroxide (about 50 cc.) to completely dissolve the phenolphthalein, then filter to separate the phenolphthalein from the impurities dissolved by the acetone. To 25 cc. of the filtrate add a slight excess of acid, then extract three times with ether, wash the combined ether solution three times with water, filter, remove the solvent and dry the residue to constant weight. The weight obtained represents half the amount of phenolphthalein in the sample taken.—G. THOMAS. *J. pharm. Belg.*, 21 (1939), 361–364. (S. W. G.)

***p*-Phenylenediamine and *p*-Tolylenediamine—Method for the Determination of.** A method is proposed based on that of Callan and Henderson. The method (described in detail) consists essentially in treating a suitable amount of sample, dissolved in water, with 5% sodium hypochlorite solution to convert the *p*-diamine into the corresponding quinonedichlorimide, destroying the excess hypochlorite with sodium arsenite solution, extracting the quinonedichlorimide with chloroform, adding a solution of potassium iodide acidified with hydrochloric acid, and titrating with decinormal sodium thiosulfate solution, 1 cc. of which = 0.001801 Gm. of *p*-phenylenediamine or 0.002035 Gm. of *p*-tolylenediamine. The quinonedichlorimide may be used as an aid in establishing the identity of the *p*-diamine as follows: Dissolve in 10 cc. of water sufficient material to represent about 0.5 Gm. of the diamine, extract with 2 × 25 cc. of petroleum ether, add the extracted aqueous solution to an alkaline 5% sodium hypochlorite solution, extract the dichlorimide with petroleum ether, evaporate the latter, accurately weigh about 0.1 Gm. of the dichlorimide, and titrate as directed above; calculate the molecular weight = 60,000 × (weight of sample)/(cc. of thiosulfate), and compare it with the theoretical. Working on known amounts of material, the method gave recoveries of 98.32 to 103.01% for *p*-phenylenediamine and of 97.87 to 99.36% for *p*-tolylenediamine.—R. L. HERD. *J. Assoc. Official Agr. Chem.*, 22 (1939) 158–161. (A. P.-C.)

***p*-Phenylenediamine—Hydrochloride of, as Reagent for Oxidizing Agents.** Experiments on various oxidizing agents with aqueous solution of *p*-phenylenediamine hydrochloride in sulfuric medium which proved to be a sensitive indicator. Tests were made with solutions of chlorates, nitrates and nitrites, manganates, chromates, H_2O_2, chlorine, bromine and iodine waters. It gave the sharpest reactions with alkaline chlorates.—EDGARD ABRANTES, OSWALDO COSTA and MILITINO ROSA. *Rev. soc. brasil. quím.*, 6 (1937), 153. (G. S. G.)

Phosphorus and Arsenic—Improved Molybdenum Blue Reagents for the Determination of. Difficulties encountered in applying Zinzadze's method (*Ind. Eng. Chem. Anal. Ed.*, 7 (1935), 227, 230) to the determination of minute quantities of phosphorus in soil extracts and similar solutions were traced to buffer effects in the presence of appreciable salt concentrations and to the composition of the molybdenum blue reagent itself. The ranges of concentration of sulfuric acid, molybdenum oxide and reduction over which color intensity remains practically constant were determined experimentally. The conditions for minimum interference of yellow tints, silica and salt effects require the minimum reduction and molybdenum oxide concentrations, and maximum sulfuric acid concentration compatible with uniform and complete color development. Modified molybdenum blue reagents meeting these requirements are described. These reagents, used in the proportion of 1 part per 100 parts of test solution, have a sulfuric acid concentration of 36 times normal, reduction concentration of 0.040 normal and molybdic acid concentration of 0.18 and 0.32 times molar for phosphorus and arsenic, respectively; in composition they conform to fiftieth molar $Mo_{10}O_{10}$ and $Mo_{17}O_{50}$ for phosphorus and arsenic, respectively. Preparation of the reagents themselves requires little time and care, but temperature and time are important factors in actual color development up to the point where a final stable end-point is reached. Great precision may be obtained by measuring the colors in a photoelectric colorimeter, as little as 0.001 mg. or less equivalent of phosphorus being readable. Substitute of quinaldine red for β-dinitrophenol as an indicator for preliminary adjustment of the p_H of the test solution is recommended. Sulfurous acid is recommended instead of sodium bisulfite as a preventive of arsenic and nitrate interference in highly buffered and salt-containing solutions. An alternative method for phosphorus, specifying a sulfomolybdic acid reagent corresponding in concentration to the molybdenum blue reagent and metol as a reducing agent, is also described.—JOHN A. SCHRICKER and PAUL R. DAWSON. *J. Assoc. Official Agr. Chem.*, 22 (1938), 167–179. (A. P.-C.)

Plasmoquine (8-(Diethylaminoisopentyl)amino-6-methoxy-quinoline)—Identification of, by Color Reaction. The color reaction utilizing chloranil was found to lack the specificity for plasmoquine or præquine accredited to it. Similar reactions were noted with 8-(diethylaminopropyl)amino-6-methoxy-quinoline (plasmocide, rhodoquine), 8-(diethylaminoethyl)amino-6-methoxy-quinoline and 8-amino-6-methoxyquinoline. The following reaction is recommended as being more sharply specific and more sensitive for plasmoquine than the chloranil reaction. Dissolve the sample in 10 cc. of diluted sulfuric acid and add 5 cc. of 10% iodic acid solution. A violet color appears in 3–5 minutes, depending upon the amount of plasmoquine present, and persists for at least one hour. The color is definite with samples diluted 1:200,000. Plasmoquine may be detected in urine by extraction of the alkalinized urine with ether, removal of the ether, solution of the residue in diluted sulfuric acid and addition of the iodic acid reagent. Plasmocide gives a color that has more red and less violet, and the color takes a longer time to develop (20 to 30 minutes).—A. E. TCHICHIBABINE and C. HOFFMANN. *Bull. sci. pharmacol.*, 46 (1939), 231–232. (S. W. G.)

Silver Compounds—Differentiation of Some Colloidal. With 10% sodium thiosulfate solution and with 1% sodium chloride solution, collargol, argyrol and protargol in 1% pseudosolution give in a few minutes a more or less dark colored precipitate, whereas solutions of the other colloidal silver compounds remain clear. If the precipitates are filtered out and the filtrates are treated with 5 cc. of 20% sodium hydroxide, then drop by drop with 2 cc.

of 2% copper sulfate, filtered again and heated on the water bath, the collargol remains clear and colorless whereas the argyrol and protargol turn violet. On addition of nitric acid, argyrol solution turns turbid and gives a brown precipitate, while protargol solution remains clear. To differentiate between argyrine, argonine, choleval and silver proteinate, the solutions are treated with 1 + 4 nitric acid: argonine gives a greyish precipitate, the others a brown precipitate. With glacial acetic acid, choleval and silver proteinate give an abundant brown precipitate, while the argyrine solution remains clear. With ferric chloride, only choleval gives an abundant, yellowish, cheesy precipitate.—A. FERRARIS. *Boll. chim.-farm.*, 77 (1938), 219–220; through *Chimie & Industrie*, 40 (1938), 710. (A. P.-C.)

Spectrochemical Analyses—Index to the Literature on, 1920–1937. A brief history of spectrochemical analysis precedes this indexed bibliography of 932 citations.—W. F. MEGGERS and B. F. SCRIBNER. *Am. Soc. Testing Materials, Comm. E-2 on Spectrographic Analysis* (1939) 59 pages; through *Chem. Abstr.*, 33 (1939), 1619. (F. J. S.)

Spectrophotometry—Some Biological Applications of. Microdetermination of Sodium and Phosphates and Determination of p_H. The application of the spectrophotometer to known colorimetric methods is described.—A. LECLÈRE. *Bull. biologistes pharm.*, (1938), 530–541; through *Chem. Abstr.*, 33 (1939), 2161. (F. J. S.)

Sulfanilamide—Method of Analysis. Reference is made to some of the methods described heretofore. The methods presented involve crystallizing-point determination, plotting a time-temperature curve and the "New and Non-Official Remedies" diazotization procedure. Methods are given in detail. Each is accurate to 0.1%. Together they constitute a precise method for estimating purity of sulfanilamide.—R. W. TOWNE and R. M. HITCHINS. *Jour. A. Ph. A.*, 28 (1939), 585. (Z. M. C.)

Sulfomolybdic Reagent of Denigès—Some New Applications of. Sulfomolybdic reagent of Denigès produces blue molybdate with phosphates and arsenates and it is prepared by dissolving 10 Gm. ammonium molybdate in 100 cc. water and adding slowly 100 cc. concentrated sulfuric acid. Preserve in amber glass. This reagent gives a blue color with animal and vegetable oils; produces reaction with mineral oils in ± 110 minutes. It is applicable to the identification of saponifiable oil in composite oils. It gives a positive reaction with methanol and the aldehydes which are organic reducing agents; and gives a positive reaction with glycerin. The mechanism of the reaction is not yet perfectly understood.—RENATO DIAS DE SILVA. *Rev. soc. brasil. quím.*, 6 (1937), 59. (G. S. G.)

Thallium—Determination of, by a Mercurimetric Method. In the presence of excess potassium iodide, only about 5.5 mg. of thallium iodide dissolves in 100 cc. of water. For determining thallium, therefore, good results can be obtained by adding a known quantity of potassium iodide, filtering the precipitate of thallium iodide and titrating the filtrate with mercuric nitrate solution to an end-point with diphenylcarbazone indicator. The modification proposed by Jilek and Koudela (*Collection Czechoslov. Chem. Commun.*, 9 (1937), 265–272), who use pyridine to overcome the trouble caused by red mercuric iodide, also serves to give results in determining the potassium iodide content in an aliquot part of the filtrate from the thallium precipitation.—J. TRTILEK. *Z. Analyt. Chem.*, 11 (1937), 10–14; through *Chimie & Industrie*, 40 (1938), 865. (A. P.-C.)

Thiamin—Determination of Free and Phosphorylate, by a Modified Thiochrome Assay. The assay of thiamin, through its quantitative conversion to thiochrome which can be determined fluorometrically, is based on the oxidation of thiamin by potassium ferricyanide in an alkaline medium, extraction of the thiochrome formed by isobutanol, and estimation of the intensity of the violet-blue fluorescence in ultraviolet light. Materials interfering in the thiochrome method for determining vitamin B activity are efficiently eliminated by the use of a base-exchanging zeolite. An enzyme preparation, which is obtained from kidney as a stable powder, converts thiamin phosphoric esters to thiamin, thus allowing materials containing co-carboxylase to be assayed by the thiochrome method. Such an assay gives results agreeing with biological tests.—D. J. HENNESSY and L. R. CERECEDO. *J. Am. Chem. Soc.*, 61 (1939), 179. (E. B. S.)

Tin and Antimony—Microgravimetric Separation of. Attempts to determine small quantities of tin, in the presence of other elements likely to be present, by precipitation with benzenearsonic acid, proved futile. If other metals are absent, tin can be precipitated as metastannic acid by heating with ammonium hydroxide and ammonium nitrate and the metastannic acid can be weighed as stannic oxide. Cupferron can be used advantageously for separating tin and antimony. The tin must be in the stannic condition which can be accomplished by treatment with perhydrol. Tartaric acid is then added and the solution is made very slightly acid with hydrochloric acid, after which a liberal excess of cupferron is added. The tin precipitate is washed with 0.05% cupferron solution, dried at 60° to 70° C., ignited and weighed as stannic oxide. Excellent results were obtained in 15 experiments with 4 to 7 mg. of tin. In the filtrate from the tin determination it is necessary to remove the excess cupferron before attempting to precipitate antimony as sulfide. Oxidation with nitric acid proved difficult to accomplish but the desired end was reached by the repeated action of perhydrol and ammonia. Then, in the slightly acid solution, the antimony can be precipitated by introduction of hydrogen sulfide and the filtered sulfide can be weighed as antimony trisulfide after heating the aluminum block. Results obtained in separating 1 to 7 mg. of tin from 1 to 7 mg. of antimony were excellent. A new type of micro filter stick is described which proved useful for all tin determinations.—M. v. MACK and F. HECHT. *Mikrochim. Acta*, 2 (1937), 227–241; through *Chimie & Industrie*, 40 (1938), 865. (A. P.-C.)

Tincture of Ferric Citrochloride—Assay of. The following modified N. F. procedure is offered: Measure accurately 5 cc. of the tincture in an iodine flask, add 7 cc. of hydrochloric acid, 25 cc. of water and heat on a steam bath until clear. Then add about 3 Gm. of potassium iodide and allow the mixture to stand for five minutes. Cool the solution, add 100 cc. water and titrate the liberated iodine with 0.1*N* sodium thiosulfate (each cc. = 0.005584 Gm. Fe).—F. O. TAYLOR. *Bull. Natl. Formulary Committee*, 7 (1939), 726. (H. M. B.)

Vitamin A—Chemical Determination of, in Total Tuna Fish Oil. Owing to the preventive and curative action of total tuna fish oil in vitamin A deficiency diseases, an attempt was made to determine the vitamin A content of the oil by known chemical methods. Carr and Price's colorimetric method (production of an azure blue coloration in contact with a solution of copper sulfate and cobalt nitrate) gave negative results. With none of the samples tested was there obtained the characteristic blue coloration; but there appeared an intense red coloration, which in all probability is caused by a provitamin A, which is transformed and utilized in the organism.—A. AGENO and A. INCHIOSTRI.

Atti mem. Chir. Padova, 15 (1937), 391–392; through *Chimie & Industrie*, 40 (1938), 720. (A. P.-C.)

PHARMACOGNOSY

VEGETABLE DRUGS

Agar-Agars of Different Origins—Comparative Physicochemical Characteristics of. From a comparison of the physical and chemical properties of agar-agar from *Ahnfeltia* of Japanese and Maritime coasts and the White Sea, from *Phyllophora* of the Black Sea and from *Iradœa*, it is concluded that the Maritime grade ranks highest in technological applications.—I. V. KIESEWETTER. *Vestnik Dal'nevostoch Filiala. Akad. Nauk S. S. S. R.*, 26 (1937), 53–70; through *Chimie & Industrie*, 40 (1938), 1143. (A. P.-C.)

Anthelmintic—Pumpkin Seed as an. The anthelmintic principle seems to be present in traces in the skin of the embryo, also in the seed case, here only during the stages shortly before and some weeks after ripening of the fruit. The fatty oil (18.5 to 26.75%) possesses no anthelmintic properties.—F. W. FREISE. *Pharm. Zentralhalle*, 79 (1938), 97–99; through *Chimie & Industrie*, 41 (1939), 314. (A. P.-C.)

Belladonna—Histology of. A new and complete investigation is made of the morphology and histology of the flower of belladonna with a view of determining the diagnostic features of the flower as present in "Belladonna Pulverata, B. P.," which is prepared from leaves and flowering tops of *Atropa belladonna*, Linn. The description of the gross morphology of the flower of belladonna is followed by histological investigations of the calyx, corolla, stamens, ovary and other components of the flower, including the fruit and its pedicel. It is concluded that the following tissues are most diagnostic of the flower, these being arranged in order of relative importance as a means of distinguishing flower tissues from leaf tissues. (1) The fibrous layer of the anther wall consists of cells with their long axes transversely directed with thickening in the form of a lignified spiral band on the longer walls of each cell. These are most characteristic in surface view when the thickenings give a beaded appearance of the walls. The cells are from 47 to 93 microns in length and 22 to 53 microns in breadth and height. Lignification is so slight that phloroglucin and hydrochloric acid do not materially assist in the identification of this issue. (2) Pollen grains are very numerous and present in all stages of development, the majority being mature. The ripe grains are subspherical with slight flattening at the poles, equatorial diameter averaging 45 to 47 microns and polar diameter 40 to 43 microns. There are three pores extending in the form of slits almost from pole to pole. (3) Papillose cells from the inner and upper epidermis of the corolla. This is most marked in the epidermal cells of the corolla lobes, the outer wall being extended as a small papilla. The cells are polygonal and isodiametric, the surface dimensions ranging from 10 to 20 microns. A pink to purplish colored sap is usually present, which is rapidly dispersed. (4) Pitted epidermal cells from the base of the corolla have highly refractive walls and in surface view are traversed by delicate branched and unbranched bars of thickening. The sub-rectangular cells are 43 to 103 microns in length, 20 to 39 microns in breadth and 55 to 65 microns in height. (5) Chloroplasts from the epidermis of the anther may be enclosed in the cells or in groups often associated with the fibrous layer (of the above).—T. E. WALLIS and ROSEMARY BUTTERFIELD. *Chemist and Druggist*, 131 (1939), 134. (A. C. DeD.)

Bixa Orellana. The leaves of the tree commonly called urucu have antiseptic properties and they also contain vitamins. The macerate is used in cases of dysentery; the oil extracted from the fruits is used in leprosy, since it has an action similar to chaulmoogra oil. The drug is also used in secret formulæ.—ANON. *Tribuna farm.*, 6 (1938), 20. (G. S. G.)

Blue Aconite and Ranunculus Ficaria—Contribution to the Morphology of. A detailed study of *Aconitum napellus* L. and *Ranunculus ficaria* with 5 illustrations and drawings and 5 references.—HANS WEBER. *Deut. Apoth. Ztg.*, 54 (1939), 215. (H. M. B.)

Book Scorpion. *Chelifer caneroides* L. is described.—W. MADEL. *Deut. Apoth. Ztg.*, 54 (1939), 138. (H. M. B.)

Caulophyllum. No changes in titles, synonyms, definition and purity rubric statement is deemed necessary. Description and physical properties statements require little change. The structure of the rhizome, root and powder of the drug is described with 17 drawings.—H. W. YOUNGKEN and R. W. VANDER WYK. *Bull. Natl. Formulary Committee* 7 (1939), 277–281. (H. M. B.)

Chamomile and Peppermint in 1938. Yields, colors and odors of the volatile oils for 72 samples of chamomile from 13 countries and the yields of peppermint oil from 31 samples from 6 countries are reported.—HANNS WILL. *Deut. Apoth. Ztg.*, 53 (1938), 1479–1480. (H. M. B.)

Cherry Laurel Leaves—Seasonal Variations in the Juice of. The maximum concentration of the pressed juice of the leaves is noted in January and February, and the minimum is noted in May. The density of the juice is highest in winter, the dried extract is greater and the values for total ash are higher during this period.—A. LEULIER and L. TUARZE. *J. pharm. chim.*, 29 (1939), 544–549. (S. W. G.)

Chimaphila. A detailed histological description of the leaves of *Chimaphila umbellata* for inclusion in the N. F. and 10 drawings are offered.—H. W. YOUNGKEN and R. W. VANDER WYK. *Bull. Natl. Formulary Committee*, 7 (1939), 282–283. (H. M. B.)

Cinchona and Quinine Production. Present position of the production of cinchona bark and quinine in foreign countries is discussed.—ANON. *Chemist and Druggist*, 131 (1939), 313, 345, 440. (A. C. DeD.)

Cinchona Cultivation in India—Possibilities of. India at present is producing annually 70,000 lbs. of quinine mainly from *C. ledgeriana* and *C. succirubra*. Since India possesses first class land for cinchona growing and at the same time is having to import 140,000 lbs. of quinine over and above the amount being grown the time was deemed propitious for a resumption of the production of this drug. There was said to be one hundred million sufferers from malaria in India which emphasized the importance of cheap quinine to that country.—A. WILSON. *Imp. Coun. Agri. Res. Bull.*, 29; through *Indian Med. Gaz.*, 74 (1939), 433. (W. T. S.)

Cochlospermum Tinctorium—Study of. The pharmacognostic characteristics of the sample are given. The starch was determined as follows: The sample was powdered and extracted with ether in a Soxhlet to remove the coloring matter. The exhausted powder was exposed to the air to remove the ether. The powder was then assayed for the starch present by the diastasic hydrolysis method of Bourdouil (*Bull. soc. chim. biol.*, 13 (1931), 809). The large roots contained 41.4% of anhydrous starch, and the smaller roots contained 56.5% of anhydrous starch. The starch grains may be separated from the powdered root by mixing well with

water and passing the suspended starch through a sieve. Allow the starch to settle and wash by decantation.—J. RABATE. *J. pharm. chim.*, 29 (1939), 582–583. (S. W. G.)

Crude Drugs—Evaluation of. V. Microscopical Investigation. D. describes the use of the microscope to identify various plant drugs, including leaves, barks, flowers, herbs, seeds, fruits, roots, rhizomes, stolons and corms.—T. C. DENSTON. *Chem. Prods.*, 2 (1939), 161; through *Squibb Abstract Bull.*, 12 (1939), A-1496. (F. J. S.)

Cumaru. Chemical Study of Northeastern Species. Several Brazilian plants are grouped under the common name Cumaru with the chief characteristic an odorous principle cumarin. The northeastern variety called *Torresia cearensis* has been studied pharmacognostically. This study shows plates of leaves, pods and seeds. Chemical analysis shows moisture 11.1 Gm., cumarin 4, fixed oil 22.4, protein 13.5, cellulose 24.7, ash 4.3, other substances 20, including an alkaloid. The plant, especially the seeds, requires pharmacodynamic study.—C. H. LIBERALLI and JANDYRA LIMA. *Rev. quím. farm.*, 3 (1938), 4. (G. S. G.)

Curacao Aloe. The author discusses the possibility of improving the aloe industry of the Netherlands West Indies. He concludes as follows: (1) There appear to be indications that attempts are being made to improve the quality of aloe produced in South Africa. If Curacao Aloe is to retain its privileged position, too long a time should not elapse before adequate measures are adopted to improve the industry. (2) The institution of regulations retaining the existing methods of preparation will not produce the desired result. (3) The institution of a central plant for the evaporation of aloe juice presents many difficulties. (4) If the statements of various authors in pharmacognosy, concerning the preparation of aloe by the evaporation of the juice in the sun, are true, then the Curacao government should gradually change to this method. (5) The suggested method (4) no doubt possesses other advantages over the present method besides the convenience of control in a central plant. Other important advantages will be discovered upon experimentation. (6) Upon the introduction of the new method steps should be taken to restrict the ruinous exhausting cultivation by restriction and by reforestation. (7) It seems necessary at first through painstaking documentary research and then by experimentation to obtain more information relative to: (*a*) "Crown Aloe" and the cause of its decline in commerce; (*b*) the possibility of increasing the yield by pressing, extraction or other methods and (*c*) the possibility of further working the refuse aloe leaves.—P. COHEN HENRIQUEZ. *Pharm. Weekblad*, 76 (1939), 33. (E. H. W.)

Curacao Aloe. The author replies to an earlier article by P. Cohen Henriquez (*Pharm. Weekblad*, 76 (1939), 33) and summarizes as follows: An experiment is described in which Curacao Aloe is prepared by slow evaporation of the aloe juice in the sun. The product obtained however proved to be somewhat moister and tougher than the aloe produced by boiling in the usual way. Other experiments concerned the possibility of getting the aloe juice by pressing out the cut leaves instead of allowing the juice to exude from them. The pressed juice yielded a product with a very high ash content and was also of inferior quality to the aloe obtained from the exuded juice. The preparing of a useful fiber from the rejected leaves seems to be impossible since the leaves of the aloe-producing *Aloe* species contains no fiber of economic value.—P. A. ROWAAN. *Pharm. Weekblad*, 76 (1939), 165. (E. H. W.)

Drug Cultivation in India—Possibilities of. The author stated that a number of valuable drugs *e. g.*, certain species of Atropa, Rheum, Artemisia, Juniperus and Aconitum have been found growing in India. Since many or all of these drugs are being imported at the present it was believed that their judicious exploitation would solve much of India's drug problem. Some of these drugs were claimed to have export value since they are superior to the corresponding product now being sold on the market.—ANON. *Indian Med. Gaz.*, 74 (1939), 433. (W. T. S.)

Drugs and Roots—Tropical Africa as a Commercial Source of. A discussion.—ILSE ESDORN. *Deut. Apoth. Ztg.*, 54 (1939), 25–26. (H. M. B.)

Drugs Occurring in European Commerce—Most Important, Their Identification, Adulteration and Use. A continuation of Part I dealing with a description of the roots of ginseng, *Agropyron repens* (L.) Beauv., *Helleborus viridis* L., *Helleborus nigra* *Hydrastis canadensis*, Imperatoria (*Peucedanum ostruthium* (L.) Koch). ipecac (3 commercial varieties) and iris (6 commercial varieties). A key for the determination of the various ipecac roots and their adulterants is given. Nine illustrations.—FRANZ BERGER. *Scientia Pharm.*, 10 (1939), 83–87. (H. M. B.)

Drugs Occurring in European Trade—Most Important, Their Identification, Adulteration and Use. A continuation of Part I dealing with roots from *Symphytum officianale* L. (consolida root), bryonia, *Carlena acaulis* L., curcuma, *Carex arenaria* L., cynoglossum, *Dryopteris Filix-mas* Schott, *Sambucus ebulus* L., inula, galanga, gelsemium and gentian. Four adulterants are reported for galanga. Eleven illustrations are given.—FRANZ BERGER. *Scientia Pharm.*, 10 (1939), 71–75. (H. M. B.)

Drugs on Storage—Changes of. Prolonged storage of drugs especially those with volatile oils should be avoided.—FISCHER and HORKHEIMER. *Deut. Apoth. Ztg.*, 54 (1939), 506–507. (H. M. B.)

Fenugreek (Trigonella Fœnum-græcum L.). The macroscopic and microscopic characteristics are reviewed, and the chemical constituents of the different parts of the plant are discussed. Results of detailed studies of the plant with respect to forage and grain values are given. The constants for the oil obtained from the June crop are tabulated.—R. SALGUES. *Bull. sci. pharmacol.*, 46 (1939), 77–89. (S. W. G.)

Fungal Infection of Powdered Drugs. The following drugs were studied: althaea, capsicum, cascara, ginger, licorice, rhubarb, mustard and sarsaparilla. All were sterilized, moistened with sterile water and inoculated with *Aspergillus niger*, *Penicillium glaucum* and *Rhizopus nigricans*. Rate of growth and abundance of each organism was noted. Results are described somewhat in detail.—FANCHON HART. *Jour. A. Ph. A.*, 28 (1939), 374. (Z. M. C.)

Juniperus Sabina—Toxicologic Detection of Powdered, in Abortive Preparations. A procedure is given for the detection of powdered sabin in pills. A microscopic comparison is made of some powdered sabin with the powder obtained by disintegration of the pill with water. The ligneous fragments are characteristic and are readily recognized. A portion from the disintegrated pill is treated in chloral and then examined. The following characteristics should be noted: (1) The epidermis is made up of oval cells elongated tangentially with some stomata. (2) The hypodermis is formed by a layer of small cells, fusiform. (3) The mesophyl consists of very large elongated cells. (4) The parenchyma is formed by round cells irregularly disposed. (5) The glands are coated with several layers of char-

acteristic secretory cells. (6) The ligneous border is limited by very large peripheral fibers.—ANON. *Chimica*, 14 (1938), 136; through *J. pharm. Belg.*, 21 (1939), 575. (S. W. G.)

Linden Flowers—Adulteration of Official. *Tilia argentea* and *T. americana* are listed as adulterants.—W. PEYER *Deut. Apoth. Ztg.*, 54 (1939), 608–609. (H. M. B.)

Oil Seeds—Determination of Moisture Content of, by Measurement of Dielectric Constant. The method gives satisfactory results for sunflower seed and linseed.—V. RSHECHIN and N. POGONKINA. *Maslob. Zhir. Delo*, 1 (1939), 16–18; through *J. Soc. Chem. Ind.*, 58 (1939), 513. (E. G. V.)

Peppermint and Peppermint Oil—Investigations on. An extensive report on the effects of 4 fertilizer mixtures: 4 Kg. superphosphate, 3 Kg. potash (40%) and 4 Kg. ammonium sulfate (A), 4 Kg. superphosphate and 4 Kg. ammonium sulfate (B), 3 Kg. potash (40%) and 4 Kg. superphosphate (C) and 3 Kg. potash (40%) and 4 Kg. ammonium sulfate (D). The greatest yield of the herb in 1936–1937 was obtained with mixtures B and C. In the yield of volatile oil no appreciable difference is noted for the various mixtures. A greater yield of oil was obtained from the herb dried in a storehouse rather than in the sun. The physical constants of the oils obtained from the same series of experiments were determined. The specific gravity showed little variation with the oils from the various fertilizer mixtures but was lower for the samples dried in the warehouse; the optical rotation was higher for samples dried in the warehouse; the index of refraction showed little variation in any case; dielectric constants were consistently lower for samples dried in the warehouse; the total menthol content was highest in the oils obtained from the drug grown with mixture D and in general higher when dried in the warehouse; the esters were the highest with mixture C and were consistently lower in the oils of the herbs dried in the warehouse; free menthol was the greatest with mixture D and higher when the herb was dried in the warehouse; acid numbers were the greatest with mixture D and much higher with the oils from sun-dried samples; menthone contents were highest with oils from mixtures C and D and in general showed little variation in the oils from the drugs dried by the two methods.—F. SCHLEMMER and R. SPRINGER. *Scientia Pharm.*, 10 (1939), 97–102. (H. M. B.)

Phytolacca—Pharmacognostic Description of. A description for the histology and powder of phytolacca root is offered.—R. W. VANDER WYK and H. W. YOUNGKEN. *Bull. Natl. Formulary Committee*, 7 (1939), 343–345. (H. M. B.)

Psidium Guajava. A pharmacognostic description of the species of Guava, bearing the well-known fruits, one yellow, one red and with meaty pulp is given. Gives histologic structure of skin, with its chemical analysis; also analysis of leaves and fruits, which contain resins, tannin, some volatile oil; and in the pulp, cellulose, glucose and malic acid. Leaves, roots and skin are used in preparing astringents for therapy of diarrhea, dysentery, cholera. Green fruits also serve as intestinal astringents, while ripe ones are useful laxatives. It is also of industrial value as conserves, jellies and similar confections.—PAULO LACERDA DE ARUJO FEIO. *Lab. Clinico*, 18 (1938), 5. (G. S. G.)

Pyrethrum Romano. A pharmacognostic examination of several forms of pyrethrum; the leaves being used chiefly as an insecticide and the root as a medicinal. There is a description, with plates, of two forms of roots, showing two types of sclerotic cells.—CARLOS STELLFELD. *Tribuna farm.*, 6 (1938), 43. (G. S. G.)

Rhamnus Alaternus L., and Rhamnus Punctata Boiss—Studies on. In both these species the most important active principles are tannin and anthraquinone bodies. The tannin is located chiefly in the cells surrounding the foliar bundles, in the medullary rays of the liber and in a few cells of the secondary cortical parenchyma. Emodin is located chiefly in the liber of the central vein of the leaf and the cells which surround it, in the medullary rays and in a few liberian cells of the bark. Emodin, extracted by a special process and recrystallized from hot chloroform, melts at 255° C. *Rhamnus alaternus* contains 2.15 % emodin in the bark and 1.00% in the leaves; the young bark contains 11.5% tannin, and the leaves contain 2%. *Rhamnus punctata* contains 0.85% emodin in the bark and 0.80% in the leaves; the young bark contains 3.4% tannin, and the leaves contain 8.6%. Pharmacologically there would be no objection to substituting the bark of *Rhamnus alaternus* for alder-buckthorn and for cascara sagrada, provided it is harvested in the proper season and at an altitude of 800 to 100 meters. *Rhamnus punctata*, however, seems devoid of interest on account of its low emodin content.—C. VUTYRAKIS. *Ann. Fac. Franç. Méd. Pharm. Beyrouth*, 6 (1937), 257–534; through *Chimie & Industrie*, 41 (1939), 315. (A. P.-C.)

Roots and Rhizomes. Comparisons of structure by pocket-lens photography for licorice, gelsemium, gentian and belladonna are made.—J. SMALL. *Chemist and Druggist*, 131 (1939), 493. (A. C. DeD.)

Saffron—Starch Granules in. Characteristics of starch granules (which originate from the dried bulb) occurring in commercial, powdered saffron are described.—S. CAMILLA. *Ann. chim. applicata*, 28 (1938), 541–547; through *J. Soc. Chem. Ind.*, 58 (1939), 549. (E. G. V.)

Salvia. Three samples of *Salvia officinalis* from three commercial sources show volatile oil contents of 1.75, 1.50 and 1.64% and a sample of *S. triloba*, 2.37% using the Clevenger method and an oil trap. These results are higher than those obtained by using the indirect method for the volatile ether extract and hence is preferred.—H. W. YOUNGKEN and R. W. VANDER WYK. *Bull. Natl. Formulary Committee*, 7 (1939), 273–274. (H. M. B.)

Strophanthus Species and Tinctures—Identification of. The following tests are recommended: Mix 3 drops of the tincture, 1 drop of 1% furfurol in alcohol and 2–3 drops of sulfuric acid. An indigo blue develops with *S. Kombé* or *S. hispidus;* while with *S. gratus* a pale rose color gradually changing to violet is observed. Remove the alcohol from 5 cc. of the tincture on a water bath, cool, shake with 3 cc. of ether. Separate the ether solution and shake with 10 cc. of 0.1*N* sodium hydroxide solution. Separate the mixture into two layers by centrifuging and immediately examine the fluorescence of the aqueous layer in Wood's light. *S. Kombé* exhibits a blue fluorescence; while *S. hispidus* and *S. gratus* exhibit a green-yellow fluorescence. The seeds of *S. Kombé* and *S. hispidus* are hairy: the former has long silky hairs, and the latter has short compact hairs.—P. DUMONT and G. THOMAS. *J. pharm. Belg.*, 21 (1939), 397–402. (S. W. G.)

Taraxacum—Pharmacognostic Description of. A revised monograph is offered.—R. W. VANDER WYK and H. W. YOUNGKEN. *Bull. Natl. Formulary Committee*, 7 (1939), 346–349. (H. M. B.)

Uva Ursi. An examination of 5 commercial samples shows an acid-insoluble ash content of 0.49–0.59% (av. 0.544), foreign organic matter 0.10–1.02% (av. 0.90) and stems 2.12–2.80% (av. 2.49). A study of the transverse section of the leaf of *Arctostaphylos uva-ursi* and var. *coactylis*

(4 drawings) is offered and it is recommended that the definition and descriptive portions of the N. F. monograph should be broadened to include the American varieties of the drug.—H. W. YOUNGKEN and R. W. VANDER WYK. *Bull. Natl. Formulary Committee*, 7 (1939) 284–287. (H. M. B.)

PHARMACY

GALENICAL

Calcium Camphor-Sulfonate—Preparation of Ampuls of. The preparation of 10 liter batches of a 10% aqueous solution (p_H 6.4) of the salt is described. Sterilization of the ampuled solution is effected by autoclaving at 100° for 1 hour.—L. BRACALONI. *Boll. chim.-farm.*, 78 (1939), 145–147; through *J. Soc. Chem. Ind.*, 58 (1939), 661. (E. G. V.)

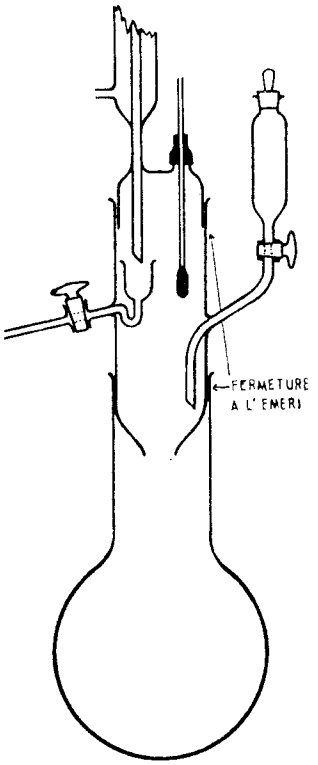
Calcium Compounds and Solutions—Therapeutic. Solutions which are stable for at least a considerable time contain water together with 10 to 20% of calcium gluconate and 5 to 30% of calcium methionate. Various details are given, involving the preparation and use of compounds such as the calcium salts of 1,2-propanedisulfonic acid and 1,2,3-propanetrisulfonic acid and, in general, soluble calcium salts of the formula $[R(SO_3)_x]_yCa_z$, where x, y and z are each integers, x is greater than unity and y is 1 or 2 as x is even or odd, respectively, and z is one-half the product of x and y, and R is an alkyl radical containing more than two carbon atoms and of relatively low molecular weight.—GLENN L. JENKINS, assignor to PITMAN-MOORE CO. U. S. pat. 2,140,291, Dec. 13, 1938. (A. P.-C.)

Digitalis Preparations—Quality of, Being Sold in India. The recent findings of the Calcutta Biochemical Standardization Laboratory showed that a large portion of the digitalis preparations being sold in India were decidedly sub-standard. The reason for this is not well understood in view of the fact that so much work has been done there and elsewhere regarding the stability of this drug. It was suggested that the situation could be remedied by more strictly controlling the potency of all digitalis to be released and requiring greater precaution to be taken in storing these products.—ANON. *Indian Med. Gaz.*, 74 (1939), 433. (W. T. S.)

Distillation Apparatus. The apparatus (see figure) is recommended for removing low boiling substances from mixtures by distillation. The low boiling substance is allowed to collect in the receiving cup (volume about 10 cc.) below the condenser. The side arm stop-cock is then opened and distillation is carried on at ordinary pressure or the pressure may be reduced by connecting the side arm to a pump.—J. ERDÖS and B. MOLNAR. *J. pharm. chim.*, 28 (1938), 216–218. (S. W. G.)

Drug Extraction. XXII. The Extraction of Podophyllum. Previously, alcohol was found to be better than alcohol and water as menstruum. The present study covers various methods of extraction, details of which are reported. Maceration with excess of alcohol produced equilibrium in 36 hours. Percolation in cylindrical glass tubes gave 85 to 90% of total resin in the volume equivalent to original weight. By forcing menstruum through a long column by means of air pressure 99% of resin was obtained in the first 1000 cc. of percolate from 1 Kg. of drug.—WILLIAM J. HUSA and D. W. LEE. *Jour. A. Ph. A.*, 28 (1939), 593. (Z. M. C.)

Emulsions—Physico-Chemical Considerations in the Formation and Stability of. Interface phenomena and the physico-chemical aspects of the emulsification, and the rôle of the emulsifiers as interface-modifying agents, are discussed. The fact that the interfacial tension between the two phases may be affected by the composition of the oil phase is shown by a study of the interfacial tension of various mixtures of oleic acid and paraffin oil against aqueous soap (sodium oleate) solution; the curve relating interfacial tension with composition of the oil phase is found to show a well-marked minimum when 1% of oleic acid is present in the oil.—F. SEELICH. *Fette u. Seifen*, 46 (1939), 139–142; through *J. Soc. Chem. Ind.*, 58 (1939), 626. (E. G. V.)



Distillation Apparatus.

Erythrol Tetranitrate, D. A. K. and Nitroerythrol Tablets, D. A. K. The Danish Apothecaries Society Control Laboratory has issued purity rubrics for a dilute nitroerythrol powder containing 47.5–52.4% erythrol tetranitrate, with lactose as diluent. *Nitroerythrol Tablets (5 mg.) D. A. K. Formula.*—Dilute erythrol tetranitrate (D. A. K.) 10 Gm., lactose 24 Gm. and potato starch 29 Gm. Granulate with about 15 cc. of dilute spirit, dry and sift in 7 Gm. of talcum. Punch tablets of 5-mm. diameter containing 5 mg. nitroerythrol. Makes 1000 tablets. *Nitroerythrol Tablets (3 Cg.) D. A. K. Formula.*—Dilute erythrol tetranitrate (D. A. K.) 60 Gm., lactose 144 Gm. and potato starch 174 Gm. Granulate with about 90 cc. of dilute spirit, dry and sift in 42 Gm. of talcum. Punch tablets of 10-mm. diameter containing 3 Cg. of nitroerythrol. Makes 1000 tablets. *Compound Nitroerythrol Tablets, D. A. K.*—Each tablet contains 5 mg. nitroerythrol, 0.2 mg. atropine sulfate, 2 Cg. phenylethylbarbituric acid, 4 Cg. papaverine HCl, 15 Cg. theobromine, 10 Cg. phenacetin and 10 Cg. quinine sulfate. *Formula.*—I. Dilute erythrol tetranitrate (D. A. K.) 10 Gm., lactose 24 Gm. and potato starch 29 Gm. Granulate with about 15 cc. dilute spirit and dry. II. Atropine sulfate 0.2 Gm., powdered phenylethylbarbituric acid 20 Gm., papaverine HCl 40 Gm., theobromine 150 Gm., powdered phenacetin 100 Gm., quinine sulfate 100 Gm. and potato starch

64.3 Gm. Granulate with a solution of 7.5 Gm. of white gelatin in about 100 Gm. of distilled water and dry in mild heat. These granules are mixed with the granules of I, then there is sifted in a mixture of 50 Gm. talcum and 5 Gm. powdered agar. Punch tablets containing the above cited content of active ingredients. Makes 1000 tablets. All the preparations should be stored shielded from light.—ANON. *Arch. Pharm. Chemi.* 46 (1939), 227, 229–231. (C. S. L.)

Granulating Methods. A discussion of modern methods and problems involved.—FRANCIS CHILSON. *Drug and Cosmetic Ind.*, 44 (1939), 568–571. (H. M. B.)

Iron Chloride Pills. The stability of iron chloride pills and of iron chloride pills with ascorbic acid is examined.—O. LARSSON. *Farm. Revy*, 38 (1939), 340. (C. S. L.)

Lactuca Virosa—Standardization of Preparations from Fresh Milky Juice of. The gustative method of Wasicky *et al.*, can be applied to the evaluation of the principle content of these preparations. Comparative data for 2 preparations, and for brucine and quinine, are given.—G. SCHENCK and H. GRAF. *Mikrochim. Acta*, 3 (1938), 231–235; *J. Soc. Chem. Ind.*, 58 (1939), 215. (E. G. V.)

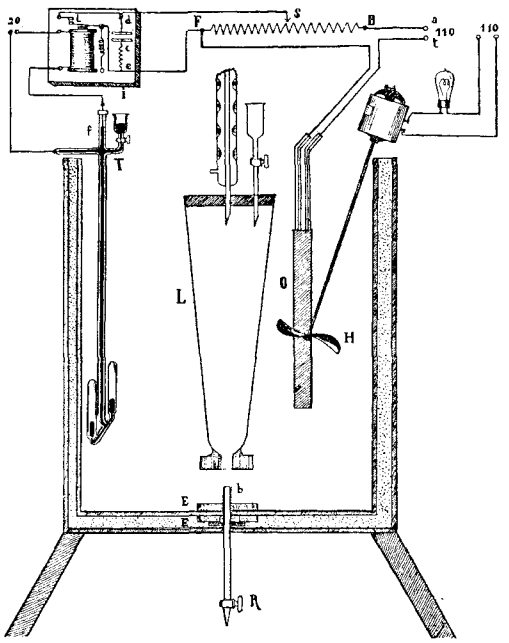
Lixiviation—Modification of Astruc Apparatus for, at Higher Temperatures. The cone of the percolator measures 36 cm., the diameters of the ends of the cone are, respectively, 10 cm. and 6.5 cm., the small part of the percolator is 5 cm. long and has a diameter of 1 cm. This screws onto the tube "b" which has a stop-cock "R" at its outside end. The percolator is made of galvanized copper and has a capacity of 2 liters. It is almost completely immersed in the water in the constant temperature bath. A $^1/_{25}$ h. p. motor runs the stirrer, and the temperature is controlled by a toluene-mercury regulator "T" which is hooked up with the heating element "O" by a relay interrupter "I." The time of lixiviation of aconite was reduced from six to three days by means of the above apparatus.—A. ASTRUC, J. GIROUX and A. BARTHE. *J. pharm. chim.*, 29 (1939), 145–148. (S. W. G.)

Methylatropine Bromide Solutions—Stability of. Solutions of this compound should be stabilized with hydrochloric acid (0.1 to 1.0 cc. of normal acid per 100 cc. of solution). In this way solutions are stabilized for a long period and tolerate heating in the autoclave. In no case could any formation of atropine be detected in solutions of methylatropine bromide.—F. REIMERS. *Arch. Pharm.*, 276 (1938), 78–82; through *Chimie & Industrie*, 41 (1939), 315. (A. P.-C.)

N. F. Chemicals—Packaging and Storage of. The effect of storage at various relative humidities and temperatures and of exposure to the sun lamp for 48 hours is reported.—J. F. ROSS and L. KAPLAN. *Bull. Natl. Formulary Committee*, 7 (1939), 323–325. (H. M. B.)

Ointment of Potassium Iodide—Prevention of the Discoloration in. Ointment of potassium iodide was prepared using 6 partially hydrogenated oils as the ointment base and none deteriorated as rapidly as lard although the iodine value of lard (54.2) was lower than all the oils except hydrogenated coconut oil (5.1) and hydrogenated lard (51.0). The hydrogenated oils are listed according to their tendency to deteriorate: cottonseed oil (iodine value 66.7), peanut oil (73.3), soybean oil (70.3), lard (51.0), coconut oil (5.1) and sesame oil (57.7). An emulsified ointment of potassium iodide using triethanolamine-stearic acid emulsifier, was more stable than mixtures using the same ointment base and these agents are listed according to their tendency to deterioration using lard (iodine value 54.2) and hydrogenated cottonseed oil (66.7) as ointment bases: mixed isopropanolamines-stearic acid, triisopropanolamine-stearic acid, soft soap, hard soap and borax. Using hydrogenated cotton seed oils of different manufacturers there seems to be no distinct relationship between the iodine value and melting point and their tendency to deteriorate.—GEORGE W. FIERO. *Bull. Natl. Formulary Committee*, 7 (1939), 313–319. (H. M. B.)

Peroxide Formation in Ether—Prevention of. A study of 16 substances at different concentrations to prevent peroxide formation indicates that Nipa 48, 49, 50 (0.01%) accomplishes this in diffused daylight without any visible change in the ether. Storage of ether in places which are protected from the entrance of light retards peroxide formation. The usual amber bottles, if they are exposed to diffused light affords some but not sufficient protection against the furthering of this formation by light.—TH. SABALITSCHKA and G. MAAS. *Deut. Apoth. Ztg.*, 54 (1939), 693–694. (H. M. B.)



Lixiviation Apparatus.

Quinine in Oil—Stabilization of Hypodermic Solutions of. Solutions containing up to 5% of quinine are prepared by the use of oleic acid, camphorated oil, guaiacol, essential oil, etc. The preparation of aqueous calcium gluconate in the presence of sodium cacodylate, glycerophosphate, formate, etc., is described.—F. ANGELO. *Boll. chim.-farm.*, 78 (1939), 173–176; through *J. Soc. Chem. Ind.*, 58 (1939), 663. (E. G. V.)

Tincture of Pepsin F. M. B.—Stability of. This tincture is unstable because of its acid content.—PH. HORKHEIMER. *Deut. Apoth. Ztg.*, 54 (1939), 67. (H. M. B.)

Urva Ursi—Sectional Percolation Studies of. Results are presented in confirmation of Wruble's and Power's observations on the percolation of cinchona.—LLOYD M. PARKS. *Pharm. Arch.*, 10 (1939), 17–22. (H. M. B.)

PHARMACOPŒIAS AND FORMULARIES

Austrian Pharmacopœia VIII—From the, to the German Pharmacopœia VI. Pharmacognostic Part.

A comparison of the contents of the two works.—L. FUCHS. *Scientia Pharm.*, 10 (1939), 65–69. (H. M. B.)

British Pharmacopœia—Analytical Processes of the. Methods which appeared in the present pharmacopœia are being revised for the new British Pharmacopœia. The methods described in various monographs are dealt with in alphabetical order.—T. L. BOURGER. *Chemist and Druggist*, 131 (1939), 343, 416. (A. C. DeD.)

British Pharmacopœia—Next. Suggested changes in the following existing monographs of the Britsh Pharmacopœia are given: Acriflavina, Adrenalina, Barbitonum and Barbitonum Solubile, Calcii Gluconas, Carbromalum, Chloralis Hydras, Cinchophenum, Indicarminum, Iodophthaleinum, Lactosum, Methylthioninæ Chloridum, Phenobarbitonum and Phenobarbitonum Solubile, Salicinum Thymol. New monographs suggested for the British Pharmacopœia are Acidum Mandelicum, Calcii Lævulas, Calcii Mandelas, Cyclopropanum, Liquor Nucleotidi, β-Phenyl*iso*propylamine, β-Phenyl*iso*propylamine Sulfate, Pyridine- β-Carboxylic Acid Diethylamide, Sulfanilamidum, Theophyllina cum Æthylenediamina, Urethanum. *Report of the Pharmaceutical Chemistry Committee (II).*—This committee undertook work on the assay of alkaloidal salts. The Committee recommended that changes or additions should be made in the following: Aconitum, Extractum Ipecacuanhæ, Ipecacuanhæ Pulverata, Liquor Morphinæ Hydrochloridi, Liquor Strychninæ Hydrochloridi, Lobelia, Opium, Pulvis Ipecacuanhæ et Opii, Syrupus Ferri Phosphatis cum Quinina et Strychnina, Tinctura Opii Camphorata, Theobromina et Sodii Salicylas, Theophyllina et Sodii Acetas. The Sub-Committee has agreed that for any alkaloidal salt, the purity of which can be accurately controlled by physical measurements such as those of melting point and specific rotation and by chemical tests for purity, a chemical test is unnecessary. In those instances for which such tests cannot be defined with sufficient accuracy, it is recommended that a chemical assay should be described.—ANON. *Pharm. J.*, 142 (1939), 613; 143 (1939), 7. (W. B. B.)

Hospital Formulary—Use of a. The paper discusses the value of hospital formularies and some things which increase the value of them to physicians and patients in the hospitals which the author represents. He believes them of little value in some institutions. Advantages in hospitals having large resident staffs, those with many open-ward patients and those without patient departments are outlined. Two points that are elaborated are importance to patient and physician of prompt inauguration of prescribed treatment and consideration of the needs of the physician who spends a large part of his time in hospital practice.—ROBERT S. FUQUA. *Jour. A. Ph. A.*, 28 (1939) 382 (Z. M. C.)

National Formulary Committee—Report of the Meeting of the. More than ninety items dealing with revisions, additions and deletions for the N. F. are offered.—E. N. GATHERCOAL. *Bull. Natl. Formulary Committee*, 7 (1938), 1–26. (H. M. B.)

Pharmacopœia of the United States, XIth Edition. The continuation of a commentary.—HERBERT HARMS. *Deut. Apoth. Ztg.*, 53 (1938), 1481–1482, 1500–1502, 1521–1523, 1538–1540 and 1577–1579. (H. M. B.)

Strychnine and Brucine—Determination of, in the Presence of One Another. A discussion of various methods for the determination of strychnine and brucine in the presence of one another including the methods of the Commentary on the Netherlands Pharmacopœia, the British Pharmacopœia and the United States Pharmacopœia.—N. J. A. GROEN and P. VAN DER WIELEN. *Pharm. Weekblad*, 76 (1939), 3. (E. H. W.)

NON-OFFICIAL FORMULÆ

Eye Lotions. In making collyria properly the p_H, tonicity, sterility, clarity and packaging are important. They are classified as simple solutions including cleansing, soothing and astringent liquids and specially medicated preparations such as antiseptic, anesthetic, mydriatic and myotic lotions. Components of the various types are discussed. Seven formulæ and seventeen references are given.—MILTON A. LESSER. *Drug and Cosmetic Ind.*, 44 (1939), 580–583, 585. (H. M. B.)

Mouth Washes and Gargles. Mouth washes (A) are milder preparations for every day casual use; gargles (B) are, however, more specialized products usually employed for the treatment of specific conditions and are used in areas further back in the mouth and throat. B are more astringent, more antiseptic and less pleasant in taste than A. A may be made so as to be deodorant, astringent, antiseptic, soothing or healing and may be liquids, liquid concentrates, tablets, powders and lozenges; and are essentially suitably colored water-alcohol solutions of flavoring materials, a mild astringent, possibly an antiseptic and a foaming agent of some sort. The ingredients in A and B are discussed with 10 formulæ. Twelve references.—M. A. LESSER. *Drug and Cosmetic Ind.*, 45 (1939), 160–163, 167. (H. M. B.)

Pastes. I. For Dermatologic Use. "Paste" is defined as a water-soluble gel for medical use. Discontinuing of present use of the term for preparations with fatty bases is urged. The subject is considered under these heads: ulcer pastes, method of using the pastes in the treatment of bed sores and ulcers, and the economy of paste treatment. Formulæ are given for Dense Pectin Paste, Thin Pectin Paste, Tragacanth Paste, Carbamide (Urea) Paste, Ethyl Aminobenzoate Paste, Sulfanilimide Paste, Zinc Peroxide Paste, Cuticolor Tragacanth Paste, Cuticolor Film, Cuticolor Bentonite Paste, Cuticolor Bentonite Film.—BERNARD FANTUS and H. A. DYNIEWICZ. *Jour. A. Ph. A.*, 28 (1939), 548. (Z. M. C.)

Water-Soap Systems—Increasing the Solubility of Oils in. The presence of pine oil greatly increases the solubility of kerosene and benzene in aqueous sodium oleate (I). Optimum proportions for producing transparent stable solutions are 1, 4, 4, 4, and 1, 2, 2, 2, parts by weight of I, water, oxidized pine oil and kerosene, respectively, and 1, 8, 8, 2, parts of I, water, pine oil and benzene, respectively.—H. N. HOLMES. *J. Phys. Chem.*, 43 (1939), 495–498; through *J. Soc. Chem. Ind.*, 58 (1939), 627. (E. G. V.)

DISPENSING

B Vitamins Tonic, D. A. K. The Danish Apothecaries Society Control Laboratory have issued a formula for a B vitamins tonic (B-Tonicum): Solution I. Manganese sulfate 0.65 Gm., citric acid 2 Gm., sodium monomethylarsenate 1.2 Gm., distilled water 116.15 Gm. Solution II. Sodium glycerophosphate solution (50%) 35 Gm., Tincture of Nux Vomica 10 Gm., Tincture of Orange 20 Gm., concentrated spirit 20 Gm., almond water 10 Gm, Fluidextract of Cola (examaratum) 85 Gm., Liquor of Vitamin B, D. A. K. 200 Gm., Syrupus Cerasi 500 Gm: Solution II is mixed with I to make 1000 Gm., allowed to stand a day and filtered. **B Vitamins Tonic with Iron** (B-Tonicum cum Ferro): Formula similiar to the above except that in solu-

tion II 25 Gm. of the Syrupus Cerasi is omitted. After mixing solutions I and II, 25 Gm. of Saccharated Ferric Oxide is dissolved in the mixture, allowed to stand two days and filtered. To make 1000 Gm.—ANON. *Arch. Pharm. Chemi*, 46 (1939), 225, 226. (C. S. L.)

Castor Oil—Hydrogenated, as an Ointment Base. IV. Hydroxystearic Acid. Salts of hydroxystearic acid obtained from completely hydrogenated castor oil were prepared and characteristics are reported. Emulsions and cold creams also were prepared and they compared favorably with those prepared with ricinoleic acids. Vanishing creams were prepared with hydroxystearic acid, stearic acid and with mixtures of them. Those containing the hydroxystearic acid alone did not possess the luster found in stearic acid vanishing creams. Alkyolamine salts of hydroxystearic acid were better emulsifying agents than those of ricinoleic acid and practically equal to those of stearic acid.—GEORGE W. FIERO. *Jour. A. Ph. A.*, 28 (1939), 598. (Z. M. C.)

Cinchona—Percolation of. The method used was adapted from that of Wruble. Results showed a surprising agreement between the two methods. Many graphs are offered to show specific gravities, per cent extractive and per cent of total alkaloids for the series of percolations.—JUSTIN L. POWERS. *Pharm. Arch.*, 7 (1936), 65–96; 8 (1937) 1–2. (H. M. B.)

Cinchona—Studies in the Extraction of. An extensive study is reported. Details of experimental work are given and many tables of results. Red cinchona, in different degrees of comminution, with U. S. P. alcohol was used. When maceration was the method, vacuum helped in initial extraction of coarser powders but was not good for finer ones. Prolonged shaking offers some advantage by ordinary maceration but has no merit under vacuum with coarse powders. No. 40 powder gives best results for extraction with Soxhlet apparatus. In maceration experiments, No. 60 is the optimum degree of fineness on the basis of rate of extraction but No. 40 can be used if time is prolonged. Menstruum in divided portions is more effective than a single maceration with a large quantity. The usual type of percolator is as effective as a narrow tube. Total extractive material is removed more readily than alkaloids.—ADLEY B. NICHOLS and C. B. SHAH. *Jour. A. Ph. A.*, 28 (1939), 506. (Z. M. C.)

Cinchona—Wine of, in Different Pharmacopœias. Alkaloidal Content. The following conclusions are given: The authors recommend the reduction of the primary maceration of the powdered cinchona bark from twenty-four hours to a period of one hour, in the preparation of Wine of Cinchona of the type recognized in the French Codex. Very sweet wines or cordials were found to be inferior solvents of the alkaloids as compared to the red wines or the even better white wines. In the case of the latter, the fact that they usually have a higher total acidity aids in the solution and extraction of the alkaloids. The Wine of Cinchona of the Italian Pharmacopœia showed the highest alkaloidal content (0.25%), being two and a half times as strong as the French Codex preparation (0.105%). The wines prepared according to the procedures given in the Belgian, Swiss, Spanish and German Pharmacopœias contained 0.05%, 0.10%, 0.20% and 0.175% of alkaloids, respectively. The French Pharmacopœia 1937 gives an alternate procedure for the preparation of Wine of Cinchona using the Fluidextract of Cinchona (3.5% alkaloids) 30 parts, alcohol (60%) 50 parts and red wine 920 parts.—A. GUILLAUME and A.-M. SCHWEITZER. *Bull. sci. pharmacol.*, 46 (1939), 216–222. (S. W. G.)

Cod Liver Oil and Ferrous Iodide. The various methods proposed for the compounding of the cod liver oil ferrous iodide preparation, including the use of solvents for incorporating the ferrous iodide, addition of a separately prepared ferrous iodide solution, addition of an iodated oil to ferrous oleate solutions in oil, are discussed. The preparation of a concentrated solution of 1.80 Gm. of iodine and 2.50 Gm. of iron in 100 cc. of oil for ten-fold dilution at the time of use is recommended.—R. BOZZOLA. *Boll. chim.-farm.*, 76 (1937), 682–687; through *Chimie & Industrie*, 41 (1939), 114. (A. P.-C.)

Compound Syrup of B Vitamins, D. A. K. The Danish Apothecaries Society Control Laboratory has issued a formula for a compound syrup of B Vitamins (Syrupus B-Vitaminorum Compositus): Solution I. Manganese sulfate 0.65 Gm., citric acid 2 Gm., distilled water 116.35 Gm. Solution II. Quinine hydrochloride 1 Gm., tincture of orange 20 Gm., concentated spirit 30 Gm. Solution III. Sodium glycerophosphate solution (50%) 35 Gm., almond water 10 Gm., Fluidextract of Cola (examarantum) 85 Gm., Liquor of Vitamin B, D.A.K. 200 Gm., Syrupus Cerasi 500 Gm. Solutions I and II are added to III, the mixture is allowed to stand 2 days and filtered. To make 1000 Gm.—ANON. *Arch. Pharm. Chemi*, 46 (1939), 227. (C. S. L.)

Emulsification—Technic of. A discussion with six references.—WALTER MEYER. *Wien. Pharm. Wochschr.*, 72 (1939), 312–317. (H. M. B.)

Emulsions and Emulsifiers—Examination and Evaluation of. Illustrative examples from earlier work of the author and collaborators on the examination of cod liver oil emulsions, and emulsifiers of the type of Paalsgaard and tragacanth are expounded.—H. SCHMALFUSS. *Fette u. Seifen*, 46 (1939), 142–144; through *J. Soc. Chem. Ind.*, 58 (1939), 626. (E. G. V.)

Emulsions—Preparation of, of Fatty Oils. Fresh vegetable oils cannot be readily and directly emulsified; oils aged by storage or artificially by blowing (for example, at 160° for 4–5 days) emulsify readily with water and a base, for example, aqueous ammonia, triethanolamine, morpholine, but only aged olive oil yielded a permanently stable emulsion. The other oils could be emulsified by rubbing them up with an oleic acid soap of an organic base before adding water. Preparations of aged olive oil are suitable for making cold and cleansing creams.—L. S. MALOWAN. *Seifensieder-Ztg.*, 65 (1938), 988–989; through *J. Soc. Chem. Ind.*, 58 (1939), 400. (E. G. V.)

Ephedrine Sprays—Formula Improvement of. A series of experiments indicates that (1) the addition of corn oil lessens appreciably the development of a disagreeable odor, (2) drying of the liquid petrolatum without heat helps to prevent the formation of the disagreeable odor, (3) ephedrine is soluble 1 Gm. in 100 cc. of liquid petrolatum at 25° C., at 15° precipitation may occur and the precipitate redissolves on warming or upon agitation, (4) specific gravity and viscosity of the liquid petrolatum exert little influence on the preparation of a 1% solution.—REPT. AMER. PHARM. ASSOC. LAB. *Bull. Natl. Formulary Committee*, 7 (1939), 328–331. (H. M. B.)

Tablets of Phenobarbital and Soluble Phenobarbital—Assay of. The following procedure is recommended: Weigh not less than 20 of the tablets, reduce to a fine powder without appreciable loss and transfer an aliquot portion equivalent to 0.3 Gm. phenobarbital or sodium phenobarbital to a glass-stoppered Erlenmeyer flask. Prepare an alkaline salt solution in the following way: To a saturated aqueous solution of sodium chloride add

barium hydroxide until the solution is saturated; filter through a Gooch crucible and protect the filtrate from exposure to the air. Transfer 100 cc. of the alkaline salt solution to the Erlenmeyer flask, tightly stopper and shake for 10 minutes. Filter the solution, transfer 50 cc. of the filtrate to a separatory funnel and add hydrochloric acid until acid to litmus. Add 5 cc. of water and extract completely with a solvent 80 cc. chloroform and 20 cc. ether. Combine the extracts in a second separatory funnel provided with a pledget of cotton in the stem, wash with 10 cc. water, acidified with a few drops of hydrochloric acid and drain into a tared dry beaker. Extract the aqueous washings with two 10-cc. portions of the solvent and combine in the beaker with the first extract. Evaporate the solvent nearly to dryness on a water bath with a fan. Dry the residue in the oven for 0.5 hour at 95–100° C., cool in a dessicator and weigh. The weight of the residue represents the amount of phenobarbital or when multiplied by 1.0947 the amount of sodium phenobarbital.—REPT. AMER. PHARM. ASSOC. LAB. *Bull. Natl. Formulary Committee*, 7 (1939), 331–334. (H. M. B.)

Glycols and Their Derivatives—Pharmaceutical Uses of. Increase in cost of alcohol and restrictions about its use, and the decrease in price of glycols and large scale production paved the way for their more general use in pharmacy. Glycols and derivatives are excellent solvents and possess other advantages but they have not been used by pharmaceutical manufacturers because they were untried. They have been used in industry. Those suggested as suitable for use in pharmacy and those that have been used are the lower members of the series, those containing fewer than six carbon atoms and the derivatives suggested for use are certain ethers, alkyl esters and amino derivatives of these lower members. Properties which make them suitable are the following: most are liquid at ordinary temperature; they have little or no objectionable odor; taste is not objectionable; they boil from 105° to 290° C.; most of them combine solvent properties of alcohol and water; they can be dehydrated by heat; they inhibit growth of microörganisms; some are emulsifying agents. The paper lists about 25 of these compounds, giving chemical formula, physical state, boiling point and solubility for each. A number are discussed individually with special reference to the literature.—A. G. DUMEZ. *Jour. A. Ph. A.*, 28 (1939), 416. (Z. M. C.)

Intrarterial Anesthesia—Solutions for. This is indicated in inflammations located in the extremities which require surgical intervention. A turniquet is applied to prevent the reflux of the liquid through the veins. The quantity used varies with the extent of area to be anesthetized. An acceptable solution contains novocain 2 Gm, adrenaline 10 drops, potassium metabisulfite 0.15 Gm., sodium chloride 0.6 Gm., calcium chloride 0.02 Gm., potassium chloride 0.015 Gm., bicarbonate of soda 0.01 Gm., glucose 0.1 Gm., water *q. s.* to 100 cc.—GONZALEZ S. GALICA. *Rev. Sanidad Naval* (Chile) (July–Sept., 1936); through *Rev. sud-americana endocrinol. inmunol. químioterap*, 21 (1938), 250. (G. S. G.)

Iron—Metallic, Manufacture of, for Use as a Pharmaceutical Preparation. A finely-divided metallic iron preparation which dissolves more readily than ferrum reductum in gastric fluids is obtained by bringing the iron in permanent contact with not more than 1% of platinum, rubidium, osmium, iridium or rhodium. For example, 200 Gm. of powdered iron are coated with platinum by stirring for 2 hours with a solution containing 0.53 Gm. of chloroplatinic acid or 75 Gm. of ferrous sulfate, and 0.013 Gm. of platinum (as platinic chloride) are precipitated with sodium hydroxide and the precipitate is reduced in hydrogen at a high temperature.—H. J. W. FRANCE. Brit. pat. 499,044; through *J. Soc. Chem. Ind.*, 58 (1939), 666. (E. G. V.)

Liquor Vitamin B, D. A. K. The Danish Apothecaries Society Control Laboratory have issued preparation and control directions for a standardized yeast extract (Solutio Extracti Saccharomycetis Cerevisiæ). The yeast after autolysis is extracted with an equal weight of a solution containing 10 parts spirit and 90 parts water. It is vacuum evaporated to a thick extract, then dissolved in a mixture of 25 parts spirit and 75 parts water and assayed biologically for vitamins B_1, B_2, B_6 and B. The solution is then so diluted as to contain in each Gm., 20 International units of vitamin B_1 (equivalent to 40 mg. of thiamin hydrochloride). The B_2 content will vary somewhat but usually there is about 25 mg. of flavin (or about 3 biological B_2 units) per Gm. The product is a clear brown fluid, weakly acid in reaction and of yeast-like smell and taste.—ANON. *Arch. Pharm. Chemi*, 46 (1939), 224. (C. S. L.)

Nasal Preparations. Representative formulas are given for various nasal preparations including Alkaline Aromatic Solution N. F., Compound Solution of Sodium Borate N. F., aromatic oil spray, isotonic ephedrine solution in water, zinc chloride astringent spray, tannin spray, alum spray, Mandl's solution, compound glycerite of iodine + camphor + menthol, menthol and camphor in oil, thymol-menthol-eucalyptol spray, pine needle oil spray, ephedrine jellies and Blair's inhalent.—M. A. LESSER. *Chem. Prods.*, 2 (1939), 151; through *Squibb Abstr. Bull.*, 12 (1939), A-1496. (F. J. S.)

Ointments—Ideal Vehicle for. Eucerinum anhydricum is a mixture of eucerit, an alcohol of the *meta*-cholesterol series, and several chemically indifferent hydrocarbons. It has no odor, is stable, non-irritating and can absorb up to 200–300% of water. These properties along with its ability to adhere to damp mucosa render it a suitable vehicle for watery preparations and an ideal base for ointments intended for mucosæ such as eyes, lips, vagina, etc. Eucerinum (cum aqua), a homogeneous mixture of equal parts of eucerinum anhydricum and water, is also available and was recommended as a bland and soothing application or as an easily absorbed ointment base.—ANON. *Indian Med. Gaz.*, 74 (1939), 64. (W. T. S.)

Plaster Bandages—Preparation of. A mixture is made of calcined anhydrous or hemihydrate plaster and hot water containing a soluble binder which swells greatly, and the paste is coated on a support in an apparatus which, including the air therein, is at all times maintained at 90–100° until the coated bandage enters the dryer. As binder, compositions of dextrin and/or glycerin, and (as plasticizer) ethylene glycol or Marseilles soap, are claimed.—CELLONA. Brit. pat. 498,975; through *J. Soc. Chem. Ind.*, 58 (1939), 552. (E. G. V.)

Powders—Mixing of. The work of Grönberg and Büchi is reviewed. Thirteen experiments are carried out on a mixture of potassium bicarbonate 1 part, saccharum album 4; potassium bicarbonate 1, saccharum lactus 4; and potassium bicarbonate 1 part and saccharum lactis 24. The experiments showed that the thoroughness of mixing of the powders is dependent on (1) the time of trituration, (2) the return of the powders clinging to the walls of the mortar by scraping the walls several times during the process and (3) the degree of fineness of the components at the beginning of the mixing. The time, which is necessary for the proper distribution of the powders, depends also on (1) the amount of powders to be mixed, (2) the physical condition of the powder, (3) the size of the mortar used, (4) the ratio of the diameter of the pestle to that of the

mortar and (5) the humidity of the air. In practice the following methods are used to distribute powders: (1) division by measurement with the eye, (2) division with a powder shears, (3) division with a powder stopper and (4) division by weighing.—H. LEPKE and HORST HALFTER. *Deut. Apoth. Ztg.*, 54 (1939), 256–258. (H. M. B.)

Suppositories. Insulin is incorporated into a mixture of a non-irritant carrier (cacao butter) with a minor proportion of non-irritant acid (lactic, citric, tartaric). Palmitic acid and saponin are optional addenda.—D. J. VAN AALST. Brit. pat. 499,824; through *J. Soc. Chem. Ind.*, 58 (1939), 552. (E. G. V.)

Suppositories. Six prescriptions are given.—KARL BECHER. *Deut. Apoth. Ztg.*, 54 (1939), 82. (H. M. B.)

Sweeting Agents in the Drug Industry. Saccharin, dulcin and other such agents are discussed and properties are given. A table of regulations controlling the uses of saccharin and dulcin in products is given.—ANNECKE. *Deut. Apoth. Ztg.*, 54 (1939), 244–248. (H. M. B.)

Syrups of Hypophosphites—Discoloration of the. Seven syrups were prepared and studied in which glycerin, dextrose, dextrose and glycerin replaced the sucrose and sodium citrate for acid of the official formula and these were stored for two months in insulated containers heated to 60° C. by an incandescent light. The colors of the preparations were determined by Munsell color charts and it was found that the syrup with 50% glycerin replacing the 60% sucrose and the one with 25% dextrose replacing 60% of sucrose and the glycerin content raised to 28% were the most stable preparations. Dextrose causes less effect and sodium citrate was found useless. The following formula is recommended which is satisfactory from the standpoint of color: Calcium hypophosphite 35 Gm., potassium hypophosphite 18, sodium hypophosphite 18, hypophosphorous acid 1 cc., glycerin 300 cc., dextrose 250 Gm., distilled water *q. s.* 1000 cc. Triturate the hypophosphites with 500 cc. of water until dissolved. Add the acid to this solution and filter and dissolve the dextrose in the filtrate, then add the glycerin; mix and add sufficient water; strain if necessary.—REPT. AMER. PHARM. ASSOC. LAB. *Bull. Natl. Formulary Committee.*, 7 (1939), 300–301. (H. M. B.)

PHARMACEUTICAL HISTORY

Anesthesia—Conquest of Pain by. Historical.—E. PODOLSKY. *Am. Professional Pharmacist*, 5 (1939), 629; through *Squibb Abstr. Bull.*, 12 (1939), A-1507. (F. J. S.)

Apothecaries of Emmerich—History of the. ANON. *Deut. Apoth. Ztg.*, 54 (1939), 470–471. (H. M. B.)

Apothecaries of Ostmark as Writers and Poets. VI. VII. Bibliographies of Hans Kloepfer and Karl Gareis.—RODERICH WALD. *Wien. Pharm. Wochschr.*, 72 (1939), 380–383, 407–410. (H. M. B.)

Apothecaries of Ostmark as Writers and Poets. Biographical sketch dealing with Hans Molisch.—RODERICH WALD. *Wien. Pharm. Wochschr.*, 72 (1939), 240–242. (H. M. B.)

Apothecary in Liegnitz—500-Year Old Court and City.—ERICH KEYSER. *Deut. Apoth. Ztg.*, 54 (1939), 117–120. (H. M. B.)

Apothecary Law in Königsberg—375th Renewal of the First. A historical discussion dealing with four apothecaries.—H. VALENTIN. *Deut. Apoth. Ztg.*, 53 (1938), 1553–1556. (H. M. B.)

Apothecary of A. Bando in Schweidnitz—600-Year Old Court and City.—ANON. *Deut. Apoth. Ztg.*, 54 (1939), 432–434. (H. M. B.)

Apothecary of Lucas Cranach, the Elder—Owners of the.—HERBERT MÜLLER HESTER. *Deut. Apoth. Ztg.*, 54 (1939), 388–389. (H. M. B.)

Chemical Microscopy—Services of Emile M. Chamot to. The pioneer work of Chamot, father of chemical microscopy, is described.—C. W. MASON. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 341–343. (E. G. V.)

Chinese Apothecaries—Pictures of. Five illustrations.—ANON. *Wien. Pharm. Wochschr.*, 72 (1939), 406–407. (H. M. B.)

Datura Stramonium L.—Chemico-Pharmaceutical Study of. A lengthy historical review (35 references), synonyms (22 references), description (6 references) and a pharmacopœial history are offered. Fluidextracts and tinctures of the seeds are prepared by various methods and the extracts of these are reported.—RALPH WILLIAM CLARK. *Pharm. Arch.*, 9 (1938), 89–96; 10 (1939), 1–15, 23–31. (H. M. B.)

Drug Plants—Efforts of 150 Years Over the Use of Native, instead of Imported Ones. Historical account dealing with 25 drug plants.—HERBERT SCHINDLER. *Deut. Apoth. Ztg.*, 54 (1939), 38–40. (H. M. B.)

Jewish Apothecaries of Fürth. Historical.—ROBERT STAUDENRAUS. *Deut. Apoth. Ztg.*, 54 (1939), 397–400. (H. M. B.)

Johann Rudolf Glauber—Genius or Charlatan. Biographical.—RUTH EUGEL. *Deut. Apoth. Ztg.* 53 (1938), 1557–1559. (H. M. B.)

Perfumery in Spain—Economical and Industrial Development of. Historical.—ANON. *Riechstoff Ind. Kosmetik*, 14 (1939), 80–82. (H. M. B.)

Pharmaceutical History of a Small Brandenburg City (Lieberose).—WALTER KOWALEWSKY. *Deut. Apoth. Ztg.*, 54 (1939), 572–573. (H. M. B.)

Pharmacist. Reproduction of a painting by Bega. Available in 8 x 10 in. print at $1.50 or 16 x 20 in. at $4.00. D. D. BEROLZHEIMER, 50 E. 41st St., New York.—*Ind. Eng. Chem.*, 31 (1939), 617. (E. G. V.)

Soap—History of the Manufacture of.—F. W. GIBBS. *Ann. Sci.*, 4 (1939), 169–190; through *J. Soc. Chem. Ind.*, 58 (1939), 626. (E. G. V.)

Synonyms. Historical development of synonymous words for drugs.—FRIDO KORDON. *Wien. Pharm. Wochschr.*, 72 (1939), 237–239. (H. M. B.)

PHARMACEUTICAL LEGISLATION

College of Pharmacists of Puerto Rico. Established by law recently as an organization for maintaining high standards, ethical, professional and fraternal among pharmacists of Puerto Rico and providing penalties for any person not a pharmacist who attempts to practice as one.—EDITORIAL. *Rev. farm.* (Puerto Rico), 3 (1938), 785. (G. S. G.)

Fair Trade Law of Puerto Rico. A law was passed by the Puerto Rican Legislature concerning the resale of trade-marked articles.—ANON. *Rev. farm.* (Puerto Rico), 3 (1938), 713. (G. S. G.)

Mercurials—Control of. A control of Mercury Order October 3, 1939 has been made by the Minister of Supply under Regulation 55 of the Defense Regulations, 1939. Under the order no person may buy or sell within the United Kingdom any amalgam or compound of mercury of any of the descriptions mentioned in the Schedule of the Order at a price exceeding the maximum set out provided in the Schedule. A license becomes necessary be-

fore any person may acquire, dispose of, or use in any one calendar month any quantity of mercury sulfide red exceeding seven pounds.—ANON. *Chemist and Druggist*, 131 (1939), 378. (A. C. DeD.)

Mercuricals—Control of. In pursuance of Regulations 55 and 98 of the Defence Regulations, 1939, the Minister of Supply has issued the Control of Mercury (No. 2) Order, 1939, dated December 5, 1939, which amends the Schedule of the Control of Mercury Order, 1939, dated October 3, 1939. The maximum prices now authorized are at a higher level due to advance in the price of mercury metal since the issue of the original Order. The new scales came into operation on December 7.—ANON. *Chemist and Druggist*, 131 (1939), 552. (A. C. DeD.)

Oilseeds, Oils and Fats—Control of. A new order entitled The Oilseeds, Vegetable Oils and Fats and Marine Oils (Control) Order, 1939 has been issued by the Minister of Food.—ANON. *Chemist and Druggist*, 131 (1939), 401. (A. C. DeD.)

Pharmacy—Condition of, as a Profession in India. The author pointed out the dire need for stringent measures to deal with the chaotic situation in regard to the profession of pharmacy in India. Specific laws were said to be needed to control the mislabeling and adulteration of drugs and to regulate the licensing of compounders.—ANON. *Indian Med. Gaz.*, 74 (1939), 104. (W. T. S.)

Pharmacy—Legislation and History of. Résumé of pharmacy laws in Venezuela.—FRANCISCO VELEZ-SALAS. *Venezuela Farm.*, 11 (1937), 3, 621. (G. S. G.)

PHARMACEUTICAL ECONOMICS

Chemical Industry Develops in the American Way. An answer to those who have attacked the basic philosophy of American life and government. Several articles (see below) follow which remind the attackers of the part played by chemical industry.—ANON. *Ind. Eng. Chem.*, 31 (1939), 499–500. **Growth of American Industry.** A survey of research, development and merger.—C. BELKNAP. *Ibid*, 501. **Problem Plus Research Plus Capital Equals Progress.**—T. MIDGLEY, JR. *Ibid*, 504. **Growth of an American Industry Around a Major Product.** The development of the Eastman Kodak Company.—W. CLARK. *Ibid*, 507. **Synthetic Organic Chemicals from Petroleum.** The development of glycols, alcohols, ketones, etc.—B. T. BROOKS. *Ibid*, 515. **Strategic Raw Materials.** The effect of stopping foreign supply on industry.—F. J. VAN ANTWERPEN. *Ibid*, 520. **The American Way in Pharmacy.** A discussion of progress in pharmaceutical education, and organization of the profession.—G. D. BEAL. *Ibid*, 531. **Chemurgy.** Utilization of farm products in the American way.—W. MCMILLEN. *Ibid*, 540. **The American Way in Industrial Research.** The Mellon Institute and other institutions.—E. O. RHODES. *Ibid*, 549. **Plastics.**—A. J. WEITH. *Ibid*, 557. **Progress through Coöperation.**—E. R. WELDLEIN. *Ibid*, 563. **Tariff Aids American Enterprise.**—D. NORTH. *Ibid*, 567. **Equipment Meets Industry's Challenge.**—C. F. ROTH. *Ibid*, 570. **Federal Researches.**—D. NORTH. *Ibid*, 574. **The American Patent System Aids Chemical Industry.**—B. K. BROWN. *Ibid*, 580. **Waste Utilization.**—J. L. SCHANTZ and T. MARVIN. *Ibid*, 585. (E. G. V.)

Drug Industry in India—Difficulties of. C. calls attention to the progress which has been made in the drug industry of India but stated that too little drug manufacturing is done there in view of the rich source of raw materials for this industry. Any scheme of drug manufacture which is to succeed in India must, according to the author, have several objects in view, principal of which are: the elimination of inferior products from the market, a supply of drugs the cost of which is commensurate with the means of the people and the utilization of available raw materials.—R. N. CHOPRA. *Indian Med. Gaz.*, 74 (1939), 230–231. (W. T. S.)

Patent Medicines—Attitude of the Public and the Doctor Toward. A treatise was presented on the psychology involved in, the harmful effects from and a solution for the extensive use of "patent" medicines by the laity.—E. S. PHIPSON. *Indian Med. Gaz.*, 74 (1939), 98–104. (W. T. S.)

Pharmacists Must Assume Responsibility. Pharmacists, in seeking to tighten the restrictions surrounding the sale of drug products, must themselves recognize the responsibility they shoulder and see to it that they themselves are not guilty of fostering the very evils from which, in others, they seek to protect the public by resort to law. So states the *N. A. R. D. Journal* in its leading editorial entitled "With Privilege, Responsibility," in the August 3 issue. The editorial further points out that, while it is greatly to be desired that pharmacy laws be strictly enforced and strengthened, and that those not qualified to dispense and sell drug products be restrained therefrom, the pharmacist lays his store and his profession open to criticism and danger if he permits equally incompetent, nonprofessional employees to care for customers in the drug department of his own store. The editorial concludes with the observation that the pharmacist must be willing to assume the responsibility of providing better professional service than the untrained storekeeper could provide.—ANON. *New Jersey J. Pharm*; through *Australasian J. Pharm.*, 20 (1939), 1119. (A. C. DeD.)

MISCELLANEOUS

Centrifuge in Pharmaceutical Practice. A review of purposes and operation.—WALTER MEYER. *Wien. Pharm. Wochschr.*, 72 (1939), 284–287. (H. M. B.)

Cosmetic Waxes—Modern. A brief discussion of the use in cosmetics of so-called synthetic waxes.—E. BOURDET. *Rev. marques parfum. de France*, 16 (1938), 144–145. (A. P.-C.)

Creams. Cosmetic creams are classified as oil-in-water (A) and water-in-oil (B) types. Type A includes vanishing, foundation, brushless shaving and hand creams; type B includes cleansing, tissue, nourishing and other oily products. Ingredients and procedures are discussed.—JOSEPH KALISH. *Drug and Cosmetic Ind.*, 44 (1939), 574–575, 579, 584. (H. M. B.)

Creams—Mixing and Filling of. Practical notes on production and processes are given.—S. P. JANNAWAY. *Perfumery Essent. Oil Record*, 30 (1939), 377. (A. C. DeD.)

Dentifrice Abrasives—Testing. In view of the possibility of damage, especially to the softer tissues, by regular brushing, a standard test for grading the fine powders used in dentifrices is important. An abrasion test is more satisfactory than a starch test, although the latter is useful for detecting coarse adulterants and is more selective. Antimony has several advantages as a standard surface. Surface flow does not appreciably interfere with the test, providing proper precautions are taken. Some modifications of a convenient abrasion apparatus are described. Results obtained with this apparatus using sized powders show that particle size distribution is important, since for the same abrasion loss per unit weight of powder larger particles will give fewer but deeper scratches. The correlation between the abrasion test on extracted teeth and the wear involved in cleaning of teeth *in vivo* is

discussed. The test with extracted teeth exaggerates the wear.—M. L. SMITH. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 155–158. (E. G. V.)

Depilatory. A mixture of 17% zinc oxide, 60% soluble acetone and 23% insoluble acetone is spread in the plastic state on a flexible support such as paper, film or fabric.—E. DIDIER. Belg. pat. 429, 447, Aug. 31, 1939. (A. P.-C.)

Disinfectant and Process for its Manufacture. Porous refractory bodies impregnated with solutions of silver salts are heated in a current of air.—R. MULLER. Belg. pat. 429, 148, Aug. 31, 1938. (A. P.-C.)

Disinfectants—Stable, Preparation of. Small quantities of metal or metallic compounds which prevent the development of hydrogen sulfide are added to acid thiocyanates.—G. SCHOENBERG. Belg. pat. 428, 504, Aug. 31, 1938. (A. P.-C.)

Disinfecting and Unguentary Preparations (Stable) of Aromatic Compounds Containing Active Halogen. Haloamides such as toluenesulfodichloramide, etc., are used in solution in biphenyls, diaryl ethers or phthalic acid anhydride (suitably to form ointments, dusting powders, etc.). Several examples are given.—FRIEDRICH ARNOLD STEINGROEVER AND OTTO J. BOSER, assignors to CHEMISCHE FABRIK VON HEYDEN, A. G. U. S. pat. 2,136,173, Nov. 8, 1938. (A. P.-C.)

Drugs, Nostrums and Cosmetics—Report of Investigations on. Thiry-four items are discussed.—C. GRIEBEL. *Deut. Apoth. Ztg.*, 53 (1938), 1595–1597. (H. M. B.)

Ether—Treatment and Packaging of. Ether is brought into contact anaerobically with an ether-insoluble, nontoxic ferrous compound such as ferrous sulfate to prevent peroxide formation without material contamination of the ether.—VERDINAND W. NITARDY, assignor to E. R. SQUIBB & SONS. U. S. pat. 2,138,039, Nov. 29, 1938. (A. P.-C.)

Fumigants and Deodorants. Notes on incense cones, incense sticks, deodorants, fumigating pastilles, etc. are discussed.—S. P. JANNAWAY. *Perfumery Essent. Oil Record*, 30 (1939), 339. (A. C. DeD.)

Germicidal Detergents. *2,138,805*—Germicidal detergent compositions are prepared in the form of a dry mixture of buffer salts, soaps and the sodium salt of a phenylphenol, in such proportions that when a solution, adapted for use as a detergent solution, is made of the mixture in such strength that the resulting p_H will be from 7 to 11, the soap and phenolate will each be present in solution and to the extent of only such a small fraction of 1% in the solution (the proportion of phenolate being such that the solutions would not be germicidal in the absence of the soap. *2,138,806*—This patent relates to similarly proportioned mixtures containing buffer salts, soap and azochloramid.—HALVOR O. HALVORSON, MILWARD BAYLISS and JOHN L. WILSON. U. S. pat. 2,138,805, Nov. 29, 1938; HALVOR O. HALVORSON, JOHN L. WILSON and ERLING J. ORDAL. U. S. pat. 2,138,806, Nov. 29, 1938; both pats., assigned to ECONOMICS LAB., INC. (A. P.-C.)

Insecticidal and Fungicidal Compositions. The essential active fungicidal ingredient is a cuprous xanthate, and the essential active insecticidal ingredient is a lower dialkyl xanthogen, the two ingredients being in the approximate molecular ratio of two to one.—ROSCOE H. CARTER, dedicated to the free use of the Public in the territory of the U. S. A. U. S. pat. 2,150,759, March 14, 1939. (A. P.-C.)

Insecticide. The product consists of rotenone in solution in a hydrocarbon solvent.—R. BOUILLENNE and O. LAZAR. Belg. pat. 428,133, June 30, 1938. (A. P.-C.)

Insecticides. An insecticide suitable for dusting, spraying, etc., comprises a finely divided mixtures, solidified from the molten state, of an insecticidal vegetable material and a carrier substance, which is solid at ordinary temperatures, but melts below carbonization temperature of the vegetable material and in its molten state is capable of extracting the active insecticide from the insecticidal vegetable material. For example, the mixture may comprise tobacco powder and sodium acetate mixed while the sodium acetate is molten.—HERBERT SCHOTTE and KARL GÖRNITZ, assignors to SCHERING-KAHLBAUM A.-G. U. S. pat. 2,136,868, Nov. 15, 1938. (A. P.-C.)

Insecticides—Adhesive for. *2,146,257*—An adhesive for insecticides comprises the reaction products of furfural with β-naphthylamine, aniline or *p*-toluidine. *2,146,258*—The adhesive consists of the reaction products of furfural with such ketones as acetone, methylethylketone, acetophenone, benzophenone and 2-naphthylketone.—LYLE D. GOODHUE, dedicated to the free use of the people of the U. S. A. U. S. pats. 2,146,257 and 2,146,258, Feb. 7, 1939. (A. P.-C.)

Insecticides—Biological Chemical Evaluation of Gaseous. Data on the boiling point, specific heat, heat of vaporization, and saturation limit at 20° are given for sulfur dioxide, methyl bromide, ethylene oxide, cyanogen chloride, cyanic acid, methyl formate, carbon disulfide, chloropicrin and heavy naphtha. The vapor density, mol. wt. and explosion limits are given for the same group, except the last. The most important factors are gas concentration and time, the product of which (*ct*) at 100% mortality ideally equals a constant which is characteristic for a given gas and a given insect at constant temperature. The *c-t* curve for cyanic acid *vs.* the grain weevil (*Calandra granaria*) is practically ideal. Deviations from the ideal are more usual, as shown by curves for carbon disulfide *vs.* ants (*Formica rufa*) and cyanic acid *vs.* resistant red scale (*chrysomphalus aurantii* res.). The *c-t* relationship is better expressed by c^nt. In practice, observations are generally based upon 50% mortality as results therefrom are more accurate than those based on 100%. The typical curve based on the entire range of mortality, *i. e.*, 0–100%, is the sigmoid form. This form is due to the varying degrees of resistance of the insects. The utility of sigmoid curves in evaluting fumigants is discussed. Gases show specificity in action against insects. Temperature is an important factor; it affects the action of the various gases differently.—G. PETERS. *Anz. Schädlingskunde*, 14 (1938), 116–122; through *Chem. Abstr.*, 33 (1939), 1867. (E. G. V.)

Insecticides—Improvements to, and Their Preparation. The insecticidal principle is incorporated into a neutral emulsion which is nonliquid at ordinary temperature, *e. g.*, a stearic acid ester.—PRODUIT "BIOS" ETABLISSEMENTS COUTELIER FRÈRES, SOC. ANON., and M. LAPINE. Belg. pat. 429,244, Aug 31, 1939. (A. P.-C.)

Lip Rouges—Harmfulness of. A brief discussion showing that rouges properly made from well purified acid eosins are completely harmless.—E. BOURDET. *Rev. marques parfum. de France*, 17 (1939), 11–12. (A. P.-C.)

Medicinal Bandage or Dressing Material. A thin flexible starch composition film carries a waterproof coating on one face, and to the other face there is affixed a flexible adhesive alkali-cooked starch film carrying a medicinal agent. Various examples are given.—HAROLD A. LEVEY. U. S. pat. 2,137,169, Nov. 15, 1938. (A. P.-C.)

Musk Perfume Materials. A lecture. The chemical constitution and synthesis of civetone, muscone, ambrettolide and related ring compounds (synthetic lactones, ketones, etc.) are reviewed, and the relation of the musky odor to constitution in such compounds is expounded.—M. STOLL. *Fette u. Seifen*, 46 (1939), 136–139; through *J. Soc. Chem. Ind.*, 58 (1939), 664. (E. G. V.)

Parasiticide. A mothproofing composition contains as the active ingredients a phenolic salt of a disubstituted guanidine, suitably a *p*-tertiaryamyl phenolic salt of dixylyl guanidine.—DAVID W. JAYNE, JR., assignor to AMERICAN CYANAMID CO. U. S. pat. 2,145,214, Jan. 24, 1939. (A. P.-C.)

Perfumery—Progress of, in 1939. A review of the various articles which appeared in *Perfumery Essential Oil Record* during the year is given.—ANON. *Perfumery Essent. Oil Record*, 30 (1939), 418. (A. C. DeD.)

Powders. A discussion of powders and two tables give the "V-au" value *i. e.*, $\frac{\text{volume of the powder}}{\text{weight in Gm. of powder}}$, for ninety drugs and chemicals with mathematical examples.—KARL BECHER. *Deut. Apoth. Ztg.*, 54 (1939), 177. (H. M. B.)

Rotenone Insecticide and Its Identification Reactions. A short account of the history and characters is given.—M. E. POZZI-ESCOT. *Bull. assoc. chim. sucr. dist.*, 55 (1938), 27–30; through *J. Soc. Chem. Ind.*, 58 (1939), 647. (E. G. V.)

Salves—Fatty, in the Care and Therapy of the Skin. Salves, creams, pastes, etc. are discussed from the viewpoint of the effect of their physical characteristics (consistency, etc.) on properties such as penetration, protection of the skin against the weather, etc.—G. HOPF. *Fette u. Seifen*, 46 (1939), 144–146; through *J. Soc. Chem. Ind.*, 58 (1939), 670. (E. G. V.)

Soap Industry in 1939. A review of the various new suggestions made during the year, and in many cases patented, for improvement both in the methods of soap manufacture and of the finished article is given.—ANON. *Perfumery Essent. Oil Record*, 30 (1939), 423. (A. C. DeD.)

Soaps—Factors Which Contribute to the Detergent Power of. Penetration, wetting (of fabric and the dirt thereon), emulsification, and deflocculation are the main factors concerned, and these have been investigated by washing tests on artificially soiled fabric (not described). Formula are deduced connecting the spreading (wetting) and penetrating powers of aqueous soap solutions with their surface tension, but the experimental results given indicate that there is no consistent relation between spreading rate (wetting time) and detergent power, while the relation between penetrative and detergent powers may be adversely affected by the accompanying fiber swelling. Soaps are better detergents when they preferentially wet the greasy dirt sufficiently to loosen and subsequently emulsify it; detergents which directly emulsify grease leave the fabric gray all over by coating it with a fine dispersion of the greasy dirt. To be a satisfactory detergent a soap solution should have a suface tension of less than 11 dynes/cm., but if this value is much lower an excessive amount of soap is adsorbed by the fabric and thereby rendered valueless in washing. The most satisfactory detergents have high deflocculating power.—L. P. HALL. *Am. Dyestuff Reptr.*, 27 (1938), 612–616; through *J. Soc. Chem. Ind.*, 58 (1939), 71. (E. G. V.)

Sulfur Nitride as a Possible Insecticide and Fungicide. A mixture of sulfur nitride and sulfur, which does not detonate when struck, is toxic to the Mexican bean beetle and to spores of *Penicillium* and *Rhizopus*.—R. A. FULTON. *J. Econ. Entomol.*, 31 (1938), 545–546; through *J. Soc. Chem. Ind.*, 58 (1939), 531. (E. G. V.)

Sunburn Preventives. Menthyl salicylate is widely employed in the prevention of sunburn, and has given much satisfaction in both creams and oils, but it has not escaped criticism. Although a 3% solution of menthyl salicylate in a film of 0.08 mm. thickness gives 100% protection between 2900 and 3115 Å., the screening drops very rapidly for rays of wave lengths above the latter figure, and it is maintained that burns may result from light of wave length up to 3500 Å. On the other hand, menthyl anthanilate is said to give more uniform protection up to 3500 Å. It is claimed that by allowing about 5% of rays in the region 2900 to 3100 Å. to pass, production of vitamin D is permitted, and it is also stated that good tanning takes place. Although there is an idea current that, owing to the presence of the amino group, anthranilates are liable to irritate the skin, the experience of Givaudan-Delawanna Inc. indicates that, at any rate, menthyl anthranilate is innocuous. "Solprotex I" and "Melanigene" are preparations on the British market that are said to give satisfactory protection against sunburn. The former is an oil-soluble preparation, while the latter is water- and alcohol-soluble. The same manufacturer that markets "Solprotex I" also markets a water-soluble similar preparation, called "Solprotex II Hydro." It is interesting to note that tannic acid has been claimed to act as an effective water-soluble sunburn preventive when used in the form of a solution in weak alcohol (I. M. S. 1 part to water 5 parts), containing about 9%. One of the latest commercial sunburn preventives is "Baytan" (May and Baker, Ltd.), which is stated to be effective yet physiologically innocuous.—H. S. REDGROVE. *Pharm. J.*, 142 (1939), 589. (W. B. B.)

Toilet Preparations—Perfuming. Notes on perfumes for face creams, powders, lotions, brilliantines and bath salts.—S. P. JANNAWAY. *Perfumery Essent. Oil Record*, 30 (1939), 275. (A. C. DeD.)

Vermicidal Compounds—Manufacture of. The diethylcarbamates of resorcinol monoalkyl ethers are vermicides having actions against ascarides and/or bothriocephalus. The vermicides are made (*a*) by interaction of resorcinol with carbonyl chloride followed by treatment with diethyl amine; (*b*) from resorcinol and N-diethyl chloroformamide (I); (*c*) by alkylation of resorcinol monodiethylcarbamate. Among examples, resorcinol monomethylether (26) and pyridine (18) are dissolved in toluene (67) and treated while cooling with a 25% solution of carbonyl chloride in toluene (200); after 2–3 hours the solution is shaken with dilute hydrochloric acid at 0°, washed, dried, treated with diethyl amine (80) dissolved in ether (30) washed, and the solvents removed, leaving resorcinolmonomethyl ether diethylcarbamate (**II**), an oil, boiling point 138–140°/2 mm. Further, resorcinol and I afford resorcinol monodiethylcarbamate, boiling point 177–179°/2 mm., melting point 64–66°, converted into II by dimethyl sulfate. Similarly there are obtained the diethylcarbamates of resorcinol monoethyl ether, boiling point 151°/3 mm., and monobutyl ether, boiling point 155°/2 mm., and of 2-ethoxy-*p*-cresol, boiling point 152°/2 mm. (from I and 2-ethoxy-*p*-cresol, boiling point 119°/4 mm., melting point 71–72°).—W. W. GROVES. Brit. pat. 493,465; through *J. Soc. Chem. Ind.*, 57 (1938), 1501. (E. G. V.)

Vial Holder. The holder is constructed of two pieces of brass or steel wire; one piece forms the outer ring used as the base and to this is attached the second piece forming the jaws which resemble those of an ordinary test-tube clamp. The holder

serves as an individual rack, facilitating heating, filtering and filling.—J. A. QUENSE and W. M. DEHN. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 483. (E. G. V.)

PHARMACOLOGY, TOXICOLOGY AND THERAPEUTICS

PHARMACOLOGY

Acacia—Effect of, on the Blood. Working on dogs the authors studied the effect of intravenously injected acacia on plasma and blood volumes, the albumin, globulin and fibrinogen fractions, the blood concentration of acacia, cholesterol, hemoglobin, cell volume and red blood cell count. Autopsy of one dog showed evidence of a deposition of acacia in the liver, small amounts were also found in the kidney, spleen and muscles. The authors conclude that the intravenous administration of acacia is counterindicated in nephrosis because of its interference with the restoration of normal serum protein. The lowering of the hemoglobin following the administration of acacia is also of consequence with patients who may already have anemia.—ROBERT L. JACKSON and LOIS FRAYER. *J. Pharmacol.*, 65 (1939), 4. (H. B. H.)

Acetylcholine and Eserine—Joint Reaction of, under the Influence of Various Drugs.—T. YOSIDA and M. YOSIMURA. *Folia Pharmacol. Japon.*, 26 (1939), 242–255 (Breviaria 105); through *Chem. Abstr.*, 33 (1939), 2998. (F. J. S.)

Acetylcholine—Intra-Arterial Action of, in Sympathectomized Subjects. In some sympathectomized subjects intra-arterial injection of 0.04 Gm. acetylcholine provokes reaction in segment of member corresponding to constrictor effect on principal arteries. Flushing and distress appear, but not sweat. In other cases the injection produces the same effects as in those not sympathectomized.—A. BATTRO and A. LANARI. *Rev. soc. argentina biol.*, 12 (1936); through *Rev. sud-americana endocrinol. inmunol. quimioterap.*, 21 (1938), 136. (G. S. G.)

Adrenaline and Blood Potassium. Intravenous injection of adrenaline produces a strong increase in plasma potassium, lasting a few minutes and then diminishing. There is no significant variation in globular potassium, or in plasma sodium, calcium or chloride. The liver provides freed potassium which fixes itself rapidly in muscles. Adrenaline produces no increase of potassium in animals deprived of livers. The same action was observed in the absence of pancreas, spleen, digestive apparatus and thyroid after the injection of atropine or eserine. The action is increased by cocaine and can be suppressed by ergotine and yohimbine—A. MARENZI and R. GERSHMAN. *Rev. soc. argentina biol.*, 12 (Nov. 1936); through *Rev. sud-americana endocrinol. inmunol. quimioterap.*, 21 (1938), 138. (G. S. G.)

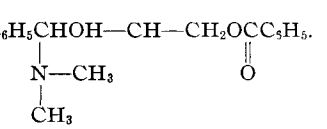
Adrenaline—Influence of, on Muscular Exercise. This report was a record of certain observations made to determine whether the liver glycogen which is mobilized by adrenaline injections results in an enhanced use of carbohydrate as a source of energy in the muscle. The following conclusions were drawn from the results of a previous study and the experimental data obtained by using human male subjects to determine the respiratory exchange, concentrations of glucose and lactic acid in the blood and CO_2 combining power of the blood at rest and at work followed by adrenaline injections. The hyperglycemia caused by a given dose of adrenaline is less during exercise than during rest; while the concentration of excess lactic acid in the blood is much the same in the two cases with the disappearance of the excess being almost as rapid during exercise as during rest. The changes of respiratory quotient appeared to depend on the concentration of excess lactic acid and affords no evidence that there is an enhanced oxidation of carbohydrate in spite of the increase in blood glucose.—F. C. COURTICE, C. G. DOUGLAS and J. G. PRIESTLEY. *Proc. Roy. Soc.* (London) B, 127 (1939), 288–297. (W. T. S.)

Amides—Latest Results on the Experimental Feeding of. A review of the feeding of amides, especially urea and glycine. It is concluded that results with ruminants are uniformly favorable.—J. WEBER. *Deut. landw. Tierzucht*, 42 (1938), 697–698; through *Chem. Abstr.*, 33 (1939), 2567. (E. G. V.)

***p*-Aminobenzoylaminomethyl-*l*-Hydrocotarnine—Preparation, Properties and Pharmacological Action of.** Anhydrocotarninenitromethane was reduced to the methylamine and the latter treated with *p*-nitrobenzoyl chloride in dry benzene to give *p*-nitrobenzoylaminomethylhydrocotarnine hydrochloride, which melts at 234° C. after crystallization from water. The free base was obtained from strong ammonia and crystallized from alcohol; it melts at 138° C. The base, reduced with stannous chloride in concentrated hydrochloric acid, gave *p*-aminobenzoylaminomethyl - *l* - hydrocotarnine, which after recrystallization from benzenes or alcohol melts at 185° C., and is easily soluble in dilute acids. Its toxicity is of the same order as that of cocaine. Its anesthetic action on the rabbit cornea is almost instantaneous and more prolonged than that of cocaine; but it has no effect on the human cornea. Its local anesthetic action by hypodermic injection is identical to that of cocaine and is increased by addition of adrenaline. Intravenously, at high doses, *p*-aminobenzoylaminomethyl-l-cotarnine produces a slowing down of respiration which finally causes death.—B. B. DEY, MISS P. LAKSHMIKANTHAM, J. C. DAVID and R. KRISHNASWAMI. *Indian J. Med. Research*, 25 (1938), 712–721; through *Chimie & Industrie*, 40 (1938), 938–939. (A. P.-C.)

Amphiporine—Active Base Isolated from the Marine Worm Amphiparus Lactifloreus. Bacq in 1937, while examining certain marine animals for the presence of acetylcholine, found that the Nemertean marine worm, *Amphiparus lactifloreus* contained a stable substance resembling acetylcholine in that it powerfully stimulated the frog's voluntary muscle but except for this was much more closely related in action to nicotine. In the present report King states that he was able to isolate 50 mg. of this base which he names amphiporine by extracting the bodies of several thousand of these carnivorous worms with chloroform. The base was isolated as a varnish and in the form of the HCl salt behaved almost identically like nicotine HCl toward alkaloidal precipitants. The platinum complex was very stable. A solution of the HCl salt on slow evaporation crystallized as a mass of needles.—HAROLD KING. *J. Chem. Soc.* (London), (1939), 1365–1366. (W. T. S.)

Anesthetic Activity—Local, Series of Contributions to the Question of the Relation between Chemical Constitution and. IV. Local Anesthetics Containing an Ephedrine-Like Nucleus. Reference is made to the earlier papers in this series. In this research it was thought that if the alcohol had a structural resemblance to ephedrine it might be possible to obtain anesthetics possessing vasopressor activity. Attempts failed. Then an analogous dimethyl amino compound was attempted:



Six compounds were successfully synthesized. All were potent local anesthetics but no vasopressor activity was observable in blood pressure measurements.—W. A. LOTT and W. G. CHRISTIANSEN. *Jour. A. Ph. A.*, 28 (1939), 502. (Z. M. C.)

Anesthetic Agents—Assay of General. A general anesthetic must be judged, for proper evaluation, on the basis of its narcotic strength, solubility in air and blood, explosibility, controllability of route of administration, toxicity and side-effects, adequacy of physiological effects, specificity of action, elimination, death rate and general safety. These points are discussed with regard to $CHCl_3$, ether, EtCl, cyclopropane, ethylene and N_2O.—HENRY K. BEECHER. *Ann. Surg.*, 110 (1939), 823; through *Squibb Abstr. Bull.*, 12 (1939), A-1544. (F. J. S.)

Anesthetic—Local. An anesthetic solution suitable for hypodermic injection contains a propylaminoethyl aminobenzoate or other salt of a monoalkylaminoethyl *p*-aminobenzoate in which the alkyl group contains not more than 5 carbon atoms in the chain, together with less than 0.002% of adrenaline.—SAMUEL D. GOLDBERG, assignor to NOVOCOL CHEMICAL MFG. CO. U. S. pat. 2,139,818, Dec. 13, 1938. (A. P.-C.)

Anthelmintics. I. Vermifuge Action of Alantolactone. Alantolactone has a chemical constitution very close to that of santonin. Impure alantolactone is very bitter and has emetic properties, but the purified product which has been freed from higher terpene derivatives possesses only slight bitterness and does not produce emesis. Its anthelmintic action is greater than that of santonin and its toxicity toward animals (dogs) is lower.—S. OZEKI, M. KOTAKE and K. HAYASI. *Collected Papers Faculty Sci. Osaka Imp. Univ.*, 4 (1937), 233–234; through *Chimie & Industrie*, 41 (1939), 112. (A. P.-C.)

Antispasmodic Drugs—Relationship between the Chemical Constitution and Pharmacological Action of Various. A study of such drugs as atropine, trasentin, octinum, syntropan and some derivatives of these showed that the antispasmodic effect of the alkaloids in mice is the greatest, that of the trasentin series was second and of the octinum series third. Increased activity of the octinum series was associated with the introduction of a benzyl nucleus, but in the trasentin series neither the benzyl nor phenyl group was significant. The toxicity of the octinum series was greater than that of the trasentin series. Both series showed less toxicity when a benzyl group was introduced.—T. YOSIDA. *Folia Pharmacol. Japon.*, 26 (1939), 234–241; through *Chem. Abstr.*, 33 (1939), 2997. (F. J. S.)

Artichoke Extract—Influence of, upon the Antitoxic Function of the Liver of the Guinea Pig. The author presents a note relative to the stimulating influence of artichokes upon the antitoxic function of the liver. The histologic examination of the livers of sixty guinea pigs fatally intoxicated by sodium cacodylate showed that those animals which had received the stabilized extract of artichoke failed to present the typical arsenical lesions found among those which did not receive the extract. Further, the guinea pigs which had received the artichoke eliminated a very large proportion of arsenic in the urine. The experiences encountered are believed to be of therapeutic importance and have already gained clinical importance.—O. GAUDIN. *Soc. de Therap.*, Feb. 8, 1939; through *Presse Medicale*, 28 (1939), 532. (W. H. H.)

Ascorbic Acid—Influence of Salicylates and Other Drugs on the Excretion of, In Animals. Rats on a diet of uniform composition containing no ascorbic acid, excreted a relatively constant daily amount of this substance. The same was true of guinea pigs when the diet was supplemented by a constant amount of ascorbic acid each day. When acetylsalicylic acid or sodium salicylate was given to the rats by stomach tube a considerable increase in the excretion of ascorbic acid occurred during the next twenty-four hours. This increase was roughly proportionate to the dose. This was followed by a drop below the normal rate of excretion. The variation was confirmed by 2, 6–dichlorobenzenone-indophenol titration, the Evelyn colorimeter procedure, and the determination of the 2, 4-dinitrophenylosazone. The same change occurred in guinea pigs if the intake of ascorbic acid had been above a certain minimum level. Neocincophen, caffeine, salyrgan and sodium bicarbonate have been administered at comparable and at higher dosages. These drugs do not give a similar effect. The source of the ascorbic acid is considered on the basis of the data.—L. T. SAMUELS, N. D. RITZ and ELLEN POYET. *J. Pharmacol.*, 66 (1939), 1. (H. B. H.)

Benzedrine as a Controlling Agent of Avertin Anesthesia. Benzedrine, 3 mg. per Kg, has been employed successfully in rabbits to offset the respiratory depression in avertin anesthesia. The heart beat was also strengthened.—JOST MICHELSEN and MAX VERLOT. *Anesthesia and Analgesia*, 18 (1939), 59–60; through *Chem. Abstr.*, 33 (1939), 2585. (E. G. V.)

***dl*-Benzedrine Sulfate—Cardiovascular Action of.** A 0.001% solution of benzedrine sulfate had no effect on the isolated frog heart, a 0.1% solution had a negative inotropic effect. In the dog the compound caused an increase in frequency and amplitude of the heart beats with accentuation of the *P* and *T* waves of the electrocardiogram. Hypertension was produced by 0.1 to 0.5 mg. per Kg. In the rabbit 0.5 to 5.0 mg. per Kg. had little or no effect on blood pressure, larger doses produced hypotension. Vasoconstriction of the spleen but not of the kidneys was produced in the dog. Benzedrine, like ephedrine, sensitizes the dog to adrenaline. The tachyphylactic action is weaker than that of ephedrine.—B. N. HALPERN. *Compt. rend. soc. biol.*, 127 (1938), 890–893; through *Chime & Industrie*, 40 (1938), 938. (A. P.-C.)

Cannabis Resin—Physiological Action of Indian, on Small Fish. The animal used is a stickleback (*Gasterostus leiurus*), which has a uniform size; therefore it was easy to obtain specimens of practically identical weight (within 0.05 Gm.). The sensitivity of the fish increases with the size. The time of survival is directly dependent upon the physico-chemical properties of the external medium. A natural calcareous water was brought from p_H 7.4 to p_H 9.0 with sodium carbonate. After precipitation of a part of the dissolved salts, the clear water was decanted. The surface tension corresponding to 111 drops per 5 cc. was changed by addition of biliary salts (12%) to 136 drops per 5 cc. The temperature was kept at 20°. Each fish (1.5 Gm.) was placed in 80 cc. of the prepared water and the effects of the addition of 0.3, 0.5 and 1.0 mg. of the resin were noted. The following conclusions are given: The inebriant and convulsive actions of cannabis were studied. The incoördination of the movements, the loss of equilibrium may be due to the cerebellous action of the resin. The effect on the cerebral hemispheres manifests itself in the case of the fish by a lively cortical excitation followed by a paralysis (torpor) which is more difficult to observe than the other signs. The medullary action is essentially the following: the hyperactivity manifests itself by a great excitability and irritability, the exaggeration of the reflexes, the strong convulsions affecting only the anterior part of the body when the pos-

terior part has already become paralyzed. The bulbar paralysis finally causes the asphyxiating apnea which terminates poisoning caused by cannabis or other convulsants. The symptoms observed constitute a good biologic reaction for cannabinol, being observed with 0.5 mg. of the resin; and, when used in addition to the chemical color reactions, should assure a positive identification. Although the biologic reaction is very sensitive, it cannot be used for quantitative determinations because the subjects are too responsive to external variations in addition to the existing individual variations.—P. DUQUENOIS. *Bull. sci. pharmacol.*, 46 (1939), 222–231. (S. W. G.)

Chemical Constitution and Local Anesthetic Activity—Series of Contributions to the Question of the Relation between. III. Substituted Cinnamic Acid Esters of Dialkylamino Alcohols. Reference is made to the first and second papers in the series. The aromatic acid used in preparing a local anesthetic may be a cinnamic instead of a benzoic acid, the $C_6H_5CH=CH-$ nucleus being qualitatively equivalent to the C_6H_5- nucleus. The cinnamic nucleus offers some possibilities that the benzoic does not, that of substitution on the *alpha* and *beta* carbon atoms. By introducing alkyl groups and gradually increasing the size of the alkyl substituent the oil solubility can be changed gradually. Compounds studied can be represented by the following formulæ:

$$C_6H_5-CH=\underset{\displaystyle R}{C}-COOC_2H_4N(C_2H_5)_2.HCl \quad \text{and}$$

$$C_6H_5-CH=\underset{\displaystyle R}{C}-CONH.C_2H_4N(C_2H_5)_2.HCl.$$

has been varied, representing methyl, ethyl, propyl, (normal and iso), normal butyl and normal amyl. In every instance compounds had pronounced anesthetic activity. Details of experimental work are reported and a table gives compounds, method, melting point, solvent, formula, analyses, showing percentage of N calculated and found, Cl calculated and found.—W. A. LOTT and W. G. CHRISTIANSEN. *Jour. A. Ph. A.*, 28 (1939), 499. (Z. M. C.)

Chemical Structure and Pharmacological Action—Relation between. I. Local Anesthetic Action of the Ester of *p*-Aminobenzoic Acid and the Alkaloid Lupinine. *p*-Aminobenzoyllupinine, melting at 162–163°, is insoluble in water, slightly soluble in ethyl ether and readily soluble in ethyl alcohol. The hydrochloric acid salt is water-soluble. Its anesthetic properties are greater than those of cocaine, while its toxicity is of the same order.—L. G. MERKULOV. *Bull. biol. med. exptl. U. R. S. S.*, 6 (1938), 64–68 (in English). **II. Narcotizing Properties of the Derivatives of Hexahydrobenzylbarbituric Acid.** The narcotic action of hexahydrobenzyl-, hexahydrobenzylethyl-, hexahydrobenzylisobutyl- and hexahydrobenzylisoamylbarbituric acids is described. The activity is inferior to that of veronal and is chacterized by a rapid onset and a relatively short duration.—*Ibid.*, 238–241; through *Chem. Abstr.*, 33 (1939), 2992. (E. G. V.)

Choline Phosphoric Acid Ester. The phosphoric acid ester of choline (β-phosphatoethyl-tri-methylammonium hydroxide, I) obtained by cleavage of lecithin is a sympathicotropic substance. It increases the blood pressure of cats even after decapitation, adrenalectomy or treatment with nicotine or atropine, and like epinephrine (II) paralyzes the intestine. These effects of I are reversed by ergotamine (III) more markedly than are the effects of II. Animals receiving I show increased sensitivity to the lethal effects of III. Like choline (IV), I stimulates salvation and (to a slight extent in high concentrations) stimulates the isolated intestine. I does not exhibit IV-like activity on the heart, pupils, bronchi or intestine *in situ*, or on the isolated frog heart or rectus abdominis muscle. I is about $^1/_{10}$ as toxic as IV, the intravenous minimum lethal dose of I for rats being approximately 0.6 Gm./Kg. I forms a soluble calcium salt, which is less irritating than calcium chloride when injected intracutaneously.—O. EICHLER. *Arch. exptl. Path. Pharmakol.*, 193 (1939), 576; through *Squibb Abstr. Bull.*, 12 (1939), A-1575. (F. J. S.)

Cobra Venom—Prolonged Administration of, in Relation to Kidney and Liver Function. Equivalents to the ordinary and exceptional dosage of cobra venom employed in adults, namely 5 to 10 mouse units, were administered to rabbits 5 or 6 days a week for 7 to 22 weeks. Neither kidneys nor liver showed in any animal signs of impairment at the end of the experiment.—DAVID I. MACHT and DOROTHY J. BROOKS. *Proc. Soc. Exptl. Biol. Med.*, 41 (1939), 418. (A. E. M.)

Digitalis Action—"Tone" Hypothesis of. In the intact animal the digitalis glucosides diminish the size of the heart, which is commonly regarded to be the mechanism by which heart failure is abolished. The diminished size is explained in one view by a primary constriction of the hepatic veins which reduces the return flow to the heart, and in another view, by a primary action on the heart itself, diminishing the diastolic size (increased "tone"). Both formulations, however, involve the assumption that in heart failure the heart muscle is overstretched. We have performed experiments and adduced evidence, which indicate that the heart muscle is not overstretched in heart failure, that cardiac "tone" in the sense of diastolic size is not at fault, and that digitalis does not produce effective constriction of the hepatic veins in man. When all secondary mechanisms by which diastolic size of the heart can be reduced are eliminated, digitalis in therapeutic doses produces no shortening of the diastolic length (no increase in the "tone" of the heart muscle). The direct experiment shows that the action of digitalis by which it may relieve heart failure, is not one on cardiac "tone" but directly on the force of the systolic contraction (direct action upon the muscle).—HARRY GOLD and MCKEEN CATTELL. *J. Pharmacol.*, 66 (1939), 1. (H. B. H.)

Digitalis Glucosides—Influence of Extracardial Tissues on the Effective Dose of, on the Heart. The digitalis glucosides cause marked increase in systolic tension of the papillary muscle of the cat's right ventricle in concentrations well within the range that might prevail after therapeutic doses in man. Since the increased tension probably represents the therapeutic action of the glucosides on heart muscle, the authors have extended these experiments with the view of relating the minimal therapeutic doses (minimal effective concentrations in papillary muscle experiments) to the minimal fatal doses (concentrations calculated on basis of cat method assay) for several members of the digitalis group: ouabain, digitoxin, digilanid C. The results show that the relative fatal doses of these three compounds in mg./Kg. (concentration in the whole animal) do not correspond to their relative therapeutic doses in mg./Kg. (concentration in the system of papillary muscle and Tyrode's). The relative fatal doses of ouabain, digilanid C and digitoxin are 1:3:4. Their relative therapeutic doses for papillary muscle are 1:20:1. These results indicate that the therapeutic doses in man of digilanid C might be 20 times as large as ouabain. The facts however, are otherwise. The full intravenous therapeutic doses of the two in patients with auricular fibrillation in terms of cat units have been found to be not far apart: of ouabain about 0.9 mg. (9 cat units) and of digilanid C about 1.6 mg. (6 cat

units). Thus data secured from isolated tissue or organ technics regarding relative therapeutic potency of different digitalis glucosides do not apply to the whole animal presumably because the presence of extracardial tissues in the body alter the potency of the cardiac action. It follows that bio-assay methods for therapeutic potency must employ the intact animal.—McKEEN CATTELL and HARRY GOLD. *J. Pharmacol.*, 66 (1939), 1. (H. B. H.)

Digitalis Glucosides—Observations of the Cardiac Activity of. In the so-called digitalis cumulation, B. distinguishes between toxic disturbances, occurring after high doses, and therapeutics effects, occurring after the usual therapeutic doses. He cites two case histories of patients receiving digitalis preparations (Digalen, Digipurat) to illustrate this distinction. In rabbits and cats, cumulative action of digitoxin was accompanied by no marked changes in the electrocardiogram. In cats, thyroxin intoxication lead to increased sensitivity to digitoxin, without electrocardiographic changes.—H. BAUER. *Arch. exptl. Path. Pharmakol.*, 193 (1939), 661; through *Squibb Abstr. Bull.*, 12 (1939), A-1575. (F. J. S.)

Digitalis—New Methods of Titration of. Three methods are suggested: (1) testing an infusion of digitalis on the isolated uterine horn of a guinea pig; (2) testing its effect on the tonus and contractions of the longitudinal fibers of mammals; (3) testing the diuretic effect on rabbits into which normal sodium chloride solution is constantly injected intravenously up to the time of death. Parallel determinations were made of volume of urine eliminated and amount of chlorine eliminated in several series of animals with varying doses of digitalis.—I. SIMON. *Boll. soc. ital. biol. sper.*, 13 (1938), 28-30; through *Chimie & Industrie*, 41 (1939), 310. (A. P.-C.)

Digitalis—Quantitive Estimation of the Potency of, by the Cat Method in Relation to Secular Variation. Experimental procedure followed the general method, first described by Hatcher and Brody but details of procedure are given and results for 52 assays are tabulated and discussed. Variation within assays relative to that between assays has been isolated by convariance in data on the individual dose of standard "digilusin" for the 52 groups, each of 4 cats tested simultaneously. Factors which might impair validity of comparison were avoided. When individual values were corrected for secular variation the distribution of the individual log-doses followed the normal curve of error. The median lethal dose is recommended in place of the usual arithmetic mean. A modified bioassay is proposed so that the variation between groups will not bias estimates of the log-ratio of potencies or its error either in conducting the experiment or in calculating the result.—C. I. BLISS and J. C. HANSON. *Jour. A. Ph. A.*, 28 (1939), 521. (Z. M. C.)

Diuresis with Isomannide—Studies in. Isomannide, when administered orally to man or by vein to dogs, is excreted unchanged in the urine in large quantities producing an increase in urine volume. When ingested in large quantities or administered intravenously it produces no toxic symptoms. Like urea, isomannide permeates the red blood cells eliciting the characteristic osmotic phenomena. The diuretic activity of isomannide is likely due to its lack of tubular absorption thus increasing the osmotic pressure of the fluid upon which the water absorbing cells are acting and thereby increasing the volume of urine excreted.—C. J. CARR. *J. Pharmacol.*, 66 (1939), 1. (H. B. H.)

Diuretics—Mechanism of Action and Method of Administration of Mercury-Containing. Good diuretic effects were produced by injecting the preparation dilurgen Richter (containing in each cc. 0.1 Gm. hydroxy (hydroxymercuri)-allylsuccinylcarbamide and 0.043 Gm. theophylline). The diuretic effect can be increased by a previous ammonium chloride treatment. The agent is suitable in treatment of obesity.—J. SCHERNHARDT. *Orvosi Hetilap*, 82 (1938), 955-957; through *Chem. Abstr.*, 33 (1939), 1814. (F. J. S.)

Elixir of Paregoric, French Pharmacopœia—Pharmacological Notes on. Two older formulæ and the present official Elixir of Paregoric are discussed. Dilutions of the elixirs (1:200 to 1:400) caused lowering of the tonus and stopped the peristaltic movement of the isolated intestine of the chloralozed dog. When 0.01 to 0.02 cc. of the present elixir was diluted to a 1% suspension in physiological salt solution and injected intravenously into a chloralozed dog the action on the intestine *in situ* gave an increased tonus and a rise in the amplitude and rate of the movements. This effect was apparently caused by the central action of the camphor contained in the doses administered.—L. VIGNOLI and J. DELPHAUT. *Bull. sci. pharmacol.*, 46 (1939), 160-167. (S. W. G.)

Epinephrine and Potassium—Identity of Action of. The identity of action of epinephrine and potassium in intact animals has led the authors to believe that the effect of epinephrine is due to a disturbance of the intracellular-extracellular potassium balance, an increase in extracellular potassium resulting in an increased physiologic response of the particular cells affected. Alteration of the physiological response of an organ by the use of other drugs, digitalis, quinine, yohimbine, alters the response in the same manner as potassium. In a series of several hundred dogs the authors have not met with any divergence in the action of these two substances. It is suggested that in those cases requiring the use of epinephrine, that the administration of potassium would help to alleviate the condition and increase the effectiveness of epinephrine.—W. J. R. CAMP. *J. Pharmacol.*, 66 (1939), 1. (H. B. H.)

Epinephrine in Oil. A suspension of powdered epinephrine base in peanut oil was prepared and exposed to supersonic vibrations. The resultant suspension has been shown to be slowly absorbed when injected subcutaneously. Hyperglycemic effects and cardiovascular responses lasting eight to nine hours were produced. Severe cases of asthma appear to receive more prolonged relief from the use of this preparation.—E. L. KEENEY, J. A. PIERCE and L. N. GRAY. *Arch. Internal Med.*, 63 (1939), 119; through *Brit. Med. J.*, 4085 (1939), 8556E. (W. H. H.)

Eserine—Influence of, on the External Secretion of the Pancreas. The author has performed a series of experimental researches to study the action of eserine on the external secretion of the pancreas, and has been able to show that small doses of this substance varying between 0.1-0.18 mg. per Kg., have a stimulating action on the external secretion of the pancreas by two different mechanisms when given intravenously: one acts through the vagus, and the other is bound to the increased stimulus produced by the secretine, which is increased in turn by the eserine. According to the author, large doses are followed by a decrease in the secretion, and still larger doses may stop it if it has already started spontaneously. The author also confirms the statement that the pancreatic juice secreted after administration of eserine can digest coagulated albumen without being activated beforehand.—L. LIACI. *Biochim. terap. sper.*, 25 (1938), 445. (A. C. DeD)

Hemostatics in Present-Day Usage. The author's studies in the rabbit of the action of hemostatics have proven unequal regarding the recent

medicaments, when subjected to a pharmacodynamic control. In his experiences he has found that Manetol did not possess hemostatic properties. On the other hand, it prolonged bleeding time. Solutions of commercialized pectin under the name of Sangostop and Coagucit constitute a powerfully active and durable preparation. Adrenaline or Stryphnon also acts very efficiently in the control of hemorrhages. The above three products seem to give, in the rabbit, superior results than one obtains with the aid of the classic active hemostatics, such as extract of posterior pituitary and extract of platelets named coagulene.—G. DERONAUX. *Arch. intern. pharmacodynamie*, 62 (1939), 100. (W. H. H.)

Heparin. Heparin inhibits blood coagulation after intravenous, intramuscular or subcutaneous injection for a period depending on the dosage. Heparin is inactive after oral administration. The smallest active dose on intravenous injection is 50 a. c. u./Kg. rabbit, about 8000 a. c. u./Kg. subcutaneously and about 3000 a. c. u./Kg. rabbit intramuscularly. After intravenous injection maximal action is reached two minutes after injection. After intramuscular or subcutaneous injection maximal action only occurs after two to four hours. Heparin is also well tolerated after repeated intravenous injection, although it must not be overlooked that repeated administration of very high doses may be followed by a secondary acceleration of blood coagulation. Further experiments will be necessary to decide whether this phenomenon is due to a secondary reaction of the organism to the administration of heparin (increase of the thrombin-content due to a protective action of the body). A protracted action of the salts of heparin with benzidine, clupeine or quinine could not be observed, contrary to the observations of A. Fischer and C. H. Best. Heparin is of low toxicity. High doses cause a definite increase of temperature. The blood pressure of cats and rabbits is only slightly and temporarily affected, even by high doses of heparin. It had no action on the surviving guinea pig intestine, nor does it produce anaphylactic shock. The blood picture is unaffected by pure heparin but impure preparations cause a temporary leucocytosis. About twenty per cent of the heparin or a heparin-like substance appear to be excreted through the kidneys, after intravenous injection in the rabbit. A simple method of standardization of heparin is described and an anticoagulant unit (a. c. u.) is defined as that quantity of heparin which will keep 1 cc. of recalcified cattle plasma uncoagulated for four hours at 37° C.—M. REINERT and A. WINTERSTEIN. *Arch. intern. pharmacodynamie*, 62 (1939), 47. (W. H. H.)

Hydrocinchonidine—Major Hypotensive and Sympathicolytic Effects of. After an injection of 2.5 mg. of hydrocinchonidine sulfate (I) per Kg. body weight, the injection of 0.01 mg. adrenaline (II) caused the carotid pressure of the cat to rise 57 mm. as contrasted with 64 mm. in the normal cat. There was less renal vasoconstriction than with II alone. After a second injection of 5 mg. of I, II brought the pressure up 24 mm. and after a third injection of 10 mg. of I and finally after a total of 40 mg., the injection of II gradually brought the pressure back to its normal level. With the increasing amounts of I the renal vasoconstriction decreased.—RAYMOND-HAMET. *Compt. rend.*, 207 (1938), 1252-1254; through *Chem. Abstr.*, 33 (1939) 2584. (E. G. V.)

Insulin—Agent Promoting Intestinal Absorption of. According to production of convulsions and hypoglycemia in animals, the following classes of agents promote the absorption of insulin from intestinal loops: astringents, protoplasmic poisons, simple alcohols, polyalcohols, polyalcoholamines, detergents, dyes, certain local anesthetics, nerve paralyzants and agents which increase permeability, promote hyperemia, and lower surface tension. Rectal absorption is generally better in animals. But, both oral and rectal absorption are uncertain or negative in man (hypoglycemia) after certain of these agents.—P. J. HANZLIK, W. C. CUTTING and G. B. ROBSON. *J. Pharmacol.*, 66 (1939), 1. (H. B. H.)

Insulin and Cardiazole in Schizophrenia—Technic and Indication of Cures with. Technices are presented for the treatment of schizophrenia by (1) insulin, producing hypoglucemic comas, (2) cardiazole, producing epileptic crises and (3) the 2 treatments combined. Psychotherapy is recommended during the treatment. (1) or (2) is used with patients in the early stages of the disease, but, if no good results are obtained, treatment (3) is tried. The latter therapy is also recommended for catatonic stupor.—M. GROSS and G. GROSS-MAY. *J. belge neurol. psychiat.*, 38 (1938), 831-846; through *Chem. Abstr.*, 33 (1939), 2587. (E. G. V.)

Insulin—Influence of Certain Metals on the Stability of. Zinc in the ratio of .05, 0.1 and 0.4 mg. to 1000 units retarded the rate of deterioration of low-ash, zinc-free insulin incubated at 52° C. The addition of 1 mg. of either cobalt, nickel or aluminum to 1000 units of insulin was effective in preserving the physiological activity of the insulin incubated at 52° C. for a period of at least seven weeks.—M. SAHYUN, ARTHUR NIXON and M. GOODELL. *J. Pharmacol.*, 65 (1939), 2. (H. B. H.)

Intravenous Injections from Original Containers. The use of a screw-capped bottle with a special holder and delivery tube enables sterile solutions to be employed directly from original containers, thereby eliminating the possibility of contamination when the solution is poured over the lip of an ordinary bottle into the funnel used for injection. A sketch is shown of the set-up, which is simple and easy to use.—R. J. STRATTON. *Pharm. J.*, 142 (1939), 620. (W. B. B.)

Laxatives—Bioassays of, on Monkeys (Rhesus) and on Lower Mammalians (Dyemeal Methods). The "dyemeal" procedure devised in 1925 for the assay of laxatives has beeu given further study. In the search for test animals, it became apparent that the monkey was superior. Increase in rate of intestinal progression was most appropriate for dyemeal assays in the mouse and change in stool consistence for assay in the monkey. Methods are discussed under the following heads: dyemeal methods (principle, technic, interpretation of results, application and restrictions of the methods); monkey method (principle, care of experimental animals, technic of assays). The author recommends "bioassay through approximation" for evaluation of laxatives, with the rhesus monkey as test animal. More than 4500 experiments on 128 monkeys showed the method to be valuable for laxatives from different pharmacological groups as well as for comparison of the same active principle. The sensitivity of monkeys to laxatives is comparable to humans. In the assays conducted, the same values of relative potency were found.—S. LOEWE. *Jour. A. Ph. A.*, 28 (1939), 427. (Z. M. C.)

Magnesium—Differentiation of the Effects of the Potassium Ion from That of Acetylcholine by. Magnesium accentuates weakly the muscarine effect of acetylcholine and diminishes on the contrary the hypertensive and vasoconstrictor effects exerted in the presence of atropine. It brings forth a new element in the differenciation between the potassium ion and acetylcholine.—R. HAZARD and L. WURMSER. *Soc. de Biol.*, April 22, 1939; through *Presse Medicale*, 34 (1939) 656. (W. H. H.)

Magnesium Sulfate—Effect of Intravenous Injections of, on the Vascular System. Experiments on dogs indicate that the vasodilating effect of magnesium is due to the direct effect on the vessel wall.—VICTOR G. HAURY. *J. Pharmacol.*, 65 (1939), 4. (H. B. H.)

Male Sex Hormone—Experimental Research upon the Assay of. Many tests have been proposed for the testicular hormone. The assay (cockscomb) is the most utilized, but the previous necessary castration offers inconveniences. The author proposes the test upon the crest of the hen which consists of painting the crest daily with the hormone. The assay offers incontestable advantages. It avoids the operation upon the cock and the direct application is very simple as one paints the crest twice a day. The reaction of growth is lively and rapid. The sensibility of the method is infinitely superior to that seen from the subcutaneous or intramuscular injections (50 times more). The author's research fixes the unit as the hen's crest.—AL. CRAINICEANU. *Acad. de Med. de Roumanie*, Feb. 21, 1939; through *Presse Medicale*, 26 (1939), 494. (W. H. H.)

Mercurial Compounds—Augmentation of Diuresis Produced by, after Administration of Glucose. Pellegrini has shown that the administration of large quantities of glucose (100 to 200 Gm.) after the administration by injection of a mercurial diuretic produced a polyurea which was greater than that produced by the mercurial diuretic alone or associated with calcium or ammonium chloride. The authors have studied eighteen œdemous cases (cardiac affections, cirrhosis, etc.) the urinary elimination after the injection of a mercurial alone, and associated with glucose, then calcium chloride. The increase of urinary elimination of urea and of chlorides under the influence of mercurial aides by glucose and calcium chloride correspond to the increase of these substances in the blood; the urinary elimination is increased when the hydroma is greater. The dosages seem to demonstrate that glucose and to a less degree calcium chloride have an extra renal action; the first time it exerts a direct action upon the tissues; second time, the accumulated water in the tissues is mobilized, mobilization which precedes and accompanies the polyuria; the chlorides and the urea accompany the water of the tissues toward the blood; the polyuria is essentially bound to the kidneys, direct seat and principal action of the mercurials. Glucose and the mercurials act in the same sense but not in the same tract; the first, acts upon the tissues, mobilizing the water which is presented at the kidneys in increased quantity, the mercury acts upon the kidneys. The best indication for mercurial diuretics is furnished by cardiac œdemas with notable chloride retention; glucose is shown in this case as an always efficacious adjuvant. The mercurial diuretics act more upon the ocdemas and the outpouring of cirrhotics.—A. BERTOLA and R. TRAVERSO. *Gazz. ospedali clin.*, 59 (1938), 945; through *Presse Medicale*, 31 (1939), 78. (W. H. H.)

Metrazol—Action of, on the Autonomic Nervous System. Experiments on normal, anesthetized and decerebrated cats demonstrate the following effects of metrazol on the autonomic nervous system. Metrazol resulting in convulsions was found generally to produce an initial drop in blood pressure associated with some dilatation of both pupils. The onset of convulsions was associated with a constriction or cessation of dilatation of the sympathectomized pupil, large dilatation of the normal pupil, contraction of the normal N. M. without contraction of the denervated N. M., galvanic (sweating) responses of the footpads, and cessation of the fall or beginning of rise in blood pressure. The constriction of the sympathectomized pupil indicates excitations of parasympathetic mechanisms. The unusual dilation of the normal pupil, the contraction of the normal N. M. and the galvanic reactions of the footpads indicate excitations of the sympathetic mechanisms. In a few experiments, especially after repeated doses of metrazol, the initial fall in blood pressure was reduced or eliminated and even a considerable elevation in pressure was noted. Following metrazol convulsions, or in the absence of convulsions as after repeated small doses of metrazol with curare, there is an increased reflex sympathetic excitability by afferent stimulation as indicated by increased responses and lowered thresholds of the nictitating membranes to stimulation, increased tendency toward pressor effects on blood pressure, increased reactions of the normal as compared with the denervated pupil, and increased frequency of sweating (galvanic) responses of the footpads. There are also signs of increased sympathetic discharge observable as rhythmical activity of the N. M. and as increased difference between the normal and sympathectomized pupils. Decerebration and adrenalectomy, did not appreciably alter these effects. Removal of the buffer nerves tended to reduce convulsive effects and the tendency for metrazol to produce a fall in pressure. The authors therefore come to the conclusion that metrazol increases the excitablity of the somatic and autonomic nervous systems, that both branches of the autonomic nervous system may be excited during convulsions, and that even in the absence of convulsions reflex sympathetic excitability is the outstanding persisting effect.—E. GELLHORN and C. W. DARROW. *Arch. intern. pharmacodynamie*, 62 (1939), 114. (W. H. H.)

Metrazol—Antidotal Action of, Against Ether Overdosage. The minimal amount of ether for 17 dogs required to produce respiratory arrest in at least two of three consecutive experiments are individually determined by the method previously described. Metrazol in a dosage of 0.05 cc./Kg. of the 10% solution was then injected intravenously late in the surgical stage or early in the toxic stage of anesthesia. Results: Poisoning by ether proceeded to respiratory arrest in 80% of 80 control experiments. The administration of this same dose of ether followed by metrazol produced respiratory arrest in 52% of 48 experiments. Resuscitation by means of artificial respiration and the administration of oxygen from the respiratory arrest induced by ether was unsuccessful in 3% of 65 attempts. In 25 experiments, where, in addition to the above measures, metrazol was injected intravenously, there were no failures to resuscitate. These experiments indicate that metrazol has some tendency to prevent the onset of respiratory arrest following an overdose of ether. There is also some evidence that metrazol increases the ease and certainty of resuscitation from an overdose of ether.—W. B. DRAPER and R. W. WHITEHEAD. *J. Pharmacol.*, 66 (1939), 1. (H. B. H.)

Neosynephrine Hydrochloride—Clinical Use of, for the Control of Blood Pressure During Spinal Anesthesia. Neosynephrine was superior to ephedrine in maintaining control of blood pressure in 320 cases of spinal anesthesia. It has a low toxicity, causing but few extra systoles in a very large dose.—N. M. BITTRICH. *Anesthesia and Analgesia*, 18 (1939), 29-36; through *Chem. Abstr.*, 33 (1939), 2585. (E. G. V.)

Nicotine—Effect of, upon the General Pressure and Volume of Intact and Denervated Kidney. The authors have shown that with doses of 0.01 and 0.02 mg. per Kg., nicotine produces in the chloralosed dog a notable hypertension, the diminution of the volume of the inervated kidney and increase of the

volume of the denervated kidney. They have concluded that the effects of nicotine in weak doses are principally of nervous origin.—M. BARIETY and D. KOHLER. *Soc. de Biol.*, Mar. 18, 1939; through *Presse Medicale*, No. 26 (1939), 491. (W. H. H.)

Œstrogenic Substances—Liver Destruction of. The difference in the activity of œstrone, œstrone benzoate, œstradiol and œstradiol benzoate, parenterally and orally administered was studied. The equally active parenteral doses in monkeys were: Œstrone, 1 mg., œstrone benzoate, 0.05 mg., œstradiol, 1 mg., and œstradiol benzoate, 0.025 mg. The oral doses were: œstrone, 5 mg., œstrone benzoate, 50 mg., œstradiol, 20 mg., œstradiol benzoate, 100 mg. Hence the benzoates were more effective than the free substances when parenterally given, but were less effective when orally administered. All were less active orally than parenterally. To determine if the material was not absorbed by the gastrointestinal tract, the feces of animals to which the substances were orally administered were examined. The benzoates were practically quantitatively recoverable in the feces. However when the free sterols were orally administered very little appeared in the feces. The reason for this was sought in rat studies. After introduction of 1 mg. of œstrone by stomach tube in female rats less than 1% appeared in the feces. The question of possible destruction in the gastrointestinal tract was studied by *in vitro* experiments with minced rat tissues (stomach, small intestine and large intestine), adding to the minced tissue œstrone dissolved in sodium chloride solution and incubating for 3 days at 37° C. The œstrone was recovered quantitatively from all three types of organ tissue. Hence it was not destroyed in the gastrointestinal tract. The question of the site of absorption of œstrone was determined by experiments in which the gastrointestinal tract was ligated at different levels in rats. Ligating below the stomach, 1 mg. of œstrone, introduced by stomach tube, was completely recovered from the stomach on killing the rats after 3 hours. Ligating at the lower end of the small intestine, 3 hours after introduction by stomach tube, the animals were killed, the stomach and small intestine removed and examined separately. Eighty per cent of the œstrone had left the stomach; only 5% was recoverable in the small intestine, hence it was concluded that 75% had been absorbed from the small intestine 3 hours after administration. Tests of the urine showed that only 2% of the orally-administered œstrone appeared in the urine in 4 days. Hence destruction in the tissues must occur, probably in the liver. It was held that the higher activity of subcutaneously administered œstrone was due to the fact that, under these conditions, there was less destruction by the liver, whereas the majority of the orally-administered œstrone had to pass the liver, and only that portion which directly entered the blood stream from the lymph was active. To test the power of the liver in destroying œstrone, comparisons were made of the doses of œstrone equally active in rats when introduced by different routes: subcutaneously, 20 micrograms, orally, 770 micrograms, intravenously in the femoral vein, 250 micrograms, intravenously in the portal vein, 2500 micrograms. It was concluded that the rat liver inactivated 90% of the hormone introduced into the portal vein, and that the activity of orally administered œstrone was due to that portion reaching the circulation *via* the lymph. Search for an œstrogenically active substance not destroyed in the organism was suggested if successful oral administration is to be effected.—K. PEDERSEN-BJERGAARD. *Dansk Tids. Farm.*, 13 (1939), 114. (C. S. L.)

Oil of Chenopodium and Tetrachloroethylene—Comparative Value of, as an Anthelmintic. The problem of hookworm diseases was discussed and the requirements for an effective anthelmintic in the mass treatment of the infection were pointed out. By assessing the comparative value of anthelmintics in 188 cases on percentage of persons cured, rather than the usual method based on percentage of worms expelled, the authors concluded that tetrachloroethylene more nearly fulfills the requirements for an ideal anthelmintic than does oil of chenopodium. The efficacy of single doses of chenopodium oil and tetrachloroethylene was checked by examining the stools by centrifugal flotation fourteen days after exhibition of the anthelmintic. Oil of chenopodium and tetrachloroethylene were discussed with regard to published reports on the use of these drugs.—K. P. HARE and S. C. DUTTA. *Indian Med. Gaz.*, (1939), 198–201. (W. T. S.)

Pancreatic Diabetes of Toad—Influence of Hypophysis and Suprarenal on. Destruction of suprarenals diminishes pancreatic diabetes in the toad, as does extirpation of anterior hypophysis. Injection of anterior pituitary causes intense diabetes in these animals, or those deprived of pancreas, hypophysis, and suprarenals. Injection of cortin from toad or mammal has produced no specific reaction. It is probable that anterior pituitary produces its diabetogenic action independently of suprarenal in toads. It is still to be determined if suprarenal has a diabetogenic action of itself, if its insufficience affects diabetes in spite of the hypophysis, or if both glands have each its own function, whose failure lessens diabetic hyperglucemia.—B. HOUSSAY and A. BIASOTTI. *Soc. Argentina Biol.*, June 4, 1936; through *Rev. sudamericana endocrinol. inmunol. químioterap.*, 21 (1938), 135. (G. S. G.)

Papaverine—Notes on the Pharmacology of. Papaverine hydrochloride in dilutions of 1×10^{-6} depresses isolated rabbit intestine. It increases the perfusion rate through Trendelenburg frogs and through the isolated rabbit heart poisoned with strophanthin. Papaverine in doses of 0.5 to 1.0 mg. per Kg. causes in cats under nembutal and in dogs under morphine-chlorbutanol anesthesia a sharp fall of blood pressure lasting 3 minutes. Intraperitoneal injections of papaverine, 40 mg. per Kg., markedly depress but do not kill rats. These rats may receive at 30-minute intervals repeated additional doses of 40 to 100 mg. per Kg. without death or convulsions. A total of over 250 mg. per Kg. have been injected in this manner. An initial dose of 60 mg. caused convulsions followed by death in all of 10 rats. Eight patients with Raynaud's disease and 7 normal subjects received intravenously 60 mg. of papaverine. Twelve showed a rise in systolic blood pressure of 10 to 32 mm. Hg and 3 showed no change. The heart rate accelerated 10 to 46 beats per minute in 13 of the 15 subjects. There were no electrocardiographic complex changes following the injections. Control injections of sodium acid phosphate cause no such changes in heart rate or blood pressure.—MICHAEL G. MULINOS, I. SHULMAN and LEO POMERANTZ. *J. Pharmacol.*, 66 (1939), 1. (H. B. H.)

Pharmacological Preparations—Clinical Application of Some of the More Recent. A review on barbiturates, digitalis preparations and mercurial diuretics.—K. S. HETZEL. *Med. J. Australia*, 26 (1939), 57–59; through *Chem. Abstr.*, 33 (1939), 2998. (E. G. V.)

Potassium—Is the Physiological Activity of, Due to Its Natural Radioactivity? Neither radio-sodium, minute amounts of radio-potassium nor radio-phosphorus can replace natural potassium in maintaining the beating of the isolated frog heart. This throws in doubt the hypothesis of Zwaardemaker

that the radioactivity of natural potassium is responsible for its physical properties.—A. J. GLASKO and D. M. GREENBERG. *Am. J. Physiol.* 125 (1939), 405–409; through *Chem. Abstr.*, 33 (1939), 2552. (E. G. V.)

Posterior Pituitary Extracts—Assay of. A simple technic is described for the bioassay of posterior pituitary extracts employing the depressor response of the domestic fowl as the physiological basis. Data are presented to show that the white leghorn rooster, 1.8 to 2.2 Kg. in weight, and anesthetized with 200 mg. per Kg. of sodium phenobarbital, is the most satisfactory assay subject. The tolerance of the chicken toward pituitary is shown to be high and the responses to repeated small doses to be so consistent as to permit several tests on the same assay preparation. Comparative assays by this and by the official guinea pig uterine method reveal the fact that only when the pressor-oxytocic ratio of a pituitary solution is above 2.5 is the oxytocic assay value obtained by the depressor method higher than that obtained by the official method. In all other cases results by the two methods agree. Possible causes for the apparent augmentation of the oxytocic depression by the pressor component are considered. Experiments on the perfused isolated chicken heart prove that the phenomenon is not the result of action of the pressor substance or the anesthetic on the myocardium or coronary arteries. Pitocin is found to increase coronary flow and stimulate the activity of the heart. Pitressin has no effect not attributable to its oxytocic impurity. Atropinization augments both the fall and the secondary rise in blood pressure produced by the injection of pituitary extracts. The extent of the secondary pressor effect is dependent upon the beginning blood pressure level and upon the absolute dose of pressor substance and is not influenced by the accompanying dose of oxytocic substance. The advantages of the chicken depressor method of assay are outlined. The validity of the official guinea pig uterus method in the assay of pituitary solutions with high pressor-oxytocic ratio is questioned.—J. M. COON. *Arch. intern. Pharmacodynamie*, 62 (1939), 79. (W. H. H.)

Procain Phenylpropionate and Hydrochloride—Comparison of the Anesthetic Power of. Novocain phenylpropionate has approximately three to six times the anesthetic power of the hydrochloride on the rabbit cornea, and three to four times on the sciatic nerve of the guinea pig. The two salts behave in the same way on blood pressure and on the respiratory functions by exerting a depressant action at large doses (0.144 Gm. per Kg. for rabbits, 0.07 Gm. per Kg. for dogs). These results confirm the conclusions of Régnier. There remains to determine whether the two salts possess the same toxicity.—E. ADAMI. *Arch. ital. Sci. Farmacol.*, 7 (1938), 29–47; through *Chimie & Industrie*, 41 (1939), 116. (A. P.-C.)

Prostigmine and Physostigmine—Effects of Anesthetics on the Response of Submaxillary and Pancreatic Glands to. At low doses prostigmine is a mere potent excitant of pancreatic and submaxillary secretion than physostigmine. A reversal in the response of the pancreas occurred when the dose of prostigmine was increased above 0.06 mg. per Kg., and of the submaxillary gland in doses above 0.1 mg. per Kg. Chloralose and paraldehyde anesthesia markedly diminish the response of both glands to either drug.—PHOEBE J. CRITTENDEN. *Proc. Soc. Exptl. Biol. Med.*, 41 (1939), 367. (A. E. M.)

Radix Ononodis—Diuretic and Antidiuretic Action of, on Rats. The results obtained in a study of this drug on rats are reported. Among other findings noted was the surprising one that an infusion of Ononis promotes diuresis, while a decoction is slightly inhibitory. This phenomenon appears to depend on the presence in greater or less amount of an essential oil. Radix ononidis contains two fundamentally active components: substances volatile with steam which promote diuresis; nonvolatile substances obviously difficulty soluble in water which check diuresis. According to the method of preparation of the prescribed infusion, a more or less diuretic action will result, or none at all.—R. JARETZKY and F. NEUWALD. *Arch. Pharm.*, 276 (1938), 114–121; through *Chimie & Industrie*, 40 (1938), 718. (A. P.-C.)

Renin—Preparation and Bioassay of. A fractional precipitation method for the extraction and purification of renin, a pressor substance found in kidneys, employing sodium chloride and ammonium sulfate is described. The final product obtained is a nontoxic pressor protein apparently belonging to the globulin group. The protein retains its pressor properties for a long period of time when kept appropriately. Renin was assayed at various dosage levels on dogs and a unit established. A renin unit is defined as the minimum amount necessary when given intravenously over a period of 2–5 seconds, to raise the mean arterial pressure of anesthetized dogs an average of forty millimeters of mercury above the starting pressure level. This unit in terms of the preparation used is equivalent to 0.1 mg. solid material per Kg. body weight and contained 0.016 mg. nitrogen.—W. W. SWINGLE, A. R. TAYLOR, W. D. COLLINGS and H. W. HAYS. *Am. J. Physiol.*, 127 (1939), 768; through *Squibb Abstr. Bull.*, 12 (1939), A-1479. (F. J. S.)

Sodium Evipan—Influence of Age and Weight of Pigs on Response to. Pigs from 2 to 4 days old were found to be more susceptible to sodium evipan given intravenously than older pigs. Between the ages of 10 days to 80 there was no difference in susceptibility, while pigs six months old were somewhat more susceptible.—H. P. DONALD and J. RAVENTOS. *J. Pharmacol.*, 65 (1939), 4. (H. B. H.)

Sophora Alkaloids—Pharmacology of. The general pharmacological action of the alkaloids of *S. pachycarpa* and *S. alopecuroides* in the central nervous system due to sophocarpine (I), sophocarpidine (II) and sophoridine (III). Intravenous injection causes a slight rise, followed by a fall, in blood pressure, the activity decreasing in the order I, III, II. Small doses in each stimulate the isolated heart of warm- and cold-blooded animals. Large doses have a depressing action, the activity being in the order III, II, I. The activity in contracting peripheral and internal blood vessels is in the order II, III, I.—V. N. GEORGADZE. *J. Physiol.* (U. S. S. R.), 25 (1938), 179–195 (in German 195); through *Chem. Abstr.*, 33 (1939), 2994. (F. J. S.)

Sparteine—Differentiation of Potassium and Acetylcholine by. The author states that potassium tends to diminish weakly the muscarine action of acetylcholine and to augment the nicotinic effects. Sparteine inverses the vascular and cardiac effects of acetylcholine when strengthened by the potassium ion.—R. HAZARD. *Soc. de Biol.*, March 18, 1939; through *Presse Medicale*, No. 26 (1939), 491. (W. H. H.)

Squill—Biological Determination of Powdered Red "Stablactivated." The following procedure is given: An infusion of the drug is administered to a chloralozed dog by the saphenous or jugular vein. The amount, which is injected during about half an hour, which stops the action of the heart is noted. The following conclusions are given: We do not know which of the principles present in red squill "stablactivated" is responsible for the activity of the drug, but we believe that the acid vapors acting on the drug increase the toxic action of the stabilized

product. The practice of making preparations of squill by means of acetic acid has been carried on from ancient times to the present. The present investigation shows the advantages of subjecting the powdered squill to the action of vapors of heated alcohol and acetic acid. The powder thus stabilized and rapidly dried is protected from diastasic actions, exhibits an increased physiological activity, and, if protected from atmospheric moisture, may be perfectly preserved.—A. TOURNADE, P. FOURMENT, H. ROQUES and G. CHARDON. *Bull. sci. pharmacol.*, 46 (1939), 209–16. (S. W. G.)

Stilboestrol and Œstrogenic Agents. Diethylstilboestrol, a synthetic di-phenol has the following properties common to œstrogens; injected into ovariectomized rats and mice it produces œstrus; it causes growth of the endometrium in rats an rabbits and in monkeys, and in the latter animals it activates the sexual skin; it causes changes in the feathers of capons and in the teats of guinea pigs; it can be used instead of natural œstrogens in the treatment of symptoms resulting from hypofunction of the ovaries either at the menopause or at other times; it can interrupt early pregnancy in rabbits; and, it appears to inhibit the gonadotropic activity of the anterior pituitary of the rat. Stilboestrol differs from the natural œstrogens in that it is much more active by mouth, and that when injected, although (unlike the natural œstrogens) it inhibits the effects of injected androgenic hormone on the comb of capons, it has (unlike the natural œstrogens) no inhibiting effect on comb-growth when it is administered by inunction.—A. PALMER and S. ZUCKERMAN. *Lancet*, 236 (1939), 933. (W. H. H.)

Strophanthin—Studies upon the Action of, in Peripheral Circulatory Disorders. Strophanthin occupies a very special place along with the substances capable of exerting an action upon intimate gaseous exchange. Injection by the intravenous route of the usual therapeutic doses, determines an increase of muscular efficiency which has been diminished due to peripheral vascular trouble. The author has shown this by means of Ratschow's ergometer in circulatory diseases (endocarditis obliterans, arteriosclerosis with intermittent claudication, vascular spasms). The author has shown that ten minutes after the injection of strophanthin, the capacity of the efficiency of the diseased muscles was greatly increased; they began to decrease forty minutes after the injection but remained higher than prior to the injection. By this treatment there was a greatly increased oxygen supply to the tissues as was measured from the arteries in the leg. He showed that the conception of a modification of the utilization of oxygen is an important factor in the action of strophanthin upon the healthy heart and the therapeutic possibilities of the new application in cases of troubles of peripheral circulation. Also there is the condition of obtaining maximum rate of muscular action by utilizing the action of strophanthin.—H. ZOTHE. *Zeit. für Kreislaufforshung*, 30 (1938), 889; through *Presse Medicale*, 31 (1939), 74. (W. H. H.)

Strychnine—Action of. Strychnine inhibits the action of cholinesterase *in vitro*. Its action is weaker than that of eserine.—D. NACHMANSOHN. *Compt. rend. soc. biol.*, 129 (1938), 941–943; through *Chem. Abstr.*, 33 (1939), 2153. (F. J. S.)

Strychnine—Lack of Convulsant Action of, in Its Iodomethylate. In frogs and mammals strychnine iodomethylate has a weak curare-like action but does not produce convulsions even in lethal doses. The subcutaneous lethal dose for the guinea pig is 60 mg. per Kg. The lethal dose when given intravenously is 7 mg. per Kg. for rabbits and a little less than 20 mg. per Kg. for dogs.—BUSQUET and CH. VISCHNIAC. *Compt. rend. soc. biol.*, 127 (1938), 664–666; through *Chimie & Industrie*, 40 (1938), 719. (A. P.-C.)

Sulfanilamide—Pharmacology of.—P. S. GAULT. *U. S. Naval Med. Bull.*, 37 (1939), 112–114; through *Chem. Abstr.*, 33 (1939), 2980. (F. J. S.)

Sulfur—Pharmocology of. I. Sulfur and Body Temperature. Introduction and Experiments with Suspensions of Sulfur in the Presence of Gum Arabic. In rabbits injections of sulfur in gum arabic caused a transitory hypothermia.—S. GAJATTO. *Arch. farmacol. sper.*, 66 (1938), 97–118. **II. Sulfur and Body Temperature. Experiments with Solutions of Sulfur in Olive Oil.** Precipitated sulfur dissolved in olive oil caused an immediate transitory hypothermia followed by a more lasting hyperthermia.—*Ibid.*, 129–144. **III. Sulfur and Body Temperature. Experiments with Solutions of Sulfur in Paraffin Oil.** Precipitated sulfur dissolved in paraffin oil produced an immediate transitory hypothermia followed by a hyperthermia.—*Ibid.*, 171–184; through *Chem. Abstr.*, 33 (1939), 1816. (F. J. S.)

Thyreotropic Hormone of the Hypophysis—Can the, be Inhibited by Hormones, Vitamins or Drugs? The effect of hormones (insulin, cortin, thyroxin, various thymus, pituitary and gonadal preparations), vitamins (A, B_1, B_2, C, D) and quinine was studied on the action of the thyreotropic hormone in producing histological changes in the thyroid. It was found that only vitamin C can effectivcly inhibit the thyreotropic action. Thyroxin and iodine produce inhibition.—A. STURM, W. SCHMIDT and J. BECK. *Endokrinologie*, 21 (1938), 1–9; through *Chem. Abstr.*, 33 (1939), 1803. (F. J. S.)

Thyroid—Some Effects of Feeding, to Immature Fishes (Platypœcilus). Thyroid feeding to immature *P. maculatus* and *P. variatus* resulted in exophthalmus, decreased growth rate and altered body proportions, in addition to precocious sex maturation.—CLIFFORD GROBSTEIN and ALBERT W. BELLAMY. *Proc. Soc. Exptl. Biol. Med.*, 41 (1939), 363. (A. E. M.)

Urethans as Local Anesthetics. V. Alkyl γ-Diethylaminopropylcarbamates. A series of alkyl γ-diethylaminopropylcarbamates was prepared and studied pharmacologically. The alkyl group was methyl, ethyl, *n*-propyl, *n*-butyl, isobutyl, *n*-amyl, isoamyl or *n*-hexyl. The toxicity increases with increase in length of the alkyl group. No topical anesthesia was shown until the *n*-hexyl derivative was reached. No regular variation in injection anesthesia occur. All compounds are irritating to some extent.—R. L. SHRINER and J. H. HICKEY. *J. Am. Chem. Soc.*, 61 (1939), 888. (E. B. S.)

Venom of the Honey Bee (Apis Mellifera)—Investigations on the Chemistry and Physiology of. Reference is made to previous work on the nature of the venom and methods of collecting it. The authors describe their method of collecting venom and subsequent treatment. A physiologically active "solid concentrate" was prepared and analyzed; it contained sulfur. The minimum lethal dose for intravenous injections into the white mouse was 3.5 Gm. per Kg. body weight. It possesses hemolytic properties and shows definite necrotic action when injected intracutaneously.—W. M. LAUTER and O. J. GRIGGS. *Jour. A. Ph. A.*, 28 (1939), 519. (Z. M. C.)

Zinc Content in Commercial Insulin—Significance of. The zinc content is commercial insulin underwent a very sharp increase between February and March, 1938, and at the same time clinical experience has shown a marked decrease in the amount of insulin required by patients. These two observations are thought to bear a causal relation to each

other.—E. H. VOGELENSANG and L. A. HULST. *Acta. Med. Scand.*, 97 (1938), 307–310; through *Chem. Abstr.*, 33 (1939), 2588. (E. G. V.)

TOXICOLOGY

Amines and Their Importance in Chemotherapy. II. Molecular Size and Toxicity to Protozoa. The toxicity of amines belonging to a homologous series increases with the number of carbon atoms. Amines possessing a like number of carbon atoms are the more toxic as the length of their carbon chains increases. Aliphatic amines with more than 3 carbon atoms increase in toxicity with the size of the molecule. Of isomeric amines the one possessing the longest carbon chain always has the highest toxicity. Thus, *n*-hexylamine is 30 times more toxic than the isomeric dipropylamine, and dihexyl amine is 13 times more toxic than the isomeric tributylamine. Furthermore, all aliphatic amines with straight chains so far examined were more toxic than the isomeric amines with ramified chains. Of aliphatic-aromatic amines, phenylethylamine is 10 times, phenylpropylamine 35 times and phenylbutylamine 65 times more toxic than benzylamine. The toxicity of phenylpentylamine is superior to that of benzylamine by 180 times.—K. KINDLER. *Arch. Pharmazie*, 276 (1938), 107–114; through *Chimie & Industrie*, 40 (1938), 940. (A. P.-C.)

Ammonium Sulfate—Use of, as a Larvicide. Since ammonium sulfate is available in large quantities, is non-poisonous and relatively stable in contact with the soil, the authors undertook to determine whether it would serve as a larvicide. By the use of gravid female anopheline and culicine mosquitoes, it was found that although a 0.75% solution of ammonium sulfate will prevent mass breeding, the recurring cost of the method renders it unsuitable where large areas must be treated.—C. J. H. BRINK and D. K. DAS. CHODDHURY. *J. Malaria Inst. India*, 2 (1939); through *J. Trop. Med. Hyg.*, 42 (1939), 223–124. (W. T. S.)

Aniline Poisoning—Preventive and Therapeutic Action of Lecithin and Cholesterol in. Lethal doses of aniline were injected hypodermically into rabbits, who were then given at regular intervals intravenous injections of a mixture of lecithin and cholesterol. The control animals, who received 1.5 Gm. per Kg., all died in 20 to 30 hours, presenting phenomena of general excitation and convulsions followed by paralysis extending gradually to the whole body. The hematological modifications (anisocytosis, anisochromia) make themselves felt at the very beginning of the poisoning, at the expense of the red corpuscles; the number of the latter then decreases progressively; the hemoglobin content also decreases, but the decrease is not proportional to that of the red corpuscles. Animals which were treated with 1.5 Gm. (or more) of aniliue per Kg. followed by intravenous injection of lecithin and cholesterol, resist acute intoxication. There is no significant change in the hemoglobin content nor in the red corpuscles count. With high doses of the lipoids the animals rapidly recover their normal state and remain in good health for months without manifesting any subsequent ill effects.—C. BELLESINI. *Med. Lavoro*, 29 (1938), 104–116; through *Chimie & Industrie*, 40 (1938), 1097. (A. P.-C.)

Argemone Oil. A Dangerous Adulterant in Expressed Oil of Mustard Seed. Prior to the present investigation it was known that outbreaks of epidemic dropsy are likely to occur in areas where expressed mustard seed oil is used for cooking purposes. Previous investigations had provided evidence to show that these outbreaks were caused by the presence in the mustard oil of either argemone oil from the seed of *Argemone mexicana* or another oil obtained from a certain seed locally known as Odissimari. On learning that Odissimari seed and the seed of *A. mexicana* are the same, the authors reopened the investigation concerning the adulteration of mustard seed oil by argemone oil. Food cooked in mustard oil adulterated with a known sample of argemone oil proved harmful to human subjects, appeared to be cumulative in its action and moreover produced the same symptoms observed in the outbreaks of epidemic dropsy. A test to distinguish argemone oil in the presence of mustard oil was included and attention called to the fact that since *Argemone mexicana* is often found growing in mustard fields it is possible that careless harvesting of mustard seed causes the contamination. Temperatures as high as 240° C. were found to destroy the toxicity of argemone oil.—R. N. CHOPRA, C. L. PASRICHA, R. K. GOYAL, S. LAL and A. K. SEN. *Indian Med. Gaz.*, (1939), 193–195. (W. T. S.)

Ascorbic Acid—Protective Action of, on Phenylquinolinecarboxylic Acid Intoxication. Phenylquinolinecarboxylic acid produces definite intoxication in animals. The minimum lethal dose for guinea pigs is 0.8 Gm. per Kg. (by injection). Death comes after a period of from 8 hours to several days. Degenerative lesions in the liver, kidneys and heart were observed. Injection of ascorbic acid protects the animals from this intoxication, 50 mg. per day being enough to raise the minimum lethal dose to 1 Gm. or 1.4 Gm. per Kg. The tissues of animals poisoned with phenylquinolinecarboxylic acid showed less ascorbic acid than the controls. The mechanism of this protection is not known.—N. BORSETTI. *Arch. ist. biochim. ital.*, 10 (1938), 3–36; through *Chimie & Industrie*, 40 (1938), 939. (A. P.-C.)

Atabrin—Chronic Oral Administration of. The daily administration of atabrin in amounts of 17 to 80% of the acute M. L. D. to dogs, cats and rabbits resulted in death. The systems of poisoning consisted chiefly of gastrointestinal and central nervous system disturbances, loss of weight and a yellowish discoloration of the skin and mucous membrane. Post-mortem observations revealed no changes which might specifically characterize atabrin toxicity. The animals receiving from 2 to 3% of the acute M. L. D. daily showed no untoward symptoms except a slight loss in body weight after being on this medication for 6 to 7 weeks.—S. J. MARTIN, B. COMINOLE and B. B. CLARK. *J. Pharmacol.*, 65 (1939), 2. (H. B. H.)

Atabrin—Effect of, on Liver and Kidney Function. When dogs were given oral doses of atabrin representing 33 or 66% of the acute M. L. D. daily for 14 and 4 consecutive days, respectively, there was evidence of impaired hepatic function as judged by the bromsulfalein and bilirubin tests. When dogs were given 17% of the acute M. L. D. daily for 6 weeks no reduction in liver function was noted in 3 of the 4 dogs used. No evidence of renal damage was noted in 11 of the 12 dogs given daily doses of atabrin ranging from 17 to 66% of the acute M. L. D.—B. B. CLARK, B. COMINOLE and S. J. MARTIN. *J. Pharmacol.*, 65 (1939), 2. (H. B. H.)

Bee Poison and Other Animal Poisons. A review.—LILLIG. *Scientia Pharm.*, 10 (1939), 87–88. (H. M. B.)

Benzedrine, Coramine, Metrazol and Picrotoxin—Certain Effects of, in Alcohol Depression. Pilcher and Sollmann reported that large doses of alcohol increase the toxicity of caffeine for cats. In contrast with this, the results of this investigation indicate that the administration of 7 cc./Kg. of alcohol orally to rabbits provides protection against the lethal effects of subsequently administered benzedrine, coramine, metrazol or picrotoxin. The lethal dose of benzedrine was increased approximately 1.5

times and the lethal dose of each of the other three stimulants was increased approximately 2 times. In this part of the study some evidence of stimulation was noted after the use of each of the analeptics, but none effected complete arousal of depressed animals. Benzedrine and coramine administration was followed by an increase in body temperature while metrazol and picrotoxin administration was not. The most positive evidence of stimulation was obtained using the analeptics in rabbits depressed by the intravenous administration of 2.5 cc./Kg of alcohol. Coördination in the hind legs was restored by the proper administration of any one of the four drugs.—H. W. WERNER. *J. Pharmacol.*, 66 (1939), 1. (H. B. H.)

Benzene Poisoning. Benzene is the most toxic substance employed in industry. The only preventive method is the replacement of benzene by a solvent which is less toxic. The ventilation of factories is not sufficient, while the use of masks is impractical.—P. E. WEIL. *Sang*, 12 (1938), 519–520; through *Chem. Abstr.*, 33 (1939), 2608. (F. J. S.)

Carbon Disulfide Poisoning. Industrial hazard in rayon plants is added to that of rubber and explosive industries. The chief danger is where there is poor ventilation. Symptoms in man are malaise, headaches, excitement and motor palsies, in acute cases; and in chronic affections: (1) somatic disorders such as diarrhea, or constipation, anemia, bradycardia, etc.; (2) organic neurologic manifestations such as dizziness, incoördination, palsies, etc.; (3) psychic disturbancies such as lack of inhibitions, sleeplessness and somnolence, hallucinations, inability to concentrate, etc. In a report of six cases, all workers in viscose plants, three acute and three chronic poisoning, all showed psychotic signs and all are now invalids. Carbon disulfide is lipotropic and hence neurotoxic. Better ventilation in factories is urged, keeping the concentration well below 0.1 mg. per liter of air and frequent examinations of the workers to detect early symptoms of chronic poisoning.—SAMUEL T. GORDY and MAX TRUMPER. *J. Am. Med. Assoc.*, 110 (1938), 1543. (G. S. G.)

Chlorinated Hydrocarbons—Exposure to. Three cases are described, with minute details of pathological findings, in which death was due to degenerative changes in the liver after exposure to chlorinated naphthalenes and diphenyl, such as those which are used in the manufacture of electrical insulating material. No predisposing causes could be found. Aggregations of comedones were prominent among the early symptoms. Several suggestions are made for prevention, particularly that acneiform eruptions should be regarded as a warning to remove the worker from further exposure. Current literature on the subject is briefly summarized.—D. GREENBURG, M. R. MAYERS and A. R. SMITH. *J. Ind. Hyg. Toxicol.*, 21 (1939), 29; through *Brit. Med. J.*, 4084 (1939), 808. (W. H. H.)

Cinchophen—Fatal Hemolytic Icterus after Prolonged Treatment with.—ESCHBACH and L. BERARD. *Bull. mem. soc. méd. hôp. Paris*, 53 (1937), 717–719; through *Chem. Abstr.*, 33 (1939), 2981. (F. J. S.)

Cyanosis in Chickens and Mice Induced by Sulfanilamide. Large doses of sulfanilamide produce cyanosis due to methemoglobin in chickens, and cyanosis due to sulfhemoglobin in mice. Methylene blue exerts a beneficial effect on sulfanilamide cyanosis in chickens but not in mice. The conversion of hemoglobin into methemoglobin *in vitro* is reported.—ARTHUR P. RICHARDSON. *Bull. Johns Hopkins Hosp.*, 65 (1939), 445; through *Squibb Abstr. Bull.*, 12 (1939), A-1532. (F. J. S.)

Cyclopropane Anesthesia—Massive Atalectasis Following. Four deaths following quickly after the administration of cyclopropane, showed on autopsy a massive atalectasis of one or both lungs. The mask used in anesthesia has the general atmosphere, largely nitrogen, to which oxygen and cyclopropane are added. During the course of operation the bag may become deranged, with loss of nitrogen, and the substitution of oxygen and cyclopropane. Anesthetic and active gases, cyclopropane and oxygen, are much more rapidly absorbed than inert ones, nitrogen in this case. When the alveoli have lost the support of inert nitrogen due to long anesthesia, atalectasis may result. Prevention is possible by the addition of an inert gas to the cyclopropane mixture; nitrogen and nitrous oxide have been used; nitrogen is of the greatest value. Hydrogen and helium are also suggested because of slow absorption and lightness. Helium is preferable because it is non-explosive. Animal experiments proved that helium with oxygen supported life as well as normal air, over long periods, and better than any other gas mixed with oxygen. The routine use of helium with cyclopropane or any other gas given with high oxygen content is suggested. The only caution is to watch for cyanosis.—OSWALD R. JONES and GEORGE EDGAR BURFORD. *J. Am. Med. Assoc.*, 110 (1938), 1092. (G. S. G.)

Dermatitis Due to Hemorrhoidal Ointment. Report of a case of dermatitis resulting from the use of hemorrhoidal ointment. It was found that the patient was sensitive to adhesive plaster. Patch tests gave positive reactions to krameria and oil of cade (two ingredients of the ointment) and to the rubber and rosin of adhesive tape.—MAX GROLNICK. *J. Am. Med. Assoc.*, 110 (1938), 951. (G. S. G.)

Desoxycorticosterone Esters—Toxic Effects of, in Dogs. Possible toxicity of synthetic desoxycorticosterone was suggested by the occurrence of cardiac insufficiency and of weakness leading to death in several patients treated with this hormone for Addison's disease. To investigate this possibility, the hormone was injected subcutaneously in peanut oil in doses of 20–25 mg. daily for 10–70 days into female dogs with carotid loops on a regular maintenance diet and normal male dogs on a low-K diet. All the dogs showed curious periodic weakness, augmented ingestion and excretion of water, and irregular changes in the T waves of the electrocardiogram apparently related to the reduction in serum K produced by the hormone. The dogs with carotid loops showed a maximum increase in arterial pressure of 45 and 20 mm. Hg. Following the withdrawal of the hormone, all the abnormalities disappeared in 3–4 days and no manifestation of adrenal insufficiency appeared.—DANIEL KUHLMANN, CHARLES RAGAN, JOSEPH W. FERREBEE, DANA W. ATCHLEY and ROBERT F. LOEB. *Science*, 90 (1939), 496; through *Squibb Abstr. Bull.*, 12 (1939), A-1552. (F. J. S.)

Dial Poisoning (Severe) Cured by Large Doses of Strychnine and Complicated by a Pulmonary Abscess.—LAIGNEL-LAVASTINE, H. M. GALLOT and MME. HECTOR. *Bull. mém. soc. méd. hôp. Paris*, 53 (1938), 970–974; through *Chem. Abstr.*, 33 (1939), 2982. (F. J. S.)

Diethyl Stilbestrol—Toxicity of. In an editorial, to show that chemicals of diverse chemical structure may act alike physiologically, the writer prefaces some remarks concerning diethyl stilbestrol with certain statements about desoxycorticosterone and vitamin D. Desoxycorticosterone was synthesized and found capable of maintaining life in adrenalectomized animals before it was obtained from the adrenals. Vitamin D and the hormone of the parathyroid were also said to have properties in common

Although diethyl stilbestrol is chemically unrelated to estrogens it possesses the physiological activity of the latter compounds and moreover is active when given by mouth. Relative to the toxicity of diethyl stilbestrol it was said that it is more toxic in mice than the follicle hormone, producing icterus, liver damage and jaundice. If diethyl stilbestrol is prescribed over a long period chronic reactions are to be anticipated.—ANON. *Southern Med. J.*, 32 (1939), 978–979. (W. T. S.)

Dinitrocresol—Therapeutic Poisoning with. Cataract Followed by Glaucoma. Pathogenic Considerations.—GILBERT-DREYFUS and R. ONFRAY. *Bull. mém. soc. méd. hôp. Paris*, 53 (1937), 1073–1078; through *Chem. Abstr.*, 33 (1939), 2982. (F. J. S.)

Dinitro-*o*-Cresol—Fatal Poisoning with. Death occurred 60 hours after poisoning took place. Post-mortem examination gave the following results: skin colored yellow as in the case of absorption of picric acid, surprising emaciation, desiccation of all the organs, hyperplasia of the bone marrow, hardening of the fatty tissues and presence of dinitrocresol.—M. NORDMANN and O. WEBER. *Arch. Gewerbepath. Gewerbehyg.*, 8 (1938), 441–448; through *Chem. Abstr.*, 33 (1939), 2588. (F. J. S.)

Dusts—Accumulation and Examination of Harmful, Especially from the Standpoint of Silicosis. Dusts are dangerous from the standpoint of silicosis when, on solution, they give soluble silica, and when the simultaneous presence of alkali hydroxides intensifies the lung affection produced, either by increasing the solubility of the silica or by affecting the organ as a result of too high a p_H. Dust that is injurious to health may be rendered harmless by mixing it with a dust that reduces the solubility of the silica (cement or iron).—JANET W. MATTHEWS. *Oesterr. Chem.-Ztg.*, 41 (1938), 173–179; through *Chimie & Industrie*, 40 (1938), 1097. (A. P.-C.)

Ethylene Dibromide—Skin Affections Due to, a Constituent of Liquid Used in Remote Water Gages. The liquid consists of a mixture of dibromoethylene, dichloroethane and oil of paraffin, but the dibromoethylene is the only one that causes the lesions that were observed. They manifest themselves after some time by a burning sensation when the liquid has penetrated deep into the skin. The tissues are destroyed and there is formed a considerable exudation of plasma. The action depends chiefly on the time of contact of the liquid with the skin; with some individuals, accidents may occur in as little as 3 minutes.—G. PFLESSER. *Arch. Gewerbepath. Gewerbehyg.*, 8 (1938), 591–600; through *Chimie & Industrie*, 40 (1938), 892. (A. P.-C.)

Food Poisoning. V. Food-Borne Infections. Food poisoning is due either to pathogenic bacteria entering with the food, causing inflammation of the alimentary tract, or to poisonous compounds formed by bacteria before or after ingestion. Micro-organisms causing food infection such as the *Salmonella* group (*B. œrtrycke, enteritidis* and *suipestifer*), and some outbreaks are described. The most important food vehicles of infection are minced-meat foods, meat pies, handled meat foods, and milk and its products.—E. B. DEWBERRY. *Food Manuf.*, 14 (1939), 96–100; through *J. Soc. Chem. Ind.*, 58 (1939), 546. (E. G. V.)

Formalin and Bromoacetate—Comparison of the Chemical and Antitoxic Actions of. Bromoacetate can react in neutral medium with primary, secondary and tertiary bases, but not with quaternary ammonium bases; there results a considerable decrease in the physiological activity (toxicity and others) of the amino compound. Formalin reacts only with amino groups; its action is therefore more restricted. Moreover, in alkaline medium bromoacetate reacts only with simple amino derivatives. The investigation showed more particularly that bromoacetate destroys the toxicity of diphtheria toxin and of tetanus toxin; there exists a stoichiometric relationship between the toxic function of the toxin and bromoacetate combined with the toxin.—L. GENEVOIS and C. MANDILLON. *VIe Congrès Chim. Biol.*, (Lyon, Oct. 11–13, 1937), 429–431; through *Chimie & Industrie*, 40 (1938), 719. (A. P.-C.)

Insulin Poisoning—Experimental, Surgical Treatment of. Excessive insulin doses are absorbed promptly and amputation or excision of the site of injection is valueless in late stages, but will terminate the effects of an overdose of protamine insulin. Alternate periods of ligation and release not only fail to protect animals against over doses of either ordinary or protamine insulin, but actually increase the toxic effect.—F. M. ALLEN and C. A. VICENS. *Endocrinology*, 24 (1939), 230–236; through *Chem. Abstr.*, 33 (1939), 2589. (E. G. V.)

Lead Poisoning—Relationship Existing between, Vascular Modifications and Porphyry. The sensitiveness to adrenaline of poisoned rats (1 cc. of 1% lead acetate solution, per 100 Gm. body weight and per day) rises during the very first week of treatment and continues for two weeks after it has been stopped. Porphyrin is present in the urine, feces, metaphysis, bone marrow, kidneys and gastrointestinal contents of the poisoned animals, while in the control animals this reaction is obtained only from the gastrointestinal contents. The intensity of porphyry runs parallel to sensitiveness to adrenaline. In short experiments, no signs of vascular lesions are observed.—J. PUTNOKY and S. SÜMEGI. *Arch. Gewerbepath.*, 8 (1938), 570–590 through *Chimie & Industrie*, 40 (1938), 892. (A. P.-C.)

Mansonia Altissima A. Chev. (Dô)—Digitalic Properties of Bark of. In a qualitative sense the action of the drug and its bitter principle on the heart *in situ*, on the arterial pressure, the modifications of the electro-cardiogram, the action on the spleen, on the kidneys, on the isolated intestine, are all analogous to the actions observed under similar conditions with the substances of the digitalis group. The authors believe that the toxic action of the bark is due to a non-nitrogenous bitter principle, which, according to its chemical reactions and its physiological action, may be classed in the group of digitalis poisons. The authors state that this is the first report of the presence of a principle of this nature in the order of *Malvales*.—M. MASCRE and R. PARIS. *Bull. sci. pharmacol.*, 46 (1939), 145–148. (S. W. G.)

Muscarine—Cases of Intoxication by. There have been numerous cases of acute and fatal intoxication in children of the city of Abancay and the clinical picture corresponded to a neuro-encephalitis. After a short incubation period of 24 to 48 hours, somnolence was followed by epileptiform convulsions which in 8 to 10 hours changed to coma. There was elimination through the nose and mouth of a black bloody liquid and death followed on cardiac collapse. The autopsies discovered no bacterial invasion nor traces of poison from insect bites. The only possible cause of intoxication could be an exogenous toxin in food. Gastrointestinal symptoms, with diarrhea, suggested a ptomaine of the muscarine type because of the neurotropic manifestations. Mycology of this region had heretofore only been noted in relatively benign forms producing a transient dermatitis. However other fungi were found, among them *Amanita muscaris* containing muscarine an active poison producing profound nervous upheaval. Symptoms of muscarine poisoning are slow

to develop, taking 24 to 48 hours; then the malady runs a rapid course, through delirium with violent gastrointestinal disturbance, to coma and death from cardiac failure. Rare cases of survival endure a chronic myocarditis or a nephritis. Early diagnosis is only possible if all food ingested is noted. Chemical analysis is difficult, but microscope examination may disclose certain structures of the fungus. In the cases above mentioned, all of them had a history of eating the fungus. Animal tests confirmed its toxicity and the gastrointestinal contents of the patients contained particles of fungus which were identified microscopically. A careful check of fruits, and warning of the danger of eating unknown plants, have prevented a recurrence of this epidemic.—CARLOS F. BAUSCH. *Reforma Med.*, 24 (1938), 273. (G. S. G.)

Oleoresin of Capsicum—Effects of the Oral Administration of Large Doses of, on Young Rabbits. Eighteen rabbits, weighing from 3 lbs. to 5 lbs. after fasting for 24 hours, were given 28 cc. to 56 cc. of oleoresin of capsicum by stomach tube. The 28 cc. dose is equivalent to the amount used in seasoning 2500 lbs. or 10,000 portions of meat. In the case of the large doses, the animals lose their appetites and usually do not drink as much water during the 24 hours after the drug has been administered as during the fasting period of 24 hours. Six young rabbits were sacrificed as controls in order to see what the normal and fasting amounts of contents in the different parts of the gastrointestinal tract would be. A 28-cc. dose was used in ten of the rabbits and it always caused a diarrhea with a loss in body weight but did not markedly effect the emptying of the stomach within 24 hours. Three of the animals that received 28 cc. of the drug and two that received 42 cc. were allowed to recover. They regained their normal or pre-experimental weights within six to eighteen days. The 56-cc. dose of the oleoresin of capsicum was lethal for young rabbits.—EMMETT B. CARMICHAEL. *J. Pharmacol.*, 66 (1939), 1. (H. B. H.)

Pepo and Its Anthelmintic Constituents. A review of the pharmacological and chemical literature on pepo is given. A new bioassay for anthelmintics using *Tubifex rivulorum* as a test animal has been developed, and it was shown that the toxic action of pepo is of the same order of magnitude as the action of the other usual taenifuges. Twenty-four specimens of different origin were tested and seeds more than a year old and grown in moderate climates had little or no activity. The active constituents are located in the embryo and the green membrane but not in the shells and they are relatively stable to heat, light and oxygen. All fractions obtained by the biological enrichment method were brown, viscous, non-crystallizing alcohol-soluble substances. Thirty-eight references are given.—ALBERT ERNST SCHUBIGER. *Pharm. Arch.*, 8 (1937), 39–80. (H. M. B.)

Phenol and Cyanide—Influence of Diet on the Intoxication with. Variations in protein, carbohydrate and fat in the diet had no noticeable influence on poisoning with phenol. In cyanide poisoning, the mortality of animals on a diet high in fat is less than on a high carbohydrate or protein diet. The difference becomes quite striking after prolonged feeding.—A. ROTHE MEYER. *Proc. Soc. Exptl. Biol. Med.*, 41 (1939), 402. (A. E. M.)

Phenyl Sulfamide, Sulfone and Sulfoxide Derivatives—Antiendotoxic Action of Certain. Mice were given the indicated dose of the drug by the mouth, then a lethal dose of Flexner bacillus endotoxin was injected intravenously. The percentages of survivals were: for 30 mg. of sulfanilamide, 50%; for 30 mg. of the sodium salt of 4′-sulfamidophenylazo-3,-5-benzoic acid, 33%; for 5 mg. of 4-nitro-4′-aminodi-phenylsulfone, 50%; and for 5 mg. of 4-nitro-4′-aminodiphenylsulfoxide, 67%.—C. LEVADITI and A. VAISMAN. *Compt. rend. soc. biol.*, 128 (1938), 873–875; through *Chimie & Industrie*, 40 (1938), 1143. (A. P.-C.)

Plasmochin—Injury Due to Overdosage of.—C. SONNENSCHEIN. *Arch. Schiffs- u. Tropen-Hyg.*, 40 (1936), 165–166; through *Chem. Abstr.*, 33 (1939), 2981. (F. J. S.)

Potent Drugs—Standardization of. I. Squill. Squill and its tincture and infusion are studied.—K. KOCH. *Deut. Apoth. Ztg.*, 54 (1939), 385–388. (H. M. B.)

Potent Drugs—Standardization of. II. Adonis. The uses and preparations of *A. vernalis* are discussed.—K. KOCH. *Deut. Apoth. Ztg.*, 54 (1939), 442–443. (H. M. B.)

Rats—Destruction of. Sodium orthoarsenite or barium carbonate is generally used for rat poisons and some tests have been made of Zelio Paste, a proprietary preparation containing thallium sulfate. These poisons are used with baits and the sodium orthoarsenite is most satisfactory. About 0.2 Gm. of the paste is necessary to kill a rat and when not fatal is claimed to make the rat sterile. Because of the danger little use is made of calcium cyanide dust.—H. W. JACK. *Agr. J. Fiji*, 9 (1938), 2–4; through *Chem. Abstr.*, 33 (1939), 1835. (F. J. S.)

Ricin—Toxic and Agglutination Actions of. Since the toxic and agglutination actions of ricin are attributed to two different principles contained in the ricin complex, the influence of the proteolytic enzymes on these actions were studied. The determination of the threshhold values of agglutination of rat erythrocytes was accomplished microscopically by the hanging drop method; as experimental animals for the toxicity tests white mice were used. The M. L. D. of combined ricin was 0.0015 mg. per 10 Gm. weight by subcutaneous injection. A 3- to 8-hour digestion of ricin with pepsin in an incubator produces an appreciable decrease in the agglutination action (A) while the toxicity (B) remains unchanged. After 1 hour digestion with pancreatin, A practically disappears yet B remains the same. Just as a simple addition of pepsin and pancreatin to a ricin solution produces a significant decrease in A, likewise a brief action of acid and base produces similar results. The toxicity of ricin decreases first after a combined pepsin and pancreatin digestion. Experiments show that the agglutination principle of ricin is inactivated more or less easily under the conditions of proteolytic digestion while the toxic principles are much more resistant. Fifteen references are given.—L. FUCHS and H. FALKENSAMMER. *Scientia Pharm.*, 10 (1939), 103–106. (H. M. B.)

Rotenone-Containing Plants—Evaluation of. IV. Toxicity to Aphis Rumicis of Certain Products Isolated from Derris Root. Ether extracts of Sumatra-type derris contain a crystalline substance, melting point 103°, which yields toxicarol on treatment with ethyl alcohol-potassium hydroxide. It is levorotatory in benzene and dextrorotatory in ethyl alcohol. The relative toxicities of components of derris resins to *A. rumicis* were: rotenone more than *D. elliptica* resin, which is more than Sumatra resin, which is more than sumatrol which is the same as toxicarol precursor, which is more than *i*-toxicarol.—F. TATTERSFIELD and J. T. MARTIN. *Ann. Applied Biol.*, 25 (1938), 411–429; through *J. Soc. Chem. Ind.*, 58 (1939), 419. (E. G. V.)

Saturnism—Early Diagnosis of, by the Determination of Porphyrin. Observation on 130 lead workers showed that determination of porphyrin

provides a good method of detecting lead poisoning at an early stage. It is preferable to hematological examination. After employment for 2 years in a dangerous occupation there is observed a high porphyrin content. The test will reveal what workers are in danger of becoming lead poisoned. The method used consists in detecting and evaluating, in ultraviolet light, the red fluorescence produced by porphyrin extracted from 30 cc. of urine by means of ethyl acetate.—H. OTTO. *Arch. Gewerbepath. Gewerbehyg.*, 8 (1938), 655–660; through *Chimie & Industrie*, 40 (1938), 1097. (A. P.-C.)

Sodium Sulfapyridine—Toxic Manifestations after Oral Administration of. Sulfapyridine produces gastric irritation and results in rats, rabbits and monkeys in the formation of urinary concretions. The doses vary from 0.25 Gm. per Kg. to 2 Gm. per Kg. given daily for 10 days.—HANS MOLITOR and HARRY ROBINSON. *Proc. Soc. Exptl. Biol. Med.*, 41 (1939), 409. (A. E. M.)

Sodium Sulfide as an Antidote for Corrosive Sublimate. Sodium sulfide was an effective antidote for a lethal dose of mercuric chloride ingested by rabbits 1 hour previously.—I. SIMON. *Arch. farmacol. sper.*, 67 (1939), 27–28; through *Chem. Abstr.*, 33 (1939), 2987. (E. G. V.)

Solvents of the Aromatic Series—Intoxications by. A clinical description of intoxications produced by benzene, toluene, xylene, nitrobenzene and aniline. Bibliography.—E. C. VIGLIANI. *Rass. med. applicata lavoro ind.*, 9 (1938), 303–329; through *Chem. Abstr.*, 33 (1939), 2608. (E. G. V.)

Solvents on the Health—Injurious Action of the Most Used. A discussion of the effects of benzin, chloroform, benzene, toluene, oil of turpentine, nitrobenzene and carbon disulfide. Eight references are given.—HERBERT SCHWAB. *Deut. Apoth. Ztg.*, 54 (1939), 17–18. (H. M. B.)

Strophanthin—Toxicity and Clinical Value of. Single intravenous injections of 0.3 or 0.5 mg. of strophanthin K in patients with severe cardiac failure, and of 0.5 or 0.75 mg. in normal persons failed to produce signs of toxicity. Continued injection of 0.3 mg. daily for as long as twenty-four days consecutively was also tolerated well by patients with cardiac failure. The therapeutic results obtained with strophanthin seem comparable in every way to those obtained by adequate digitalization when digitalis is given by mouth. The administration of strophanthin instead of digitalis is not advocated in the routine management of cardiac failure. Its speed of action and safety, however, render it an ideal drug in acute cardiac emergencies, and in marked congestive failure where oral digitalis is absorbed with some uncertainty.—W. A. BRAMS, J. S. GOLDEN, A. SANDERS and L. KAPLAN. *Ann. Internal Med.*, 13 (1939), 618; through *Squibb Abstr. Bull.*, 12 (1939), A-1512. (F. J. S.)

Strychnine Poisoning Successfully Treated with Sodium Amytal. Strychnine is frequently used for suicides because of its cheapness, accessibility and the small lethal dosage. Children number many accidental deaths from this. Barbiturates are found to be satisfactory antidotes, and in animal experiments they have proved protective. Two cases of strychnine poisoning are reported and these were treated with intravenous injections of 0.5 Gm. ($7\frac{1}{2}$ grains) of sodium amytal, in addition to gastric lavage, and recovery was achieved.—ROBERT E. PRIEST. *J. Am. Med. Assoc.*, 110 (1938), 1440. (G. S. G.)

Sulfanilamide—Cyanosis from, Methemoglobin as the Principal Abnormal Pigment in the Blood of Humans Showing. Methemogolbin is apparently largely responsible for the abnormally dark color of the blood of patients made cyanotic by sulfanilamide. It has been confirmed that ultraviolet or solar irradiation of sulfanilamide solutions yields colored derivatives, in the presence of oxygen, the nature and concentration of which are unknown. These substances have not been found in the blood of patients, but it is interesting that they rapidly convert hemoglobin to methemoglobin.—W. B. WENDEL, N. M. WENDEL and W. W. COX. *J. Biol. Chem.*, 131 (1939), 177; through *Squibb Abstr. Bull.*, 12 (1939), A-1462. (F. J. S.)

Tetanus Toxin Broth—Effect of Tryptic Digestion on. The previous separation of immunologically-active fractions from certain toxin broths led the author to investigate the effect of the tryptic digestion of tetanus toxin broth. By correlating the degree of digestion and the toxicity of the broth it was concluded that the broth loses its toxicity and antigenicity on exposure to digestion. Such changes were thought to result from an alteration in the toxin molecule due to its protein nature. The experiments are described and their results tabulated in four tables.—D. C. LAHIRI. *Indian J. Med. Research*, 26 (1939), 889–896. (W. T. S.)

Toxoflavin, an Isomer of *l*-Methylxanthine. Toxoflavin, $C_6H_6N_4O_2$, is a yellow substance possessing toxic properties. It is formed under certain conditions by the action of *Bacterium cocovenenans* on fats. Most of its properties correspond to those of lumi-lactoflavin. Toxoflavin is isomeric with *l*-methylxanthine; on the other hand it can be considered as the cyclic diimine of alloxan, which would explain the great analogy existing between the two compounds.—A. G. VAV VEEN and J. K. BAARS. *Rec. trav. chim.*, 57 (1938), 248–264; through *Chimie & Industrie*, 41 (1939), 313. (A. P.-C.)

Trophophylactic Power of Certain Edible Oils toward Toxic Substances. Experiments with white mice by means of hypodermic injections revealed the trophophylactic action of certain edible oils: olive, arachis, sweet almond, palm, sesame, toward toxic substances (extract of *Amanita muscaria*, cobra venom, sparteine sulfate, cyanide of mercury). Not only did the animals that were treated exclusively with the various oils outlive the control animals, but in many cases (38%) they survived indefinitely. It should be noted that the trophophylactins must not be confused with the vitamins.—P. LASSABLIÈRE, M. UZAN and A. MONNET. *Compt. rend. acad. sci.*, 206 (1938), 1592–1593; through *Chimie & Industrie*, 40 (1938), 939. (A. P.-C.)

Vitamin C Metabolism and Chronic Benzene Poisoning. Chronic benzene poisoning must be considered as a hypovitaminosis C. But the determination of ascorbic acid in the urine cannot be used for establishing the early diagnosis of this poisoning. Administration of vitamin C during serious benzene intoxication results in a considerable clinical and hematological improvement. According to the seriousness of the case, daily doses of 75 to 400 mg. of vitamin are required.—J. HAGEN. *Arch. Gewerpath. Gewerbehyg.*, 8 (1938), 541–569; through *Chimie & Industrie*, 40 (1938), 891–892. (A. P.-C.)

Wormwood and Essential Oil of Savin—Toxic Action of, on the System. In guinea pigs and rabbits oral administration of oil of savin (*Juniperus sabina*) produced dyspnea, hematuria, gastroenteritis, cachexia and death. Dilute infusion of wormwood leaves had little effect but a concentrated aqueous extract of the leaves produced effects like those of oil of savin. The kidneys showed hemorrhagic inflammation, the liver cytolytic degeneration without fat infiltration and the lungs edema and hemorrhagic infiltration. Abortion was produced by both drugs as a result of

severe general poisoning and by a specific action. The livers and kidneys of the fetuses were affected like those of the mothers.—A. PATOIR, G. PATOIR and H. BEDRINE. *Compt. rend. soc. biol.*, 127 (1938), 1325–1326; through *Chimie & Industrie*, 40 (1938), 719. (A. P.-C.)

THERAPEUTICS

Acacia—Rational Use of, in Treatment of Nephrotic Syndrome. Damaged glomeruli of the nephrotic syndrome cause loss of protein in the blood plasma, producing edema through decreased osmotic pressure. Acacia given intravenously increases this pressure, produces diuresis and diminishes edema. But the effect is transitory and continued injection may cause acacia to accumulate in the liver and spleen. It is recommended to use acacia to banish edema while a high protein diet is instituted. However, this is not suitable for infants. There is a psychologic value in the prompt elimination of edema. Acacia is not useful in nephritis due to cardiac failure or capillary damage. Its chief use is as a temporary measure for eliminating edema, the principal therapeutic agent being a high protein diet.—SAMUEL A. SHELBURNE. *J. Am. Med. Assoc.*, 110 (1938), 1173. (G. S. G.)

Alkaline Earth Metal Double Salts of Organic Acids—Therapeutic. Compounds are formed having antipyretic, analgesic, alterative or antiseptic properties and which have the general formula R'COOMOOCRCOOR" in which M represents a bivalent metal such as calcium, magnesium or strontrium, R' represents a phenyl group or a substituted phenyl group such as hydroxyphenyl, ethoxyphenyl, acetylhydroxyphenyl or aminophenyl, R" represents an alkyl radical such as ethyl, or a substituted alkyl radical such as benzyl, hydroxybenzyl, ethoxybenzyl, cetylhydroxybenzyl or amino-benzyl and R represents the nucleus of a dibasic aliphatic acid. Details are given of the preparation of a number of such calcium double salts.—HERMAN SEYDEL and ALBERT H. REINERS, assignors to SEYDEL CHEMICAL CO. U. S. pat. 2,137,957, Nov. 22, 1938. (A. P.-C.)

Aniline Dyes—Use of, to Control Fungous Infections. The authors report general success from the use of a combination of gentian violet and brilliant green in the treatment of various fungous infections of the skin. The skin of the toes, fingers and nail folds were the areas most often involved. The specific organisms encountered in the study are named and the method of treatment is described. Included, along with two pictures showing paronychia of the nails, is a table giving the details of 25 cases of *Achorion violaceum* infection most of which were successfully treated with the above dye combination. Thirty references are given to previous reports concerning the use of aniline dyes in fungous infections, some of which are described in detail.—P. A. MAPLESTONE and N. C. DEY. *Indian Med. Gaz.*, 74 (1939), 391–394. (W. T. S.)

Antimony Compounds—Manufacture of Therapeutically Active Organic. *p*-Aminophenylstibinic acid (I) or its nitrogen-substituted derivatives interact in aqueous solution with *N*-methylglucamine (II) and the product is precipitated by an organic solvent miscible with water. The compounds are less toxic and have greater trypanocidal action than those of Brit. pat. 311,448 or 309,184. In the examples, a 37% paste of I (227 Gm.) is dissolved in an aqueous solution of glucamine (62), or the *s*-urea of I (15) and II (10 Gm.) are dissolved in water (45 cc.) at 55° and the filtered solution run into 10 times its weight of dry ethyl alcohol; the products are washed with dry ethyl alcohol and dried in vacuum at a low temperature.—SOC. DES USINES CHIM. RHONE-POULENC. Brit. pat. 501,232; through *J. Soc. Chem. Ind.*, 58 (1939), 552. (E. G. V.)

Antivenin—Effect of Refrigerating an Area Prior to the Injection of. Among other findings relative to the treatment of snake bite by local measures Allen reported that refrigeration of the area of a snake bite to check the spreading of the poison previous to antivenin injection is not dependable.—FREDERICK M. ALLEN. *Am. J. Trop. Med.*, 19 (1939), 393–403. (W. T. S.)

Argotropin in Puerperal Fever. The author claims that a reduction of maternal mortality in puerperal fever to less than 1 in 1000 was achieved by the use of argotropin, which is a combination of colloidal silver (1%) and hexamethylenetetramine (20%), given in intravenous injections of 5 cc.—W. WOLFRAM. *Med. Klin.*, 35 (1939), 213; through *Brit. Med. J.*, 4086 (1939), 906B. (W. H. H.)

Autohemotherapy in Arterial Hypertension. A patient's own blood reinjected intramuscularly permits hormones or protein substances to act as antigens to the circulating blood. Experience demonstrates that semi-weekly injections in courses of 15 are of greater value than daily treatments. Thirty-six cases of chronic arterial hypertension received this therapy. It produced an increase of pressure which did not drop to the original cipher, but the gradual descent was not accompanied by any distress. All of these patients experienced subjective improvement and clinical signs disappeared or decreased. This improvement has lasted more than two and one-half years.—DONATO BOCCIA, MARIO BONAFINA and DANTE UGAZIO. *Rev. sud-americana endocrinol. inmunol. químioterap.*, 21 (1938), 107. (G. S. G.)

Autopiovaccine in Odontology. It is not easy to identify the causative agent in a suppuration of the buccal region. The same pus diluted and reheated to 60–70° for a half hour and injected into the gums gives favorable results. This treatment in alveolar pyorrhea caused suppuration to disappear and the inflamed lesions of the gingival region to regress, with no local nor general reaction. Advanced cases of pyorrhea respond to prolonged treatment.—D. ANTIONIOTTI. *Rev. Odontologica*, 24 (Sept. 1936); through *Rev. sud-americana endocrinol. inmunol. químioterap.*, 21 (1938), 159. (G. S. G.)

Benzedrine in Alcoholism. A method of treating alcoholism with amphetamine sulfate, better known as benzedrine, is presented. The results in twenty-one cases were distinctly promising. It is, however, important that the patient should be really willing to stop drinking. Benzedrine seems to afford the support which the patient formerly found in alcohol. In successful cases there is no desire to drink and the patient is able to work and to face difficulties, and feels alert and energetic. In eight of the twenty-one cases the patient took no drink after beginning treatment; in only four cases was there complete failure. Institutional treatment is not necessary. It is suggested that benzedrine permits a sufficient period of sobriety for the institution of more fundamental psychotherapeutic methods.—W. BLOOMBERG. *New England J. Med.*, 220 (1939), 130; through *Brit. Med. J.*, 4083 (1939), 758C. (W. H. H.)

Benzedrine Sulfate—Treatment of Alcoholic Psychoses with. Alcohol has depressing effect on the central nervous system, therefore it is rational to use benzedrine sulfate (*beta*-phenylisopropylamine sulfate), because of its stimulating effect on the central nervous system. Patients with alcoholic psychoses were given 10 to 30 mg. of benzedrine sulfate by mouth daily; in some cases the same dose was administered intravenously.

It was given to 28 patients with alcoholic psychoses and produced marked improvement in 93%. The drug is of most value in recent cases and also in non-psychotic intoxication. Since benzedrine sulfate is also habit forming, its use in overcoming chronic alcoholic habituation should be confined to institutions.—EDWARD C. REIFENSTEIN and EUGENE DAVIDOFF. *J. Am. Med. Assoc.*, 110 (1938), 1811. (G. S. G.)

Ascorbic Acid—Clinical Application of. Scurvy was first recognized as a disease of mariners on long voyages which was relieved when on land and was eventually traced to the limited diet on ships. The alimentary factor is called vitamin C and is known to exist in citrus fruits. It was isolated first from the suprarenal capsule of cattle and later from pepper and accessible vegetable sources which made it a cheaper commercial product. Avitaminosis seldom appears as a pure factor, but as part of a pathological picture and may be detected before its specific lesions develop. Also the etiology of malnutrition shows cases of avitaminosis due not to insufficiently diverse diet but to failure of proper absorption due to bacteria or chemical factors in the alimentary tract. Ascorbic acid has oxidation-reduction properties and is non-toxic even in massive doses; the excess is eliminated by the urine. Intravenous injection is most effective in hemorrhagic manifestations of scurvy but frequently the addition of lemons or oranges to the diet produces a desired improvement. It also demonstrates an influence on pigmentation of pathologic origin. Parenteral administration of vitamin C is advantageous in gastrointestinal infections such as typhoid. Benefits from administration are noted in infantile scurvy, in sterility, in edemas. Daily need of vitamin C is 20–40 mg. Usually the dosage is 150 mg. intravenously daily. Uniform results obtained by various investigators confirm the value of vitamin C, ascorbic acid, in the therapeutic arsenal.—HERMANN SCHROEDER. *Rev. centro. estud. farm. bioquím.*, 27 (1937), 263. (G. S. G.)

Benzedrine Sulfate—Use of, in Postencephalitic Parkinsonism. Stimulation of the central nervous system is probably due to increased cerebral blood flow and possibly to chemical action on the brain itself. The action of a vasopressor causes increase in blood and spinal fluid pressures. Ninety cases of parkinsonism were observed but records were completed on only seventy-four. Their ages ranged from 15 to 64 years and all were far advanced in the disease. Two doses of benzedrine sulfate were given daily, at eight A.M. and at noon; 30 mg. each in each dose, 20-mg. doses were given to a few older and more advanced cases. Previous medication by the atropine group of drugs was continued along with benzedrine sulfate. Subjective improvement was most notable but objective improvement was of most importance, especially in the oculogyric crises. There was marked improvement also in the ability to write and draw. Benzedrine sulfate, either alone or combined with belladonna, proves a useful medication.—PERK LEE DAVIS and WINIFRED B. STEWART. *J. Am. Med. Assoc.*, 110 (1938), 1890. (G. S. G.)

***p*-Benzylaminobenzenesulfonamide (Proseptasine) in the Prevention of Measles Complications.** In an attempt to assess the value of proseptasine in preventing the complications of measles a controlled investigation has been carried out on 329 cases of measles, 158 of which received proseptasine for a period of ten days after admission to hospital. While, owing to the mildness of the epidemic, the incidence of complications generally was lower than is usual, there is evidence that proseptasine is of value in reducing the incidence of complications due wholly or in part to secondary invasion by hemolytic streptococci, the best results being obtained in pure streptococcal complications such as otitis media. Proseptasine does not appear to influence the incidence of non-specific enteritis in measles. The comparative lack of toxicity of proseptasine, even when administered to very young children, has been fully borne out.—J. C. HOGARTH. *Brit. Med. J.*, 4083 (1939), 718. (W. H. H.)

Benzyl Benzoate—Treatment of Dermatitis with. In the treatment of itch or mange, balsam of Peru is substituted for sulfur with success. Benzyl benzoate being a constituent of balsam of Peru, a lotion of equal parts benzyl benzoate, 90% alcohol and soft soap was tried. It has the advantage of being water-soluble.—COLUNA MEDICAL. *Rev. assoc. Brasil. farm.*, 19 (1938), 128. (G. S. G.)

Bulgarian Cure for Encephalitic Parkinsonianism. Encephalitis lethargica has been treated by atropine, belladonna, scopolamine, etc. There is a new treatment by a preparation of a part of the root of Bulgarian belladonna in a 20% macerate in white wine. The macerate stands 6 to 8 hours, it is boiled 13 minutes in a reflux condenser, chilled, filtered through double filter paper and preserved in the ice box under a cap of foil. It is administered orally several times daily beginning with $^1/_2$ cc. and increasing the dose by $^1/_2$ cc. (varying with the individual) usually totaling 30 to 35 cc. per day. It is never omitted, but the amount may be reduced if the symptoms indicate this necessary. Satisfactory response has been reported in 150 cases of six months' to four years' duration. The treatment is symptomatic, not etiologic, and is accompanied by dietetic and physiotherapy.—ALDO GANDELLINI. *Rev. sud-americana Endocrinol. inmunol. químioterap.*, 21 (1938), 218. (G. S. G.)

Calamines from the Pharmaceutical, Chemical and Pharmacological Standpoints—Natural and Artificial. Study of the merit of calamine as compared with zinc oxide was undertaken. The scope is indicated by the sub-titles: history and nomenclature, its preparation and use, official preparations, experimental work, chemistry of calamines, precipitated zinc carbonate, bacteriological tests, a proposed formula for calamine ointment, clinical observations. Native American calamine is not available; samples obtained were silicates of zinc. Calcium, magnesium, iron and aluminum said to be found in English calamine are present in the Chinese. Ointments and suspensions containing prepared calamine, N. F. VI, zinc oxide, U. S. P. XI zinc carbonate A. R., Chinese calamine, precipitated zinc carbonate and semi-colloidal zinc carbonate were not bacteriostatic. Clinical observations with lotions of Chinese calamine, zinc oxide U. S. P. XI and prepared calamine N. F. VI indicated no difference in therapeutic action. The authors recommend retaining prepared calamine as an official product; also that color of present calamine ointment be improved unless such change would impair therapeutic value.—HELEN L. CREECH and C. O. LEE. *Jour. A. Ph. A.*, 28 (1939), 443. (Z. M. C.)

Cancerization. The author injected 1:2 benzopyrene subcutaneous or intravenous in white rats. After the intravenous injection, a fluorescent ether-soluble substance appeared in the liver and, in smaller extent, in the other organs as well as in the urine. A strong concentration of the substance can be observed in the lung only if the product is injected dissolved in "mugaglio lecitinato." Also after subcutaneous injections of benzopyrene dissolved in lard, a fluorescent substance appears in the liver and in the urine, but most of the product remains at the point of injection at least until

cancerization begins.—E. MORELLI. *Biochim. terap. sper.*, 25 (1938), 366. (A. C. DeD.)

Chemotherapy—Organic Compounds in. I. Derivatives of Sulfanilamide. Nineteen derivatives of sulfanilamide have been prepared and described. Acetylsulfanilyl- derivatives were found to be therapeutically less active than sulfanilamide. Sulfanilyl-4-nitroaniline and sulfanilyl-4-aminoaniline were found to possess greater activity than sulfanilamide. The tests were made on mice infected with *beta* hemolytic streptococci.—H. BAUER. *J. Am. Chem. Soc.*, 61 (1939), 613. (E. B. S.)

Chemotherapy—Organic Compounds in. II. The Preparation of Formaldehyde Sulfoxylate Derivatives of Sulfanilamide and of Amino Compounds. A new method for the preparation of formaldehyde sulfoxylate derivatives of sulfanilamide and amino compounds is described. The reaction is carried out in a solution of glacial acetic acid. The therapeutic activity of sodium sulfanilamide formaldehyde sulfoxylate and of some derivatives of 4,4′-diaminodiphenyl sulfone have been determined in streptococcal infections of mice.—H. BAUER. *J. Am. Chem. Soc.*, 61 (1939), 617. (E. B. S.)

Cyclopropane—Pulmonary Complications Following the Administration of. The value of cyclopropane as an anesthetic lies in the high oxygen content with which it can be used. Other features are the ease of induction, greater relaxation, quick elimination and reduction in the incidence of postoperative pulmonary complications. Factors in such complications are the anesthetic agent, the site and duration of the operation, sex, preoperative condition of the patient, and the depth of anesthesia. There is a correlation of statistics on 1333 administrations of cyclopropane. Pulmonary complications are far less with cyclopropane than with ether. It is administered with constant flow, and the patient is placed on his side for the recovery period. Half of these operations were abdominal in which type lies the greatest danger of pulmonary complication because of decreased ventilation. No complications appeared in operations of one hour or less. Women are less susceptible to pulmonary complications than men, unless the men have premedication. Preoperative condition is not significant with cyclopropane anesthesia. The risk increases with the depth of anesthesia, but cyclopropane gives a greater relaxation than other anesthetics. Cyclopropane anesthesia produces a relatively low incidence of pulmonary morbidity and a low ratio of morbidity-mortality.—G. EDGAR BURFORD. *J. Am. Med. Assoc.*, 110 (1938), 1087. (G. S. G.)

Depersonalization—Treatment of. The picture of depersonalization is a rather well circumscribed chronic neurotic picture which offers difficulties for psychotherapy. However by psychoanalysis or methods akin to psychoanalysis good results can be obtained if the treatment is continued for years. Treatment with mescaline and benzedrine is ineffective. Nine cases are reported in which the intravenous treatment with metrazol in doses sufficient to give convulsions, gave good results. However, some of the cases were not completely cured. This treatment should be combined with psychotherapy. The effects of the drug treatment are not sufficient to explain the results. Metrazol treatment is not only effective in schizophrenia but also in manic-depressive psychoses and in specific types of chronic neuroses.—P. SCHILDER. *Bull. N. Y. Acad. Med.*, 15 (1939), 258. (A. C. DeD.)

Dercum's Disease. Treatment of the asthenic phase is made with prostigmine and aminoacetic acid. Cases are frequently diagnosed as endocrine obesity with arthritis. Four cardinal signs of the syndrome are adiposity, asthenia, pain and psychic disturbances. The asthenia is disproportionate to physical activity. Three cases are reported in which asthenia was a symptom and they were treated as follows: Two of them presented signs of myasthenia gravis and the administration of aminoacetic acid, 15 Gm. daily, and prostigmine 45 mg. daily by mouth, produced marked improvement in one; and 7 Gm. aminoacetic acid with 45 mg. prostigmine orally daily helped the other. A third case showed symptoms of associated muscular dystrophy; 10 Gm. aminoacetic acid and 45 mg. prostigmine orally daily improved her, and 15 Gm. aminoacetic acid daily is continued as a maintenance dose.—MICHAEL G. WOHL and NATHAN PASTOR. *J. Am. Med. Assoc.*, 110 (1938), 1261. (G. S. G.)

Digitalis. Does It Influence the Course of Cardiac Pain? A study was made of 120 selected cases of angina pectoris. The subjects were 120 ambulant patients, diagnosed as arteriosclerotic heart disease with cardiac pain. Duration of observations varied from 2 to 64 months, averaging 21 months. The majority were without occupation. Severity of pain ranged from mild discomfort on slight effort, to almost complete incapacity. Dried digitalis leaf in compressed tablets of 1, 2 or 3 cat units each, with a potency of 80 mg. % unit was given in a single dose. The tincture was used in a few cases, at 2 cat units (0.2 Gm.), to 6 cat units unless minor toxic symptoms appeared. It was given in courses of 1 to 68 weeks, averaging 2 courses per patient, and was frequently alternated with other agents as controls. Sodium salicylate, calomel, rhubarb and soda, and phenobarbitol were used as such. In each case the digitalis effect was compared with that of lactose. Data depended on the patient's judgment of the intensity of pain. Results indicate a belief that digitalis under no circumstances influences cardiac pain.—HARRY GOLD, *et al.* *J. Am. Med. Assoc.*, 110 (1938), 859. (G. S. G.)

Estrogenic Hormone—Treatment of Gonococcic Vaginitis with. Treatment is founded on the theory that the delicate vaginal lining of a child should be thickened to greater resistance to gonococcic infection. Thickening is induced by administration of estrogen. Preliminary experiments with amniotin orally, hypodermically, and in suppositories resulted in the choice of amniotin in suppositories. Suppositories containing 1000 International units of amniotin are introduced, one each night at bedtime. The patients report to the clinic weekly for vaginal smears and washings. Treatment is continued for two weeks after the first negative smear shows. The percentage of permanent cures ($2^1/_2$ years' duration) was 98% in the first group of 100 treated. There were no changes in the breasts from amniotin suppositories, indicating that there was no general absorption. Acidity is a factor but other acidified suppositories are of less benefit. Complete estimate of the value of the treatment is postponed till the children who have been treated have reached maturity and borne children.—RICHARD W. TELINDE. *J. Am. Med. Assoc.*, 110 (1938), 1634. (G. S. G.)

Evipal Soluble—Use of, by Rectum. Basal anesthesia as a supplemental to inhalation anesthesia has three levels. It is used as a preliminary to inhalation or locally to allay anxiety of the patient. A report is made of 518 cases of rectal evipal anesthesia, representing a variety of surgical conditions: 203 kidney, ureter and bladder, 176 general surgical, orthopedic and gynecologic, 136 in children for the removal of stitches, etc.; and 3 renal and ureteral colic. Dosage is given with reference to body weight, 0.2 cc. of 10% aqueous solution of evipal per pound. A preliminary enema of soda bicarbonate is given two hours before, and

morphine or dilaudid is injected 1 hour before. The solution is injected from a 30-cc. syringe by a small catheter. The few contraindications to the use of evipal soluble by rectum are impaired liver function, myocardial degeneration, anemia and cachetic or septic conditions.—ALFRED E. JONES. *J. Am. Med. Assoc.*, 110 (1938), 1419. (G. S. G.)

Filarial Attacks—Treatment of, with Prontosil.—ERNST KEIL. *Arch. Schiffs- u. Tropen-Hyg.*, 40 (1936), 400–405; through *Chem. Abstr.*, 33 (1939), 2981. (E. G. V.)

Folliculin—Treatment of Gastric Ulcer by. Based upon the statistical observations, one may ascertain a fundamental sexual difference in the frequency of gastric and duodenal ulcers. The author has written of the treatment by folliculin of fifty-one subjects suffering from this condition; of this number it has cured forty-seven. The cure appeared to be spontaneous and no other medication was necessary in these forty-seven cases. In the other cases it did not effect a cure. The treatment was limited to folliculin in all cases and it is believed that further and longer observations are necessary to prove its merits.—K. CSEPAI. *Orvosi Hetilap*, 82 (1938), 915; through *Presse Méd.*, 26 (1939), 70. (W. H. H.)

Gonadotropic Substance—Treatment of Intra-Abdominal Cryptorchidism with. Hypoplasia and inguinal cryptorchidism were treated successfully by endocrine therapy. Cases of genita underdevelopment in which the testes lie in the abdomen, not palpable, may be corrected by surgery or endocrine therapy. This reports on 12 cases of prepuberal boys who showed intra-abdominal cryptorchidism. Their ages ranged from $3^1/_2$ to $11^2/_3$ years. The dosage varied from 14,000 to 78,500 rat units of antuitrin S or follutein or both. Only two cases failed to respond. Prognosis is better in younger children. Endocrine therapy is preferable to surgery because genital underdevelopment is usually due to endocrine disturbance.—GEORGE B. DORFF. *J. Am. Med. Assoc.*, 110 (1938) 1799. (G. S. G.)

Hay Fever Relieved. Of 35 hay fever and asthma patients treated with KCl or potassium gluconate, more than half obtained complete or almost complete relief, another 12% were relieved as much as 50%, and 12% showed slight improvement. The beneficial effects continued only as long as the potassium salts were given daily. Patients attaining most relief were those showing the smallest increase of blood potassium during treatment, indicating that the potassium acts by entering the tissues from the blood. These results suggest that adrenal gland disorder may be responsible treatment. No toxic effects were noted in patients receiving large doses of the potassium salts.—FRANCIS P. PARKER. *Southern Med. Assoc.* (meeting); through *Squibb Abstr. Bull.*, 12 (1939), A-1520. (F. J. S.)

Hodgkins Disease—Use of Tuberculin A-O in. The author asserts that Hodgkins disease is of tubercular origin and can be cured by Japanese tuberculin A-O.—AYUSO and H. O'HORIBE. *Gaceta Med. Mexico*, 66 (Oct. 31, 1936); through *Rev. sud-americana endocrinol. inmunol. quimioterap.*, 21 (1938), 238. (G. S. G.)

Insulin as a Dressing for Chronic Indolent Ulcers. There is no serious evidence of any injurious local effect from the use of insulin as a dressing agent. In nearly all cases some progress of the wound toward healing occurred. With two of the patients, when the control solution had ceased to stimulate epithelial growth the use of insulin produced no further reaction such as would be expected from a change of dressing. Where an ulcer had a sloughy base one of the first reactions was a profuse purulent discharge with both dressings. There was never any evidence of systemic absorption of insulin—that is, no hypoglycemic symptoms were observed—and accordingly it was not considered necessary to investigate blood-sugar levels. In general it may be concluded that insulin is no more satisfactory as an external dressing than a similar solution of tricresol containing no insulin.—A. R. HUNTER. *Brit. Med. J.*, 4084 (1939), 773. (W. H. H.)

Insulin as a Sedative.—G. W. ROBINSON. *Clin. Med. Surg.*, 46 (1939), 61–66; through *Chem. Abstr.*, 33 (1939), 2990. (E. G. V.)

Keratin Derivatives—Therapeutic Metal Compounds of. High-molecular, water-soluble, metal compounds are obtained by hydrolyzing keratin with acids, separating the hydrolyzate, neutralizing with barium carbonate or barium hydroxide, evaporating at a low temperature in vacuum, taking up the residue in water, and treating with salts of such metals as gold, silver, mercury, lead, antimony or bismuth. Thus, the neutralized hydrolyzate from the hydrolysis of hair by hydrochloric acid is treated with gold chloride. Several other examples are given.—ERNST STRUM and RICHARD FLEISCHMANN, assignors to CHEMISCHE FABRIK JOHANN A. WÜLFING. U. S. pat. 2,137,927, Nov. 22, 1938. (A. P.-C.)

Leucopoictic Drugs—Evaluation of. The author undertook to determine the activity mechanism of and evaluate certain drugs which are known to increase neutrophils thereby bringing about leucocytosis. This was done by collecting and examining the blood of rabbits which had been injected with one of a number of drugs belonging to one of the following classes: leucopoictic, toxic, sympathetic stimulants, parasympathetic stimulants or parasympathetic depressants. Only transient leucocytosis was observed after single injections of nucleins, liver extract, histamine adrenaline or acetylcholine. This was thought to be due mainly to a redistribution and partly to a mobilization of leucocytes. It could not be demonstrated that frequent injections of liver extract or nucleins accelerated formation of white cells. Colchicine stimulated proliferation of cells in the marrow but its toxicity offset its advantages in this respect. The article is replete with charts and tables and is appended with forty appropriate references.—C. R. DAS GUPTA. *Indian J. Med. Research*, 26 (1939), 947–999. (W. T. S.)

Magnesium Sulfate for Cough. A 15% solution was used intramuscularly daily or every two to three days as indicated. A report is given of 61 cases consisting of three groups—asthmatic, whooping-cough and spasmodic cough of indeterminate etiology. Only two asthmatics failed to respond and all of the other groups produced encouraging results.—FREYRE A. VIDAL. *Publicaciones Med.*, July, 1936; through *Rev. sud-americana endocrinol. inmunol. quimioterap.*, 21 (1938), 252. (G. S. G.)

Malaria—Chemotherapy of. In a monograph prepared from a series of his lectures the author has presented the history, chemical structure, mode of action and shortcomings of numerous natural and synthetic agents which have been used since 1804 in attempts to control malarial fever. The literature covering the subject of malaria was well reviewed.—J. W. FIELD. *F. M. State Bulletin*, No. 2, 1938; through *J. Trop. Med. Hyg.*, 42 (1939), 258–259. (W. T. S.)

Malaria Prophylaxis with Atebrin.—OTTO FISCHER. *Arch. Schiffs- u. Tropen-Hyg.*, 40 (1936), 397–400; through *Chem. Abstr.*, 33 (1939), 2981. (F. J. S.)

Malaria—Treatment of. A résumé of the League of Nations Bulletin on malaria describes the action of quinine and synthetics on malarial infection. Quinine has beneficial action with no depressive nor toxic manifestations if limited to the necessary days. It does not interfere with the process of immunization. Atebrin has the same attack on gametocytes as quinine and its systemic action is not yet sufficiently known. Plasmochin used after quinine or atebrin prevents recurrences. There are not yet sufficient data on its use alone but its use with quinine or with atebrin has no advantage and in some cases has proved toxic. Prophylaxis is useful but complete suppression of malaria by prophylaxis is as yet unattainable. However, both treatment and prophylaxis have reduced the morbidity from malaria, though it is not possible to suppress all parasites in all vectors.—ANON. *Reforma. Med.*, 24 (1938), 125. (G. S. G.)

M. & B. 693 in Peritonitis with Scarlet Fever. A case is described of hemolytic streptococcal septicemia and general peritonitis occurring on the twenty-sixth day of scarlet fever and associated with other complications of the disease, namely, infraorbital cellulitis, cervical adenitis and nephritis. The patient had not had the benefit of antitoxin treatment in the initial stage of his scarlet fever but had been treated by sulfanilamide, which was badly tolerated. For the peritonitis, since there was no evidence of an abdominal focus, operative treatment was not adopted. Chemotherapy, at first with M. & B. 693 by injection of the 20% suspension of the drug, later by the injection of the sodium salt, and ultimately by oral administration, apparently brought about a rapid sterilization of the pus in the abdominal cavity. There was a considerable accumulation of peritoneal fluid and an associated bilateral pleural effusion. The patient suffered in convalescence from a profound secondary anemia which did not improve under iron and liver therapy but rapidly improved after two blood transfusions. There was an uneventful recovery. The advantage of injections of the sodium salt of M. & B. 693 in the early treatment of this type of case is emphasized.—H. S. BANKS. *Lancet*, 236 (1939), 983. (W. H. H.)

M. & B. 693—Treatment of Gonorrhea by. Treatment of a series of 127 cases of gonorrhea in the male by M. & B. 693 is described. The standard of cure insisted upon is detailed. Thirty patients in this series ceased to attend, or were transferred to other centers, before final tests of cure could be carried out. Of the remaining ninety-seven there were ninety-one patients who passed all tests of cure—which gives over 93% of successful results. There were six failures. Of those ceasing attendance, eight were probably cured, seventeen were doubtful and five transferred. Toxic reactions encountered were of the minor type, varying in incidence with the dosage employed. These reactions subsided rapidly on withdrawal of the drug, and no major toxic effects have developed. Various dosage schemes have been tried, and it is suggested that intensive treatment over a short period merits further investigation. Treatment should be instituted at the earliest possible moment, particularly in view of the noteworthy absence of complications in the cases so treated. In face of failure to respond within a week, or of early relapse, persistence with M. & B. 693, even in repeated courses, has proved ineffective. In the interests of the patient, in such circumstances, resort should be made to some other form of therapy. In the authors' experience M. & B. 693 has proved the most effective therapeutic agent yet introduced in the treatment of gonorrhea.—J. T. BOWIE, *et al. Brit. Med. J.*, 4083 (1939), 711. (W. H. H.)

Mandelic Acid Therapy. After admitting that the ideal urinary antiseptic is yet to be found the author states that a proper concentration of mandelic acid in a distinctly acid urine is definitely bacteriocidal. The origin of mandelic acid therapy is given as are some physical and chemical properties of the acid. The indications, contra-indications and untoward reactions of mandelic acid therapy are then discussed with particular reference to the precautions necessary to obtain the best results therefrom. If these precautions are observed the use of mandelic acid may be expected to be successful in 3 out of 4 cases of non-tuberculous bacillary infections of the urinary tract.—MEREDITH F. CAMPBELL. *N. Y. State J. Med.*, 38 (1938), 1257; through *Indian Med. Gaz.*, 74 (1939), 437–439. (W. T. S.)

Mercurials—Treatment of Miases with. Parasitic infestation of *Dermatobia hominis* causing furunculosis around the eyes and nose is satisfactorily treated by intravenous administration of oxycyanate of mercury in 1-cc. units of a 1:100 dilution; or mercury salicylate. In the case of an infant, intramuscular administration is substituted. Six cases, aged 12 to 52 years, were treated successfully by this method.—WALTER TELLES. *Lab. Clin.*, 18 (1938), 109. (G. S. G.)

Neosynephrine Hydrochloride—Report of a Case of Orthostatic Hypotension Treated with. Orthostatic hypotension, probably the result of dysfunction of the autonomic system, is characterized by an inability to maintain blood pressure consistent with normal activity, when erect. This is a case of a woman experiencing vertigo on standing, but recovering promptly when recumbent. There were no significant physical nor chemical findings and it was determined as a case of orthostatic hypotension of idiopathic origin. Treatment was symptomatic, to elevate blood pressure. The various drugs used were pilocarpine, atropine, ephedrine sulfate, thyroid extract, strychnine, benzedrine sulfate, pitressin; but they produced no satisfactory result. Neosynephrine hydrochloride was tried and found effective. It is a synthetic related to epinephrine and may be given orally or parenterally. It has produced none of the unpleasant nor untoward symptoms usually associated with sympathomimetic drugs. The dosage in the present case was set at 60 mg. daily.—GEORGE D. CAPACCIO and CHARLES J. DONALD. *J. Am. Med. Assoc.*, 110 (1938), 1180. (G. S. G.)

Organic Sulfur Derivatives (*p*-Aminophenylsulfamide)—Determination of Therapeutic Doses of One of the New.—R. BENDA and M. PALAZZOLI. *Bull. mém. soc. méd. hôp. Paris*, 53 (1937), 1273–1274; through *Chem. Abstr.*, 33 (1939), 2982. (E. G. V.)

Pentothal Sodium Injection—Extensive Thrombosis after. A man of sixty-seven developed extensive thrombosis of the superficial veins of the forearm after the intravenous injection of 0.5-Gm. of pentothal sodium in a five per cent solution. There was no evidence of leakage into the surrounding tissues.—R. T. PAYNE. *Lancet*, 236 (1939), 816. (W. H. H.)

Pneumonia and the Common Cold. To prevent colds from developing into pneumonia, B. and G. recommend that every patient with a cold plus slight fever be given 0.25 Gm. sulfapyridine 4 times daily for 4 days, with repetition of this course if the cold is still present after an interval of 2 days. This dosage is quite safe, may be effective in reducing the number of pneumococci in the nose and throat of the cold sufferer, and will not interfere with palliative treatment or later typing.—M. A. BLANKENHORN and GEORGE GROSS. *J. Med.*, 20

(1939), 416; through *Squibb Abstr. Bull.*, 12 (1939), A-1534. (F. J. S.)

Polymyelitis—Chemoprophylaxis in. The technic of applying chemical agents to the olfactory mucous gives evidence that a chemical agent such as 1% zinc sulfate confers resistance to poliomyelitis virus in monkeys for at least one month after treatment. A study was made of the methods of applying prophylactic treatment effectively and with the least discomfort to the patient. An atomizer, even with a long tip is unsatisfactory, because the material will not reach the olfactory area. Instillation with a dropper, while the head is inverted, is satisfactory if complete inversion is maintained. Only then will the fluid settle in the common nasal meatus, immersing most of the olfactory area. The fluid is warmed to body temperature and instilled slowly, drop by drop. The head is kept inverted one minute after the last drop has entered. Excess is sniffed out afterward. The physical action of the lake of fluid is more efficacious than a spray. Roentgen studies made of experimental animals to determine the position and diffusion, confirm that 0.4 cc. to 0.5 cc. for children and 0.25 cc. for adults is sufficient to immerse the area adequately. —LEE SHAHINIAN, *et al. J. Am. Med. Assoc.*, 110 (1938), 1254. (G. S. G.)

Posterior Pituitary Extract Following Parturition—Prophylactic Intravenous Injection of. Intravenous injection of posterior pituitary extract following parturition should only be employed in cases in which hemorrhage due to uterine atony may be expected, or when hemorrhage does occur.—J. EMMRICH. *Münch. Med. Wochschr.*, 86 (1939), 329; through *Brit. Med. J.*, 4087 (1939), 962B. (W. H. H.)

Potassium and the T Wave of the Electrocardiogram. A case of Addison's disease is reported in which a fall in the level of the serum potassium was accompanied by a diminution in the height of the T wave in the electrocardiogram. Five other cases are described in which a rise in the level of the serum potassium was accompanied by an increase in the amplitude of the T wave, followed in some of them by a decrease in the amplitude of the T wave when the level of the serum potassium fell again. It is suggested that there is a correlation between the concentration of the serum potassium and the height of the T wave.—W. A. R. THOMSON. *Lancet*, 236 (1939), 808. (W. H. H.)

Potassium Chloride Therapy—Note on Oral, in Asthma, Hay Fever, Urticaria and Eczema. One 5-grain tablet of KCl dissolved in a glass of water was given one-half hour before meals 3 times a day to 43 allergic patients, of whom 10 suffered from hay fever, 10 from allergic rhinitis, 10 from asthma, 9 from urticaria and 4 from eczema. Only 2 patients with allergic rhinitis and 1 patient with urticaria showed marked improvement, whereas most of the cases were not benefited at all and some even grew worse.—DAVID HARLEY. *J. Allergy*, 11 (1939), 38; through *Squibb Abstr. Bull.*, 12 (1939), A-1520. (F. J. S.)

Prontosil Album Found Effective against an Iliac Abscess. A six-year old, female patient suffering from an iliac abscess showed remarkable recovery upon receiving a treatment consisting of one-half tablet of prontosil album four times a day and an alkaline mixture with potassium iodide. Complete recovery resulted with no other treatment except the local application of antiphlogistine.—S. B. SEN GUPTA and M. ALI. *Indian Med. Gaz.*, 74 (1939), 480. (W. T. S.)

Pyorrhea Cures—Twenty-Five Years of. A review with 83 references.—J. L. BLASS. *Dental Outlook*, 26 (1939), 65–76; through *Chem. Abstr.*, 33 (1939), 2990. (E. G. V.)

Pyrazine-2,3-Dicarboxylic Acid and Pyrazine Monocarboxylic Acid—Antipellagric Action of. The authors have reported on the vitamin action of two pyrazine carboxylic acids which they were led to study by the well-known antipellagric activity of nicotinic acid. The pyrazine acids differ from the pyridine acids in having two nitrogen atoms in the ring. The pyrazine-2,3-dicarboxylic acid was prepared by oxidizing quinoxaline with $KMnO_4$ and this acid was then decomposed by heat to yield the pyrazine monocarboxylic acid. A preliminary study showed that these pyrazine acids could be safely administered in 100-mg. amounts five times per day. Either acid administered in this dosage to pellagrins resulted in a prompt disappearance of their glossitis. Following disappearance of the pellagrous glossitis abrupt discontinuance of the therapy in 6 cases was followed by a return of the symptoms in every case. The minimum and maximum dosage for oral use was not determined but 500 to 800 mg. of either acid given in divided doses five to eight times a day is safe and effective. Attention was called to the fact that of the three isomeric pyridine-carboxylic acids only the *beta* acid is active.—CHARLES E. BILLS, FRANCIS G. MCDONALD and TOM D. SPIES. *Southern Med. J.*, 32 (1939), 793–795. (W. T. S.)

Pyridinecarboxamide Mercury Compounds—*N*-Substituted. *2,136,501*—By mercurating amides of pyridinecarboxylic acids the amide nitrogen of which is substituted by at least one alkylene radical, diuretic and antiseptic compounds are obtained suitable for therapeutic uses. Details are described of a number of such compounds. *2,136,503*—Procedure and products of like character are described, the claims relating particularly to pyridinecarboxamides with not more than one carboxylic acid group.—MAX HARTMAN and LEANDRO PANIZZON, assignors to SOCIÉTÉ POUR L'INDUSTRIE CHIMIQUE À BÂLE. U. S. pats. 2,136,501 and 2,136,503, Nov. 15, 1938. (A. P.-C.)

Rheumatic Fever—Action of Sodium Salicylate in. Sodium salicylate has a specific action in rheumatic fever if given in sufficient dosage (16–20 Gm. orally and 1–2 Gm. intravenously daily) accompanied by an alkali, sodium bicarbonate, to combate salicylic acidosis. If intolerance is manifested, insulin is suggested. Even after apparent clinical cure it is advisable to continue the treatment with 10 Gm. daily, 10 days each month.—G. COSTA-BERTANI. *Rev. asoc. méd. argentina.*, (May 1936), 742; through *Rev. sud-americana endocrinol. inmunol. químioterap.*, 21 (1938), 237. (G. S. G.)

Rocky Mountain Spotted Fever. This is one of several tick-borne diseases endemic in North America. It is transmitted to man by the Rocky Mountain wood tick and the American dog tick; and it is carried by the rabbit tick and perhaps by the bird tick. Tick paralysis and Colorado tick fever are also caused by the Rocky Mountain wood tick. A filter passing agent found in the wood tick may cause some variations reported in the disease following tick bite. Secondary infections may occur as a result of tick bite, resulting in chronic lesions, septicemia, loss of limb, occasionally death. Natural floral and faunal conditions of the Rocky Mountain area favor the propagation of ticks, making tick borne diseases a serious national problem. Three tests to identify the fever are: (1) The infection test where the blood of a suspected person is injected intraperitoneally into male guinea pigs, positives give scrotal swelling and lesions. (2) The Weil-Felix reaction tests the patient's serum for agglutinins against O strains of Proteus X_{19} and X_2; this is the most useful test. (3) Protection or

virus neutralization test, testing convalescent serum to determine the protective value in guinea pigs against spotted fever serum virus is always of diagnostic value. Use at least two tests whenever possible.—R. R. PARKER. *J. Am. Med. Assoc.*, 100 (1938), 1273. (G. S. G.)

Scabies—Treatment of. The following preparation is painted on infected regions after cleansing with green soap: benzyl benzoate 50 Gm., liniment of soft soap 65 Gm., ethyl alcohol (90) 30 Gm., distilled water 5 Gm.—G. E. THOMAS. *U. S. Naval Med. Bull.*, 37 (1939), 137–138; through *Chem. Abstr.*, 33 (1939), 2980. (E. G. V.)

Serum Therapy for the Insane from Blood of the Testicular Vein. Serum from the testicular vein of young healthy animals has been used in subcutaneous injection for rejuvenation of men from 57 to 80 years of age. This application of the effect of endocrine on the nervous system, suggested the use of testicular blood on psychopathic cases. Four cases of melancholia were selected, men aged 30, 48, 49 and 53 years. Serum from the spermatic vein of bulls was used in ten intramuscular injections: five of 5 cc., and five of 10 cc., after a preliminary 1 cc. intradermal injection for desensitization. All four cases responded favorably improving in health and weight, and intellectual rehabilitation. Four cases are insufficient for an authoritative statement but they indicate possibilities for further treatment.—RAMON MELGAR and JULIO LUIS PELUFFO. *Rev. sud-americana endocrinol. inmunol. quimioterap.*, 21 (1938), 202. (G. S. G.)

Streptococcal Infections—Chemotherapeutic Study of. The fact that the antistreptococcic activity of *p*-amino-benzene-sulfonamide lies in its sulfonamide grouping led De and Basu to investigate other compounds possessing this grouping for the same activity. Some compounds in which the amide group is linked to certain ring or chain compounds known to be bacteriostatic were chosen for this study. The conclusions were that the replacement of one of the amide hydrogens of the sulfonamide group by an 8-quinolyl, 6-methoxy-8-quinolyl or δ-diethyl-amino-butyl group does not increase the bacteriostatic property of these compounds. On the contrary the toxicity was increased by the substitution. Previously the same authors had shown that 4-amino-benzene-sulfon-8′-quinolyl-amide is bacteriostatic only in concentrations of 1–4000 which indicates less activity than sulfonanilamide is known to possess.—S. P. DE and U. P. BASU. *Indian J. Med. Research*, 26 (1938); through *J. Trop. Med. Hyg.*, 42 (1939), 256–257. (W. T. S.)

Sulfanilamide in the Treatment Of Erysipelas. Among forty-two cases of facial erysipelas in males treated with sulfanilamide and forty-three similar cases treated in the same hospital before use of sulfanilamide was instituted, the mortality rates were seven and three per cent, the recurrence rates were five and seven per cent, and the durations of fever were 2–19 (av. 7.1) and 4–23 (av. 7.5) days, respectively. Among the patients receiving sulfanilamide, those treated on or before the third day of illness showed an average duration of fever of 5.2 days from the beginning of illness and 3.0 days from the beginning of treatment, as contrasted with 9.1 and 4.2 days for those first receiving sulfanilamide after the third day. The three deaths in the sulfanilamide group were in patients exhibiting old age, arteriosclerosis, chronic alcoholism, *Staphylococcus aureus* septicemia, and rheumatic heart disease, respectively. The results indicate that sulfanilamide shortens the course of illness and decreases its severity if it is administered before the third day of the disease, but does not affect the incidence of recurrence and does not prevent death in aged or chronically ill patients.—L. A. RANTZ and C. S. KEEFER. *New England J. Med.*, 221 (1939), 809; through *Squibb Abstr. Bull.*, 12 (1939), A-1463. (F. J. S.)

Sulfanilamide in the Treatment of Measles. A series of 125 cases of measles admitted to hospital between December 1937, and March 1938, was investigated to determine the value of sulfanilamide in treatment. The cases were divided into two groups without selection, one group being treated with sulfanilamide, the other acting as controls. Comparison is made between the two groups with respect to complications before and after admission, and length of stay in hospital. The conclusions to be drawn from the survey are given.—T. ANDERSON. *Brit. Med. J.*, 4083 (1939), 716. (W. H. H.)

Sulfanilamide—Observations Concerning the Absorption of, from the Large Intestine of Man. An Experimental Study. Blood analyses for sulfanilamide demonstrated absorption of this drug after its rectal installation in two patients with hemorrhoids and otherwise normal intestinal tracts, in one patient with a colon isolated from the small intestine, and in one patient with a rectum isolated from the rest of the intestine. The 1% solution of sulfanilamide in warm sterile distilled water caused no changes in the normal mucous membrane of the rectum and the sigmoid, when given in amounts of 100 cc. approximately every four hours until 6–18 Gm. of the drug were administered. The blood concentrations attained varied from 2.5 to 11 mg. (%?) free sulfanilamide and 0 to 5 mg. (%?) conjugated sulfanilamide. These results indicate that absorption is sufficiently high to recommend rectal administration when the drug cannot be given orally.—R. TURELL, A. W. M. MARINO and L. NERB. *Brooklyn Hosp. J.*, 1 (1939), 90; through *Squibb Abstr. Bull.*, 12 (1939), A-1461. (F. J. S.)

Sulfanilamide—Some Experiments on Chemotherapy of, for Gonorrhea. *In vitro*, the growth of most gonococci is completely inhibited by 2–5 mg. % sulfanilamide. This concentration corresponds, in general, to that present in the blood of patients treated with 2–5 Gm. of the drug per day. The resistance of gonococci to sulfanilamide (10-mg. %) varies with many factors, *e. g.*, method of chemotherapy, resistance of host, time of infection, conditions of cultivation, variation of culture, successive transplantation of culture, etc. Aside from the definite concentration of sulfanilamide in the blood, a certain active factor takes part in the bacteriostatic effect on gonococci and increases bodily resistance. Three cases of gonorrhea resistant to sulfanilamide were cured with *p*-amino-*p*′-dimethylsulfamylbenzenesulfonanilide (Uliron).—Z. SAI. *Japan. J. Exptl. Med.*, 17 (1939), 387; through *Squibb Abstr. Bull.*, 12 (1939), A-1463. (F. J. S.)

Sulfanilamide—Use of, after Transurethral Prostatectomy. This study was undertaken because of the uniformity of age, sex and lesion; and because urine is usually infected in such patients. The group was divided into control and experimental series. The drug was administered on the morning of the operation and continued until the fifth day after. The dose ranged between 45 and 50 grains daily (3 and 4 Gm.) and the patients also were given a similar dose of sodium bicarbonate. Urine specimens were taken by catheter on the first and fifth days, and cultures were made four to six hours later. Smears from cultures were stained by Gm. stain and the results were recorded as Gm.-negative, streptococci and micrococci including staphylococci. One hundred cases in each group failed to prove the efficacy of sulfanilamide as a urinary antiseptic and unfavorable reactions proved a

hindrance to convalescence.—HOWARD J. GAUDIN, *et al. J. Am. Med. Assoc.*, 110 (1938), 1887. (G. S. G.)

Sulfapyridine Therapy—Hematuria and Renal Colic as an Undesirable Action of. It is to be expected that certain undesirable actions will follow the use of potent sulfanilamide and related compounds as is the case with other decidely active drugs. It is known that sulfanilamide may give rise to agranulocytosis and hemolytic anemia. Analogous complications have been reported following the use of sulfapyridine. It now appears that sulfapyridine causes a new complication not observed with sulfanilamide. The appearance of hematuria and renal colic following the use of sulfapyridine has been observed in four cases and reported. It was concluded that these complications were caused by precipitation along the urinary tract of crystalline acetyl-sulfapyridine since this highly insoluble compound has been found in the urine of patients and experimental animals to whom sulfapyridine had been administered. This report is not to be construed as an effort on the part of the writers to lessen the use of these popular drugs but merely to inform the practitioner who does employ them.—LIU, CHUNG, YU and SUN. *China Med. J.*, 56 (1939), 1–10. (W. T. S.)

Syphilis—Bismuth Therapy of. I. Comparative Study of the Toxicity and Therapeutic Activity of Bismuth Compounds Commonly Employed in the Treatment of Syphilis. Thirteen bismuth compounds were tested on white rats and rabbits infected with *T. pallidum*. There is a wide variation in effects, especially in treponemicidal activity, of bismuth compounds in the dosage and frequency of administration commonly employed. Apparently both toxicity and treponemicidal activity are related not only to the amounts of elemental bismuth administered but likewise to absorption and excretion, the latter being influenced by solubility in menstrua and tissues and by possible effects of chemical constitution influencing the rate of dissociation. Detailed tables present a complete comparison of the compounds.—J. A. KOLMER, H. BROWN and A. M. RULE. *Am. J. Syphilis, Gonorrhea, Veneral Diseases*, 23 (1939), 7–40; through *Chem. Abstr.*, 33 (1939), 2978. (E. G. V.)

Tabetic Lightening Pains—Treatment of, with Thiamin Chloride. Six cases of tabes dorsalis were treated, with encouraging results. It is suggested that the pathogenesis may depend on the interrelation of dietary deficiency (possibly of vitamin B_1) in patients with previously existing neurosyphilis.—P. F. METILDI. *Am. J. Syphilis, Gonorrhea, Veneral Diseases*, 23 (1939), 1–6; through *Chem. Abstr.*, 33 (1939), 2978. (E. G. V.)

Thioderazine—Treatment of Sciatic Nerve Disorders by Injection of. The author presented a film concerning the technic of the intramuscular injection of an aqueous solution, isotonic and painless, of thiocarbamide-iodazine diethylene-diamine. Successively were shown the methods of the paravertebral injections of Barre which permit depositing the solution in the immediate vicinity of the lumbar roots of the sciatic nerve, as they emerge from the cord. The technic of the epidural injection is shown as is the injection of the sciatic trunk.—M. WIRTH. *Soc. de Med. et de Chir. de Bordeaux*, (Feb. 1939); through *Presse méd.*, 29 (1939), 548. (W. H. H.)

Totaquina as a Malaria Remedy. From observations on 30 cases of malaria it is assumed that Totaquina II is effective in tertian malaria, less so in quartan and still less so in tropical malaria. Its action resembles that of quinine. In tropical malaria its action on the gametes is inadequate, so that plasmochin must be used. The single advantage of cheapness does not compensate for its inadequate activity.—W. MOLLOW. *Arch. Schiffs- u. Tropen-Hyg.*, 40 (1936), 118–119; through *Chem. Abstr.*, 33 (1939), 2981. (F. J. S.)

Typhoid Fever—Attempt at the Treatment of, with Vitamin A. The use of pure vitamin A free from carotene apparently shortened the duration of the disease. Injections were more effective than oral administration. Intestinal complications were absent and other complications were also favorably influenced. No toxic effects were observed.—P. GIRAUD, SARDOU, BOURESQUE and PROVANSAL. *Bull. mém. soc. méd. hôp. Paris*, 53 (1937), 422–427; through *Chem. Abstr.*, 33 (1939), 2944. (E. G. V.)

Vitamin B_1—Effect of, on Peripheral Neuritis of Pellagra. Studies on alcoholic pellagra indicate that alcohol is not the sole cause of the accompanying neuritis. Peripheral neuritis of pellagra is identical with that of beriberi. In a study of six cases of pellagra, four alcoholic and two endemic, vitamin B_1 crystals (aneurin, torulin, thiamin), were injected intravenously and produced prompt relief of the pain of neuritis. Nicotinic acid by mouth was used in three cases to relieve stomatitis and glossitis. These observations suggest that painful peripheral neuritis in these cases was caused by some lack of vitamin B_1. While these pellagrins responded to a basic diet plus nicotinic acid and thiamin, it is not recommended that such diet be used in the treatment of pellagra, since not all sufferers have peripheral neuritis.—TOM D. SPIES and CHARLES D. ARING. *J. Am. Med. Assoc.*, 110 (1938), 1081. (G. S. G.)

Vitamin B_1—Therapeutic Use of, in Polyneuritis and Cardiovascular Conditions. Beriberi develops in the oriental because his customary diet of polished rice contains insufficient vitamin B_1 per calorie. Beriberi in the westerner develops because complicating factors render the vitamin B_1 intake inadequate. Alcoholism, carbohydrate diet of pregnant women, pyloric stenosis, types of colitis, and prolonged fevers, contribute to imbalance of the diet. Onset of vitamin B_1 deficiency is sudden but insidious, weakness and lack of control of muscles being evident. Polyneuritis of vitamin B_1 deficiency is different in the clinical picture from that of poisons or diphtheria. Cardiovascular manifestations are less definitely marked. If doubt exists as to the etiology of polyneuritic and cardiovascular symptoms there is no harm in vitamin B_1 therapy while the case is carefully investigated. Vitamin B_1 may be employed in pure crystalline form, 20 to 50 mg. injected daily, and there is no danger in an overdose; or foods rich in vitamin B_1 may be administered. Deficiency responds readily to therapy, but is seldom limited to one factor; treatment for other deficiencies is often involved.—MAURICE B. STRAUSS. *J. Am. Med. Assoc.*, 110 (1938), 953. (G. S. G.)

Vitamin B_1—Use of, in the Treatment of Certain Nervous Disorders. Eijkman's observation that the feeding of chicks with polished rice produced symptoms resembling beri-beri in man gave origin to vitamin B therapy in nervous diseases. Insufficient intake, defective absorption, increased requirements and rapid elimination are the factors, it was said, which produce B_1 avitaminosis. Reference is made to the work of the author and others by which it has been demonstrated that vitamin B_1 therapy produces brilliant results in a variety of cases of nervous disorders while in other cases the results are disappointing. Seven cases of trigeminal neuralgia which were treated with larger doses of vitamin B_1 are described in detail in this article. Of these 7 cases, 6 responded to the treatment and of the 6 which responded 4 obtained complete relief while 2 only partial relief. It was concluded

that even huge doses of vitamin B_1 by hypodermically or oral injection are not toxic.—I. BAKHSH. *Indian Med. Gaz.*, 74 (1939), 456–458. (W. T. S.)

Vitamin C—Influence of, upon the Development of Tumors. Vitamin C in large doses did not influence the growth of adenocarcinoma of Erlich.—G. LANCELLOTTI. *Biochim. terap. sper.*, 25 (1938), 540. (A. C. DeD.)

Vitamin K and Sprue. Sprue may lead to symptoms of deficiency of almost all the vitamins known to man. Vitamin K, the coagulation vitamin, is a fat-soluble factor which is only absorbed in the bile through the gut wall. Hemorrhages occur when the bile ducts are blocked. Vitamin K is found in spinach, tomatoes and alfalfa, and may be produced from fish or alfalfa flour. Engel has successfully corrected the hemorrhagic tendency in sprue by the administration of synthetically produced vitamin K.—R. ENGEL. *Med. Welt*, 13 (1939), 120; through *Brit. Med. J.*, 4083 (1939), 758B. (W. H. H.)

Vitamin P. An account is given of seven cases of hemorrhagic nephritis treated by intravenous injections of vitamin P. The results were disappointing.—T. GIMSING. *Ugeskrift for Laeger*, 101 (1939), 117; through *Brit. Med. J.*, 4083 (1939), 758D. (W. H. H.)

Vitamin P—Clinical Results Obtained with. It is known that in certain cases vitamin C does not influence hemorrhagic diseases, whereas the juice of the citrus fruits will heal these alterations. It is supposed that there is present in this juice another substance other than vitamin C which is active. Szent-Györgyi has found this factor as a flavone to which he gave the name vitamin P (capillary permeability vitamin). The author has used this vitamin in certain hemorrhagic cases where vitamin C has failed to influence the state of the condition. He has observed that it augments the resistance of the capillaries and diminishes their permeability. He has also obtained good results in purpura vascularis. In nephritis of different origins it has been noticed that the hematuria ceases rapidly and the disease is cured in a short time. It is believed that in the case where the danger of nephritis exists, as a prophylaxis one should quickly employ vitamin P. In other hemorrhagic diseases the results are very variable, but, in these conditions one may easily observe the diminution of the permeability and the augmentation of the resistance of the capillaries.—S. LAJOS. *Orvosi Hetilap*, 82 (1938), 642; through *Presse méd.*, 26 (1939), 70. (W. H. H.)

Vitamin Therapeutics and Physiological Activity.—A. SZENT-GYÖRGYI. *Inst. intern. chim. Solvay, 6e Conseil chim. Bruxelles*, 1937 (1938), 59–89; through *Chem. Abstr.*, 33 (1939), 2950. (E. G. V.)

Whooping Cough—Prophylactic Vaccine for. Observations were made on seventy-seven children who received prophylactic vaccine for whooping cough. It proved effective in 66% of the cases. Since this protection is of short duration, monthly repetition of vaccination is recommended in epidemics of whooping cough.—F. MARTILLOTI. *La pediatria*, (Aug. 1937); through *Lab. Clin.*, 18 (1938), 88. (G. S. G.)

Yellow Fever in Brazil. Anti-yellow fever virus 170, was used successfully in preventive inoculation of persons in danger zones. The virus is cultivated *in vivo* on embryo chicks, triturated with normal human serum in 10% concentration, dried *in vacuo* and sealed in ampuls. It may be kept for long periods at low temperature and is shipped to country districts in chilled containers; however, immediately before human inoculation it is tested for viability on mice. No harmful sequelæ have resulted from its use and it has proved efficacious in the production of antibodies in 96% of the cases; 168,000 having been vaccinated up to March 31, 1938. Mosquitoes are established as the vectors, but it is uncertain which ones, in addition to *Stegomyia*.—FRED. L. SOPER. *Bol. Ofic. Sanit. Panam.*, 17 (1938), 510. (G. S. G.)

NEW REMEDIES

SYNTHETICS

A-Vitalever (Lever Brothers & Unilever) is obtainable in capsules and in drops. It is a vitamin preparation (vitamin A) of animal origin containing no artificial product and is used in the treatment of xerophthalmia and keratomalacia, to increase the appetite, to increase general resistance and also in the treatment of certain skin diseases. One gram of Vitalever contains 40,000 International units of vitamin A.—*Pharm. Weekblad*, 76 (1939), 420. (E. H. W.)

Calcetol (Dr. H. Oschmann, Fabrik Chem.-pharmaz. Specialties, Düsseldorf) is the calcium salt of acetylsalicylic acid. It is marketed in the form of capsules.—*Pharm. Zentralhalle*, 80 (1939), 298. (N. L.)

Cevitabs (National Institute of Nutrition, Los Angeles and Buffalo, N. Y.) contain in each tablet 500 I. U. of cevitamic acid. They are recommended in dental caries, pyorrhea and certain gum infections when due to a vitamin C deficiency; correction and prevention of scurvy or borderline avitaminosis; rheumatic fever; wound healing; cataract; hemorrhagic diseases; gastro-enteritis; anorexia, anemia, undernutrition and infection when due to vitamin deficiency associated with the lack of vitamin C. The tablets are supplied in bottles of 40 and 100. Cevitabs are also known as Vitamin C Tablets Nion.—*Am. Professional Pharmacist*, 5 (1939), 95. (F. J. S.)

Dagenan (Poulenc Frères en Usines du Rhône, Paris) is α-*p*-amino-phenylsulfamido-pyridine or chemical preparation 693. It forms prismatic crystals melting at 191–192°, is soluble in cold water but better in hot water; soluble in ether, benzol and chloroform, more soluble in alcohol and very soluble in hydrochloric acid and potassium hydroxide solution. The hydrochloric acid solution is colored yellow by nitrites. Upon the addition of α-naphthol in alkaline solution a lilac or Bordeaux red color results. The aqueous solution yields a precipitate with bromine water.—*Pharm. Weekblad*, 76 (1939), 417. (E. H. W.)

Degalol (Riedel-de Haen, Inc., New York) contains in each tablet $1^1/_2$ grains of deoxycholic acid. The tablets are indicated in impaired fat digestion and in hemorrhagic diathesis in jaundice (in order to assure the absorption of vitamin K). Degalol is supplied in boxes of 100 tablets.—*Am. Professional Pharmacist*, 5 (1939), 215. (F. J. S.)

Disulon (Alba Pharmaceutical Co., Inc., New York) is sulfanilyl-sulfanilamide, 4(4-amino-benzol-sulfonamide), benzol sulfonamide and it is a colorless, crystalline compound, soluble in water 0.01%, much more soluble in hot water; is stated clinically to be more effective and less toxic than sulfanilamide in gonorrhea and in upper urinary tract infections due to colon and staphylococcus organisms. It has been found to be effective in 65% of sulfanilamide resistant gonorrhea. The dose for adults is 30 grains per day for six days, one week's rest, and repeat for six more days if necessary. Disulon is supplied in tablet form (5 grains) in bottles of 50 and 500.—*Am. Professional Pharmacist*, 5 (1939), 35. (F. J. S.)

Elixir Berocca (Hoffmann-La Roche, Inc., Nutley, N. J.) contains in each fluidounce 5 mg. (1665 I. U.) of Berocca (synthetic vitamin B_1) in a palatable vehicle of a sherry wine flavor, blended with orange peel. It is recommended in vitamin B_1 deficiencies, and the dose is one to three teaspoonfuls daily, or more, as directed by the physician. Elixir Berocca is supplied in 8-oz. and gallon bottles.—*Am. Professional Pharmacist*, 5 (1939), 155. (F. J. S.)

Eskolloid (Dr. Madaus & Co., Radebeul, Dresden) consists of a solution of colloidal sulfur in ampul form for injection. It is recommended in the treatment of furunculosis, erysipelis, sepsis, etc.—*Pharm. Zentralhalle*, 80 (1939), 372. (N. L.)

Eubasinum (Nordmark-Werke, Hamburg) is sulfopyridine (*para* - aminophenylsulfamide - α - pyridine) in tablet form. It is recommended in the treatment of pneumonia.—*Pharm. Zentralhalle*, 80 (1939), 299. (N. L.)

Euphagine (Chemosan-Union, Vienna) consists of tablets known in Germany as Anaestheticum Tablets Phiag. They contain *p*-amino benzoic acid ethyl ester, borax and menthol. They are used as a local anesthetic and at the same time disinfect the mucous membrane. The action takes place in 5–10 minutes and lasts about half an hour.—*Pharm. Weekblad*, 76 (1939), 418. (E. H. W.)

Neo-Hombreol Dosules (Roche-Organon, Inc., Nutley, N. J.) contain in each dosule 4 mg. of chemically pure synthetic testosterone propionate in 2 Gm. of ointment base. In the male, the dosules are used for male climacteric, prostatic hypertrophy, impotence, hypogonadism, cryptorchidism; in the female, premenstrual mastopathia, female climacteric, dysmenorrhea, menorrhagia, Graves' disease. The usual dose is 2 dosules a day; one in the morning and one in the evening. Neo-Hombreol Dosules are supplied in boxes of 25 dosules.—*Am. Professional Pharmacist*, 5 (1939), 215. (F. J. S.)

Propavine (Société Parisienne d'Expansion Chimique) is the hydrochloric acid salt of the ester of diethylaminoethanol and propylphenylacetic acid. It is soluble in water, has a pleasant odor and melts at 113–114°. The solution in sulfuric acid is colorless but the addition of a layer of formalin results in an orange, later yellowish brown ring. The compound is saponified by sodium hydroxide, the diethylaminoethanol distilling over and the propylphenylacetic acid remaining behind as the sodium salt.—*Pharm. Weekblad*, 76 (1939), 419. (E. H. W.)

Septargan (Elfa, Elektrochemische Fabrik Francke, Aarau (Schweiz)) is a preparation containing colloidal silver intended for injection. Each cc. represents 0.0025 Gm. silver.—*Pharm. Zentralhalle*, 80 (1939), 314. (N. L.)

Stilboestrol is 4,4-dihydroxy-α,β-diethyl-stilbene first obtained by Dodds, Goldberg, Lawson and Robin (*Nature*, 141; 247). Dodds collaborating with Cook found that various phenanthrene derivatives possessed weak estrogenic properties, but it was later found that the property was stronger with *p*-hydroxypropenylbenzol. Further work in this direction was the cause of the discovery of stilboestrol in 1938 which possessed even stronger estrogenic properties than the hormone. Stilboestrol may be used orally or subcutaneously and is obtainable from two firms in England and also through Boots Pure Drugs Co. It is found on the market in tablets of 0.1 mg., of 1 and 5 mg. and in ampuls of 1 mg.—*Pharm. Weekblad*, 76 (1939), 419. (E. H. W.)

Typhoid H Antigen (Eli Lilly and Co., Indianapolis) consists of the flagellar antigen of typhoid bacilli ('H' Antigen), prepared from motile cultures of *Eberthella typhosa*, standardized in saline, and with 0.5% phenol—to 25 million killed organisms per cc. It is a bacterial protein for intravenous ocular therapy and has proved of value in the treatment of peripheral vascular disease and for use in ocular inflammations where non-specific immunization is indicated. The initial intravenous dose in suitable cases is 10 million to 25 million organisms. Succeeding doses are usually doubled, depending on the reaction. The dose may be repeated at twenty-four hour intervals or administered every thirty-six to forty-eight hours, as indicated. Typhoid H Antigen is supplied in 5-cc. vials, each cc. containing 25 million bacteria. (For the treatment of Buerger's Disease, it is supplied in boxes of ten 2-cc. vials, each cc. containing 100 million bacteria.)—*Am. Professional Pharmacist*, 5 (1939), 35. (F. J. S.)

SPECIALTIES

Aciform II (Aciform Corporation, Chicago, Ill.) is a solution of formic acid, sulfur and iodine with a terpene (derived from Borneol camphor). It is indicated in the various neuro-muscular involvements, the various forms of arthritis, sciatica, neuritis, lumbago, bursitis, etc., and it is administered by intermuscular injection, in doses from $^1/_4$ to 2 cc. directly into the local points of tenderness and into the muscle spasms. Where the pain is generalized, the injection is made along the region of the main nerve supplying the part. Aciform II is supplied in ampuls of 1 and 2 cc., in boxes of 12, 25 and 50 ampuls; and in vials of 30, 60 and 100 cc.—*Am. Professional Pharmacist*, 5 (1939), 155. (F. J. S.)

Betakar (Endo Products, Inc., New York) is compounded of specially selected gum karaya coated with a layer of vitamin B-containing material. It is an effective laxative without causing irritation of the small or the large intestine. It contains no harsh cathartics or evacuants. The dose is 1 or 2 teaspoonfuls daily with a plentiful supply of water. When the "habit" is reëstablished, the same dose may be taken at less frequent intervals. Betakar is supplied in 4-oz., 8-oz. and 16-oz. cans.—*Am. Professional Pharmacist*, 5 (1939), 95. (F. J. S.)

Bluevita Liquidum (Lever Brothers & Unilever) contains Vitamins A and D, biologically standardized to a content of 25,000 vitamin A and 3000 vitamin D units per Gm. Artificial vitamins are not present; the oil is obtained from natural sources of high vitamin content. Bluevita liquidum is given as a prophylactic to children in 4–6 drop doses per day. The vitamin content closely resembles that of cod liver oil. It is used in rickets, scrofula and in tuberculosis.—*Pharm. Weekblad*, 76 (1939), 417. (E. H. W.)

Dorital (C. F. Boehringer & Sohn, G. m. b. H., Mannheim-Waldhof) consists chiefly of oxysulfonal 0.015 Gm. and atropine methyl bromide 0.00025 Gm. It is recommended in the treatment of hypertension.—*Pharm. Zentralhalle*, 80 (1939), 390. (N. L.)

Dysperos (Behringwerke, Leverkusen) consists of dragées containing a substance against dysentery and designed for oral use. They are used for active immunization against dysentery.—*Pharm. Weekblad*, 76 (1939), 418. (E. H. W.)

Erlagit (Baumer & Lang, Erlangen) consists principally of a salicylate, menthol, extract of arnica, extract of *Rhus toxicodendron* and extract of belladonna. It is recommended in the treatment of rheumatism, gout, etc.—*Pharm. Zentralhalle*, 80 (1939), 372. (N. L.)

Haemozel Salve (Labor. "Zely" der Kreuzberg-Apotheke, Berlin) consists of bismuth subgallate, zinc oxide, extract of witch hazel, resorcinol, balsam of Peru, benzocaine, benzyl benzoate, menthol and a soft ointment base. It is recommended in the treatment of hemorrhoids.—*Pharm. Zentralhalle,* 80 (1939), 372. (N. L.)

Hypervitam Spherules (Professional Laboratories, Inc., Bloomfield, N. J.) contain in each spherul 30,000 I. U. of vitamin A; 3000 Chase-Sherman—1500 I. U. vitamin B_1; 100 gammas riboflavin (vitamin B_2 (G)); 1000 I. U. of vitamin C; 2000 I. U. of vitamin D; and vitamin E content of 1 minim of cold pressed wheat germ oil; with 400 mg. of dicalcium phosphate and 60 mg. of ferrous sulfate. Hypervitam spherules are indicated for hypervitamin therapy in pre-operative cases; complicated mixed symptomatology; geriatrics; where restricted diets are necessary such as obesity, ulcer, colitis, diabetes; pregnancy and lactation and vitamin deficiencies, etc. The dose is one vitamin spherul and two mineral spherules daily. The size of the container is not stated.—*Am. Professional Pharmacist,* 5 (1939), 95. (F. J. S.)

Iri-Magenkräuter Elixir (H. Köhler, Berlin N) consists principally of a mixture of senna, frangula, cinnamon, anise, jupiter, clove, fennel, ginger, rhubarb and gentian. It is recommended as a carminative.—*Pharm. Zentralhalle,* 80 (1939), 390. (N. L.)

Iso-Efemist (Hart Drug Corporation, Miami, Florida) consists of ephedrine sulfate, 1%, chlorobutanol, 0.5% and sufficient dextrose to make the solution isotonic. It is used for acute rhinitis, coryza, sinusitis, eustachitis and catarrhal otitis media; for symptomatic relief of hay fever and preparation for rhinological examination. It is administered preferably as a spray from an atomizer; or as drops or packs. Iso-Efemist is supplied in bottles of 1, 8, 16 fluidoz., and in $^1/_2$-gallon and 1-gallon bottles.—*Am. Professional Pharmacist,* 5 (1939), 155. (F. J. S.)

Isutan (A. G. B. Siegfried, Zofingen) contains ephedrine hydrochloride 0.47, papaverine hydrochloride 0.05, extract of ipecac 0.23 and unnamed quantities of liquid extract of cinchona, extract of cola and syrup of thyme *ad* 235. It is used in coughs, bronchitis, grippe, etc. The dose is a spoonful 1–3 times a day for adults and for children a dessertspoonful or a teaspoonful 1–2 times a day.—*Pharm. Weekblad,* 76 (1939), 418. (E. H. W.)

Kalk Chocolade Tabletten (Dr. J. Blomberg, The Hague) contain 0.5 Gm. dicalcium phosphate per tablet.—*Pharm. Weekblad,* 76 (1939), 418. (E. H. W.)

Kapseals Desicol (Parke, Davis & Co., Detroit, U. S. A.) is a readily soluble desiccated bile similar to the whole fresh bile in therapeutic activity. Each kapseal represents 2.5 cc. of fresh gall bladder bile, and is supplied in sealed bottles of 50.—*Indian Med. Gaz.,* 74 (1939), 511. (W. T. S.)

New Remedies. The following new products have appeared on the British market recently: **Mersagal,** which is phenyl mercuric acetate 1 in 750 in a water-soluble jelly. **Physolactin,** an aqueous solution of active lactogenic principles obtained from fresh pituitary, standardized biologically. **Placental Globulins (Human) B. D. H.,** being globulins from human placentas used for the modification of an attack of measles. **Valestrin,** which is keto-hydroxy oestrin 100 I. U., theobromine and sodium salicylate $^3/_4$ gr., caffeine citrate $^1/_4$ gr., calcium lactate $1^1/_2$ gr., brom-isovalerianyl urea 1 gr., aloin $^1/_{20}$ gr., in each tablet.—ANON. *Pharm. J.,* 142 (1939), 636. (W. B. B.)

Paral is the name under which the Oil Refinery Zuilen markets cetyl alcohol.—*Pharm. Weekblad,* 76 (1939), 419. (E. H. W.)

Rythmocor (Koninklijke Pharm. Fabrieken Brocades Stheeman & Pharmacia) is an injectable quinidine preparation sold in ampuls of 1 cc.—*Pharm. Weekblad,* 76 (1939), 419. (E. H. W.)

Silmacol (Amfre Drug Co., Inc., New York) consists of magnesium trisilicate, 50%, colloidal kaolin, 25%, and aluminum hydroxide, 25%. It is used successfully in the management of gastric hyperacidity and peptic ulcer, with considerable clinical evidence presented in the literature to support its superiority of action. It is supplied in the form of tablets and capsules (8 grains each) in bottles of 60 and 120; and the powder is packaged in 4-oz. tins.—*Am. Professional Pharmacist,* 5 (1939), 95. (F. J. S.)

Solidox (Solidox Gesellschaft für Zahnhygiene m. b. H., Berlin) consists chiefly of sulforizin oleate 6%, calcium carbonate 54%, glycerin 16%, soap 2%, peppermint oil 1.2%, titanium oxide 1.5% and emulsion of tragacanth 18%. It is recommended as a toothpaste.—*Pharm. Zentralhalle,* 80 (1939), 391. (N. L.)

Solvochin (A. G. Bad Homburg) (L. F. Will & Co.) is a 25% solution of basic quinine in water (p_H 7.2) according to the prospectus.—*Pharm. Weekblad,* 76 (1939), 419. (E. H. W.)

Thiamol (R. J. Strasenburgh Co., Rochester, N. Y.) contains thiamin hydrochloride (crystalline vitamin B_1 hydrochloride) in an especially stable, practically non-alcoholic and palatable form. One teaspoonful contains 100 U. S. P. units of thiamin hydrochloride and each fluidounce contains $2^1/_2$ mg. thiamin hydrochloride (750 U. S. P. units of vitamin B_1). It is used in anorexia, subnormal growth, beriberi, faulty metabolism, pernicious vomiting of pregnancy when caused by vitamin B_1 deficiences. Thiamol is supplied in pint and gallon bottles.—*Am. Professional Pharmacist,* 5 (1939), 452. (F. J. S.)

Thiaplex (Hart Drug Corporation, Miami, Florida) is a concentrate of the natural vitamin B complex made from rice bran. Each cc. contains 500 I. U. of vitamin B_1 (thiamin), 100 gammas of riboflavin, 60 gammas of vitamin B_6, 100 gammas of nicotinic acid (Pellagra Preventative Factor), a Jukes-Lepkovsky Filtrate Factor Value of 13 and valuable amounts of all the other factors of the vitamin B complex. It is prepared particularly for infants and it is used for inadequate growth, loss of appetite, constipation, vomiting, fretfulness, irritability, etc., when due to a vitamin B complex deficiency. The dose is 4 to 8 drops daily from the specially adjusted dropper in milk or fruit juice. Thiaplex is supplied in bottles of one fluid dram.—*Am. Professional Pharmacist,* 5 (1939), 152. (F. J. S.)

Thymophysin (Chemosan-Union, Vienna) consists of the extract of the thymus gland and the posterior lobe of the pituitary gland. It is used in gynecology to relieve the pain of parturition. One cubic centimeter of thymophysin is standardized to 10 International units. It is sold in ampuls of 0.6 and 1.1 cc.—*Pharm. Weekblad,* 76, (1939), 420. (E. H. W.)

Tonicum Bayer (I. G. Bayer Farbenindustrie, Leverkusen) contains vitamin B complex, vitamin C, liver extract, phosphorus- and arsenic-compounds, nux vomica and the mineral salts found in the blood. It is used in convalescence and as a tonic.—*Pharm. Weekblad,* 76 (1939), 420. (E. H. W.)

Unden Salve (Bayer, I. G. Farbenindustrie A.-G., Leverkusen a. Rh.) contains in each Gm., 1000 International units of œstrone. It is recommended

in the treatment of acne, vulvitis, eczema, etc.—*Pharm. Zentralhalle*, 80 (1939), 314. (N. L.)

Vitamin B Complex Tablets (Abbott Laboratories, North Chicago, Ill.) have the following content of the vitamin B complex factors whose chemical composition is known: In each tablet, thiamin (vitamin B_1) 100 I. U. (equivalent to thiamin chloride, 0.33 mg.); riboflavin (vitamin G or B_2), 133 Sherman-Bourquin Units (equivalent to pure riboflavin, 0.33 mg.); nicotinic acid, approximately 5 mg. Their outstanding use is to supply the main vitamin deficiency in diets of people who by choice, habit or necessity do not obtain the foods furnishing the vitamin B complex in adequate amounts. The dose is three tablets daily for adults. These tablets are supplied in bottles of 25 and 100 tablets.—*Am. Professional Pharmacist*, 5 (1939), 97. (F. J. S.)

V-Vitamin Capsules (Schieffelin & Co., New York) contain vitamins A, B_1, G (B_2), C, D and wheat germ oil. Each capsule contains the following: vitamin A, 10000 U. S. P. XI units; vitamin B_1, 200 I. U.; vitamin G (B_2), 65 gammas of riboflavin; vitamin C, 500 I. U.; vitamin D, 1000 U. S. P. XI units. They are used in the treatment of vitamin deficiency symptoms and as a prophylactic safeguard in conditions in which the vitamin intake falls below normal or the demands upon the system are temporarily increased. V-Vitamin Capsules are supplied in boxes of 25 and 100.—*Am. Professional Pharmacist*, 5 (1939), 214. (F. J. S.)

BACTERIOLOGY

Aerobic Fermentation. The stimulation of aerobic fermentation by cysteine or glutathione is mainly due to hydrogen sulfide arising from the action of yeast on their compounds.—G. KIRBY, V. DRILL and C. N. FREY. *Ind. Eng. Chem.*, 31 (1939), 596. (E. G. V.)

Amidines and Amidoximes—Some, with Trypanocidal Activity. In view of the known curative action of long chain alkylene-diisothioureas, -diguanidines and diamidines against mouse trypanosomiasis a number of poly-alkylene diamidines and diamidoximes have been investigated for the same activity. A series of alkylenediamidoximes and diamidoximes of diphenyl, diphenylmentane, dibenzyl, stilbene and dibenzyl sulfide have been prepared. The higher members of the long chain amidoximes (where n = 10, 11 or 13) showed considerable trypanocidal activity in a small number of mice while the lower members of this series (where n = 5, 7 or 9) were not so active.—I. D. LAMB and A. C. WHITE. *J. Chem. Soc.* (London), (1939), 1253–1257. (W. T. S.)

***p*-Aminobenzenesulfonamide—Effect of, upon Various Bacteria in Vitro and in Vivo.** *In vitro* sulfanilamide (I) has an inhibitory effect on hemolytic streptococci, meningococci and *Es. coli*, which is paralleled in the first 2 cases by a protective action in infected mice. Staphylococci, *B. anthracis* and *Pasteurella boviseptica* are unaffected *in vitro* and in animals, as is also the tubercle bacillus in guinea pigs. A method of estimating the bacteriostatic and bactericidal activity of I is described.—R. K. OAG. *Edinburgh Med. J.*, 46 (1939), 542; through *Squibb Abstr. Bull.*, 12 (1939), A-1532. (F. J. S.)

Antibodies—Molecular Weight of. Highly purified preparations of homogeneous antibody can be made by the salt dissociation methods without any change in sedimentation due to the method of purification. Antibodies prepared from sera of various animal species fall into 2 groups as regards molecular weight; in 1 group cow, horse and pig, a heavy molecule of molecular weight 990,000 is formed; in human subjects, rabbit and monkey the molecular size is that of the normal γ serum globulin. Both types of molecules are either not compact or not spherical since the frictional ratios f/f_0 are 2 and 1.5, respectively. Horse antibody shows an unchanged activity and sedimentation diagram between p_H 3.44 and 9.06, although there is some aggregation at the more acid and some dissociation at the more alkaline p_H. At p_H 1.44 the antibody activity is unchanged but some breakdown of the molecule takes place. At p_H 12.4 activity is destroyed and the molecule is completely broken down. Some horse antibody prepartions show evidence of breakdown of the antibody into nonhomogeneous material on continued immunization over a long period.—E. A. KABAT. *J. Exptl. Med.*, 69 (1939), 103–118; through *Chem. Abstr.*, 33 (1939), 1813. (E. G. V.)

Aryl Mercury Sulfonamides. Germicidal compounds suitable for use in aqueous or other solutions, in mouth washes, tooth pastes, soaps, ointments, etc., or as insecticides or fungicides, and in which the aryl-mercury radical is linked to a sulfonamido group, are prepared by treating in solution a sulfonamide and an aromatic mercury compound in which the mercury is directly connected to a carbon atom of an aromatic structure in which none of the carbon atoms has direct linkage with any element other than hydrogen, carbon and mercury. Numerous examples are given.—CARL N. ANDERSEN, assignor to LEVER BROS. CO. U. S. pat. 2,135,553, Nov. 8, 1938. (A. P.-C.)

Bacteria with Sulfamidic Preparations—in Vitro Behavior of. The author describes the morphologic alterations, which the sulfamidic compounds cause in the *Hemolytic streptococcus* and *B. typhus* cultivated *in vitro*.—C. CALLERIO. *Biochim. terap. sper.*, 25 (1938), 441. (A. C. DeD.)

Bacterial Count in Bacteriological Water Examination—Significance of. A review, with 27 references.—O. SPITTA. GAS- U. WASSERFACH, 82 (1939), 18–22; through *Chem. Abstr.*, 33 (1939), 2632. (E. G. V.)

Bactericidal Power of Urine Containing Sulfanilamide—Effect of p_H on the. Urine containing 25–80 mg. % sulfanilamide, collected from normal men taking sulfanilamide by mouth, was adjusted to p_H 6.2, 7.0 and 7.7 by addition of dilute HCl or NaOH, and then tested for bactericidal action against *B. coli*, *Aerobacter aerogenes*, *B. proteus*, *Staphylococcus aureus*, Salmonella and *Pseudomonas aeruginosa*, *in vitro*. The bactericidal effect was found to increase with the p_H. Mere alkalinization of urine containing no sulfanilamide did not confer bacteriostatic power unless the samples were made extremely alkaline (p_H 9.5). (In the discussion, E. N. Cook stated that marked alkalinity of the urine was not necessary to establish a bactericidal urine in patients taking sulfanilamide, but that in some cases the administration of $NaHCO_3$ with sulfanilamide enhanced the action of the latter.)—J. R. SICKLER. *Proc. Staff Meetings Mayo Clinic*, 14 (1939) 715; through *Squibb Abstr. Bull.*, 12 (1939), A-1531. (F. J. S.)

Bacteriology of Normal Skin. The author has devised a new technic for studying the number of bacteria on the skin under varying conditions. Using standard conditions, the hands and arms are washed in a successive series of basins and the number of bacteria in each rinse water is determined. In this way a curve relating the number of bacteria removed in each successive washing with soap and water is obtained. Repeated trials showed that this curve was quite uniform and thus the action of antiseptics, etc., used in the scrubbing becomes evident by deviations from the standard curve. Two groups of bacteria are found on the

skin; the "transients" which are relatively easily removed in washing and the "residents" which form a stable, permanent flora and can never all be entirely removed.—P. B. PRICE. *J. Infectious Diseases*, 63 (1938), 301. (T. C. G.)

Bacterium Necrophorum—Vitamin C and Resistance of Guinea Pigs to Infection with. Guinea pigs on scorbutic and adequate vitamin C diets were injected subcutaneously with human and animal strains of *B. necrophorum*. Extensive lesions developed in the scorbutic animals while those on an adequate C diet showed only transitory inflammatory responses. The lesions on the scorbutic animals healed rapidly after vitamin C was administered therapeutically. It is concluded that there is a definite relation to infection with *B. necrophorum* and the vitamin C level in the guinea pig.—N. B. MCCULLOUGH. *J. Infectious Diseases*, 63 (1938), 34. (T. C. G.)

Chlorine—Investigations of Action of, on Bacteria in Water Containing Various Organic Substances. Free chlorine in low concentrations may stimulate the growth of coliform organisms in water, and this is more marked when organic material is present. The effect is reduced if ammonia is also in solution. A critical analysis of the various factors is made.—ANON. *Acta Path. Microbiol. Scand.*, 16 (1939), 1; through *Brit. Med. J.*, 4087 (1939), 962D. (W. H. H.)

Convolvulaceæ Resins—Bactericidal Power of. A 1:300,000 solution of a mixture of equal parts of sodium taurocholate and convolvulin or a 1:3,000,000 solution of a similar mixture of sodium taurocholate and jalapin produced lysis of pneumococcus. Sodium taurocholate alone was ineffective in concentrations less than 1:2000. Much higher concentrations of jalapin were required for lysis of Löffler's bacillus and convolvulin had no action.—G. VALETTE and A. LIBER. *Compt. rend. soc. biol.*, 128 (1938), 362–363; through *Chimie & Industrie*, 41 (1939), 117. (A. P.-C.)

Cosmetics—Microbiological Principles in Relation to. An outline of simple bacteriological tests capable of being performed by a chemist who has little or no bacteriological training, and without a large amount of specialized and consequently expensive apparatus is given.—H. NICOL. *Perfumery Essent. Oil Record*, 30 (1939), 253. (A. C. DeD.)

Flea Antigen—Preparation and Activity of. The authors called attention to certain facts which indicate that some form of "immunity" is established toward insect bites especially those of the flea. By injecting a series of individuals with a sterile extract made from the bodies of fleas and a control fluid consisting mainly of the extracting solvent the following observations could be made. Generally speaking, in those individuals who were susceptible to flea bites the antigen produced a decided reaction while in the "immune" individuals no such reaction was observed. These results could not be uniformly duplicated with other similar extracts however, because often the extract produced a positive reaction in the so-called "immune" person. A few susceptible individuals were actively immunized by injections of the extract just as some people are immunized by exposure to flea bites. It was postulated that an immunity could be established against the bites of other insects which would constitute a valuable adjutant in controlling insect-borne diseases.—L. S. CHERNEY, C. M. WHEELER and ALFRED C. REED. *Am. J. Trop. Med.*, 19 (1939), 327–332. (W. T. S.)

Iodine Solution—Isotonic Aqueous, as a Skin Antiseptic. A comparative study of an aqueous solution containing iodine (85% free iodine) and 2.189% of its Na, Ca and K salts (Isodine, I) and Na *o*-ethylmercurithio-benzoate (Merthiolate, II) in 216 operative cases indicated that I is an efficient and satisfactory skin antiseptic. I is equivalent to II in bactericidal and bacteriostatic action, but has the disadvantages of greater difficulty of application, acrid and irritating odor, poorer delineation of the painted area and occasional skin irritation, making its general adoption unlikely.—MARSHALL LEE and PAUL I. HOXWORTH. *Surgery* 6 (1939), 762; through *Squibb Abstr. Bull.*, 12 (1939), A-1531. (F. J. S.)

Iron, Manganese and Copper—Influence of, on the Course of Intoxication by Diphtheria Toxin. The duration of life was not prolonged in guinea pigs who had been fed salts of iron, manganese or copper previous to poisoning with diphtheria toxin. A prolonged pretreatment with injections of these three metals, however, influenced favorably the duration of life. From the results obtained it may be concluded that the protective action of the metals is neither due to the stimulation of the production of antibodies nor to an inactivation of the exciting ferments. A method for the determination of small amounts of iron in organs is given.—H. O. HETTCHE. *Z. Immunitäts.*, 97 (1939), 81; through *Squibb Abstr. Bull.* 12 (1939), A-1469. (F. J. S.)

Lepers—Tests of Specificity of Bacillus Isolated from Blood of. A pure culture of an acid-fast bacillus from the blood of lepers, kept four years without losing its characteristics, was tested by 50 replatings. A glycerin extract was inoculated intradermally into non-leprous persons and provoked a reaction of immunity. In certain animals it produced lesions of leprosy. It produced specific agglutinins in horses, and a modification of the lesions in a leper. The antigen is prepared in a manner similar to that of the methyl antigen of tuberculosis. The reaction tested on 3038 sera gave 99% positives in clinical leprosy cases; 11% of the children of leprous parents gave positive reactions; and 1194 healthy people gave 1.5% positives. This would indicate early symptoms of the disease in people exposed to leprosy before clinical signs appear. These results justify the claims of specificity of this as a diagnostic test.—FEDERICO LLERES ACOSTA. *Bol. Ofic. Sanit. Panam.*, 17 (1938), 394. (G. S. G.)

Leprosy—Takata-Ara Test for. Forty-five leprosy suspects were tested by the Takata-Ara serum reaction; 31 gave positive reactions, 14 of which were in the eruptive form. Further study on the mechanism of the reaction is to follow.—A. ROTHBERG. *Rev. Brasil. Lepr.*, 4 (1936), 111; through *Bol. Ofic. Sanit. Panam.*, 17 (1938), 548. (G. S. G.)

M. & B. 693 in Urinary Infections. M. & B. 693 has been tried in seventy-one cases of urinary infections. In fifty-six the infections disappeared and in most of the others the symptoms were relieved. It was most successful in acute urinary infections and pyelitis of pregnancy and was also found useful in chronic cases. In vitro experiments on various strains of *Bact. coli* suggest that M. & B. 693 is a more powerful bactericide than sulfanilamide.—G. MELTON and A. BECK. *Lancet*, 236 (1939), 867. (W. H. H.)

M. & B. 693—Type III Pneumococcal Pneumonia Effect of. A series of six cases of pneumonia caused by type III pneumococcus was treated with M. & B. 693 in total doses of 12–33 Gm. In all the patients the temperature fell rapidly, but in five a secondary pyrexia was observed. The temperature finally came down to normal in three to twenty days after the start of treatment. Apart from vomiting and nausea there were no toxic manifestations. In addition two cases of widespread

bronchopneumonia due to type III pneumococcus were treated with the drug. Treatment began when the illness was well advanced and it saved neither patient. Since the completion of this paper the authors have treated two more cases of lobar pneumonia, type III, with M. & B. 693. The effect was equally striking in these cases, and both patients, a man of 47 and a woman of 60, recovered.—G. ALSTED. *Lancet*, 236 (1939), 869. (W. H. H.)

Meningococcic Meningitis Epidemics—Control of, by Active Immunization with Meningococcus Soluble Toxin. Intradermal tests for susceptibility to meningitis were given to 7339 enrollees in CCC camps in Missouri; 0.1 cc. of a 1:200 dilution of meningococcus toxin in broth culture. Persons showing 1 plus or greater reaction, received 0.5, 1, 1.5 cc. full strength toxin subcutaneously at four-day intervals. Enrollees were tested two months later; negative ones as well as positive, as a control of the testing solution as well as immunity. One month later three cases developed among the negative tests, who had not been immunized. All others were then immunized with no further outbreaks. In immunizing newly concentrated groups, the safest procedure is not to depend on differentiation by intradermal tests, but to immunize the entire group.—DWIGHT M. KUHNS, *et al. J. Am. Med. Assoc.*, 110 (1938), 484. (G. S. G.)

Methenamine Mandelate—Preparation, Toxicity and Bactericidal Activity of. Methenamine mandelate was prepared by dissolving equimolecular amounts of methenamine and mandelic acid separately in alcohol mixing the solutions while hot, filtering off the crystals which separated on cooling, and evaporating the mother liquor to obtain a practically quantitative yield of methenamine mandelate. Upon recrystallation from alcohol the product consisted of small white crystals, melting at 129.2–129.5°, readily soluble in water, slightly soluble in alcohol, practically odorless and having a sweetish taste. The p_H of a 10% aqueous solution was 4.5. When 0.5–2.5 Gm./Kg. were given orally to rabbits in 10 and 20% solutions no toxic symptoms were noted. When the 20% solution was given intraperitoneally to rats, doses/Kg. of 0.5 and 1.0 Gm. caused irritation and toxic symptoms for one day, and 1–2 Gm. caused diuresis, hemorrhage of the eyes and nostrils, and death in 10–23 hours. The compound in 0.2, 0.5 and 1.0% concentration destroyed *B. coli* in urine *in vitro* at 37° at p_H 5.5–6.5, the rapidity of bactericidal action being directly proportional to concentration.—G. L. JENKINS, J. LAURINE and C. H. DRAKE. *Pharm. Archives*, 10 (1939) 81; through *Squibb Abstr. Bull.*, 12 (1939), A-1497. (F. J. S.)

Methyl Red and Voges-Proskauer Test for Water Analysis—An Improved Technic for. The Methyl Red and Voges-Proskauer test in addition to three others is used to distinguish between *B. coli* and *B. aerogenes* which is essential in determining excremental pollution of water. These tests and several improved modifications of them are given in detail. The V-P test as modified by Barritt was found to be the most sensitive on 3000 cultures from 600 samples of water. A further modification of the latter test was developed and perfected by the authors who claim for their modification simplicity and economy.—P. V. SEETHARAMA IYER and RAO SAHIB T. N. S. RAGHAVACHARI. *Indian J. Med. Research*, 26 (1939), 885–888. (W. T. S.)

Phenylacetic Acid—Effect of Para-Substituents on the Bacteriostatic Properties of. Methods of preparing the compounds are given as well as for the solutions. Bacteriostatic tests and determination of the oil-water distribution coefficients are described and findings are discussed. Twelve *para*-substituted derivatives of phenylacetic acid were prepared and bacteriostatic tests made against *Staphylococcus aureus* and *Escherichia coli*. The *para*-bromo derivative was the most effective one studied. Substitution of chlorine on the acetyl group of N-acetyl-*p*-amino phenylacetic acid caused a very marked increase in bacteriostatic action. The substitution of hydroxy and N-acetyl-amino groups decreased bacteriostatic action while other substituents increased it. Both alkoxy derivatives gave the same maximum effective dilution against *S. aureus* but *p*-methoxy-penylacetic acid was more effective than *p*-ethoxyphenylacetic acid against *E. coli*. N-chloracetyl-*p*-aminophenylacetic acid, *p*-aminophenyl acetic acid, *p*-methoxyphenylacetic acid and phenylacetic acid were found to be more effective against *E. coli* than *S. aureus*.—W. A. BETTENBENDER and ED. F. DEGERING. *Jour. A. Ph. A.*, 28 (1939), 514. (Z. M. C.)

Pneumonia—Possible Mechanism of Lowered Resistance to. Since is is known that cold, alcoholic intoxication and ether anesthesia are predisposing factors to pneumonia, an attempt was made to elucidate the possible rôle of these factors in experimental pneumococcus infections in rats and mice. Pneumococci sprayed or intranasally instilled into rats did not produce pneumonia unless the rats had been previously injected intrabronchially with mucin solution. Mucin with india ink added as a "tracer" was introduced into the external nares of rats which were then subjected to cold, alcoholic intoxication and ether anesthesia. In the control rats the mucin was not aspirated into the lungs but in the rats exposed to the above conditions, the mucin had penetrated to the alveoli of the lungs. Rats inoculated with pneumococci in mucin and exposed to cold, alcohol and ether showed a much higher mortality than the control similarly inoculated rats not exposed to these conditions. A kymographic record of the opening and closing of the glottis showed that in rats exposed to cold, alcohol and ether, the glottis remained open for several hours after this treatment. These results suggest that factors of cold, alcohol and ether induce the "lowered resistance" to pneumonia by allowing mucus to pass down into the lung through the open glottis, carrying with it endogenous pneumococci which subsequently multiply and initiate an infection.—W. J. NUNGESTER and R. G. KLEPER. *J. Infectious Diseases*, 63 (1938), 94. (T. C. G.)

Proseptasine and Soluseptasine—Note Concerning Their Uses. Although M. & B. 693 is the product of choice in pneumo-, gono- and meningococcal infections Proseptasine and Soluseptasine have a wide use in *S. hemolyticus* and *B. coli* infections. Proseptasine is said to be less toxic than sulfanilamide while the more recent Soluseptasine is the only sulfonamide preparation available for intravenous, intramuscular or intrathecal injection in concentrated water solution.—ANON. *Indian Med. Gaz.*, 74 (1939), 511. (W. T. S.)

Rabies. Immunization with Avirulent Purified Vaccines. Rabies vaccines were prepared by grinding brains from rabbits paralyzed with the virus. These emulsions were purified by adding sufficient citric acid to reduce the p_H to 5.2, at which point the tissue proteins were precipitated. The supernatant fluid was removed and rendered avirulent by keeping the p_H at 5.0 for 24 hours at 25° C. Sixty per cent of the tissue proteins are removed in this manner and the virus is contained in a water clear suspension. Rabbits immunized with 10 daily 10-cc. intravenous injections of this purified virus will resist two but not four M. L. D.'s of the rabies virus.—C. A. BEHRENS, L. B. SCHWEIGER, J. F. BARKER and J. L. REEVES. *J. Infectious Diseases*, 64 (1939), 252. (T. C. G.)

Sera—Protein Content and Antitoxic Titer of. The specific rotation and refraction indices in the sera of immunized horses are higher than in normal animals. Sera of horses vaccinated with antitetanus serum have higher value in the two optic constants studied. Sera of immunized horses have increased the total protein, corresponding to pseudoglobulin, without any variation in euglobulin and albumin. There is no parallelism between the physical constants and the total protein content in immune serum. But there is observed a marked diminution in the albumin content of sera of high antitoxic titer. These contain a larger proportion of pseudoglobulin and a slight increment in euglobulin.—F. MODERN and G. RUFF. *Soc. Arg. Biol.*, (June 4, 1936); through *Rev. sud-americana endocrinol. immunol. quimioterap.*, 21 (1938), 163, 164. (G. S. G.)

Serum—Antithyroid Substances of. Normal rabbit serum has an inhibiting action against the lipase-decreasing power of the thyroxine; the inhibiting substance is soluble in acetone-ether.—R. KIN. *J. Chosen Med. Assoc.*, 28 (1938), 151–166. **Relation between the Antithyroid Substance and the Various Organs.** The antithyroid substance of rabbit serum has no close relation to thyroid, hypophysis, parathyroid, suparenal medulla, spleen, thymus, testes or reticulo-endothelia system, but the substance decreases markedly after pancreatectomy, and increases after the transplantation of pancreatic tissue. Conclusion: This substance is produced in the pancreas and is secreted through the pancreatic hormone.—*Ibid.* 311–323. **Relation between the Antithyroid Substance of Chicken Blood Serum and the Pancreatic Venous Blood Serum.** The antithyroid substance occurs in the normal serum chicken; it is secreted into the venous blood from the pancreas as a hormone.—*Ibid.*, 461–470; through *Chem. Abstr.*, 33 (1939), 1806. (E. G. V.)

Sterilization—Cold Bacteriological Testing of Chemical Solutions Used for "Cold Sterilization" of Surgical Instruments. In order to test the efficacy of germicidal solutions in killing spores on surgical instruments under the conditions of ordinary "cold sterilization," test razor blades are contaminated with about 100 spores each of *B. anthrax*, and after immersion in the germicide for 10, 20 or 30 minutes at 20° are tested biologically (culture tests) for surviving organisms. A satisfactory sterilizing agent is expected to kill all spores within 20 minutes.—G. F. REDDISH and E. M. BURLINGAME. *Soap*, 15 (1939), No. 3, 103, 105, 107; through *J. Soc. Chem. Ind.*, 58 (1939), 548. (E. G. V.)

Sulfamidic and Sulfonic Compounds on the Experimental Infection of Eberthella Typhi. The author describes the curative effects on the experimental infection with *Eberthella typhi* in mice, achieved by the treatment with sulfamidic and sulfonic compounds.—C. CALLERIO. *Biochim. terap. sper.*, 25 (1938), 500. (A. C. DeD.)

Sulfanilamide in the Treatment of Bacillus Pyocyaneus Infections. Infection with *B. pyocyaneus* is usually mild, but the organism may produce a septicemia resembling typhoid that is often fatal. A middle-aged woman with diarrhea and severe toxemia, in whom *B. pyocyaneus* was grown from the urine and feces and whose serum agglutinated the organism, recovered after injections of sulfanilamide. Attempts to assess the value of sulfanilamide in experimental infection with pyocyaneus in mice were inconclusive owing to great variations in virulence.—W. STEWART and T. BATES. *Lancet*, 236 (1939), 820. (W. H. H.)

Sulfonamide Compounds—Antiendotoxic Action of Certain. An endotoxin of the meningococcus was prepared by treating the culture with 1% formalin and washing the organisms with ethyl alcohol. Mice treated with sulfanilamide and 4,4′-di-acetylamino-diphenylsulfone were injected with 2 M. L. D.'s of the menigococcus endotoxin. The treated animals showed no significant protection over the controls. An endotoxin of a hemolytic streptococcus was prepared in a similar manner and injected into mice treated with the above sulfonamide compound. None of the treated mice showed any significant protection as compared with the controls.—P. GROSS, F. B. COOPER and M. LEWIS. *J. Infectious Diseases*, 63 (1938), 245. (T. C. G.)

Typhoid Bacillus—Heat Stability and Serologic Activity of Extracts of. Extracts of 17 strains of *E. typhi* were prepared by heating the growth from agar slants at 60° C. for 4 hours and then filtering through a Berkefeld N candle. The M. L. D. of these extracts was determined by injections into mice and rabbits. Rabbits were also immunized with these filtrates and typhoid vaccine. The presence or absence of Vi antigen in the various strains of *E. typhi* did not appear to affect the toxicity of the resulting filtrate. Immunization of rabbits with the extracts produced greater resistance than immunization with vaccines. The presence or absence of the Vi antibody in rabbit antisera did not affect the neutralizing power of the sera.—E. VANDORN SMITH. *J. Infectious Diseases*, 63 (1938), 21. (T. C. G.)

Typhus Vaccine—Comparative Study of Oral and Subcutaneous Use. Observations were made on 187 individuals, some of whom received oral, others subcutaneous vaccine. After four weeks their blood was tested for agglutination. Oral therapy produced as much agglutination as subcutaneous, in the subjects who were studied. The oral route has the advantage of ease of administration.—ANON. *Lab. Clin.*, 18 (1938), 83. (G. S. G.)

Urinary Antiseptics. On standing in a sealed flask for about 2 months in chloroform solution with 1 or more molecular equivalents of the proper compound, hexamethylenetetramine gave the following derivatives: $4C_6H_5CH(OH)CH_2I + (CH_2)_6N_4$ (I); $C_6H_5CH(OME)CH_2I + (CH_2)_6N_4$ (II); $C_6H_5CH(OEt)CH_2I + (CH_2)_6N_4$ (III); $CHOHCHICH_2CH_2CH_2CH_2 + (CH_2)_6N_4$ (IV). By use of the technic of Leonard these compounds were tested for bactericidal and bacteriostatic properties and compared with $(CH_2)N_4$ (V) with *B. coli* and *Staphylococcus aureus*. It was thus found that II and III are more powerful *in vitro* than V, but that V is more effective *in vivo*. In doses of 1 Gm./Kg. none of the drugs caused renal injury. Thirty-five references.—E. GERSMAN. *Rev. asoc. bioquim. argentina*, 3, No. 8 (1938), 29–40; through *Chem. Abstr.*, 33 (1939), 2589. (F. J. S.)

Vaccines of Value. A brief review, without bibliography, of immunization against diphtheria, smallpox, scarlet fever, whooping cough, anterior poliomyelitis, tetanus, tuberculosis and respiratory tract infections.—S. S. CHIPMAN. *J. Connecticut Med. Soc.*, 3 (1939), 658; through *Squibb Abstr. Bull.*, 12 (1939), A-1538. (F. J. S.)

Wounds and Infections—Treatment of Minor. Small furuncles and infected wounds treated locally by C,C′-azobis-(N′-chloroformamidine) (Azochloramid, I), as a 1:500 solution in glyceryl triacetate or as a 1:2000 solution in olive oil, healed in an average of two days less time than did similar cases treated with 3.5% tincture of iodine (II) or acetone-alcohol solution of mercurochrome (III). In contaminated wounds, I was no more effective in facilitating healing or preventing infection than were II or III.—

F. H. VAN WAGONER. *Military Surgeon*, 85 (1939), 427; through *Squibb Abstr. Bull.*, 12 (1939), A-1498. (F. J. S.)

BOTANY

Co-Enzyme R Requirement of Rhizobia. Growth in 19 strains of 4 species of *Rhizobia* was negligible in media containing no co-enzyme R. Iron could not replace the growth substance. Reducing substances (thioglycollic acid, cysteine) did not affect the growth in presence or absence of the co-enzyme. The nature of the nitrogen source (nitrate, ammonium, asparagine) had no influence on the -R requirement of the organisms.—F. E. ALLISON and F. W. MINOR. *Soil Sci.*, 46 (1938), 473–483; through *J. Soc. Chem. Ind.*, 58 (1939), 531. (E. G. V.)

Ethylene—Determination of, in the Internal Atmosphere of Plant Tissues. A bromination micromethod for the accurate determination of ethylene within a range of 0.001 to 0.06 cc. at normal temperature and pressure in a volume of 35 to 40 cc. has been developed, and a new apparatus devised for the complete removal of internal gases from plant tissue. A number of analyses have been carried out to show the presence of unsaturates (ethylene) in various kinds of tissue in quantities measurable by this method.—B. E. CHRISTENSEN, E. HANSEN and V. H. CHELDELIN. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 114–116. (E. G. V.)

Pest Control Products—Study of the Action of Elodea Leaves as Test Material for. Results are given for nicotine and calcium oxide-sulfur.—W. HERBST. *Protoplasma*, 27 (1937), 455–459; through *J. Soc. Chem. Ind.*, 58 (1939), 419. (F. J. S.)

Rubber Tree—One Species of, Growing in Temperate Climates. Contrary to general opinion there is one species, *Eucommia ulmoides*, of the rubber tree family which is hardy enough to survive the winter without protection in localities as far north as Chicago, U. S. A. The tree, a native of central China, grows to a height of 60 feet. Its leaves are said to resemble those of the elm and when torn apart show slender strands of rubber.—ANON. *Am. Botanist.*, 45 (1939), 116. (W. T. S.)

Starch Derivatives—Classification of. The results of the tests reported tend to prove that the barium hydroxide method of "dextrin" evaluation is arbitrary; the results within certain limits and with certain products vary linearly with the concentration of barium hydroxide. It has been used for arbitrary classifications in tariff matters; and for this purpose it is suitable, provided its theory is understood and its limitations are considered. The method appears to constitute primarily an index of the relative size of amylaceous micelles.—G. V. CAESAR and M. L. CUSHING. *Ind. Eng. Chem.*, 31 (1939), 921–924. (E. G. V.)

Tobacco Cultivation in Surinam. An historical review of the cultivation of tobacco in Surinam is given. Efforts to cultivate tobacco in Surinam have been a failure in about eight out of ten cases. The reasons for this are insufficient knowledge of tobacco cultivation and climatic conditions. Descriptions are given and it is hoped to carry out further experiments which will be successful.—G. SANT. *Pharm. Tijdschr. Nederland-Indië*, 15 (1938), 141, 166. (E. H. W.)

Zinc—Biological Action of. *Aspergillus niger* assimilates 30% more glucose from Raulin's medium to which zinc in a concentration of 1:50,000,000 has been added than from the zinc-free medium. The zinc also appears to exert an elective action on the synthesis of cellulose in the plant. The biologic action of zinc is exhibited proportionately for concentrations from 1:150,000 to 1:50,000,000.—O. KAUFFMANN-COSLA, P. GHEORGHIU and R. BRULL. *Bull. soc. chim. biol.*, (Mar. 1939); through *J. pharm. Belg.*, 21 (1939), 619. (S. W. G.)

CHEMISTRY

GENERAL AND PHYSICAL

Antimony Electrode—Characteristics of. The e. m. f.-p_H relationships of the antimony electrode are influenced by several factors, a knowledge of which makes it possible to employ this electrode to a distinct advantage in the continuous recording of the p_H of industrial solutions. The stability and the limit of error of the e. m. f. measurement depend upon (1) the nature of the electrode surface, (2) the concentration of dissolved air or oxygen, (3) the agitation prevailing at the electrode surface, (4) the nature and concentration of the dissolved salts, and (5) the temperature of the system. By proper standardization of these variables, it is possible to obtain continuous p_H measurements well within the limit of error demanded by the average industrial application. With proper maintenance a reproducibility of ± 0.15 p_H may be obtained.—G. A. PERLEY. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 319–322. (E. G. V.)

Color Measurement—Recent Developments in. Review.—H. M. LANGTON. *Perfumery Essent. Oil Record, Annual Special Number* (1939), 30. (A. C. DeD.)

Conductivity Cell—Dipping Type. The cell is made of lucite with platinum electrodes.—C. S. HOWARD. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 511. (E. G. V.)

Distillation Capillary. Mixtures of low boiling liquids, in volumes as small as 0.02 to 0.1 cc. can be fractionally distilled by means of the Pyrex distillation capillary which is described.—A. O. GETTLER and J. FINE. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 464–470. (E. G. V.)

Electrode Equations—New Forms of, for the Analysis of Reduction Oxidation Titration Curves. A mathematical discussion with 45 equations for oxidation-reduction systems in which semiquinone formation occurs with or without precipitation of the quinone. The new electrode equations have some practical advantage over those formerly used. From them it is easy to calculate constant and normal potentials.—A. GEAKE. *Trans. Faraday Soc.*, 34 (1938), 1395–1409; through *Chem. Abstr.*, 33 (1939), 1619. (F. J. S.)

Emulsifiers—Limits of Concentration of, for the Preparation of Stable Emulsions. The minimum concentrations of the oil-water emulsifiers—dry egg white, alkali-treated casein, acid-treated casein, dry egg yolk and gelatin—are 0.5, 0.3, 0.7, 6.0 and 1%, respectively. The optimum concentrations giving emulsions with a minimum of separation of water and oil after centrifuging for the same compounds are 4, 1, 3.5, 10 and 25%.—N. I. KOZIN. *Voprosy Pitaniya*, 7 No. 3 (1938), 18–34 (in German, 35); through *Chem. Abstr.*, 33 (1939), 2604. (F. J. S.)

Emulsions. Stable aqueous emulsions are prepared in the presence of activated gelatinous aluminum oxide made by precipitation by ordinary means and then either (*a*) aging the precipitate, mixed with water, for 2 or 3 days, (*b*) exposing the precipitate to the action of ultraviolet light or other electromagnetic rays, or (*c*) suspending the precipitate for a few hours in boiling water containing a little alkali. Or, the aluminum oxide may be precipitated in a solution containing 0.1–5.0 of gelatin or other lyophile colloid. The product is used in making emulsions for cosmetics, insecticides, medicines, foods, paints, lubricants, fuels, polishes, rubber

preparations, cements, soaps or plasticized cellulose compounds and in oil reclamation.—T. W. DICKENSON. Australian pat., 105,547; through *Chem. Abstr.*, 33 (1939), 2620. (F. J. S.)

Microviscometer. A microviscometer is described having absolute accuracy better than 4% and precision within 0.1% in the range from 2 to 10,000 centistokes. The method is simple and rapid, and requires only one drop (about 0.03 Gm.) of sample.—J. R. BOWMAN. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 409–411. (E. G. V.)

Moisture—Apparatus for Determining, by the Distillation Method. An apparatus for the determination of moisture has been devised and has been found to be superior to those of the Bidwell-Sterling type, because the removal of droplets of water forming on the walls of the condenser is accomplished automatically and the milky suspension forming in the receiver is eliminated by automatic redistillation.—A. C. BECKEL, A. G. SHARP and R. T. MILNER. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 425–426. (E. G. V.)

Molecular Weights of Oils—Determination of. An apparatus consisting essentially of a modified form of the Cottrell boiler and adapted for use with the Menzies-Wright water differential thermometer is described. Benzene or cyclohexane may be used as solvent. Benzene is to be preferred, since a good grade of commercial product requires no further purification and may be used directly. Results on pure compounds and a variety of hydrocarbon materials indicate a precision of 1% or better at all times. A complete molecular weight determination requires about 2 hours; however, with the necessary equipment, two or three determinations may be carried out simultaneously.—W. E. HANSON and J. R. BOWMAN. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 440–442. (E. G. V.)

Patent Blue V as a p_H and Redox Indicator. An aqueous solution of Patent Blue V may be used as an indicator for the colorimetric determination of p_H over the interval 0.8 to 3.0. The colors range from yellow through green to blue and are stable for periods up to 5 days, after which a very slight fading may be detected. Patent Blue V can also be used as an oxidation-reduction indicator in certain volumetric methods. Although it cannot be used with dichromate or in the presence of hydrochloric acid, it can be used with permanganate or ceric sulfate if all hydrochloric acid is removed. The oxidation-reduction potential of the indicator has been measured.—J. H. YOE and G. R. BOYD. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 492–493. (E. G. V.)

Starch Pastes—Rigidity of. The apparatus used for the quantitative measurement of rigidity in gelatin sols has been applied to starch pastes. The method gives reproducible results for a given set of the paste and is free from instrument constants. The application of rigidity measurements was demonstrated in the comparison of three starches showing extreme variation in physical properties and in the differentiation of nine samples of corn starch. The assumption that rigidity is dependent upon the condition of the granule membrane is supported by the results of microscopic observation of the granules at various stages of swelling and by rigidity measurements made on several modified starches.—B. BRIMHALE and R. H. HIXON. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 358–361. (E. G. V.)

Temperature-Measuring Instruments. Modern developments in resistance, thermo-electric, radiation and optical pyrometers are reviewed, special reference being made to the combined color-brightness pyrometer. A comprehensive bibliography is included.—W. BOWEN. *J. Inst. Fuel*, 12 (1939), 75–81; through *J. Soc. Chem. Ind.*, 58 (1939), 559. (E. G. V.)

Thermometers—Indication Lag of. The effect of periodic changes in the temperature of the surroundings on the reading of thermometers is considered. Formulas are derived based on the mathematical solution of H. Grober for periodic temperature changes of cylinders. Curves given are useful for ordinary technical thermometers.—FRITS LIENEWEG. *Wiss. Veröffent. Siemens-Werken*, 17 (1938), 19–32; through *Chem. Abstr.*, 33 (1939), 1558. (F. J. S.)

Vibrator—Simple. An ordinary laboratory stirrer (air-driven) has a rubber tube at the end whirl, when rotated, strikes the last tube of several absorption tubes rigidly fastened to a cross bar and causes them to vibrate. Use of this vibration leads to a uniform flow of gas through the system.—J. F. VINCENT and M. M. SPRUIELL. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 247. (E. G. V.)

Weights—Calibration of. A rigorous modification of Richards' method is described, including standardization in terms of a standard reference mass. Its advantages are mechanical simplicity, ease of checking for arithmetical errors and wide applicability. A mathematical discussion of the validity of Richards' method is given.—E. BLADE. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 499–501. (E. G. V.)

INORGANIC CHEMISTRY

Aluminum—Volumetric Determination of, Using Sodium Citrate. The method involves a correction for any free acid, and the cold titration of the acid liberated from a previously heated mixture of sodium citrate solution with the unknown aluminum solution. The calculation of the aluminum content is based on substitution in an appropriate equation of the amount of sodium hydroxide used in titrating the liberated acid. The method is applicable to solutions which are free from appreciable quantities of iron or other interfering ions.—A. C. TITUS and M. C. CANNON. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 137–140. (E. G. V.)

Carbon Dioxide—Determining. The present description is that of the apparatus and procedure arrived at after numerous developmental experiments. In principle, the carbonate is decomposed with boiling acid, most of the water vapor condensed out, and the liberated carbon dioxide flushed out with air into absorbent barium hydroxide solution. The turbidity of the latter after correction for blank is a measure of the amount of carbon dioxide. The method can estimate carbon dioxide in amounts between 0.5 and 10 mg., but a smaller quantity than 0.5 mg. may also be determined. The average probable error is ±2.6%. Most of this error is associated with the precision of the turbidimeter which is about ±2.0%.—P. S. ROLLER and G. ERVIN, JR. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 150–153. (E. G. V.)

Hydrogen Peroxide—Process and Apparatus for the Distillation of. A solution containing persulfate or persulfuric acid is introduced at a point intermediate the ends of a vertical vaporizing tube. The vapors are removed from the top of the tube and the concentrated liquid from the bottom. The tube is heated either internally or externally.—G. ADOLPH and M. E. BRETSCHGER. Belg. pat. 428,956, Aug. 31, 1938. (A. P.-C.)

Hydrogenation Bomb—Glass Liner for High-Pressure. The liner shown fits the bomb snugly and the joint is rimless. A steel compression spring maintains closure and prevents rotation of the

liner.—E. B. HERSHBERG and N. WEINER. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 93. (E. G. V.)

Iron—Hydrogen Peroxide in the Colorimetric Determination of, by Thiocyanate. Hydrogen peroxide is a more satisfactory oxidant for iron than permanganate in the thiocyanate determination of iron. The red color can be made stable for several minutes, depending on the amount of peroxide used, and the faded color may be restored if necessary by the addition of more peroxide. Too much peroxide may cause a yellowish interfering color due to oxidation products of thiocyanate.—C. A. PETERS, M. M. MACMASTERS and C. L. FRENCH. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 502–503. (E. G. V.)

Iron Powder—Preparation of, by Reduction with Hydrogen. In the preparation of iron powder by reduction of 20 Gm. of ferric oxide with electrolytic hydrogen in an electric furnace the best results were obtained by heating the sample at 400° to 700° C. for 40 minutes and at 700° C. for 20 minutes with 4.5 parts of hydrogen in excess of the theory. Equally good results are obtained by using dry powdered iron hydrate with an economy in time consumed in igniting it at 500° C. to ferric oxide. A saving of hydrogen can be effected by cooling the iron powder to 400° C. instead of the usual 60° to 80° C. Reduction of ferric oxide at 900° C. produces lumpy iron conglomerates difficult to powder. —P. M. ZAVELEVITCH. *Troudy Inst. Khim. React.*, (1937), 51–57; through *Chimie & Industrie*, 41 (1939), 44–45. (A. P.-C.)

Lead—Pycnometric Determination of, as Sulfate. The new method in pycnometric analysis has been adapted to the determination of lead as sulfate in two nonferrous alloys with satisfactory results. The behavior of the lead sulfate precipitate is such that centrifugalization can be eliminated, thereby considerably simplifying the method.—W. W. RUSSEL and J. H. A. HARLEY, JR. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 140–141. (E. G. V.)

Mercurous Chloride—Use of, for the Separation, Detection, and Estimation of Easily Reduced Elements. The use of mercurous chloride for the detection, estimation, separation and recovery of gold, silver, platinum, arsenic and iodine is described. Detections and estimations are made by colorimetric methods. Separations are made by using selective precipitating conditions.—G. G. PIERSON. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 86–88. (E. G. V.)

Peroxide Solutions—Control of p_H in. Control of p_H in processes involving the production and applications of the peroxygen compounds. The applicability of colorimetric and potentiometric methods for measuring the p_H of peroxide solutions is discussed and data are presented showing relationship between p_H and normality of hydrogen peroxide solutions in concentrations up to 200 volume. Hydrogen peroxide behaves like a weak acid and increases the hydrogen-ion activity of sulfuric acid in proportion to the peroxide concentration.—J. S. REICHERT and H. G. HULL. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 311–314. (E. G. V.)

Waters—Hydrogen Ion Activity and Buffer Capacity of Natural and Treated. A study of the use of the quinhydrone electrode in measuring the p_H of water. Such p_H values are usually lower than corrected colorimetric values. For an accuracy of 0.1 p_H unit, the quinhydrone electrode may be used with waters of fairly high alkalinity up to p_H 7.5. For like accuracy it is not suitable for waters of low alkalinity much above p_H 7.0.—A. P. BLACK and E. BARTOW. *Ind. Eng. Chem., Anal. Ed.*, 11 (1939), 261–264. (E. G. V.)

Zinc—Detection and Colorimetric Determination of, in Water by Dithizone. Ethyl alcohol is a more convenient solvent for the reagent than carbon tetrachloride. The solution is made alkaline by adding aqueous potassium acid carbonate and, in presence of iron, Rochelle salt.—G. GAD and K. NAUMANN. *Gas- u. Wasserfach*, 82 (1939), 168–169; through *J. Soc. Chem. Ind.*, 58 (1939), 557. (E. G. V.)

ORGANIC

Alkaloids

Alkaloid Compounds. Fatty acids derived from drying oils such as tung, linseed, fish or soybean oil, by reaction with alkaloids such as nicotine, quinine or strychnine (suitably in a common solvent such as ethanol), from water-insoluble compounds, the nicotine compounds being suitable for insecticidal use, the strychnine compounds for poisoning predatory animals or as a medicine, and the quinine compounds for use as the free alkaloid, especially for use in antisunburn ointments.—ROBERT S. MCKINNEY dedicated to the free use of the People of the U. S. U. S. pat. 2,139,839, Dec. 13, 1938. (A. P.-C.)

Alkaloidal Drugs—Extractibility of, and Examination with Mayer's Reagent. Some drugs are classified as to ease of extraction. The Pharm. Helv. V requirement of complete extraction in all cases is too strict, resulting in an uneconomical use of menstruum at times. It is recommended that, with the exception of *Secale cornutum*, percolation be continued until the quantities of percolate given below, when evaporated on the water bath with 3 drops of dilute hydrochloric acid reagent, taken up with 5 cc. of water, and filtered, then treated with 3 drops of Mayer's reagent, will show only opalescence but give no precipitate. The quantities recommended for this test are, for extracts of belladonna 5 cc., cinchona 0.1 cc., coca 2.0 cc., hydrastis 2.5 cc., hyoscyamus 5.0 cc., ipecac 0.3 cc., and nux vomica 2.5 cc.—J. BÜCHI. *Pharm. Acta Helv.*, 12 (1937), 326–335; through *Chimie & Industrie*, 40 (1938), 938. (A. P.-C.)

Alkaloids of Anabasis Aphylla. XIV. A study of the structure of aphyllidine and of aphylline. The former, $C_{15}H_{22}N_2O$, has a double bond where it can fix two bromine atoms. By catalytic hydrogenation there is obtained dihydroaphyllidine, which is identical with aphylline. Electrochemical reduction of aphyllidine gives desoxyhydroaphyllidine, identical with *d*-sparteine, which proves the carbonitrogenous structure of aphyllidine and of aphylline. Both alkaloids seem to have a carbonyl group in the 16-position.—A. OREKHOV. *J. Obchtch. Khim.*, 7 (1937), 2048–2062; through *Chimie & Industrie*, 40 (1938), 1141. (A. P.-C.)

Alkaloids of Cinchona Leaves. The alkaloids were purified by evaporating their solutions in organic solvents (which should have a higher specific gravity and lower boiling point than water) under dilute acid solution. Such treatment yielded a solution of the alkaloids in the acid solution, leaving tar admixtures in the precipitate. The leaves of *Cinchona succirubra* contain the same alkaloid groups (vinyl and ethyl bases) and in the same proportion by weight as the bark. These compounds can be easily crystallized, in the form of salts from water solutions, or in the form of bases from organic solvents. The best solvent for crystallization is benzene. The alkaloids which are not separated in the vinyl and ethyl groups cannot be crystallized from the organic solvents in the form of bases; however, after careful purification, they yield in aqueous solution, after treatment with suitable reagents, a crystalline precipitate. The alkaloids not separated

into the groups can be purified and obtained in crystalline state also by vacuum sublimation. The impure amorphous alkaloids are very sensitive to drying, which decreases their solubility.—R. I. TATARSKAÏA and V. IA. SOLOMKO. *J. Prikl. Khim.*, 10 (1937), 1586–1597; through *Chimie & Industrie*, 41 (1939), 113. (A. P.-C.)

Alkaloids of Heliotropium Lasiocarpum. Structure of Heliotridane. Synthesis of Racemic Heliotridane. Heliotridane constitutes a condensed bicyclic carbazidic system; structurally it is *l*-methylpyrolysidine. Synthesis of racemic heliotridane is effected by the action of sodium hypobromite on 2-(*sec*)butyl-pyrrolidine and heating the bromoamine with sulfuric acid. The picrate of the compound obtained melts at the same temperature as the picrate of *l*-heliotridane (236° C.).—G. P. MENCHIKOV. *Izvest. Akad. Nauk. S. S. S. R. (Série Chim.)*, (1937), No. 5, 1035–1048; through *Chimie & Industrie*, 41 (1939), 115. (A. P.-C.)

Alkaloids of Salsola Richteri. III. Three new alkaloids were isolated: salsoline, $C_{10}H_{10}(NH)(OH)(OCH_3)$; salsolidine, $C_{10}H_{10}(NH)(OCH_3)_2$; and salsamine, a nonphenolic crystalline base of undetermined composition. Inactive salsoline can be separated into *l*-salsoline and *d*-salsoline. According to the season, the plant contains either *dl*-salsoline, or a mixture of *dl*- and *l*-salsoline, while the salsolidine is present in the *l*-form. The proportion of salsamine in the plant is very small.—N. F. PROSKURNINA and A. P. OREKHOV. *J. Obchtch. Khim.*, 7 (1937), 1999–2006; through *Chimie & Industrie*, 41 (1939), 111. (A. P.-C.)

Alkaloids of the Senecio Species. V. Constitution of Seneciphylline. Seneciphylline extracted from *Senecio platyphyllus* and from *S. stenocephalus* is hydrolyzed by alkalies with formation of retronecine and seneciphyllic acid. The retronecine obtained is identical with that obtained by the hydrolysis of the alkaloids retrorsine, senecionine, jacobine and squalidine. On the other hand, trichodesmidine also proved to be identical with retronecine. All these alkaloids form a natural group; they are all derived from the same heterocyclic nucleus $C_{18}H_{15}N$ and differ only as regards the esterifying acids.—R. KONOWALOWA and A. OREKHOFF. *Bull. Soc. Chim. France*, 4 (1937), 2037–2042; through *Chimie & Industrie*, 41 (1939), 113. (A. P.-C.)

Atisine from Aconitum Heterophyllum Wall, and Anthorine from Aconitum Anthora L. There are three alkaloids in *Aconitum heterophyllum:* atisine, an isomer thereof and an ether-insoluble alkaloid. Up to the present time two alkaloids have been found in *Aconitum anthora:* anthorine and pseudoanthorine. Recent experiments have shown that anthorine is identical with atisine.—A. GORIS. *Compt. rend. acad. sci.*, 205 (1937), 1007–1009; through *Chimie & Industrie*, 40 (1938), 1142. (A. P.-C.)

Bebeerine Alkaloid—Report on the Structure of. The author has determined the relative positions of the methoxy- and hydroxy-groups in bebeerine, a curare alkaloid obtained from Radix Pareiræ Bravæ. This was accomplished by ethylating the two free phenolic groups by Spath's method and then subjecting the resulting O-ethylbebeerine to a two stage Hofmann degradation. This treatment yielded two isomeric tricarboxymethoxyethoxydiphenyl ethers which could be synthesized by other methods. This method for elucidating the structure of bebeerine was said to be applicable to the determination of the constitution of tubocurarine which is a closely related compound and the active principle in tube-curare.—HAROLD KING. *J. Chem. Soc.* (London), (1939), 1157–1164. (W. T. S.)

Brucine and Strychnine—New Method for the Microchemical Differentiation of. Strychnine and brucine are easily identified by the picrolonic acid test of Wasicky but the application of this test to toxicological work is not always easy. Rhodium chloride reacts with both brucine and strychnine; characteristic crystals are obtained with brucine and crystalline spheroids with strychnine. This test is sufficiently sensitive for forensic work.—A. MARTINI. *Mikrochem.*, 23 (1937), 164–167; through *Chimie & Industrie*, 41 (1939), 309. (A. P.-C.)

Coptis Occidentalis—Isolation and Identification of an Ether-Soluble Alkaloid. The purpose of this study was to determine the ether-soluble alkaloidal content and to identify the alkaloid, partly because in some sections of the West another species, *C. trifolia* is considerably used by the laity in gastrointestinal disorders. The experimental work is reported: extraction, quantitative and qualitative tests, formation of salts and microscopic examination of them. The plant was found to contain coptine, an ether-soluble alkaloid, also found in *C. trifolia* solution. It is hydrolyzed slowly by dilute sulfuric acid. Microscopical tests are a practical means of identification and of distinguishing from hydrastine and berberine.—T. D. ROWE. *Jour. A. Ph. A.*, 28 (1939), 422. (Z. M. C.)

Ephedrine—Natural and Synthetic. Ephedrine, the drug therapeutically used as base, chloride or sulfate, is fully identical with the synthetically produced, optically active forms of ephedrine.—B. BLEYER. *Arch. Pharm.*, 276 (1938), 164–170; through *Chimie & Industrie*, 41 (1939), 313. (A. P.-C.)

Ergot Alkaloids. III. Ergosine and ergosinine are readily identified microscopically, and thus differentiated from the other hitherto described ergot alkaloids. Ergosine crystallizes without solvent media, best from ethyl acetate, in rhombic plates which melt with decomposition between 208° and 212° C. Ergosinine forms as a rule solvent-free crystals; only with methanol is a molecular compound formed. Both crystal forms belong to the rhombic system.—A. KOFLER. *Arch. Pharm.*, 276 (1938), 40–45; through *Chimie & Industrie*, 41 (1939), 313. (A. P.-C.)

Mezcal Buttons—New Alkaloid of. There was isolated from the nonphenolic portion a secondary alkaloid identified as *N*-methylmezcaline. The same base has been obtained synthetically from mezcaline. All the known alkaloids of Mezcal buttons can be considered as formed from (3,4,5-trihydro-xyphenyl)-ethylamine, by methylation on the nitrogen or oxygen, cyclicization by means of compounds of the type of formaldehyde or acetaldehyde, and formation of etherified methylene groups.—E. SPÄTH and J. BRUCK. *Ber.*, 70 (1937), 2446–2450; through *Chimie & Industrie*, 41 (1939), 110–111. (A. P.-C.)