DIGEST OF CRITICISMS

ON THE

United States Pharmacopœia:

THE COMMITTEE OF REVISION OF THE

PHARMACOPŒIA OF THE UNITED STATES OF AMERICA

(1900–1910).

PART III.

PHILADELPHIA.

1901.

[This Pamph. is not for sale. See Notice inside of cover.]

NOTICE.

1. A copy of this Digest will be mailed to all incorporated Medical and Pharmaceutical Societies, Associations, Colleges, etc., which were represented by Delegates at the Eighth Decennial Convention for Revising the Pharmacopœia, held at Washington in 1900, and to any others who may forward a request for a copy to the Chairman of the Committee.

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6. Every recipient of this pamphlet is requested to send to the Chairman of the Committee of Revision the titles of any publications which may be known to him to contain valuable and positive contributions toward the next revision of the U. S. Pharmacopœia, and which have not already been abstracted for this part of the Digest.

DIGEST OF CRITICISMS

ON THE

UNITED STATES PHARMACOPŒIA.

SEVENTH DECENNIAL REVISION (1900).

PUBLISHED BY

THE COMMITTEE OF REVISION OF THE
PHARMACOPŒIA OF THE UNITED STATES OF AMERICA
(1900–1910).

PART III.

COMPRISING ABSTRACTS OF PAPERS UP TO MAY 15, 1901.

PHILADELPHIA.
1901.

WICKERSHAM PRESS,
LANCASTER, PA.

PREFACE.

TWO parts of the Digest of Criticisms of the Seventh Decennial Revision of the United States Pharmacopœia, 1890, have already been issued, Part I containing criticisms to July 1, 1896, and Part II, abstracts from accessible literature to January 1, 1898. The present Digest, Part III, is designed to record criticisms found up to May 15, 1901.

Since Part II was issued, both editor and compiler have passed away. Hans M. Wilder died January 25th, 1901. Dr. Charles Rice, the Chairman of the Committee, and editor, and to whom must be given the credit for the conception of gathering all available pharmacopœial criticisms into one volume for the convenience of many readers, departed this life May 13, 1901, in the midst of his arduous labors. Before his death he had requested Prof. Henry Kraemer, of Philadelphia, to take charge of the preparation of the present volume. The manuscript was therefore prepared under his direction, as will be seen by the following letter of transmittal.

The general plan of the former Digests has been retained, and whilst every effort has been made to record all criticisms, it is quite possible that some may have been overlooked. Inasmuch as the whole object of this publication is to make the United States Pharmacopœia of 1900 as perfect as possible, the undersigned will esteem it a favor if any omission or defects are noted and sent to him at as early a date as possible.

JOSEPH P. REMINGTON,
Chairman of the Committee of Revision of the Pharmacopœia of the United States of America.

July 15, 1901.

LETTER OF TRANSMITTAL.

PHILADELPHIA, *June* 13, 1901.

PROF. JOSEPH P. REMINGTON, *Chairman of the Committee of Revision of the Pharmacopœia of the United States of America.*

Dear Sir: I herewith transmit the manuscript of Part III of Digest of Criticisms on the United States Pharmacopœia (Seventh Decennial Revision, 1890), which was made by authority of Dr. Charles Rice, late Chairman of the Committee of Revision, by Florence Yaple, Philadelphia, under my direction.

This part covers the pharmaceutical literature during the years 1898, 1899 and 1900, and as much of the literature of 1901 as could be arranged by May 15th without further delaying the work. This part is probably a little larger than its predecessors, owing to the numerous criticisms on the British Pharmacopœia of 1898 and the Fourth Edition of the German Pharmacopœia. The general plan of the preceding parts has been adhered to as closely as possible.

Respectfully, HENRY KRAEMER.

COMMITTEE OF REVISION OF THE PHARMACOPŒIA OF THE UNITED STATES OF AMERICA (1900-1910).

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EXPLANATION OF ABBREVIATIONS.

A. J. Ph.—American Journal of Pharmacy. Philadelphia.

Am. Ch. J.—American Chemical Journal. Baltimore.

Am. Dr.—American Druggist and Pharmaceutical Record. New York.

Analyst.—The Analyst. London.

Ann. Bot.—Annals of Botany. London.

Ann. Chim. Anal.—Annales de Chimie Analytique. Paris.

Annal. d. Pharm.—Annales de Pharmacie. Louvain.

A. Ph. A. Comm.—Committee on the Revision of the United States Pharmacopœia, of the American Pharmaceutical Association. According to the "Proceedings of the A. Ph. A."

Apoth.-Zeit.—Apotheker-Zeitung. Berlin.

Arch. Ph.—Archiv der Pharmacie. Berlin.

Ber. Berl. Pharm. Ges.—Berichte der Deutschen Pharmaceutischen Gesellschaft. Berlin.

Ber. D. Chem. Ges.—Berichte der Deutschen Chemischen Gesellschaft. Berlin.

Boll. Chim. Farm.—Bollettino Chimico Farmaceutico. Milan. (formerly Bollettino Farmaceutico.)

Bull. Ph.—Bulletin of Pharmacy. Detroit.

Bull. Ph. Sud-Est.—Bulletin de Pharmacie du Sud-Est. Montpellier.

Bull. Soc. Ph. Bord.—Bulletin des travaux de la Société de Pharmacie de Bordeaux. Bordeaux.

Bull. Soc. Ph. Brux.—Bulletin de la Société Royale de Pharmacie de Bruxelles. Brussels.

Can. Ph. J.—Canadian Pharmaceutical Journal. Toronto.

Ch. Centralb.—Chemisches Centralblatt. Hamburg and Leipzig.

Ch. & Dr.—Chemist and Druggist. London.

Ch. News.—Chemical News. London.

Ch. Ztg.—Chemiker-Zeitung. Köthen.

Compt. rend.—Comptes-Rendus Mensuels des Travaux Chimiques. Bordeaux and Montpellier.

Dr. Circ.—Druggists Circular and Chemical Gazette. New York.

Ephem.—An Ephemeris of Materia Medica, Pharmacy, Therapeutics and Collateral Information. (By E. R., E. H. and C. F. Squibb.) Brooklyn.

Farm. Tidskr.—Svensk Farmaceutisk Tidskrift. Stockholm.

Forsch. Ber.—Forschungsberichte über Lebensmittel und ihre Beziehungen zur Hygiene, über forense Chemie und Pharmacognosie. Münschen.

Gazz. Chim.—Gazetta Chimica Italiana. Palmero.

J. Am. Ch. Soc.—Journal of the American Chemical Society. Easton.

J. Chem. Soc.—Journal of the Chemical Society. London.

J. de Ph. d' Anvers.—Journal de Pharmacie publé par la Société de Pharmacie d' Anvers. Antwerp.

J. de Ph. et Ch.—Journal de Pharmacie et de Chimie. Paris.

J. der Ph. v. Els. Lothr.—Journal der Pharmacie von Elsass-Lothringen.

Jour. Pharmacol.—The Journal of Pharmacology. New York.

J. Soc. Ch. Ind.—Journal of the Society of Chemical Industry. London.

Merck's Rep.—Merck's Report. New York.

Mon. de Ph.—Petit Moniteur de la Pharmacie. Paris.

Nat. Dr.—National Druggist. St. Louis.

Nord. Farm. Tidskr.—Nordisk Farmaceutisk Tidskrift. Copenhagen.

Nouv. Rem.—Nouveaux Remèdes. Paris.

Orosi.—L'Orosi. Florence.

Ph. Arch.—Pharmaceutical Archives. Milwaukee.

Ph. Centralh.—Pharmaceutische Centralhalle für Deutschland. Dresden.

Ph. Era.—Pharmaceutical Era. New York.

Ph. J.—Pharmaceutical Journal. London.

Ph. Post.—Pharmaceutische Post. Vienna.

Ph. Rdsch.—Pharmaceutische Rundschau. Vienna.

Ph. Rev.—Pharmaceutical Review. Milwaukee.

Ph. Weekblad.—Pharmaceutisch Weekblad. Amsterdam.

Ph. Ztg.—Pharmaceutische Zeitung. Berlin.

Ph Zts. Russl.—Pharmaceutische Zeitschrift für Russland. St. Petersburg.

Proc.—Proceedings of the American Pharmaceutical Association. Baltimore.

Rep. Ph.—Répertoire de Pharmacie. Paris.

Schimmel & Co.—Bericht von Schimmel & Co. in Leipzig (Fritsche Brothers). Semi-annual, April and October. Leipzig.

Suedd. Ap. Ztg.—Süddeutsche Apotheker-Zeitung. Stuttgart.

Schweiz. Woch.—Schweizerische Wochenschrift für Chemie und Pharmacie. Zürich.

Trans. Brit. Ph. Conf.—Transactions of the British Pharmaceutical Conference (Year-Book of Pharmacy). London.

Un. Ph.—L'Union Pharmaceutique. Paris.

W. Dr.—Western Druggist. Chicago.

Zeits. Anal. Ch.—Zeitschrift für Analytische Chemie. Wiesbaden.

Zeits. Angew. Ch.—Zeitschrift für Angewandte Chemie. Berlin.

Zeits. Anorg. Chem.—Zeitschrift für Anorganische Chemie. Hamburg.

Zeits. Oest. Apoth. Ver.—Zeitschrift des Allgemeinen Oesterreichischen Apotheker-Vereines. Vienna.

Zeits. Unter. Nahr. Genuss.—Zeitschrift für Untersuchung der Nahrungs- und Genussmittel. Berlin.

DIGEST OF CRITICISMS

ON THE

UNITED STATES PHARMACOPŒIA

SEVENTH DECENNIAL REVISION (1890).

General Remarks.

ALKALOIDS. *Standardization.* Rice recommends that the Committee of Revision of the Pharmacopœia be instructed to extend the principle of standardization to as many of the potent drugs, and preparations made from them, as may be found possible, but that no physiological tests be introduced at the next revision. (A. J. Ph. 99, 559.)——Nelson proposes that, inasmuch as the alkaloidal drugs vary much in strength, some standard be adopted for each, and then to use a proportionally larger or smaller amount of the drug. (Dr. Circ. 99, 173.)

Methods of Assay. Gordin especially emphasizes the necessity for complete exhaustion of the drug as one of the essentials in drug assaying, and states in this connection that the testing of a few drops of the percolate is not sufficient evidence of exhaustion. The best way is to remove the dregs from the percolator, dry and digest a few hours with Prollius' fluid, and then after shaking out the filtrate with acidified water, apply the alkaloidal tests. The author finds by applying this method that many of the methods recommended for the extraction of drugs for assay purposes are very inefficient. In regard to the assay methods proper, he says that some give results which are too high and others results that are too low.

The author has worked out a standard method for several of the more important alkaloidal drugs, and states that the features which should characterize such a method of assay are:

1. That the exhaustion should be so complete that no alkaloid

could be found in about 5 grammes of the dregs by the method explained above.

2. The operations involved in the standard method should only be such as are not liable to injure the alkaloid under consideration. Heat, strong acids or strong alkali and prolonged exposure to the air should, therefore, be avoided as much as possible. Where acids are used in exhausting the drugs, only very dilute acids should be used. (A. J. Ph. 01, 159.)——Linde has a paper on a critical examination of different methods. (Apoth. Zeit. 01, 47, 57, 72.)——Kippenberger has studied their extraction from aqueous solution with immiscible solvents. (Zeits. Anal. Ch. 39, 291. Ph. Rev. 00, 375.) See also Mahen. (Ph. J. 01, 109, 267.)

Acidimetric Titration. Faliéres employs an ammoniacal solution of cupric oxide for the acidimetric titration of alkaloids, the method being based upon the fact that a distinct turbidity arises in a solution of the alkaloid (prepared by dissolving 0.10 Gm. in 20 Cc. of $\frac{N}{10}$ sulphuric acid) as soon as the uncombined acid is saturated. (Compt. rend. *129*, 110. Ph. J. 99, Sept., 295.)—— Determination by means of the quantity of acid required to form normal salts. Kippenberger. (Zeits. Anal. Ch. *39*, 201. A. J. Ph. 01, 195.)

Alkalimetric Method. Gordin and Prescott have modified their alkalimetric method so as to overcome the frequent tendency of the acids associated with alkaloids to act as free acids, owing to the weak basicity of the alkaloids, and thus to render the end reaction indefinite, by affecting the indicator used, particularly phenolphtalein. The authors recommend taking up the alkaloid in an excess of standardized mineral acid; then precipitating with a slight excess of a delicate reagent like Mayer's or Wagner's, making up the mixture to a definite volume, and filtering off one-half of this after complete precipitation. In this filtrate the excess of acid is then determined by the use of standard alkali and phenolphtalein as indicator. If Wagner's reagent has been used the filtrate must first be decolorized with sodium thiosulphate. (Ph. Rev. 99, 495. Ph. Arch. *2*, 313.)——Gordin gives a method based on the fact that in all alkaloidal periodides which are precipitated by Wagner's or Mayer's reagent from acidulated aqueous solutions of the alkaloids, there is always an amount of "combined" acid which is equivalent to the amount of the alkaloid present. (Ph. Arch. 99, 313.)

Estimation as Periodides. While Gordin and Prescott suggest a volumetric estimation of alkaloids through their periodides, Kippenberger has devised an assay wherein the alkaloids are separated as periodides and weighed free. (Ph. Centralh. 98, 903. A. J. Ph. 00, 344.)—Gordin and Prescott recommend a method for the extraction

of alkaloids which they consider better adapted for their assay as periodides than the method which they previously proposed. (A. J. Ph. 99, 14.)

Volumetric Estimation. O'Linde considers the various indicators used in alkalimetric estimation together with the conditions to be observed in the use of each. (Arch. Ph. 00, 102. A. J. Ph. 01, 95.)——Kippenberger has studied the volumetric estimation of numerous alkaloids. (Zeits. Anal. Ch. 39, 201. Ph. Rev. 00, 373.)

Assay as alkylthiosulphonic salts. Troeger and Linde. (Arch. Ph. 00, 4. A. J. Ph. 00, 592.)

Estimation in Solid and Fluid Extracts, Tinctures, etc. Kippenberger recommends a method which depends upon the precipitation of the alkaloid as iodohydrate of periodide, purification of the periodide by solution in acetone, decomposition of this by caustic alkali, and final shaking out with chloroform. Such bases as choline, betaine or xanthine bodies are excluded by this method. The reagents are described and the details for the assay of a number of preparations are given. (Apoth. Ztg. 98, 664, 672. Proc. 99, 726.)

Pharmacologic Assay of Drugs. Houghton. (Proc. 00, 165.)—— Physiological vs. chemical and microscopical examination of drugs. Kebler (Ibid., 169).——Assay of drugs by the use of living plants. Kraemer. (Ibid., 171.)——Physiological standardization. Discussion by Dohme. (Dr. Circ. 99, 198.) Williams. (Ibid., 257.) Dohme. (Ibid., 283.) Williams. (Ibid., 00, 7.)—England suggests that methods of assay be adopted so as to secure uniform products of diphtheria antitoxin by manufacturers. (Proc. 00, 271.) Editorial in Ch. & Dr. 00, 352.

Valuation of Vegetable Drugs and Foods. Kraemer considers the relative value of chemical, physical, microscopical and biological methods. (Proc. 99, 228. A. J. Ph. 99, 529.)

Alkaloids and Charcoal. Laval has investigated the well-known absorbent action of animal charcoal on solutions of alkaloids. (Bull. Ph. Sud.-Est. 5, 195. Ph. J., 00, 213.)

Drying of Residues. In view of the fact that the B. P. requires that the alkaloidal residues in the assay of opium preparations shall be dried for two hours at 110° C. before titration, and as this occasions considerable trouble, Cownley has devised a method whereby a 50 p. c. solution of fused calcium chloride, or a corresponding weight of the crystalline salt, is kept boiling for producing the desired temperature, this solution boiling at 110° C. (Ch. & D. 98, Nov. 833. Proc. 99, 730.)

Emulsification. Rusting finds that the emulsification which takes place when aqueous solutions of plant extracts are shaken out with ether, chloroform, petroleum ether, etc., may be completely over-

come by adding a certain small quantity of powdered tragacanth to the mixture *after* shaking thoroughly and then again shaking. (Ph. Centralh. 98, 603. Proc. 99, 731.)—Prevention by the use of stearic acid. Moerk. (A. J. Ph. 99, 111.)

Precipitant. Bertrand finds silicotungstic acid, $(WO_3)_{12}SiO_3.2H_2O$, or its alkali salts, to be a very delicate precipitant for alkaloids, giving precipitates which are easy to collect, stable and insoluble in water or dilute acids, but readily liberated with alkalies. (Compt. rend. cxxvii., 742. Proc. 99, 732.)——In a second paper the author reports that this new reagent does not precipitate the salts of potassium and ammonium, as does platinic chloride. Its high molecular weight is considered to be another advantage. It is employed in solutions containing 5 Gm. of the crystalline acid or the sodium salt in 100 Cc. of distilled water. The reagent was tried on a number of glucosides and other substances, but, except in the case of albuminoids, had no action on them. (Bull. Soc. Chim. *9*, 434. Ph. J. 99, June 503.)

Reagent. Mecke recommends a 5 p. c. solution of selenous acid in concentrated sulphuric acid as giving striking color reactions with the opium alkaloids. (Suedd. Ap. Ztg. 99, 739. A. J. Ph. 00, 498.)

Solubility in Carbon Tetrachloride. Schindelweiser. (Ch. & Dr. 01, 594.)

Fluid for Separation. As a shaking out fluid for general use Rusting recommends 20 vols. chloroform and 80 vols. petroleum ether. (Ph. Centralh. 98, 603. Proc. 99, 731.)

Occurrence and Formation in Plants. Glautrian. (Nederl. Tijds. v. Ph. *13*, 42. Apoth. Ztg. *10*, 132. Ph. Rev. 01, 175.)

History and Constitution. Dohme. (A. J. Ph. 00, 9.)

Determination of Constitution. Kunz-Krause calls attention to the availability of Vitali's test, which depends on the color reaction produced by fuming nitric acid in contact with alkaloids, for determining their constitution. Heretofore these reactions have been considered as characteristic color reactions merely, but the author has studied a large number of the products of the reaction, and in many instances finds it to be accompanied by both a characteristic odor and color. (Apoth. Ztg. 98, 811 and 820. Proc. 99, 733.)

Micro Chemical Determination. Barth observes that the alkaloids in plants are not formed in the cellular membrane, but in the plasma from which they reach the cellular fluids and there unite with acids to form salts. In his examinations the author utilized the polariscope as well as a large number of reagents. (Arch. Ph. 98, No. 5. Apoth. Ztg. 98, 848. Proc. 99. 732.)

Solanaceous Bases. Review of character. Hesse. (Ph. J. 00, Feb. 116.)——Jowett calls attention to the work of Schmidt and

others in clearing up the chemistry of the mydriatic alkaloids. He states that the only alkaloids belonging to this group which have been definitely defined are atropine, hyoscyamine and scopolamine (hyoscine). In considering the tests of the B. P. (1898) the author makes the following suggestions: In the case of atropine, the insertion of the color test with fuming nitric acid and potassa is not necessary, the following being regarded as sufficient to insure a pure article: (1) Melting-point; (2) formation and melting-point of aurochloride; (3) optical inactivity; (4) freedom from ash on ignition. Hyoscyamine is distinguished from atropine by its optical activity. The M. P. of the sulphate should be given as not lower than 200° C. Hesse gives the solubility in water of scopolamine hydrobromide as 1 in 4, which is more accurate. (Ph. J. 98, 195.)——Gadamer finds that atroscin (Hesse) and *i*-scopolamin (Schmidt) are hydrates of the same alkaloids. (Arch. Ph. 98, 382.)——Microscopical Identification. Vreven. (Ann. de Pharm. 99, 1. A. J. Ph. 00, 76.)

Atomic Weights. Tables issued by the Commission of the German Chemical Society. (Ph. Rev. 01, 148.)——Hydrogen as Standard. Hinrichs discusses the subject. (Nat. Drug. 01, 3.)——Clarke. (Ibid., 5.)——Hinrichs. (Ibid., 82.)——Dohme considers the subject at length, and favors the basis H = 1. (Dr. Circ. 00, 180.)

Boiling Points of Mixed Liquids. Haywood. (J. Phys. Chem. 99, 317. A. J. Ph. 00, 82.)

Chlorates and Bromates. Fages employs for their detection a solution of strychnine. (Ann. Chim. Anal. *5*, 441. Ph. J. 01, 191.)

Colors. Measurement. Schreiner. (Ph. Rev. 01, 61.)

C. P. Chemicals. Kebler states that the standards for some of the chemicals of the U. S. P. are so high as to be more applicable to C. P. articles, and as a consequence many manufacturers cannot furnish products to conform to these standards at current prices. (A. J. Ph. 00, 205. Proc. 00, 359.)

Doses. Rice recommends that the Committee of Revision be authorized to introduce doses into the Pharmacopœia. (A. J. Ph. 99, 559.)——Mason contends for their introduction into U. S. P. (Proc. 99, 344.)——A number of writers in discussing the question of introducing doses into the Pharmacopœia, express themselves as favorable to the proposition. (Bull. Ph. 99, 354, 361, 413, 420, 449, 508)——Dohme also advocates their admission. (Dr. Circ. 00, 180.)

Initial Dose. Abogado urges the adoption of the statement "initial doses" for an adult, leaving it to the physician to determine how much this can be increased. (Jour. Amer. Med. Assoc. 00, 230. A. J. Ph. 00, 106.)

Drops. Definition of Drop. The following definition is pro-

posed for adoption in the Swiss Pharmacopœia: One drop is the twenty-fifth (25) part of one cubic centimeter, and is to be measured in a graduated measuring glass. (Schweiz. Woch. 99, No. 40. Proc. 00, 393.)——Eschbaum gives the weights of drops of almost every kind of liquid. (Ber. Berl. Pharm. Ges. 00, 91. A. J. Ph. 01, 141.)——Harnack has determined the number of drops equivalent to one gramme of a certain number of substances in solution. (Ph. Ztg. 99, 175. Proc. 99, 372.)——Williams is of the opinion that U. S. P. standard measures would meet with the favor of physicians, and be recommended by them as desirable in every household. (Dr. Circ. 99, 220.)——Schermerhorn gives an improved construction of dropper. (Merck's Rep. 98, 343.)——An improved graduated safety-dropper has been constructed by Greiner. (Ph. Centralh. 97, 492. Proc. 98, 629.)

Pipette. Forbing has designed a pipette particularly adapted for use with poisonous or corrosive liquids. (Am. Dr. 96, 161.)

Cooling. For the withdrawal of hot liquids. Friedrichs. (Ph. Ztg. 98, 733. Proc. 99, 376.)

Safety. Zulkowski. (Ph. Centralh. 98, 836. Proc. 99, 376.)

Reservoir. For sterilizing liquids. Woodbury. (Philad. Polyclin. vii, 483. Merck's Rep. 98, 743. Proc. 99, 377.)

Filtration. Schweissinger has employed infusorial earth with practical advantage for the filtration and classification of various liquids. (Ph. Centralh. 99, 87. Proc. 99, 377.)

Suction Filter. Walther. (Ph. Centralh. 99, 550. Proc. 99, 378.)

Incineration. Doumergue points out the value of incineration at a red heat for determining the purity of chemical drugs. (J. de Ph. et Ch. 99 (2), 145.)

Indicators. Commercial. Knight finds these to vary greatly. (Proc. Mass. Ph. Assoc. 99, 59. Proc. 00, 672.)——Occurrence in nature. Fraps. (Am. Ch. Jour. 00, 271. A. J. Ph. 01, 174.)

Melting-Points. Tyrer and Levy have applied five methods of determination to sulphonal, acetanilid, phenacetin and phenazone. (Trans. Brit. Pharm. Conf. 99, 427. Ph. J. 99, 131.)——The same authors recently examined salicylic acid, salol, carbolic acid, menthol and thymol. Commercial salicylic acid and thymol stand the B. P. test, but purified salol (recrystallized), carbolic acid and menthol must be taken if the official requirements are to be met. It is pointed out that no single method of determination is applicable to all pharmaceutical substances, and the authors propose to ascertain which methods are most applicable in particular instances. (Ph. J. 00, 91, 141 and 413.) New Apparatus. Le Sueur and Crossley. (Jour. Soc. Chem. Ind. *98*, 988. A. J. Ph. 99, 344.)——Vandevyver. (Jour. Soc. Chem. Ind. 99, 298.)

METRIC WEIGHTS AND MEASURES. Ware, basing his opinion on statistics, states that not one physician out of a thousand uses this system. (Proc. Md. Ph. Assoc. 99, 93. Proc. 00, 386.)——Whelpley has reported on 830,000 prescriptions to the effect that 5.29 p. c. are written in the metric system. (Proc. Mo. Ph. Assoc. 99, 61. Proc. 00, 387.)——Whelpley gives reports of use of metric system in 545,000 prescriptions and the use in Boards of Pharmacy examinations. (Proc. 99, 350, 351.)

NEWER REMEDIES. Rice recommends that the Committee of Revision be authorized to introduce into the Pharmacopœia such of the newer remedies as fulfil the following conditions: (*a*) If the remedy is a definite chemical compound, its chemical composition and physical and chemical properties shall be known and controlled. (*b*) It should have passed the experimental period, and should be in regular and general use by the medical profession as a remedy of a definite and recognized therapeutic value. (A. J. Ph. 99, 559. Proc. 00, 354.) (See also Proc. 00, 362.)

NOMENCLATURE. Rusby recommends the adoption of Engler and Prantl's "Die Naturlichen Pflanzenfamilien" as the standard for the U. S. P. vegetable drugs. (Proc. 98, 242.)——Lloyd agrees with Kraemer that in some instances common names of plants are less confusing. (A. J. Ph. 98, 234.)——Druce states the changes in botanical nomenclature of the B. P. 98, are almost all made in the right direction, and points out some cases where the law of priority was not adhered to. (Ph. J. 98, 202.)——Kraemer discusses problem of botanical nomenclature. (A. J. Ph. 99, 288.)

Coblentz in a paper on the nomenclature of modern medicinal preparations recommends the selection of convenient euphonic names rather than chemical titles. It is not possible now to revise the nomenclature of synthetics, but the use of like sounding titles for proprietary concoctions, which not only give rise to danger of confusion, but are very misleading, should be discouraged. (Proc. 98, 488.)

Simplified orthography. Williams discusses the question as to whether the rules adopted by the A. A. A. S. for spelling and pronouncing chemical terms should be adopted by the U. S. P. (Proc. 98, 541.)——Pharmaceutical nomenclature. Weber questions the practicability of popularizing the so-called Latin synonyms, and attempting to expunge the English appellations from common usage. (Dr. Circ. 98, 76.)

PECTINS. Chemistry. Bourquelot. (J. de Ph. et Ch. (3) 9, 563. Ph. J. 99, 139.)

PERCOLATION. *Moistening of Powders.* Wolff recommends a method of shaking the powder and a portion of the menstruum in

a tin can, which is more expeditious than that officially directed. (Am. Dr. 98, 36.)

Under Pressure. Cohen. (Merck's Rep. 99, 4.)——Nunn. (Ph. J. 98, Oct. 371.)——Cowley. (Ph. J. 98, Oct. 418.)

Percolator, Improved. Bernard. (Merck's Rep. 99, 220. Proc. 99, 387.)

Water-Bath. For hot menstrua. Kemp. (Ch. & Dr. 98, Dec. 981.)

Repercolation, Automatic. Catford. (Ch. & Dr. 98, Aug. 271.)

Technique. Wobbe. (Apoth. Zeit. 99, 312. Proc. 99, 423.)

PHARMACEUTICAL PREPARATIONS. Fink calls attention to the causes of deterioration in many medicaments. (Bull. Ph. 98, 105.) —— Madsen has studied the action of light on drugs through different colored glass. (Apoth. Zeit. 460.)——Scoville and Loftus record the results of experiments made for determining the absorptive power of various bases for aqueous liquids, particularly saturated saline solutions. (Am. Dr. 98, 383.)——Drugs may be extracted with diluted acetic acid in a much coarser condition than when other menstrua are used. Remington. (A. J. Ph. 98, 543.)——Smeets advises that all powders for percolation should be thoroughly dried at 30° C., and should have moderate but uniform fineness. (Apoth. Zeit. 99, 179. Proc. 99, 428.)——Solvents. Kremers considers the galenicals and solvents in connection with pharmacopœical revision. (Ph. Rev. 00, 109.)——Inorganic Acids. Strauss reviews the literature in which they have been used in the preparation of galenicals. (Ph. Rev. 00, 362.)

PHARMACOPŒIA. BRITISH 1898. I. From a pharmaceutical point of view, a number of innovations have been made: (*a*) The metric system has been introduced. All quantities used in the making of preparations are stated in terms of both Imperial and Metric systems. Imperial measures are standardized at 62° F. and metric measures at 39.2° F. The quantities under "Characters and Tests," and in all analytical quantitative processes, are stated in the metric system only.

(*b*) The old proof spirit (Spiritus Tenuior) has been abandoned, and instead, under Spiritus Rectificatus, are given five different strengths of alcohol, viz.: 90 per cent., 70 per cent., 60 per cent., 45 per cent. and 20 per cent. Absolute alcohol is retained.

(*c*) The use of glycerin in the making of tinctures has been retained for Tinctura Kino, and extended to one other preparation, viz., Tinctura Rhei Composita, where it is added after filtering the percolate. It is added also in Extractum Sarsæ Liquidum, Tinctura Chloroformi et Morphinæ Composita and in Syrupus Pruni Virginianæ, a new preparation in the revision.

(*d*) In regard to the processes of percolation and maceration in

the preparation of tinctures, it is to be noted that in both operations the marc is still submitted to pressure. In the maceration process there is no adjustment of the final bulk of preparations save in preparations like Tinctura Aloes, Tinctura Asafetidæ, etc.

(*e*) The principle of standardization of galenicals has been applied to Belladonna and Ipecac preparations in addition to those already mentioned in the 1885 Pharmacopœia, viz., Cinchona, Jalap, Nux-Vomica, Opium and Pepsin.

(*f*) Under Liquors are added nine concentrated preparations of vegetable drugs. These are in the nature of concentrated tinctures and infusions, the latter containing sufficient alcohol to preserve them.

(*g*) There is a marked change in the strength of some well-known preparations, in order, it is said, to establish, at least in some cases, more uniformity in doses. Tinctura Aconiti, Aqua Chloroformi and Suppositoria Morphinæ are reduced to about one-half the strength of those in the 1885 Pharmacopœia. Tinctura Nucis Vomicæ and Tinctura Podophylli are doubled in strength, and Tinctura Chloroformi et Morphinæ Composita is four times as strong as the same of the previous edition.

(*h*) Many of the articles and preparations have been changed in orthography, as Creosotum for Creasotum, Asafetida for Asafœtida, Aloinum for Aloin, etc.

II. In the chemistry of the Pharmacopœia are numerous changes, notably in nomenclature. The "ide" termination of the salts of the alkaloids has been adopted, as Apomorphinæ hydrochloridum for A. hydrochloras, etc. "In defining substances corrected data are given for many of the physical characters, and the nomenclature now used by chemists to indicate constitution has been adopted in some instances. Thus, the alkalies and analogous substances are now termed hydroxides; alcohol is named ethyl hydroxide; but the principle is not extended to ammonia or carbolic acid, which is now distinguished by the name phenol, or to water, for which the familiar name is retained without any reference to its chemical constitution. The acids are now described as hydrogen salts, and in some instances the constitution is illustrated by formulæ, the other salts of particular acid radicles being distinguished according to the metal or base they contain, as sodium acetate, calcium acetate, atropine sulphate, and so on. These innovations apply only to the vernacular names, and not to the Latin titles, of which the new names are synonyms rather than translations."

III. In regard to the botany and pharmacognosy we understand that there are marked evidences of progress, but that there are no very marked changes in nomenclature. "The botanical names of

plants yielding drugs in the 1898 Pharmacopœia have, with a few exceptions, been brought into accordance with the 'Index Kewensis,' and many of the illustrations referred to have been selected from more readily accessible works than hitherto. In some cases alterations of the official name have been made, for which there is no evident reason, such as Ipecacuanhæ Radix for Ipecacuanha, Cascarilla for Cascarillæ Cortex, and Linum for Lini Semina. The wording of the descriptions and of the characters and tests has, in the majority of cases, been modified, so as to more carefully limit the quality of drugs to be used. Details concerning the more important microscopical characters of drugs have been added, and in over twenty instances the limit of ash has been given, apparently with the view of assisting in the detection of the adulteration of powdered drugs." (A. J. Ph. 98, 311.)

B.P. as a standard. Holmes says that the Pharmacopœia should distinctly state in the preface that it is a standard for drugs and preparations used in dispensing medicines only. (Ph. J. 01, 30.) ——*Chemicals of the B. P.* Solubility. Greenish. (Ph. J. 00, Aug. 190.)——*Histological Tests of B. P.* Holmes considers it desirable to append bibliographical references to reliable microscopic descriptions. (Ph. J. 01, 30.)

German Pharmacopœia, Ed. IV, 1900. The new G. P. comprises 413 pages, having 71 more pages than the previous edition, whilst fully 100 additional pages are allotted to: reagents and volumetric solutions; the maximum doses of the stronger medicaments; a list of preparations not to be sold without prescriptions; the poison schedule; the atomic weights of the elements in connection with the Pharmacopœia; tables of sp. gr. of liquids at a temperature from + 12° C. to + 25° C., and indices of synonyms and official German names of the various medicaments. Chemical formulæ are entirely absent from the text.

The new articles are: Adeps lanæ anhydricus, Adeps lanæ cum aqua, Æther pro narcosi, Alcohol absolutus, Arecolinum hydrobromicum, Baryum chloratum, Bismutum subgallicum, Bromoformium, Cautschuc, Coffeïno-natrium salicylicum, Gelatina alba, Hydrargyrum salicylicum, Hydrastinum hydrochloricum, Mel, Methylsulfonalum, Oleum camphoratum forte, Oleum chloroformi, Oleum Santali, Pilulæ ferri carbonici Blaudii, Pyrazolonum phenyldimethylicum salicylicum, Semen erucæ, Serum antidiphthericum, Tela depurata, Tuberculinum Kochi, Unguentum adipis lanæ, Vinum chinæ. While antidiphtheritic serum and tuberculinum Kochi are admitted, they are directed to be obtained from one of the officially licensed factories, and to have passed the official tests at the Government Institute for Experimental Therapy in Frankfort-on-the-Main.

The introduction of caoutchouc into plasters is new. The general monographs on Tabulæ and Trochisci are omitted, that on Pastelli being extended so as to cover the ground.

Among the additions to the book we find crude cresol. This is an official recognition of the rapidly extending use of this substance as an antiseptic and disinfectant; there is also a formula for a cresol soap solution that will give a product soluble in water and closely resembling lysol.

Ether for anæsthesia is one of the new additions, and with the complete and somewhat stringent tests for purity insures a satisfactory article. Among the other additions that have been or are in use in this country we find adeps lanæ. This is directed to be used in two preparations, adeps lanæ cum aqua, and in an unguentum adeps lanæ.

Of the three methods of volumetric analysis, acidimetry or alkalimetry is employed in the new German standard for the estimation of not only the usual inorganic chemicals, but also in the estimation of such alkaloidal drugs as pomegranate bark, ipecac, aconite, nux vomica and its preparations, belladonna, cinchona, hyoscyamus and their preparations; also for balsam of Peru, balsam of Tolu, copaiba, rosin, wax, cod liver oil and oil of lavender.

The oxidation analysis includes the well-known chemicals such as iron salts, chlorine water and iodine, and through the latter it is applied to the iodine absorption estimation of fats. The precipitation volumetric analysis is directed for the same chemicals as in the U. S. P., and also for the assay of bitter almond water and the mustard oils. Concerning the estimations of the first class, that for the alkaloids is practically the same as in the U. S. P., a possible exception being that "jodeosin" is recommended as an indicator; always, however, with the addition of an ethereal layer. For the cinchona alkaloids, hæmatoxylin is preferred.

The estimation of acid number, ester number, and saponification number of oils and balsams is performed by treating the substance with semi-normal alcoholic potassa, titration of excess with semi-normal hydrochloric acid, phenolphtalein being used as indicator. The following standards are chosen:

	Acid Number.	Ester Number.	Saponification Number.
Balsam Peru	—	132.5	224.6
Balsam Tolu	112.3–168.5	22.4–78.4	—
Copaiba	75.6–179.7	—	—
Wax	18.5– 24.1	72.8–75.6	—
Oil lavender	—	84	—
Cod liver oil	—	—	196.6

The iodine absorption of fats is estimated by addition of the fat

to an 87 per cent. alcohol containing mercuric chloride and a definite quantity of iodine; the mixture is allowed to stand forty-eight hours and the unabsorbed iodine is estimated by titration with decinormal sodium thiosulphate. Chloroform is added to the mixture for purpose of clearing, this aiding in obtaining accurate results. One c.c. thiosulphate solution will equal 0.012685 gramme of iodine. The difference between iodine originally employed and the unabsorbed iodine is of course the amount of that element absorbed by the fat, and the number of grammes absorbed by 100 grammes of fat is called the iodine number. Laves. (Apoth.-Zeit. 01, 30. A. J. Ph. 01, 191.)

In the table of atomic weights O = 16.0 is the standard adopted. The Centigrade thermometer alone is recognized.

In the botanical part the names of authors of botanical names are omitted, and in some instances the species are not named, as in Aloe, Pilocarpus, etc.

The greatest innovation is in the description of drugs, these being now bought mostly either cut or in powder. A full description of entire parts, which was formerly given, is useless; therefore stress is laid on the histological and microscopical tests. In general, all the tests are stricter and the purity requirements greater.

Analytical Methods. Criticisms. Laves. (Apoth.-Zeit. 01, 30.) ——Fromme. (*Ibid.* 01, 14.)——Düsterbehn. (*Ibid.* 85, 101, 111, 121, 131.)——Grünhagen. (Ph. Zeit. 00, 969.)——Dieterich. (*Ibid.*, 928.)

Botany and Pharmacognosy. Criticisms. Hartwick. (Apoth.-Zeit., 00, 580, etc.)

Galenicals. Criticisms. Methods of preparation. Weinedel. (Ph. Ztg. 00, 170 and 212. Ph. Rev. 01, 225.) Wobbe. (Apoth.-Zeit., 00, 711, etc.)

Comparison B. P. 1898, G. P. Ed. IV and U. S. P. 1890. Wilbert (A. J. P. 00, 563) gives a critical and detailed comparison:

Analysis of titles in	G.P.	B.P.	U.S.P.
Vegetable substances	177	174	255
Animal substances	15	15	18
Chemical substances	178	186	239
Galenical preparations	234	451	473
General directions	23	0	5
Cross reference	1	0	0
Total number of titles	628	826	990

The following table gives the proportionate number of times that the various titles recur in each book:

Comparative frequency of various titles in	G.P.	B.P.	U.S.P.
Vegetable substances	28.2	21.1	25.7
Animal substances	2.4	1.8	1.9
Chemical substances	28.3	22.5	24.1
Galenical preparations	37.3	54.6	47.8
General directions	3.7	0.	0.5

One of the interesting features of this table is that it shows the British Pharmacopœia to have the greatest comparative number of galenical preparations. In looking through the book this seems to be explained by the entire absence of any general formulæ. These latter are most numerous in the German Pharmacopœia, and, as a practical result of this, we find that this book has the smallest number of galenical preparations.

In the following table is tabulated the number of galenical preparations:

Galenical Preparations.	G.P.	B.P.	U.S.P.
Collodions	3	3	4
Decoctions	1	3	2
Extracts, fluid	4	17	88
Extracts, solid	21	22	34
Infusions	1	22	4
Liniments	3	15	9
Mixtures	2	9	4
Mucilages	2	2	4
Ointments (and cerates, U.S.P.)	22	44	29
Papers	2	1	2
Pills	4	20	15
Plasters	10	12	13
Powders	8	16	9
Soaps	4	3	2
Solutions	24	53	24
Spirits	15	16	23
Syrups	18	22	32
Tinctures	40	67	71
Vinegars	2	3	2
Waters	12	15	19
Wines	7	6	8

The lack of uniformity in the various preparations of the different pharmacopœias is apparent in the following tables of the acids and some of the tinctures:

Official Acids.	G.P.	B.P.	U.S.P.
Acetic	96.	33.	36.
Acetic, dilute	30.	4.27	6.
Acetic, glacial		99.	99.–100
Hydrobromic	25.		
Hydrobromic, dilute		10.	10.
Hydrochloric	25.	31.79	31.9
Hydrochloric, dilute	12.5	10.58	10.
Nitric	25.	70.	68.
Nitric, dilute		17.44	10.
Nitric, crude	60.		
Phosphoric	25.	66.3	85.
Phosphoric, dilute		13.8	10.
Sulphuric	94.–98.	98.	92.5
Sulphuric, dilute	15.6–16.3	13.65	10.

Strength of Tinctures in	G.P.	B.P.	U.S.P.
Aconite	10.	5.	35.
Aloes	20.	2.5	10.
Cantharides	10.	5.	5.
Capsicum	10.	3.7	5.
Cinnamon	20.	20.	10.
Colchicum seed	10.	20.	15.
Digitalis	10.	12.5	15.
Ginger	20.	10.	20.
Iodine	10.	2.5	7.
Opium (morphine)	1.–1.2	0.75	1.3–1.5
Squill	20.	20.	15.
Strophanthus	10.	2.5	5.

The following table includes the synthetic compounds that have been admitted into the German and British Pharmacopœias, and their respective titles:

GERMAN AND BRITISH TITIES OF OFFICIAL SYNTHETICS.

	G.P.	B.P.
Antifebrine	Acetanilidum.	Acetanilidum.
Antipyrine	Pyrazolonum phenyldimethylicum.	Phenazonum.
Chloralamid	Chloralum fermamidatum.	
Dermatol	Bismutum subgallicum.	
Diuretin	Theobrominum Natrio-salicylicum.	
Phenacetine	Phenacetinum.	Phenacetinum.
Saccharine.		Glusidum.
Salipyrine	Pyrazolonum phenyldimethylicum salicylicum.	
Salol	Phenylum salicylicum.	Salol.
Sulphonal	Sulfonalum.	Sulphonal.
Trional	Methylsulfonalum.	

U. S. P. Revision. Kebler states that the Pharmacopœia contains a number of analytical methods which are either impracticable of application, or, if applied lead to erroneous conclusions. He therefore recommends that, in prescribing standards for the U. S. P., the three following propositions be borne in mind:

1. The standard of all U. S. P. preparations, drugs and chemicals should be so adjusted that they are not only satisfactory medicinally, but that they can also be manufactured from other U. S. P. goods, which enter into their preparation either in part or as a whole.

2. The requirements of all U. S. P. goods should be such that they can be employed in the manufacture of all other U. S. P. goods, of which they form an integral part, either in part or as a whole.

3. The best medicinal goods available should form the basis of all standards. (A. J. Ph. 00, 205.)

Dohme considers the purposes of the Pharmacopœia and believes in making it of practical utility. (Dr. Circ. 00, 200.)——Williams

discusses Dohme's paper. (Ibid. 00, 244.)——Dohme considers this question further. (Ibid. 01, 50.)——Kremers says that whenever demanded a new revision could be issued, and that there is no reason why pharmacopœias should not be completely revised as often as our present dispensatories. (Ph. Rev. 00, 57.)——Dohme makes some suggestions concerning the vegetable drugs. (Dr. Circ. 99, 174.)——Sayre comments on some official drugs of doubtful utility. (Dr. Circ. 00, 6.)——Sayre recommends the use of calipers for determining the size of drugs. (Dr. Circ. 00, 68.)——Problems confronting U. S. P. Dohme. (Dr. Circ. 99, 197.)——Benedict. (Ibid., 292, from Jour. Amer. Med. Assoc.)——Edes considers whether the scope of the Pharmacopœia should be increased. (Dr. Circ. 00, 29, from Jour. Amer. Med. Assoc.)——Robinson enumerates articles which should be introduced into the U. S. P. (Dr. Circ. 00, 94.)

Adulterations. Detection of adulterations in drugs by means of the X rays. Wilbert. (A. J. Ph. 01, 78.)——Huber observes that the adulteration of foods and drugs is on the decrease in this country. (Proc. Wis. Ph. Assoc. 99, 35.)

Ash. Catford and Cowley regard the qualitative examination of the ash of drugs of importrnce. (Ch. and Dr. 58, 472.)——Bamford attributes the higher percentage of ash in the fine powder of certain drugs to adhering sand. (A. J. Ph. 99, 511. Proc. 00, 556.) (See also *Powdered Drugs.*)

Color Standards. Kraemer and Watson give a list of the colors of the pharmacopœial drugs in a crude and powdered condition. (Proc. 00, 146.)

Commercial. Examination. Webster. (Proc. Me. Ph. Assoc. 99, 40. Proc. 00, 566.)

Definitions of Vegetable Drugs of. U. S. P. Kraemer. (A. J. P. 00, 236, and 01, 35).——Holmes. (Ph. J. 00, 523 (May) and 443 (October).)

Insects infesting Drugs. Knight. (Dr. Circ. 00, 73.)

Odor of Vegetable Drugs. Consideration of those described in the U. S. P. as being inodorous. A. Ph. A. Comm. (Proc. 98, 224.)—— Classification. Lowe. (Proc. Penn. Ph. Assoc. 99, 91.) Odor Standards. Alpers. (Proc. 99, 221.)

Fowdered Drugs.—Rusby considers the problems of the U. S. P. drugs in the Pharmacopœia for 1900. (Proc. N. Y. Ph. Assoc. 98. Dr. Circ. 98, 205.)——Schneider gives suggestions on their introduction into U. S. P. (Proc. 00, 141.)——Greenish considers the determination of ash far less essential than microscopical examination, assay, etc., in making examinations. (Ph. J. *66*, 167, 179 and 264. Ch. and Dr. *58*, 274.)——Dieterich shows that a certain relation ex-

ists between the total ash, the percentage of potassium carbonate in the ash, and the drug, according to the fineness of the powder. (Ph. Ztg. 98, 684. Proc. 99, 495.)——Bamford shows that the high percentage of ash is attributable to the presence of foreign inorganic matter. (A. J. Ph. 99, 511.)——Kraemer reviews the work done during the year 1898. (Ph. Rev. 99, 60. Proc. 99, 495.) (See also *Ash*.)

Vegetable Drugs. Microscopical Examination. Nelson. (Merck's Rep. 00, 308, 354, 404, 454, 503, 550, and 01, 6, 48, 82, 83.)

Polarimetry. According to Dupont, a mixture of sodium chloride and tribasic phosphate, melted together in about molecular proportions, affords a very satisfactory means of producing monochromatic light. (Ann. Chim. Anal. ii, 267. Ph. J. 98, Jan., 45.)

Solubilities of immiscible liquids in water. Herz. (Apoth.-Ztg. 00, 89. Proc. 00, 396.)

Reagents. *Nomenclature*. Richtmann, on the basis of the work of Greuber (Ch. Ztg. 00, No. 1) and Holz (Apoth.-Zeit. *15*, 54), calls attention to the necessity of a uniformity in strength and naming of chemicals. (Ph. Rev. 00, 163.)

Desiccating Agents. Elborne finds that a given weight of sulphuric acid, sp. gr. 1.843, absorbs more moisture than an equal weight of fused calcium chloride or potassium carbonate. (Ph. J. 99, July, 26.)

Fehling's Solution. The experiments of Rosenheim and Schidrowitz lead to the conclusion that Jovitschitsch's statement, that mineral acids—hydrochloric, nitric and sulphuric—possess the property of reducing Fehling's solution, is based on an error. (Chem. News 97, 318. Proc. 98, 700.)

Hydrogen Sulphide. Preparation. Michler prepares C. P. hydrogen sulphide from a concentrated solution of calcium sulphydrate by the action of hydrochloric acid. (Ph. Centralh. 97, 801. Proc. 98, 912.)——Meade recommends a device for facilitating its action in precipitation. (Jour. Am. Ch. Soc. 21, 421. Proc. 99, 601.)——Generator. Bradley. (Am. Ch. Jour. 21, 507. Ph. Rev. 99, 211.)——Substitute. Vogtherr proposes ammonium dithiocarbonate. (Apoth.-Zeit. 98, 618. Proc. 99, 604.)

Litmus Solution. The litmus is heated two or three times with 85 to 90 p. c. alcohol, half an hour each time; it is then washed with a little water and then boiled with water for half an hour. The filtrate is then saturated with carbonic acid and boiled not less than one hour. Diluted sulphuric acid is added to the filtrate, and the color of the solution maintained distinctly rose-red by the addition of small quantities of the acid as necessary. Finally, this solution is divided into two equal portions. One of these is ren-

dered distinctly blue with ammonia, the rose-red portion is added, and the liquid boiled to remove excess of ammonia. The solution is filtered and diluted with water to make 10 parts as compared to 1 part of litmus taken. Alcohol, or thymol in small quantity, acts as a preservative. (Farmazeft, 99, 652. Apoth.-Ztg. 99, 529. Proc. 00, 489.)

Nessler's Solution. Lucas suggests the following formula: Dissolve 35 Gm. of potassium iodide and 13 Gm. mercuric chloride in 500 Gm. distilled water; add sufficient saturated solution of mercuric chloride to produce a faint permanent red precipitate; then add 160 Gm. sodium hydroxide dissolved in 200 Gm. water; shake well, add 10 Cc. more saturated solution mercuric chloride and make up to one liter with distilled water. (Ch. & Dr. 99, Dec. 959. Proc. 00, 489.)

Reagent Papers. Rational preparation and valuation. Dieterich. (J. de Ph. v. Els.-Lothr. 28, 36. Ph. Rev. 01, 218.)——Formulas and uses. (W. Dr. 99, 275.)

Zinc-Iodide-Starch Solution. Leyda recommends a process which gives a solution that will keep indefinitely. (Ch. Ztg. 98, 1086. Proc. 99, 445.)

Specific Gravity. Payne calls attention to the difficulties connected with making determinations of specific gravities and solubilities, and with volumetric analysis at the standard temperature of 15° C. of the U. S. P., and suggests the adoption of a standard of 37° C. as being more natural or nearer the normal temperature. (Dr. Circ. 00, 97.)——Tables of the U. S. Pharmacopœia. Lyons makes a number of suggestions. (Ph. Rev. 01, 101.)——Method for light solids. Wiegand. (A. J. Ph. 99, 26.)——Total Immersion Hydrometers. Warrington. (Ch. News 98, 144. Proc. 99, 375.) ——Linebarger describes a Volumenometer of simple construction. (J. Am. Ch. Soc., 21, 435. Proc. 99, 375.)

Thermometer Scale. Betts has devised a milligrade thermometer in which the freezing point of mercury is the zero and its boiling point is 1000. (Scient. Amer. 00, *82*, 170. Proc. 00, 406.)—— High Temperature. Dufor has constructed a thermometer for high temperatures which has a quartz bulb and stem. (Compt. rend., *130*, 775 and 816. Ph. J. 00, May 463. Proc. 00, 406.)

Utensils. *Glass Vessels.* Büttner calls attention to the liability of glass vessels to lose in weight during evaporation on the steam bath, and in order to avoid error from this cause recommends that the vessel and contents be weighed after drying, and then the vessel cleaned and weighed. (Ph. Centralh. 99, 501. Proc. 00, 410.)

Colored Glass Containers. Möller in experimenting with such substances as silver bromide and chloride, iron, mercury, gold and

uranium salts, finds the resistance of colored glass to light to be as follows:

Strongly protective: black, red, orange, yellow, brown yellow, and pure green glass.

Somewhat protective: bluish, dark-green, violet and milky glass.

Non-protective: blue and colorless glass. (Arch. Ph. 99, 253. Apoth.-Ztg. 99, 568. Proc. 00, 420.)

Enameled Vessels. Barth found the enamel of an ordinary saucepan to contain large proportions of silica, tin, and aluminum, with small quantities of zinc, lime and potash, and traces of iron and cobalt, but neither lead nor arsenic, though these have been found in some French enamels. (Ch. News 99, 24. J. de Ph. 99, viii, No. 3. Proc. 99, 396.)

Gas Burner. "Teclu." This burner, which is the invention of Teclu, is designed for operations in which high temperatures are rapidly and continually required. (Ph. Ztg. 99, 152. Proc. 99, 389.)

Press. Pharmaceutical. One advantage of this press is that the rapidity of flow is increased during expression. Zemsch. (Ph. Centralh. 99, 15. Proc. 99, 388.)

Volumetric Apparatus. Schreiner finds that (1) measuring instruments graduated at 15° can be used at any other temperature without influencing the final result of a volumetric estimation. (2) If a solution be made up and used at another temperature an error results, but this is often no greater than is occasioned by the irregularities in the bore of the burette.

The note at the beginning of the chapter on volumetric solutions in the Pharmacopœia need, therefore, only read as follows:

NOTE.—All volumetric solutions should be prepared as near as possible to the temperature at which they are to be used. (Ph. Rev. 00, 507.)——Weight Burette. Peck describes a burette which can be weighed before and after titration, thus giving the weight of the solution used instead of the volume. (Ph. J. 99, 111.)

VOLUMETRIC STANDARDIZATION. Puckner, in experimenting with the methods of the U. S. P., finds that *oxalic acid* is unsafe for volumetric work. The method of standardizing sulphuric acid as *ammonium sulphate* is quite satisfactory. The results obtained with *sodium carbonate* in the standardization of acids are exceedingly satisfactory. *Borax* is not as satisfactory as sodium carbonate or ammonium sulphate for volumetric acid solution. (Ph. Archiv. 98, 172. Proc. 99, 620. See also Proc. 98, 399.)

Alkali Carbonates and Bi-carbonates. Leys, commenting on the test in which solutions of magnesium sulphate are employed, says that the precipitate so produced with carbonates is soluble in solutions of alkali carbonates and borax. He finds that in a solution

containing 32 parts of sodium bi-carbonate to 68 parts of crystallized sodium carbonate, the carbonate reaction is entirely overcome by the solvent action of the bi-carbonate, no precipitate being obtained no matter how much magnesium solution was used. Neither could a reaction be obtained in a solution containing 40 Gm. borax to 60 Gm. sodium carbonate. When calcium sulphate was substituted for magnesium sulphate, the detection of carbonates in presence of bi-carbonates was successful in every case; even the traces in sodium bi-carbonate and commercial borax could be detected. (Ann. Chim. Anal. Appl. III, 44. Ph. Rev. 98, 238.)

Catford claims that marble of known value is a better agent for standardizing hydrochloric acid than sodium carbonate. (Ch. & Dr. 00, Jan. 69.)

Amines. Alkalimetric Distinctions. Astruc points out that the amines of the fatty series, such as methylamine, ethylamine and propylamine, react monobasically both with phenolphtalein and with helianthin, while the primary aromatic amines, such as aniline, the toluidines and the naphthyl-amines, are neutral towards phenolphtalein, but are monobasic to methyl-orange. (Compt. rend. *129*, 1021. Ph. J. 00, Feb. 91.)

Absinthium.

Ash. Percentage. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.)

Chemistry. Adrian and Trillat. (Nouv. Rem. 99, 93. A. J. Ph. 00, 79.)

Acacia.

African Gums. Varieties from Hinterland. Dieterich. (Apoth. Ztg. 98, 265. Proc. 98, 848.)——A variety of gum from Angra Pequena, in German S. W. Africa, is said to be greatly superior to the official. (Ch. Ztg. xxi, 256. Ph. J. 98, Jan. 24.)——Bocquillon describes the gums produced in the French colonies, dividing them into two classes, those soluble in water and those swelling in water and insoluble or partly insoluble. (Apoth.-Zeit. 99, 312. Proc. 99, 564.)

Detection of Dextrin. Shoults finds the statement of the U. S. P. that acacia will not reduce alkaline cupric tartrate, V. S., to be incorrect, so far as his experiments go. He thinks that very little if any dextrin is used for adulterating the powder, and if used at all it is the white kind which contains more or less starch, which could be detected by its insolubility and by iodine T. S. A high specific rotatory power would, however, be indicative of the presence of dextrin, since these substances differ widely in this respect. A solu-

tion of pure acacia was —18°, a sample of dextrin containing starch was + 102°, and a readily soluble sample was + 138°. (A. J. Ph. 00, 267.)

Detection of Gelatin. Trillat gives a method using formaldehyde. (Ph. Post, 99, 629. Proc. 00, 643.)

Examination. Patch. (Proc. 00, 199.)

Valuation. Fromm. (Zeits. Anal. Chem. 01, No. 3. Ph. Zeit. 01, 393.)

Ash. Moor and Priest. (Ph. J. July, 00, 109.)

Powder. Microscopical Examination. Kraemer. (Proc. 98, 306.)

Acetanilidum.

Preparation. Walters. (Bull. Ph. 99, 53.)

Preparation, Properties, etc. Gorr. (Ph. Rev. 99, 295. Proc. 00, 831.)

Solubility. Enell. (Med. Farm. För. 98, 1. Apoth. Ztg. 98, 629.)

Tests. Power points out the errors in the test of the B. P. (Ph. J. 00, 145.)

Ferric Chloride Test. Helbing and Passmore comment on the G. P. test. (Ch. & Dr. 00, 354.)

Volatility. Moerk reports on the volatility of acetanilid, which he finds to be between 40° and 50° C,, and certain of the new remedies. (Proc. Pa. Ph. Assoc. 98, 111. A. J. Ph. 98, 335.)

(Acetone.)

Testing. Conroy. (J. Soc. Ch. Ind. 99, *19*, 206. A. J. Ph. 00, 434.)

Acetum Scillæ.

Krosz calls attention to the fact that the alcohol in the acid official in the Germ. Pharm. is gradually converted into acetic ester (ether), and hence the reaction with alkalies is negatived. (Apoth.-Zeit. 98, 693.)

Acidum Aceticum.

Commercial. Examination. Berry. (A. J. Ph. 99, 142.)

Substitute for Ethyl Alcohol. Squibb recommends the use in extracting certain drugs. (A. J. Ph. 99, 1.) (See Belladonna, Cinchona, Ipecac, Frangula.)

Acidum Aceticum Glaciale.

Test of Strength. Alcock thinks that the solubility in an equal volume of turpentine might be added to the tests of the B. P. 98, inasmuch as the specific gravity and melting point are no indication of the value of the acid. (Ph. J. 99, Aug. 201.)——Umney notes a

discrepancy between the required strength in the B. P. and the M. P. of the acid. (Ph. J. 98, 242.)

Acidum Arsenosum.

Estimation. Pelouski observes that while the U. S. P. process is wrong in theory, it yields satisfactory results. He points out that in the estimation of arsenous compounds by volumetric iodine solution the presence of sodium carbonate is considered objectionable, yet its presence is likely, since sodium bicarbonate is gradually changed to normal carbonate when boiled. He contends, however, that there is no need of boiling, and shows the inconsistency of directing in the method for the valuation of arsenous acid, that it be dissolved with sodium carbonate by the aid of a gentle heat, and also directing the use of heat in the estimation of solution of arsenous acid when the arsenous acid is already in solution. (W. Dr. 99, 55.)

Acidum Benzoicum.

Preparation. From coal tar. (Ch. Ztg. 00, 177. Apoth. Ztg. 00, 150. Proc. 00, 798.)——By Hydrolysis. Fahlberg finds that a perfectly pure acid may be readily prepared in this way. (Ch. Ztg. 99, 274. Proc. 99, 716.)

Artificial. Raikow finds that a small amount of chlorine always adheres to this product, which serves as a basis for its detection. (Oest. Ch. Ztg. 99, 121. Apoth. Ztg. 99, 120. Proc. 99, 715.)

G. P. Ed. IV. Sublimed from benzoin is the only form admitted.

Definition of B. P. Criticism by Power. (Ph. J. 00, 146.)

Tests. Helbing and Passmore comment on tests of G. P. Ed. iv. (Ch. & Dr. 00, 354.)

Chlorine. Detection by means of flame test. Rupp. (Ph. Centralh. 41, 529. Ph. Rev. 01, 75.)——Süss. (Ph. Centralh. 00, 449. Apoth. Zeit. 00, 558.)

Acidum Boricum.

Preparation. Moore. (Ch. Centralb. 78, 547. Ph. Rev. 01, 220.)

Borates. Flame Test. Borntraeger states that when these salts are heated with fluoric acid alone, or with ammonium nitrate and chloride, or with sulphuric and hydrochloric, or sulphuric and nitric, or nitric and hydrochloric acids, the flame of a Bunsen burner assumes a handsome green color at once. (Zeits. Anal. Ch. 00, 92. Apoth. Ztg. 00, 294. Proc. 00, 698.)

Estimation. Gladding gives a process based upon the volatilization in a current of methyl alcohol vapor. (Jour. Am. Chem. Soc. 98, Feb. 4. Am. Dr. 98, 69. Proc. 98, 923.)

Solubility. Enell. (Med. Farm. För. 98, 1. Apoth. Ztg. 98, 629. Proc. 99, 371.)

Insolubility in Vaselin. Miehle. (Apoth.-Zeit. 98, 768. Proc. 99, 614.)

Volumetric Estimation. Wollf employs a solution of ferric salicylate in sodium salicylate as an indicator for the titration of the acid and its salts. (Compt. rend. *130*, 1128. Ph. J. 00, June, 663.)——Copaux. (Compt. rend. cxxvii, 756. Apoth.-Zeit. 99, 58. Proc. 99, 613.)——Fischer comments on Jœrgensen's method. (Zeits. Unter. Nahr. Genussm. *3*, 17. Ch. Centralbl. *71*, 1, 515. Ph. Rev. 00, 180.)

Acidum Carbolicum.

Decolorizing. Barth finds that the color can be removed from a 5 p. c. solution by means of common wool. This is of no avail, however, with 95 p. c. acid. (Schweiz. Woch. 98, 581.)

Household. Williams suggests a mixture of phenol and grain alcohol. (Dr. Circ. 00, 46.)——Hallberg suggests a 25 p. c. alcoholic solution. (Proc. 00, 263.)

Volumetric Determination. Locher reviews the methods and finds that phenol can be determined volumetrically by oxidation with permanganate, and when other oxidizable substances are absent considers it more accurate than halogen processes. (Ph. J. 01, 360.)

Albumin Test. Mayer finds that both carbolic acid and creosote coagulate albumin so that its use for their differentiation is valueless. (Merck's Rep., 00, 359.)

Color Test. Fiora says that with oil of peppermint it gives a bluish-green color, which disappears on warming, but is again evident when the mixture cools. This color reaction is not given by creosote, guaiacol, resorcin, etc. (Rev. Pharm. *11*, 39. Ph. J. 01, 617.)——Chapman gives reactions with various phenols and zinc chloride and sulphuric acid. (Ch. Ztg. xxiv, 376. Ch. & Dr. 01, 568.)

Tests and Dose. Helbing and Passmore comment on the G. P. test. (Ch. & Dr. 00, 354.)

Acidum Carbolicum Crudum.

Estimation of Phenols. Smith gives a method by which the relative proportions of phenol and the cresols may, approximately at least, be ascertained. (A. J. Ph. 98, 369.)

Identity. The A. Ph. A. Comm. state that there is no crude acid obtainable in the market which will comply with the tests and requirements of the U. S. P. (Proc. 98, 225.)

(Acidum Carbonicum.)

Preparation of Galenicals. Strauss gives references to methods in which the acid has been used. (Ph. Rev. 00, 366.)

Estimation in gaseous mixtures by means of lime and phenol-

phtalein. Vignon and Meunier. (Compt. rend. *130*, No. 8. Ch. News, 00, 131.)

Acidum Citricum.

Examination. Patch. (Proc. 00, 199.)

Citrates. Test. Deniges gives a method depending upon the formation of an insoluble precipitate with mercuric sulphate in excess after oxidation with potassium permanganate. (Bull. Soc. de Ph. de Bordeaux, *39*, 97. Ph. J. 99, Aug. 139.)——Deniges finds that when citric acid is treated with potassium permanganate, crystals of manganese oxalate are formed. (J. de Ph. et Ch. 00, 102. A. J. Ph. 00, 592.)

Lead Test. Helbing and Passmore comment on the G. P. test. (Ch. & Dr. 00, 354.)

Detection. Deniges. (J. de Ph. et Ch. 98, 487. A. J. Ph. 99, 275.)

Salicylic Acid Detection. Conrady. (Apoth.-Zeit. 00, 558.)—— Langkopf. (Ph. Centralh. 00, 464.)

Tests. Helbing and Passmore comment on the test of the G. P. ed. iv. (Ch. & Dr. 00, 354.)

Acidum Gallicum.

Protection from Light. (Apoth. Ztg. 99, 84. Proc. 99, 370.)

Reaction with Tartaric Emetic. Dott finds this acid to give an abundant precipitate with tartaric emetic. (Ph. J. 99, Jan. 58. Proc. 99, 725.)

Tests. Criticisms of B. P. test, that it is not precipitated by tartrated antimony. Power. (Ph. J. 00, 146.)

Acidum Hydrobromicum.

Preparation. Scott gives method for preparing it in a state of purity. (J. Ch. Soc. 00, 648.)

Acidum Hydrobromicum Dilutum.

Commercial. Examination. Bishop examined ten samples and they were all stronger than the official standard. (A. J. Ph. 99, 142. Proc. 99, 600.)

Strength. The G. P. directs 25 parts of hydrobromic acid in 100 parts and to have sp. gr. 1.208.

Acidum Hydrochloricum.

Standard. Higgins gives a method for the preparation of an exact standard which consists in dissolving a given weight of pure dry hydrochloric acid in a definite weight of water. (Jour. Soc. Ch. Ind. *19*, 958. A. J. Ph. 01, 200.)

Strength. G. P. directs 25 parts of pure acid in 100 parts.

Acidum Hydrochloricum Dilutum.

Commercial. Examination. Brewton estimated the strength of 10 samples, the percentages ranging from 3.70 to 11.40. (A. J. Ph. 99, 142.)

Preparation of Galenicals. Strauss gives summary of drugs in which this acid has been used. (Ph. Rev. 00, 299, 362.)

Acidum Hydrocyanicum Dilutum.

Preparation Wade and Panting allow a cold mixture of equal parts of sulphuric acid and water to drop on potassium cyanide, and state that the acid is exceptionally pure and given off regularly and almost in theoretical proportions. If concentrated sulphuric acid is used, an almost theoretical quantity of pure carbon monoxide is obtained. (Jour. Chem. Soc. Merck's Rep. 98, 339.)

Deterioration. Feil suggests a time limit of keeping. (Proc. 98, 239.)

Commercial. Examination. Middleton. (A. J. Ph. 99, 142.)

Estimation in Presence of Ferro- and Ferri-Cyanides. Beckurts. (Apoth. Ztg. 00, 109. Proc. 00, 703.)

Formation. Gigli has observed that if a solution of potassium ferrocyanide containing carbonic acid be brought to the boiling point, hydrocyanic acid will be formed and may be detected in the filtrate after cooling. The quantity is sufficient to interfere with the use of carbonic acid as a test for the presence of potassium cyanide in the ferrocyanide. (Ch. Ztg. xxii, 775. Ch. News 00, 83.)

Acidum Hypophosphorosum Dilutum.

Commercial. Examination. Haus examined five samples which conformed to the official description in physical properties, but varied considerably in total acidity. (A. J. Ph. 99, 143.)

Interference in Reactions. Vanino calls attention to the influence of this acid in retarding or preventing certain chemical reactions, it being similar in this respect to many organic substances. (Ph. Centralh. 99, 637. Proc. 00, 695.)

Hypophosphites. Assay. Jowett states that any method to be accurate must either not be influenced by any impurities present, or the disturbing impurities must first be removed, and on this basis proposes the use of lead acetate for removal of the impurities. The excess of lead is removed by hydrogen sulphide, and the pure hypophosphite is completely oxidized to phosphate and estimated. (Proc. Br. Ph. Conf. 98, 409. Proc. 99, 609.)

Acidum Lacticum.

Preparation. From sour-krout liquor. Beckers. (Apoth. Ztg. 99, 400. Proc. 00, 798.)

Commercial. Examination. Bready. (A. J. Ph. 99, 143. Proc. 99, 715.)

Acidum Nitricum.

Production. From atmospheric nitrogen. Wilbert. (A. J. Ph. 01, 171.)

Strength. G. P. directs 25 parts of pure acid in 100 parts.

Preparation of Galenicals. Strauss gives summary of drugs in which this acid has been used. (Ph. Rev. 00, 366.)

Acidum Oxalicum.

Preparation. Oxalic Acid, C. P. Schmatolla. (Apoth. Ztg. 01, 194. Ph. Rev. 01, 220.)

Industrial Production. Zacher. (Apoth. Ztg. 98, 482. Proc. 99, 712.)

Stability of Solutions. Jorissen. (Ch. Centralb. 98, 1084. A. J. Ph. 99, 486.)

Acidum Phosphoricum.

Preparation. Criticism of text of B. P. Power. (Ph. J. 00, 146.)

Examination. Patch. (Proc. 00, 200.)

Detection of Lime. Gane proposes a method for determining the acid phosphate ($CaH_4P_2O_4$), frequently present in acid made from bone ash, which depends upon the fact that the sodium acid phosphates react differently to methyl orange and phenolphtalein. Using caustic soda for the titration it will be found that when the acid phosphate is present a few more c.c. of the soda solution will be required to effect neutralization when phenolphtalein is used as indicator than when methyl orange is used, this excess indicating the amount of lime present. (Am. Dr. 00, 4.)

Determination.—Gladding gives method of determination as ammonium phosphomolybdate. (Chem., News 98, 32. Proc. 98, 919.)——Lasne gives results of experiments on conditions and nature of ammonio-magnesium phosphate. (Bull. Soc. Chem. 97, Nos. 16, 17. Ch. News 97, 268.——Veitch finds that the precipitation with molybdate when organic matter is present, is complete in the presence of citric acid. (J. Am. Ch. Soc. *21*, 1090. Ph. Rev. 00, 84.)

Volumetric Estimation. Kühling has devised a method based upon the fact that when an aqueous solution of the acid is heated with potassium permanganate in the presence of zinc sulphate,

oxidation takes place and is accompanied by the separation of manganese dioxide. (Ber. 33, 2914. Ph. Rev. 01, 75.)

Acidum Phosphoricum Dilutum.

Commercial. Examination. Haus. (A. J. Ph. 99, 143.)

Strength. G. P. directs 25 parts of pure acid in 100 parts.

Preparation of Galenicals. Strauss gives summary of drugs in which this acid has been used. (Ph. Rev. 00, 366.)

Acidum Salicylicum.

Preparation. Laizer is of the opinion that salicylic acid can be prepared economically by pharmacists from oil of wintergreen, and describes apparatus and a process for this purpose. (Bull. Ph. 99, 54. Proc. 99, 718.)

Sublimation. Power criticises text of B. P. (Ph. J. 00, 146.)

Detection. Cenci employs a solution of zinc (5 Gm.) in nitric acid (30 Cc.). A few drops of this reagent added to a warm solution of salicylic acid produces a violet coloration, which on boiling changes to wine red. Sodium salicylate gives violet reaction in the cold. One part of salicylic acid in 60,000 parts of solution may be detected by this reagent. (Al Policlinico, Suppl. xxxi, 25. Am. Dr. 98, 6.) ——Ridenour finds in hydrogen peroxide in the presence of ammonium carbonate a possible test for the acid. (A. J. Ph. 99, 414.)

Reaction with Nitrate. Itallie finds this reaction to be efficient for the detection of salicylic acid in solutions of 1 : 2 or 3000. If a dilute solution of potassium nitrite is added to a 1 p. c. solution of sodium salicylate, a few drops of dilute sulphuric acid added, and the mixture heated to boiling, it becomes yellow, rapidly changing to brown and finally red-brown. On addition of potassium hydrate solution, this changes to dark red-brown, and if the mixture is then boiled with zinc dust, it again becomes colorless. The addition of a few drops of solution of sodium hypochlorite will now impart a handsome green color, and if in turn an excess of acid is added to the solution, the color changes to red. (Apoth. Ztg. 99, 584. Proc. 99, 719.)

Determination in presence of Citric Acid. Langkopf finding the ferric chloride test inefficient in presence of citric acid recommends extracting the salicylic acid with a mixture of ether and petroleum ether and estimating the residue. (Ph. Centralh. 00, 335. Proc. 00, 799.)——Conrady states that there is no difficulty with the ferric chloride test, providing the iron be maintained in the ferric condition, which may be done by adding a drop of nitric acid or of hydrogen dioxide. (Apoth. Ztg. 00, 412. Proc. 00, 799.)

Volumetric Assay. Telle. (J. de Ph. et Ch. 01, 49. A. J. Ph. 01, 189.)

Acidum Sulphuricum.

Industrial preparation. (Zeits. Angew. Ch. 99. Ph. Centralh. 99, 335. Proc. 99, 605.)

Concentration in Iron Vessels. Hartman. (Ch. News 99, 295.)

Selenium. Detection. Schlagdenhauffen and Page. (J. de Ph. et Ch. 00, 261. A. J. Ph. 01, 95.)

Examination. Troth examined seven samples, three of which were entirely free from impurities. (A. J. Ph. 99, 143.)

Sulphate. For the detection of sulphates in presence of thiosulphates, Dobbin recommends the following: The solution is placed in a flask, the air displaced by a current of carbonic anhydride, and the liquid heated. Excess of hydrochloric acid is added, and the liquid boiled down to ¼ of its original volume, the current of carbonic anhydride being maintained all the while. In this way the sulphurous anhydride set free is carried off. The liquid is then filtered from the separated sulphur, the sulphate remaining in solution where it can be determined. (Ph. J. 00, Feb. 182.)

Standard Solutions. Marshall concludes that by far the most accurate and rapid results can be obtained by basing standardizations on the very accurate densities of sulphuric acid, made by Pickering (see J. Chem. Soc. 1890, *57*, 64). (J. Soc. Ch. Ind. 99, *18*, 4.)

Preparation of Galenicals. Strauss gives summary of drugs in which this acid has been used. (Ph. Rev. 00, 364.)

Acidum Sulphuricum Aromaticum.

Examination. Beyerle determined the percentages of official sulphuric acid in 12 commercial samples, with the result that they were all below the required standard but one, which was above. (A. J. Ph. 99, 144.)

Acidum Sulphurosum.

Preparation. Hoskins urges following pharmacopœial directions implicitly. (Merck's Rep. 98, 72.)

Commercial. Coleman examined eight samples, none of which came up to the official requirement for sulphur dioxide. (A. J. Ph. 99, 144.)

Detection. Jervis observes that in reducing ferric solutions with sulphurous acid the sense of smell does not indicate the absence of SO_2 with sufficient delicacy. He proposes instead of a Bunsen valve and other like contrivances, that through the hole of the stopper

which closes the mouth of the flask there be inserted the short end of a syphon-like tube; as soon as the evolution of SO_2 becomes faint, the outer end drawn out is dipped into an acid solution of very dilute permanganate. The complete clearing of the solution indicates SO_2. (Chem. News 98, 133.)

Acidum Tannicum.

Preparation. Power criticises text of B. P. (Ph. J. 00, 146.)

Estimation. Vignon recommends untwisted silk for the estimation of tannin in aqueous solution. If an excess of silk (about 5 Gm.), is immersed in a solution of 0.1 Gm. of tannin in 100 c.c. water during 4 or 5 hours at a temperature of 50°, the tannin will be completely absorbed, and free from other substances that are usually taken up. The tannin may then be determined either by direct weighing, by estimating the extract both before and after absorption, or by titration with permanganate both before and after treatment with silk. 1 c.c. of permanganate solution containing 3.164 Gm. $KMnO_4$ per liter, corresponding to 0.004155 Gm. tannin. (J. de Ph. et Ch. 98, No. 8. Ph. Ztg., 98, 791.)

Test. Leyde finds gold chloride to be a very delicate test for tannin. The reduction of the gold salt is manifested by a purple coloration, and even in very dilute tannin solutions, by a red coloration. Neutral or faintly acid solutions are the most favorable for the reaction. (Ch. Zeit. 98, 1085.)——A solution of 1 part of sodium tungstate with 2 parts of sodium acetate in 10 parts of water gives a straw yellow precipitate. (A. J. Ph. 98, 472.)

Estimation. Specht and Lorenz propose a method whereby tannin is precipitated with safranin as a tannin-antimony lake and the uncombined safranin reduced by means of hyposulphite. (Ch. Ztg. 00, No. 17. Ph. Ztg. 00, 266. Proc. 00, 803.)

Optical Behavior. Walden. (Ph. Zeit. 98, 82. Proc. 98, 1045.)

α-Digallic Acid. Flowitsky considers this acid to be entirely different from tannin, with which it has been supposed to be identical. (Ch. News 99, 183.)

Acidum Tartaricum.

Manufacture. Scarlata. (Mon. Scient. (4), xiii, 99, May. Ch. News 99, 296.)——Preparation of fluosilicic acid used in its manufacture. (Monit. Scient. (3), xiii, May, 1899. Ch. News 99, 296.)

Examination. Patch. (Proc. 00, 200.)

Estimation. Schafer states that the method of Goldenberg—which is based on the setting free of the tartaric acid by hydrochloric acid—is the one most used. The free acid is converted into a neutral potassium salt, the solution evaporated to a small volume, and

glacial acetic acid added, whereupon partial precipitation takes place, which becomes complete on addition of a known volume of 96 p. c. alcohol and standing. The precipitate of potassium bitartrate is then washed on a filter, dissolved in *warm* water, and the solution titrated with normal soda *while still warm*. However, a number of precautions are to be observed, or the result will not be accurate. (Ch. Ztg. 98, 255. Ch. News 98, 85.)

Determination of Argols. Von Moszezenski. (Am. Dr. 98, 128.)

Determination in presence of citric acid. Borntræger gives a test which depends upon the fact that on the addition of calcium chloride to a solution (which has been neutralized with KOH) containing various amounts of citric acid and tartaric acid, the latter, on account of the excess of citric acid, is precipitated as potassium bitartrate. (Zeits. Anal. Ch. 98, 8.)

Aconitum.

Japanese. Dunstan and Read give the results of an investigation of the alkaloids of Japanese aconite, one of these being that Wright and Luff were correct in regarding japaconitine as different from aconitine, although they state that the physiological action is the same. (Ph. J. 99, Nov., 512)

Market Varieties. Holmes. (Ph. J. 00, Mar., 278. Proc. 00, 563.)

Examination. Patch. (Proc. 00, 200.)

Ash. Moor and Priest. (Ph. J. July, 00, 109.)

Oxidizing Ferments. Lepinois. (J. de Ph. et Ch. 99, 49. A. J. Ph. 00, 77.)

Alkaloids. Cast and Dunstan state that the extraordinary toxic power of *acontine* is mainly dependent on the presence of the acetyl radicle in the molecule. (Proc. Royal Soc. lxii, 338. Ph. J. 98, 323.)

Aconiiine. Tests. Criticism of B. P. description and test. (Ph. J. 00, 147.)

Aconitine Heptaiodide (?). Analysis. Prescott and Gordin. (Proc. 98, 365.)

Aconitine Triiodide (?). (Ibid.)

Action of Iodine on Aconitine. Kippenberger. (Zeits. Anal. Ch. 39, 435. Ph. Rev. 00, 523.)

Assay. Dohme recommends a modification of Keller's method for the assay of the root and leaves, which consists for the most part in a variation of the proportion of solvents used for the extraction, and the avoidance of temperatures exceeding 50° C. throughout the assay. (Dr. Circ. 00, 69.)——A further examination of the product of assay showed it to be, in both cases examined, aconitine, but of different purity. Dohme (Dr. Circ. 00, 132.)

Powder. Assay. Kippenberger. (Apoth. Ztg. 98, 664 and 672. Proc. 99, 726.)

Adeps.

G. P. Ed. IV. M. P. 36–42° C., colorless when melted and viewed through a layer 1 Cm. deep. In the limit test for free acids the amount of chloroform is specified as 10 Cc. 2 parts of lard boiled with solution of potash (sp. gr. 1.138 to 1.140), 3 parts, and alcohol, 10 parts, until clear should give, in diluting with water, 50 parts, and alcohol 10 parts, a clear or only slightly opalescent solution. The iodine absorption figure (Hübl method) should be between 46–66.

Acid Number. Dieterich has examined into the causes of change in lard and finds the acid number to furnish the most important clue for determining its quality. (Apoth. Ztg. 99, 734. Proc. 00, 784.)

Testing. Mansfield gives a method for obtaining the iodine number of the oleic acid, which is considered an important clue to the purity of lard. (Ph. Centralh. xxxviii, 353. Ph. J. 98, Feb., 126.)

Detection of Vegetable Fats. Forster and Reichelman detect the presence of vegetable fats in lard by testing for physosterin, which is distinguished from the cholesterin of animal fats by the character of its crystallization. According to Salkensky, the cholesterin crystallizes from the alcoholic solution in the form of very thin rhombic tablets, while physosterin forms solid stellate, sometimes broad bundles of needles, or hexagonal tablets if the crystallization is slow. (Ph. Centralh. xxxviii, 151. Proc. 98, 1020.)

Adeps Benzoinatus.

Preparation. Dohme washes lard with cold water and presses out adhering moisture. To the melted lard a mixture of 100 Gm. calcium sulphate, 20 Gm. benzoin, previously powdered with an equal bulk of clean white sand, is added and the whole kept at a temperature of 115°–140° F. for 2 hours, stirring frequently. (Proc. Md. Ph. Assoc. 97, 41; Proc. 98, 664.)——A method is proposed to make an ethereal solution of the benzoin, mix with castor oil and evaporate the ether. This castor oil solution (15 Gm.) is mixed with 965 Gm. lard and 20 Gm. wax (if desired). (Ph. Post, *32*, 740. Ph. Rev. 00, 133.)——Williams does not favor the use of heat in making this ointment. (Proc. Conn. Ph. Assoc. Ph. J. 98, Jan., 23.) ——When pure lard is used the U. S. P. method is quite satisfactory. Bamford. (A. J. Ph. 01, 29.)——Morris suggests adding benzoin to semi-fluid lard. (Proc. Ga. Ph Assoc. 98, 40; Proc. 99, 411.)—— Hemm describes an apparatus for the convenient preparation according to the official requirement. (Proc. Mo. Ph. Assoc. 97, 85; Proc. 98, 663.)

Adeps Lanæ Hydrosus.

G. P. Ed. IV. M. P. is about 40° C. In addition to the tests for glycerin and ammonia it is stated that on washing 10 Gm. of hydrous wool fat with 50 Cc. of water 10 Cc. of this filtered solution should not discharge the color of 2 drops of potassium permanganate solution (1:1000).

Preparation. Hurwitz gives a method of preparing the official article from the crude material, and claims that it is cheaper than the commercial product. (New Eng. Drug. ix., 650. Ph. J. 98, Jan., 45.)

Color Test. (Ph. Post 99, 427. Proc. 00, 435.)

Properties. Elborne. (Ph. J. 99, July 26. Proc. 00, 443.)

Aether.

Detection of Water. Grier, using carbon disulphide instead of benzene, is able to detect as little as $\frac{1}{16}$ p. c. of water added to ether free from alcohol, whereas benzene does not detect ½ p. c. (Ph. J. 98, 294.)

Estimation of Aldehyde. Francois makes use of the action of bisulphited rosaniline, and applies the colorimetric method of Mohler, in which the reddish-violet coloration, produced by the action of the colorless bisulphited rosaniline, reveals the presence of aldehyde in alcohol. (J. de Ph. et Ch. (6) v., No. 11. Ch. News 97, 7, 8.) —— Blaser finds that any kind of fuchsine in solution of 1:100,000, and without the use of sulphurous acid, may be used as a test. (Ph. Centralh. 99, Oct., 607. Proc. 00, 763.)

Removal of Aldehyde. Francois. (J. de Ph. et Ch. (6) v., No. 11. Ch. News 97, 7, 8.)

Prevention of Evaporation from unsealed bottles. (Nat. Drug. xxvii., 210. Ph. J. 98, Jan., 91.)

Aether Aceticus.

Examination. Patch. (Proc. 00, 200.)

Alcohol.

Preparation from the corresponding hydrocarbon. (J. Soc. Chem. Ind. *19*, 684. A. J. Ph. 01, 34.)——Wood tried some of the methods which have been given in the text-books for the synthesis of ethyl alcohol, but obtained only negative results. (Ch. News 98, Dec. 308.)——Preparation from sawdust. Simmson. (Zeits. Angew. Ch. 98, 98. Apoth.-Zeit. 98, 776. Proc. 99, 679.)

Dehydration. By calcium carbide. (Comp. rend. cxxv, 1182. Ph. J. 98, Feb., 139.)

Detection of Methyl Alcohol. Trillat proposes a method which is dependent on the fact that by condensing with dimethylamine the ethylal or methylal produced on oxidizing mixtures of ethyl or methyl alcohol with potassium dichromate and sulphuric acid, the methyl compound produces a persistent blue compound becoming more intense on warming, whereas the ethyl alcohol gives a body which has a blue color that is fugitive on warming. (Compt. rend. cxxvii, 234. Ph. J. 98, Sept., 345. Proc. 99, 690.)——Gautier describes an identical method. (Compt. rend. 98, July, 25. Ch. News 98, 267.)

Determination in Presence of Ether. Dowzard uses a method which depends upon the fact that alcohol forms a compound with calcium chloride, while ether does not. (Ph. J. 99, Feb., 170. Proc. 99, 680.)

Determination in Tincture of Iodine. Gunn proposes the following: Strong solution of sodium hyposulphite is added in just sufficient quantity to decolorize the iodine solution; caustic potash is added to saturate the sulphurous acid formed; and the alcohol is then distilled off and calculated in the distillate in the usual way. (Ph. J. 98, Sept., 330. Proc. 99, 680.)

Limit of Acidity and Fusel Oil. Miehle, finding the product of the German market unduly contaminated with the foregoing impurities, proposes the following tests: If 25 Cc. of the alcohol be carefully mixed with 1 drop of phenolphtalein solution, the mixture should not require more than 0.15 Cc. of normal alkali to produce a red color.

If 4 Cc. of alcohol be mixed with 1 Cc. of chloroform, the mixture then shaken with 4 Cc. of distilled water, and the chloroform carefully removed by means of a pipette and dropped upon filter paper, should leave no odor of fusel oil after complete evaporation. (Apoth.-Zeit. 98, 799. Proc. 99, 680.)

Substitution in Therapeutics. Davis discusses therapeutic properties of alcohol and gives reasons why the fermented and distilled liquors used as beverages should not be recognized in the Pharmacopœia as medicinal agents. (Jour. Amer. Med. Assoc., Aug. 21, 97. A. J. Ph. 97, 516.)——England contends for the retention of fermented and distilled liquors in the U. S. P. (A. J. Ph. 97, 580.)

Isobutyl Alcohol. Nagelvoort recommends this alcohol as a substitute for the unpleasant amyl alcohol as an alkaloidal solvent in forensic analysis. (Tijdschr. v. Pharm. 98, 316. Ph. Ztg. 97, 791. Proc. 99, 693.)

Alcohol Absolutum.

Patch says it is usually alkaline in reaction. Proc. 00, 200.)

(Alcohol Methylicum.)

Preparation. From the corresponding hydrocarbon. (J. Soc. Chem. Ind. *19*, 684. A. J. Ph. 01, 34.)

Detection in pharmaceutical preparations. Sieker proposes a method based upon the oxidation of methyl alcohol vapor by means of a hot copper spiral, the reaction being as follows: $CH_3OH + CuO = HCOH + H_2O + Cu$. (Ph. Rev. 01, 117.)

Solvent. Gordon discusses the availability. (Am. Dr. 01, 101.)

Qualifications required by the British Revenue Commission. (Ph. J. 99, Aug., 173.)

Alcohol Methylicum Purificatum. Question of Toxicity. Picard experimenting with gold-fish in the relative toxicity of the alcohols finds that this is directly as their molecular weights and may be expressed by the following figures: Methyl alcohol, ⅔; ethylic, 1; propylic, 2; butylic, 3; amylic, 10. These results are contrary to those of Dujardin-Beaumetz, in so far that he found methyl to be more poisonous than ethyl alcohol. (Compt. rend. cxxiv, 829. Ph. J. 97, 446.)

Gregory says that tincture of iodine, spirit of camphor, soap liniment, tincture of arnica, made with Columbian spirit are, so far as could be judged by physical examination, fully as satisfactory as those made with ethyl alcohol. (Proc. N. Y. Ph. Assoc. 97, 245. Proc. 98, 1001.) (See also Ph. Rev. 00, pp. 51, 54 and 56. A. J. P. 01, 285, 289.

Aloes.

Commercial varieties and their sources. Lloyd. (W. Dr. 98, 338.)

G. P. Ed. IV. A fragment of aloes should give when treated with nitric acid, a dark greenish, not a red, color zone. Aloes, 5 parts; should give with boiling water, 60 parts, a clear solution, from which on cooling 3 parts will separate. One part of aloes with 5 parts of alcohol (90 p. c.) will give on warming a clear solution which will remain bright on cooling.

Curaçoa. According to Brit. Consul Jesburun, economic and trade conditions are responsible for the indifferent quality of much of the commercial article. (Ph. J. 99, June 538. Proc. 99, 512.)

Socotrine possesses no special claim to official recognition and should be superseded by Curaçoa aloes, and the latter given recognition in the U. S. P. A. Ph. A. Comm. (Proc. 98, 224.)——Monograph. Lloyd. (W. Dr. 98, 338.)

"*Unganda.*" Description. Holmes. (Ph. J. 99, Mar., 230. Proc. 99, 511.) Naylor and Bryant find this variety to closely resemble Cape aloes in characters and tests. (Ph. J. 99, Apr., 296.)

Evans found no aloin. (Ph. J. Nov., 00, 573.)

Ash. In Barbadoes and Socotrine aloes. Moor and Priest. (Ph. J. July, 00, 109.)

Color Reactions. Hirschsohn gives summary of the most reliable tests. (Ph. Zeit. *46*, 117. Ph. J. 01, 460.)

Chemistry. Dohme points out: (1) That Curaçoa aloes is as efficient, and being much cheaper, should be used in preference to Socotrine aloes, the greater portion of which as sold to-day is made up of Curaçoa aloes. (2) That the resin of aloes is an ester or organic salt, and varies according to the kind of aloes, and that the varying constituent is the acid, the alcoholic constituent being aloresinotannol, and being the same in both Barbadoes and Cape aloes, the only two thus far examined. (3) That aloin contains emodin, to which its laxative property is probably due. (4) That many laxative drugs, such as senna, cascara sagrada, rhubarb, buckthorn bark, besides aloes, owe their laxative property to this substance, or some substance like it derived from anthraquinone. (Proc. Md. Ph. Assoc. 98, 99. A. J. Ph. 98, 398.)

Reactions. Heuberger finds that, owing to the distinct composition of nataloin, which yields neither oxymethyl-anthraquinone nor chrysophanic acid, not a single reaction holds good for all kinds of aloes For distinguishing the different kinds he, however, considers the halogenid and the cyanogen reactions of Klunge to be the most available. In order to apply these tests 0.5 Gm. of the sample is boiled with 50 c.c. of water, filtered and diluted to 500 c.c. Then for the *halogenid reaction*, 1 c.c. of cupric sulphate solution (1:20) is added to 10 c.c. of the aloes solution, followed by 0.5 to 1 c.c. of sodium chloride solution (1:3), and 1 to 2 c.c. of alcohol, or omitting the alcohol and applying a gentle heat. The *cyanogen* reaction is made by adding 1 c.c. of the copper sulphate solution to 10 c.c. of the aloes solution, and then 1 c.c. of cherry-laurel water.Borntraeger's ammonia test is also recommended, particularly if applied in connection with ether as suggested by Tschirch. (Schweiz. Woch. 99, 506. Proc. 00, 576.)——Hirschsohn. (Ph. Centralh. 01, 64. Ph. Rev. 01, 176. Apoth.-Zeit. 01, 88.)

Assay. An aloin standard should be given, and a general heading "Aloe" be substituted for all varieties. A. Ph. A. Comm. (Proc. 98, 224.)

Aloe Emodin. Properties. Oesterle. (Schweiz. Woch. 00, 45. A. J. Ph. 00, 593.)

Powder. Microscopical examination. Kraemer. Proc. 98, 310, 326, 327.)

Aloinum.

Chemistry. Oesterle confirms the work of Tschirch and Pedersen

in tracing the analogy to the oxy-methyl-anthraquinones and reports upon the chemical nature of aloin as follows: (1) By the action of hydrochloric acid upon aloin in alcoholic solution aloe-emodin is formed. The splitting off of sugar during the process could not be determined. The body which Rochleder considered as identical with rottlerin is aloe-emodin. (2) By oxidation with a chromic acid mixture aloin yields products from which a crystalline body separates, which latter is not, however, identical with tetraoxymethyl-anthraquinone. (Arch. Ph. 99, 81.) See also Leger. (Bull. Soc. Chim. *23*, 785, 787, 789, 792. Ph. J. 00, Nov., 511.)

Barbaloin. Leger concludes that the discrepancies of different authors are in the main due to the fact that aloin is decomposed, particularly in the presence of alkalies and even of water. He treated aloes with acetone containing a little glacial acetic acid, and obtained a body in cottony-yellow needles, having 3 mol. of H_2O. Formula $C_6H_{16}O_7H_2O$. (Compt. rend., cxxv, 188. Ph. J. 97, 189.) See also (Bull. Soc. Chim., *23*, 785, 787, 789, 792. Ph. J. 00, Nov., 511.) ——Leger finds that the color reaction of Klunge is due to the accompanying iso-barbaloin. (Compt. rend. *131*, 55. Ph. J. 00, 213.) ——Leger finds that the addition of bromine water to an aqueous solution of this substance produces a yellow, non-crystallizable precipitate readily soluble in alcohol. A solution of barbaloin in concentrated hydrochloric acid yields trichlorbarbaloin when treated with potassium chlorate. (Compt. rend. cxxvii, 234. Apoth. Ztg. 98, 889.)

Homonataloin. In addition to nataloin, Leger reports the presence of this constituent in Natal aloes. (Compt. rend. *128*, 1401. Ph. J. 99, July, 45.)

Examination. La Wall and Pursel report the examination of a sample which was simply powdered aloes. (Proc. Pa. Ph. Assoc. 00, 161. A. J. Ph. 00, 378.)

Identity. Investigation of various aloins and related substances is recommended by A. Ph. A. Comm. (Proc. 98, 224.)——Patch says some standard should be adopted. (Proc. 00, 200.)

Althaea.

Orlow has isolated betaine as well as asparagine from the root of *Althaea officinalis.* (Ph. Zeit. f. Russl. xxxvi, 631. Ph. J. 98, Feb., 116.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 312.)

Alumen.

Dried. Patch says it rarely answers the requirements for solubility. (Proc. 00, 200.)

Ammoniacum.

B. P. 98. Alcock and Kendrick commend the wisdom of the B. P. in requiring the purification of this drug, owing to the poor quality of the present supply. (Ph. J. 99, Mar., 278.)

G. P. Ed. IV. The residue insoluble in boiling alcohol (90 p. c.) should not exceed 40 p. c. Ash limit is 5 p. c. It is directed to be powdered by drying over quicklime and powdering at a low temperature.

Tests. Dieterich says not more than 50 p. c. is insoluble in alcohol and the maximum ash should be 10 p. c. (Ph. Centralh. 98, No. 19.)

Ash. Moor and Priest. (Ph. J. July, 00, 109.)

Structural Characters. Wiesner. (Zeits. Oest. Ap. Ver. 99, 425. Apoth. Ztg. 99, 759. Proc. 00, 611.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 311.)

Ammonii Benzoas.

Examination. Patch. (Proc. 00, 200.)

Ammonii Bromidum.

Solubility. In water and alcohol. Greenish. (Ph. J. 00, Aug., 190.)

Ammonii Carbonas.

Composition. White confirms Squires' observations that samples examined by him contained from 91 to 96 p. c. of the prescribed amount of NH_3. (Ph. J. 00, Feb., 144.)

Temperature of Decomposition. Cowie. (Ph. J. 99, Apr., 368.)

Ammonii Chloridum.

Solubility. Enell. (Med. Farm. For. 98, 1. Apoth. Ztg. 98, 629. Proc. 99, 371.)

Solubility in water and alcohol. Greenish. (Ph. J. 00, Aug., 190.)

(Ammonii Citras.)

Purification. De Koningh proposes the adaptation of Egeling's process for detecting traces of lead in water, for removing copper or lead in ammonium citrate. Hydrogen sulphide and kaolin are employed. (Ch. News 98, 119.)

Ammonii Iodidum.

Examination. Patch. (Proc. 00, 201.)

(Ammonii Tartras.)

Purification. De Koningh proposes a process for removing lead

and copper, based upon Egeling's test for detecting traces of lead in water, viz., the use of hydrogen sulphide and kaolin. (Ch. News 98, 119.)

Ammonii Valerianas.

Examination and Tests. Patch. (Proc. 00, 201.)

Amygdala Amara.

Microscopical Examination. Kraemer. (Proc. 98, 331.)

Amygdala Dulcis.

Microscopical Examination. Kraemer. (Proc. 98, 331.)

Amyl Nitris.

Winkler recommends for inhalation amyl nitrite which has been saturated with carbonic oxide. (Zeits. f. Klin. Med. *36*, 1 and 2. Ph. Centralh. 99, 5. Proc. 99, 694.)

Assay. Smith gives a method similar to the one proposed by him for Spiritus Aetheris Nitrosi (which see). He first dilutes the amyl nitrite with alcohol so as to make a 5 to 6 p. c. dilution. Then using just double the quantity of this (= 10 c.c.) and the reagents in the same doubled proportion, the process is carried out exactly as in the case of spirit of nitrous ether. (A. J. Ph. 98, 273, 402.)—— Fischer and Anderson find that the oxidation method gives the highest results, and that the gasometric method is the best adapted for every-day use. (Proc. 98, 413.)

Distillation. Power criticises B. P. text. (Ph. J. 00, 147.)

Amylum.

G. P. Ed. IV. Wheat starch is official.

Examination. Patch says it is frequently acid or alkaline in reaction. (Proc. 00, 201.)

Study of Starch Grains. Kraemer. (A. J. Ph. 99, 174. Proc. 99, 706.)

Structure of Grains. Salter. (Pringsheim's Jahrb., xxxii. Ph. J. 98, Dec., 695. Proc. 99, 707.)——Kraemer. (Science 00, 304. J. Am. Ch. Soc. 99, 651.)

Soluble. Syniewski reports that starch may be converted into the soluble form without production of dextrin by treatment with sodium peroxide. (Ber. d. Ch. Ges., xxx. 2415. Ph. J. 98, Jan., 45.)—— Terrat finds that the minute traces of alkaline salts often present in drinking water have a marked influence in modifying the action of diastase on starch. (Ph. Post xxx., 587. Ph. J. 98, Jan. 88.)

Anisum.

Ash. Percentage. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.)——Moor and Priest. (Ph. J. July, 00, 109.)

Adulteration. Volkart. (Ph. Centralh. 98, 297. A. J. Ph. 98, 353.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 297.)

Anthemis.

Ash. Moor and Priest. (Ph. J. July, 00, 109.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 321.)

(Antimonium.)

Assay. Alcock recommends a modification of the process of the B. P. (Ph. J. 00, Apr., 362.)

Antimonii et Potassii Tartras.

Possible Adulterants. Kebler remarks upon the solubility of the double fluorides of antimony, and says that the antimony in the potassium compound can be so adjusted as to approximate the amount in tartaric emetic. Provision is not made in the U. S. P. for the detection of this salt, but the hydrofluoric acid test would be available. (Proc. Pa. Ph. Assoc. 99, 118.)

Examination. Patch says commercial article contains arsenic. (Proc. 00, 201.)

Antimonii Sulphidum.

Estimation. Hanus has devised a method which is based upon the oxidation of the trisulphide by ferric sulphate and the subsequent titration of the ferrous sulphate with permanganate. (Apoth.-Zeit. 98, 613. Proc. 99, 645.)

Reduction. Pélabon finds that when the crystallized compound is treated with hydrogen at a temperature exceeding 360° C., metallic antimony and hydrogen sulphide result. (Compt. rend. *130* (Apr. 2, 1900), No. 14. Ch. News 00, 202.)

Apocynum.

Characteristics. Sayre. (Dr. Circ. 99, 280.)

Powder. Microscopical characteristics Kraemer. (Proc. 98, 318.)

(Apomorphine Hydrochloride.)

Color. Variability. Patch. (Proc. 00, 201.)

Solubility. Enell. (Med. Farm. För. 98, 1. Apoth. Ztg. 98, 629. Proc. 99, 371.)

Aqua.

Contamination by Algae. Moore. (A. J. Ph. 00, 25.)

Dimethylamine Reaction. Possib'e source of error. (Ph. Centralh. 99, 545. Proc. 00, 684.)

Erythrosine. Ellen recommends this indicator for alkali determinations by Hehner's method. (Ph. Centralh. 99, 413. Proc. 00, 676.)

Reagent. Brooks proposes the crystalline double iodide of lead and potassium $PbI_2.2KI$ as a very delicate reagent for the presence of water. (Ph. Weekbl. *35*, No. 20. Ph. Ztg. 98, 720. Proc. 99, 590.)

Colorimetric Method of Estimating Silica. Jolles and Neurath. (Zeits. Angew. Ch. 98, 315. Proc. 99, 611.)

Hardness. Estimation. Marpman. (Ph. Centralh. 99, 559. Proc. 00, 677.)

Nitrates and Ammonia. Estimation. Moerk. (A. J. Ph. 99, 157.)

Nitric Acid. Russwurm reports that cresol is an admirable reagent for nitrates, detecting 1 part of nitric acid in 100,000 parts of water. (Ph. Centralh. 99, 545. Proc. 00, 683.)——Bohlig proposes a method which is based on the double decomposition of HNO_3 and HCl into chlorine, etc., and the determination of the chlorine by titration with K_4FeCy_6. (Jour. Soc. Ch. Ind. xvii, 953. Merck's Rep. 99, 26.)

Nitrates. Thresh claims that the significance depends upon the sources of the water. (Ch. & Dr. 97, 883. Proc. 98, 897.)

Nitrites. Robin employs a process which is based on the fact that when pure potassium iodide is added to a solution of the nitrite in the presence of acetic acid, a definite quantity of free iodine is always liberated by a definite quantity of nitrous acid. (J. de Ph. et Ch. 98, 575. Ph. J. 98, July 97.)

Purification. Schumburg proposes use of bromin. (Ph. Zeit. xlii, 174. Proc. 98, 897.)——Sterilization with chlorinated lime. Lode. (Hyg. Rundsch. 99, 859. Ap. Ztg. 99, 578. Proc. 00, 677.)——Sterilization by means of Ozone. Calmette. (Annales de l' Inst. Pasteur, 13, 344. Ph. J. 99, May 483. Proc. 99, 594.)——Alum and Ferric Chloride Methods. Malmeyac. (J. de Ph. (6) x, No. 8. Ch. News 00, 46.)——Use of infusorial earth. Hauser. (Compt. rend. March 14, 98. Ch. News 98, 188.)——Malmejac has made a study of methods for freeing water of bacteria by means of minute quantities of the halogen elements. (J. de Ph. et Ch. 00, 364. A. J. Ph. 01, 142.)

(Aquæ Medicatæ.)

Bibliography. Richtmann. (Ph. Archives 00, 31, 48, 69, 95 and 110. Proc. 00, 427.)

Preparation. Williams suggests the following method for the preparation of all the medicated waters with the exception of rose water: Mix equal volumes of the oil, alcohol and glycerin. Fold two filters together, open out, and with a glass rod—used in mixing the oil in the graduate—spread the thick mixture over the surface of the inner filter; place the filters in a rubber or other funnel capable of resisting heat, and turn on the full quantity of water at near the boiling point. Catch the first filtrate and return to the filter; allow all to pass and return to the filter two or three times. Camphor is dissolved in its own weight of alcohol in a small mortar, then add the glycerin and proceed as with the oils. (Proc. Conn. Pharm. Assoc. 1897; Bull. Ph. 97, 407. Proc. 98, 659.)——Arny has compared the different methods and finds that hot solutions yield the most concentrated product, and even this, when absolutely clear, will be scarcely stronger than the calcium phosphate product. (Proc. 98, 238. A. J. Ph. 98, 442)——Criddle and Richtmann conclude that the U. S. P. ought to readopt the method by impregnation and filtration through cotton. (Ph. Arch. 00, 21.) ——Murphy prefers magnesium carbonate to precipitated calcium phosphate. (Merck's Rep. 99, 349. Proc. 00, 427.)——Scoville and Bigelow have examined into the different modes of preparation. (Mass. Ph. Assoc. 98. Dr. Circ. 98, 194.)

Estimation. Ewers gives a method for the quantitative determination of the volatile oil, which is as follows: To 400 Cc. of the water under examination 100 Gm. of sodium chloride are added, and the solution is shaken with 50 Cc. of petroleum ether (b. p. below 50°). After complete separation into two layers, an aliquot part of the petroleum ether solution—conveniently 25 Cc.—is removed, transferred to a small flask containing 0.1 to 0.15 Gm. of olive oil, and subjected to evaporation by drawing a current of air through the flask by means of an aspirator. The weight of residual oil, minus the weight of olive oil placed into the flask, gives the quantity of volatile oil. The author is convinced that under ordinary conditions of temperature, etc., there is no loss of volatile oil in this way. (Apoth.-Zeit. xiii, 75, 76.)——Beckurts and Frierichs give a modification of Ranwez's method. (Ph. Zeit. 98, 563.)

Aqua Amygdalæ Amaræ.

Preparation. Siebert, finding the method of distillation over direct flame or with superheated steam of the Pharm. Germ. to be

unsatisfactory, in that the distillate is contaminated with decomposition products, recommends a method whereby distillation is effected with steam under ordinary pressure. (Ph. Centralh. 00, 47. Proc. 00, 428.)

G. P. Ed. IV. Correction of the test. Hood suggests that 10 drops (instead of 5 drops) of potash solution be added to 10 Cc. of water before titration. (Apoth.-Zeit. 98, 43. Proc. 98, 659.)

Aqua Ammoniæ.

G. P. Ed. IV. Only the dilute solution is official, having sp. gr. 0.960 equiv. to 10 p. c. of ammonia.

Ammonia. Determination. Winkler. (Ch. Ztg. 99, 541. Ph. Centralh. 99, 509. Proc. 00, 706.)——Villiers and Dumesnil prefer the determination of ammonia as chloride to its volumetric estimation, the ammonia liberated by alkali being passed into a weak solution of hydrochloride. (Compt. rend. *130*, 579. Ph. J. 00, Mar. 433.)

Corrosive Sublimate Test. (Boll. Chim. Farm. Dec 1900. Am. Dr. 1901, 44.)

Liquid Ammonia. Swayze and Sayre call attention to this liquid as a solvent for both organic and inorganic substances. (Dr. Circ. 99, 148.)

Aqua Camphoræ.

Preparation. Stevens recommends keeping on hand a stock-bottle filled with distilled water, the surface of which is covered with coarsely powdered camphor. Filter into a shelf-bottle as needed, and refill stock-bottle with distilled water. (Am. Dr. 99, 355.)——Stedem recommends a process involving the principle of circulatory displacement. (A. J. Ph. 99, 163.)

Aqua Chlori.

Alternative Formula. Hemm suggests the use of potassium chlorate, hydrochloric acid and distilled water for the extemporaneous preparation of chlorine water, on the ground that the official method is not adapted to prescription work. (Am. Dr. 00, 199.)

Aqua Chloroformi.

Strength in B. P. 98. 2.5 Cc. in 1,000 Cc.

Definite Strength. Mausier proposes a method whereby allowance is made for the small amount of chloroform that is vaporized in the containing vessel. To prepare a solution containing 0 5 Gm. per 100 Gm., he weighs 4.6 Gm. of chloroform into a small flask and adds this to 900 Gm. of distilled water contained in a litre flask.

The whole is then agitated until the chloroform globules disappear, and the finished preparation is transferred to smaller containers, which are filled to the top and securely corked. (J. de Ph. et Ch. 98, 585. Ph. J. 98, Jul. 73.)

Aqua Cinnamomi.

Assay. Ewers. (Apoth.-Zeit. xiii, 75, 76.) See Aquæ Medicatæ.

Aqua Destillata.

Preparation. Cummings. Inexpensive and automatic apparatus. (Bull. Ph. 98, 196.)

Chemically Pure. By distillation with potassium permanganate and the observation of care Marck obtains a C. P. product. (Ph. Ztg. 00, 87. Proc. 00, 679.)

Odor and Taste. Removal. Christ. (Apoth. Ztg. 00, 203. Proc. 00, 679.)

Contamination. Gas flame. Wentzky. (Ph. Ztg. 99, 654. Proc. 00, 680.)

Poisonous Character. Koeppe. (Apoth. Zeit. 98, 713.)

Pharmaceutical Uses. De Kieffer recommends the use of distilled water in all pharmaceutical operations, either in dispensing or manufacturing. (A. J. Ph. 99, 300.)

Aqua Foeniculi.

Assay. Ewers. (Apoth. Zeit. xiii, 75, 76.) See Aquæ Medicatæ.

Aqua Hydrogenii Dioxidi.

Preparation. Lambotte proposes the following method: 400 Gm. of phosphoric acid (50 p. c.) are added to 1000 Cc. of water and the solution placed in a mixture of ice and salt, a little ice being placed in the liquid itself. To this is added, in small quantities, and with constant stirring, a magma composed of 750 Gm. of finely powdered barium dioxide and 1000 Gm. of water, care being taken to avoid an appreciable rise of temperature. The solution of hydrogen dioxide is then clarified by subsidence, decantation and filtration. If it be more than faintly acid barium dioxide or baryta water should be added until the excessive acidity is overcome. In this way a solution of 15–17 volume p. c. is obtained which needs only adjustment to the required strength, the permanganate method being used for this purpose. (J. de Ph. d'Anvers, 99, 250. Ph. Ztg. 99, 540.)

Protective Agents. Tyrer states that phosphoric acid appears to be the best of these, and least harmful medicinally. (Trans. Br. Ph. Conf. 99, 410. Proc. 00, 680.)

Preservation. Inefficiency of methods. (Am. Dr. 99, 67.)

Test. Reaction with Ferrous Ferrocyanide. Barralet. (Ch. News, 99, 136.)

Estimation. Moerk. (Proc. Pa. Ph. Assoc. 00, 140. A. J. Ph. 00, 370.)

Aqua Mentha Piperita.

Assay. Ewers. (Apoth. Zeit. xiii, 75, 76.) See Aquæ Medicatæ.

(Argentum.)

Reduction of residues by means of concentrated soda solution and 40 p. c. formaldehyde solution. Vanino. (Ph. Centralh. 99, 53. Proc. 99, 651.)

Silver Sulphide. Action of hydrogen. (Compt. rend. cxxvi, No. 26. Ch. News, 98, 242. Proc. 99, 651.)

Silver Orthophosphate. Preparation and medicinal uses. Spretzka. (Prac. Med. Woch. Rev. Med. Pharm. *5*, 292. Proc. 99, 651.)

M. P. Berthelot finds the average to be 962°. (Compt. rend. cxxvi, 473. Apoth. Zeit. 98, 490. Proc. 99, 652.)

Arnicæ Flores.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 302, 321.)

Arnicæ Radix.

Ash. Moor and Priest. (Ph. J. July, 00, 109.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 302.)

Sophistication. True. (Ph. Rev. 99, 348.)

Arsenic.

Estimation. Gautier gives a method for the determination of very small quantities of arsenic, using strong oxidizing agents throughout the process, and thus effecting removal of chlorides which cause the loss of arsenic by the formation of volatile compounds. (Compt. rend. *129*, No. 23, Dec. 4, 1899. Ch. News, 99, 315.)

Tests. Paul and Cownley look upon Gutzeit's test as modified by Siebold and found under the head of glycerin in the Pharm. Br. to be much more delicate than any other. The authors are not unmindful of the question concerning the positive value of the test, but think that a negative result may be relied upon to show the absence of arsenic. (Ph. J. 00, June, 668.)——Allen. Examination of Marsh's test. (Ph. J. 01, 5.)——Discussion on the various tests. (Ph. J. 01, 299.)——Paul and Cownley. (P. J. 00, 689 and 01, 136.) ——New apparatus for Marsh's test by Tyrer. (Ch. and Dr. 01,

494.)——Pharmacopœial Tests. Sayre. (Dr. Circ. 45, 70. Ph. Rev. 01, 221.)

Arseni Iodidum.

Solubility. According to Patch, rarely answers the official requirements for solubility. (Proc. 00, 201.)

Asafœtida.

Orthography. Attfield says it should be in Latin and English "Asafetida." (Tr. Br. Ph. Conf. 97, 351. Proc. 98, 821.)

Structural Characters. Wiesner. (Zeits. Oest. Ap. Ver. 99, 425. Apoth. Ztg. 99, 759. Proc. 00, 611.)

Analysis. Moore. (J. Soc. Ch. Ind. 99, 987.)

Ash and Alcohol—Soluble Constituents. Umney. (Ch. & Dr. 99, 983. Proc. 00, 610.)——Dieterich. (Ph. Centralh. 98, No. 19. A. J. Ph. 99, 85.)——Moor and Priest. Ph. J., July 00, 109.

Adulteration. Frerichs found calcspar. (Apoth. Zeit. 01, No. 3. Am. Dr. 01, 78.) See also Thoms. (Apoth. Zeit. 01, 41) and Dieterich. (Apoth. Zeit., 01, 33).——Zernik found calcium and magnesium carbonates. (Apoth. Zeit. 01, 41.)——Brandes found calcspar covered with a layer of gum resin. (Apoth. Zeit. 01, 41.)——Huber. (Proc. Wis. Ph. Assoc. 99, 35.)

Commercial. Wilbert finds this drug very variable in quality, and thinks that the Pharmacopœia should try to equalize the strength of the various preparations, as for instance, requiring the tincture to contain 10 parts of the resinous material, instead of representing the soluble portion of 20 parts of the gum. The Pharmacopœia might also direct that the emulsion be made from gum, the alcohol solubility of which has been determined. He furthermore recommends that in view of the fact that powdered asafœtida is generally not made by the pharmacist, but purchased in this form by him, the Pharmacopœia recognize the powdered drug and require a definite amount of alcohol-soluble matter, this to be low enough to prevent agglutination in warm weather, and yet to be of medicinal value. (A. J. Ph. 01, 131.) See also Umney Ch. & Dr., *55*, 983.

Commercial Purity. Lehn and Fink. (A. J. Ph. 00, 143.)

Powder. Kraemer on microscopical characteristics. (Proc. 98, 333.) Examination of commercial powder. (Proc. 00, 199.)

Asclepias.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 312.)

Aspidium.

Histology and Pharmacognosy. Dohme. (Dr. Circ. 98, 79.)

Constituents. Böhm. (Annal. d. Pharm. iii, 283. Ph. J. 97, 84.)

Conditions of Efficiency. Böhm. (Am. Dr. 98, 342. Proc. 98, 773.)

Ash. Percentage. Moor and Priest. (Ph. J. July 00, 111.)

Assay. Matzdorff. (Apoth. Zeit. 01, 233, 257, 273.)

Constituents. Influence of soil and locality of growth upon the ether-soluble constituents. Bellingroot. (Apoth. Zeit. 98, 869. Proc. 99, 505.)

Filicic Acid. Cæsar and Loretz claim that soil and climate have a greater influence on the amount of filicic acid than has the time of collection. (Geschaftsbericht 99, Sept. Ph. Rev. 99, 521. Proc. 00, 575.)

Fixed Oil. Katz. (Arch. Ph. 98, No. 9, 655. Proc. 99, 704.)

Powder. Microscopical characteristics. Jelliffe. (Dr. Circ. 99, 27.)

Aspidosperma.

Lewton enumerates the various kinds of "quebracho" and says that while "*A. quebracho blanco*" is officially recognized, its use is insignificant as compared to "*A. quebracho colorado.*" (A. J. Ph. 99, 22.)

Atropina.

Rotatory Power. Hesse concludes from his observations that: (1) absolutely pure atropine is optically inactive; (2) commercial atropine in a free state, if originally capable of slight polarization, may become, when long kept, optically inactive, and in any case suffers diminution of rotatory power; (3) the optical activity of commercial atropine is due to the presence of some hyoscyamine; (4) commercial atropine sulphate does not suffer alteration of its rotatory power when kept; (5) owing to the presence of hyoscyamine in the gold salt of atropine, this base is more or less converted back again into hyoscyamine when the salt is kept. (Ph. J. 00, Feb., 116.)

Periodides. Gordin and Prescott. (J. Am. Ch. Soc. May 98. A. J. Ph. 98, 294. Proc. 98, 360.)

Tests. Jowett. (J. Ch. Soc. 97, 679 and Ph. J. 98, 195.)

Vitali's Reaction. Kunz Krause considers this test as of great value in toxicological work. (A. J. Ph. 00, 379).

(Atroscine.)

Identity with Scopolamine and Isoscopolamine. Hesse. (Ph. J. 00, Feb. 116.)

Aurantii Amari Cortex.

Ash. Moor and Priest. (Ph. J. July 00, 109.)

Powder. Kraemer. Microscopical characteristics. (Proc. 98, 308.)

Aurantii Dulcis Cortex.

Examination of Oil. Stephan. (Ph. Zeit. *46*, 110. Ph. J. 01, 517.)
Powder. Kraemer. Microscopical characteristics. (Proc. 98, 308.)

Aurum.

Colloidal Gold. Preparation. Zsigmondy. (Zeits. f. Elektrochem. 98, 546. Apoth.-Zeit. 98, 488. Proc. 99, 652.)

Estimation. Vanino and Seeman report that when a solution of auric chloride is warmed with an alkaline solution of hydrogen peroxide, it is immediately reduced to metallic gold. (Ber. *32*, 1968. Ph. J. 99, Sept., 219.) (See also Auri et Sodii Chloridum.)

Melting Point. Berthelot finds the average value to be 1064°. (Compt. rend. cxxvi, 473. Apoth.-Zeit. 98, 490. Proc. 99, 652.)

Auri et Sodii Chloridum.

Estimation of Gold. Vanino recommends the use of formaldehyde. (Ph. Centralh. 99, 275. Proc. 99, 652.) (See also Aurum.)

Commercial. Examination. Kebler. (A. J. Ph. 00, 325.)

Balsamum Peruvianum.

G. P. Ed. IV. Total acid number 224. Cinnamein removed by ether from alkaline solution should not be less than 56 p. c.

Test. Caesar and Loretz regret that in the new G. P. the nitric acid was dropped, as this simple and quick test always gave a fair indication of the quality. (Geschäftsbericht, Sept. 1900. Ph. Rev. 00, 522.)

Ash. Moor and Priest. (Ph. J. July 00, 109.)

Benzyl Benzoate. Erdmann. (Ph. J. 00, 387.) (Also Apoth.-Zeit. *15*, 659.)

Variability of Cinnamein. Tschirch. (Ch. Ztg. *24*, 236. Ph. J. 99, Oct., 377.)

Cinnamein. Thoms. (Arch. Ph. *237*, 271.) (Schimmel & Co. Oct. 99, 49. Ph. Rev. 00, 34.)

Tests. Humphrey discusses Dieterich's test as modified in the B. P. 98. (Ph. J. 01, 29.)

Examination. Hirschsohn gives the following tests for determining the quality: (1) The balsam mixed with half its weight of calcium hydrate and heated for half an hour on the water bath should not give a firm mass. (Abs. of turpentine, resin, Canada balsam, copaiba, storax, alcohol, Siam or Sumatra benzoin, and tolu balsam.) (2) One volume of balsam mixed with four volumes of acetic acid (80–82 p. c.) should give an opalescent or only slightly turbid solution, from which no oily drops should separate in about two hours.

(Absence of resin oil, copaiba, gurjun balsam and fatty oils.) (3) The petroleum ether extract of the balsam (1 balsam, 5 petroleum ether), shaken with an equal volume of a diluted aqueous copper-acetate solution (1 per mille), should not be colored bluish-green or green. (Absence of resin, turpentine, Canada balsam, resin oil, copaiba, storax, fatty oils and tolu balsam.) (4) The residue on evaporating the petroleum ether extract covered with hydrochloric acid of 1.19 sp. gr. should not be colored. (Absence of gurjun balsam.) (Zeits. Oest. Apoth. Ver. 97, 525. Proc. 98, 854.)——Caesar and Loretz. (Geschäftsbericht Sept. 1900. Ph. Rev. 00, 522.)

Honduras. Examination. Dieterich contradicts the usual supposition that the same tree furnishes balsam of the same quality. A balsam having less than 65 p. c. of aromatic substances and more than 28 p. c. of resinous matter should be considered as of doubtful quality. (Ber. Berl. Pharm. Ges. 97, 437. Proc. 98, 854.)

Production. Preuss describes extraction from tree. (Schweiz. Woch. *39*, 38.)

Balsamum Tolutanum.

Standard. Spilsbury and Joyce are of the opinion that 18 p. c. of cinnamic acid should be the lowest official requirement. (Ph. J. 00, Feb. 93.)

Ash. Moor and Priest. (Ph. J. July 00, 109.)

Tests. Dieterich. (Ph. Centralh. 98, No. 19. A. J. Ph. 99, 85.) Thoms. (Ber. Berl. Pharm. Ges. 98, 264. A. J. Ph. 99, 229.)

Barii Dioxidum.

Commercial. Examination. La Wall and Pursel. (Proc. Pa. Ph. Assoc. 00, 162. A. J. Ph. 00, 379.)

Belladonnæ Folia.

Commercial. Moerk assayed samples of English cultivated (Allen's), German cultivated and German wild. The same samples are described by Kraemer. (A. J. Ph. 99, 105.)

Commercial. Examination. La Wall and Pursel. (Proc. Pa. Ph. Assoc. 99, 155. A. J. Ph. 99, 394.)

Comparison with Henbane Leaves. Dohme and Engelhardt. (Proc. Md. Ph. Assoc. 99, 130. Proc. 00, 590.)

Variability in Alkaloidal Content. In view of his own and other data, Puckner provisionally proposes an official requirement for this drug of from 0.35 to 0.40 p. c. of alkaloid, and says that any belladonna leaf of a higher percentage may be brought within these limits by admixture of a leaf of lower percentage. (Ph. Rev. 98, 324.)

Assay. Puckner gives modification of Keller's method. (Ph.

Rev. 99, 180. Proc. 98, 798.) Schmidt gives a modification of Keller's method. (Apoth. Zeit. 99. Ph. J. Jan. 00, 22.)——Gordin and Prescott have shown that most alkaloids form definite compounds when treated with an excess of iodo potassium iodide, and it is possible to estimate the strength of aqueous solutions of salts by means of standardized solutions of iodine and of sodium theosulphate. They have applied this method to the assay of belladonna leaves. (A. J. Ph. 99, 14.)——After a careful study of Keller's method, Moerk gives a modification of it. A feature of this modified process is the use of stearic acid for overcoming the emulsification during the extraction of the alkaloid from its alkaline solution. (A. J. Ph. 99, 105.)——Moerk finds that 20 Gm. of drug may be perfectly extracted by immediate percolation with 200 Cc. of a menstruum composed of 90 parts of 95 p. c. alcohol and 10 parts of official ammonia water. Details for overcoming emulsification by the use of stearic acid are described. (Proc. Pa. Ph. Assoc. 99, 97. A. J. Ph. 99, 320.)

Standard. Williams. (Dr. Circ. 99, 5.)

Ash. Percentage. Hockaup. (Zeits. Œst. Apoth. Ver. 98, 1. Ph. Rev. 98, 152. Proc. 98, 765.)

Powder. Microscopical characteristics. Jelliffe. (Dr. Circ. 99, 74.)——Kraemer. (Proc. 98, 300.)

Ferment. Lepinois reports the presence of a ferment in the expressed juice of belladonna, which is destroyed by exposure to a temperature of 100° for a short time. This ferment is not without interest pharmaceutically on account of its influence on the coloring principle of the drug. (Jour. de Pharm. (6) 9, 49. Ph. J. 99, Feb. 96. Proc. 99, 771.)

Belladonnæ Radix.

Adulterant. Holmes found poke root. (Ph. J. 01, 591.)

Ash. Moor and Priest. (Ph. J. July 00, 109.)

Comparison with Scopola. Dohme and Engelhardt find by Keller's method that Scopola is richer in alkaloids than Belladonna. (Proc. 00, 211.)——Alkaloidal value of Scopola and Belladonna by Reese and Sayre. (Dr. Circ. 00, 155.)

Extraction. Squibb finds that by using 10 p. c. acetic acid for the extraction of the drug the same percentage of alkaloid is obtained as when a menstruum of 91 p. c. alcohol containing a little sulphuric acid is used, he having used the latter menstruum with satisfaction for 14 years. (A. J. Ph. 00, 4.)——Gordin and Prescott have shown that most alkaloids form definite compounds when treated with an excess of iodo-potassium iodide and that it is possible to estimate the strength of aqueous solutions of salts by means of standardized solu-

tions of iodine and sodium thiosulphate. They have applied this method to the assay of belladonna root. (A. J. Ph. 99, 14.)——Clark. (A. J. Ph. 01, 22.) Bird comments on B. P. process. (Ph. J. 00, 214 and 691.——Dewhirst. (Ph. J. Apr. 00, 358.)

Standard. Williams. (Dr. Circ. 99, 4.)

Powder. Microscopical characteristics. Jelliffe. (Dr. Circ. 98, 74, 286)——Kraemer. (Proc. 98, 316.)

Oxidizing Ferments. Lepinois. (J. de Ph. et Ch. 99, 49. A. J. Ph. 00, 77.)

Benzinum.

Specific Gravity. Kremers observes that a fraction of American petroleum which passes over between 50° and 60° C. possesses a sp. gr. of 0.657 to 0.658. (Ph. Rev. 98, 221.)

Benzoinum.

Dieterich is of the opinion that Siam benzoin is the only kind that deserves pharmacopœial recognition. (Ch. & D. 98, Nov. 791. Proc. 99, 536.)

G. P. Ed. IV. The powder heated with $K_2Mn_2O_8$ sol. and allowed to stand should not develop an odor of bitter almond oil. Limit 5 p. c. insol. in boiling alcohol. Ash limit, 2 p. c.

Examination. Commercial specimens. Evans. (Ph. J. 98, 507.)

Impurities. Percentage. Dunlap. (Tr. Br. Ph. Conf. 97, 370. Proc. 98, 810.)

Tests. Dieterich. (Ph. Centralh. 98, No. 19. A. J. Ph. 99, 85.)

Bismuthi et Ammonii Citras.

Examination. Patch. (Proc. 00, 202.)

Bismuthi Subcarbonas.

Presence of Arsenic. Janzen found the product of a reputable manufacturer and labeled "Bismuth Carbonic puriss. Ph. Brit." to contain appreciable quantities of arsenic. (Apoth. Zeit. 99, 79. Proc. 99, 648.)

Nitric Acid. Alcock having found that the faint yellow color produced in a mixture of the subcarbonate and potassium iodide was due to the presence of the nitric radical, suggests this reaction as a test for the presence of nitric acid. (Ph. J. 00, June, 640.)

Bismuthi Subnitras.

Test for Chloride. Glücksmann states that the opalescence observed in solutions of bismuth subnitrate in nitric acid, on the addition of silver nitrate, is not necessarily due to the presence of chlor-

ide, and therefore proposes a solution of mercurous nitrate as a test for chloride instead of silver nitrate. (Zeits. Oest. Apoth. Ver. 98, 897. Proc. 99, 647.)

Composition and Tests. Thoms says that according to the amount of water employed, and the temperature at which the salt is precipitated, as also according to the temperature at which the preparation is dried, does it consist of the following products in varying proportions $Bi(OH)(ONO_2)_2$, $BiO(ONO_2)$, $BiO(OH)$ and water. The author recommends the Pharmacopœia to direct that upon heating the salt to redness 100 parts should yield 79 to 80.5 parts of bismuth oxide. Further, if 2 grammes of the nitrate are mixed with a number of cubic centimeters of water in a 100 Cc. measuring flask, and treated with 10 Cc. of normal KOH solution for several minutes, and the flask then filled up to the 100 Cc. mark, 50 Cc. of the clear liquid should not require less than 2.1 Cc. normal hydrochloric acid (21 Cc. $\frac{n}{10}$ normal hydrochloric acid) or more than 2.4 Cc. normal hydrochloric acid (24 Cc. $\frac{n}{10}$ normal hydrochloric acid). (Apoth. Ztg. 98, 318. A. J. Ph. 98, 409, also Suedd. Ap. Ztg. 98, 376. A. J. Ph. 99, 277.)

Assay. Thoms. (Ibid.)

Examination. Smith. (Ph. J. Dec. 00, 692.)

(Bismuthum.)

Etymology of the term. Husemann. (Ph. Ztg. 98, 895. A. J. Ph. 00, 345.)

Estimation. Vanino and Treubert find that when a solution of a bismuth salt is heated, while stirring, with a mixture of formaldehyde and soda, the bismuth is precipitated in the metallic state. (Berichte (9), xxxi, 1303. Ch. News, 99, 203.)

Volumetric Estimation. Frerichs gives method depending on the fact that freshly precipitated bismuth sulphide forms, with silver nitrate, silver sulphide and bismuth nitrate. (Apoth. Zeit. 00, 859.)

Estimation in Organic Salts. Dietze has applied the principle of Duyk to precipitate the bismuth as oxalate as follows: 1 Gm. of the salt is heated to boiling in a solution of oxalic acid (0.4 Gm. to 50 Cc. of water) and the boiling continued 5 minutes. The precipitate is then collected on a sand filter, washed, dried and weighed. According to Duyk, bismuth oxalate contains 72.06 p. c. Bi_2O_3 and according to Dietze 74.12 p. c. (Ph. Centralh. 00, 280. Proc. 00, 724.)

New Reactions. Polacci. (Ph. Post, 98, 509. A. J. Ph. 99, 280.)

Oxysalts. De Schulten obtains crystalline salts. (Bull. Soc. Chim. *23*, 156. Ph. J. Apr. 00, 357.)

Bismuthi Carbonas. Formulæ and Test. Criticism of B. P. text by Power. (Ph. J. 00, 147.)

BISMUTHI OXIDI (HYDRATED.) Preparation. Thibault, by availing himself of the known solubility of hydrated bismuth oxide in alkalies in the presence of glycerin, has succeeded, by reversing the process, and precipitating the bismuth oxide from an alkaline medium by means of a dilute acid, in obtaining $Bi_2O_3H_2O$ in a state of perfect purity. (J. de Ph. et Ch. 00, 559.)

BISMUTH OXYIODIDE. Preparation. Sobet. (Ann de Pharm. 98, 244. Ph. Ztg. 98, 668. Proc. 99, 647.)

BISMUTH IODIDES. Estimation of Iodine. Spindler gives a method which is based upon the complete liberation of the iodine from these compounds by ferric chloride; the iodine is shaken out from the mixture with chloroform, and the solution so obtained is titrated after the addition of solution of potassium iodide, in the usual manner with thiosulphate. (Apoth. Zeit. 98, 576. Proc. 99, 646.)

BISMUTHI SALICYLAS. Assay. Kollo. (Ph. Post 99, 2. A. J. Ph. 00, 345.)——Commercial. Composition and tests. Kebler. (A. J. Ph. 00, 66.)——Dispensing. Roe. (Ch. and Dr. 99, 22.)

BISMUTH SUBGALLATE. History, Chemical Composition and Properties. Kebler. (A. J. Ph. 99, 326. Proc. Pa. Ph. Assoc. 99, 182.)

Bromum.

Bromides. Swinton. Determination in the presence of both iodides and chlorides. (Ph. J. 97, 562. Proc. 98, 903.)

Detection. By Fluoresceine. Baubigny. (Ch. & Dr. 98, 400. Proc. 98, 907.)

Bryonia.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 319.)

Buchu.

South African Substitutes. Holmes. (Ph. J. 00, Jan. 70.)

Ash. Moor and Priest. (Ph. J. July 00, 110.)

Oil. Constituents. (J. Pr. Chem. through J. Chem. Soc. lxxii, 227.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 297.)

Caffeina.

G. P. Ed. IV. It loses a portion of its water of crystallization on exposure to air and becomes anhydrous at 100° C. It melts at 230.5° C., and begins to sublime at a little over 100° C., and sublimes entirely at 180° C. without residue.

Reagent. Archetti finds that a solution of potassium ferrocyanide, heated with one-half its volume of nitric acid and then diluted with water, gives with caffeine a precipitate of Prussian blue, which reaction may also be used for the quantitative estimation of the alkaloid. (Apoth. Ztg. 00, 110. Proc. 00, 826.)

Solubility. Enell. (Med. Farm. För. 98, 1. Ap. Ztg. 98, 629. Proc. 99, 371.)

Water of Crystallization. Power criticises the B. P. text. (Ph. J. 00, 148.)

TEA. Caffeine p. c. in young and old leaves. Kellner. (Forsch. Ber. iv, 88. Ph. J. 97, 83. Proc. 98, 836.)

Estimation. Kunz. (Schweiz. Woch. 98, 301. A. J. Ph. 99, 145.)——Ladd finds Gomberg's method to give higher percentages, more uniform results, and is the most rapid process compared with the methods of Peligot, Crosschaff and Vite. (Am. Ch. J. Dec. 98.)

Caffeina Citrata.

Tests. The B. P. and U. S. P. are in error when it is stated that "with 3 parts of water it forms a clear, syrupy solution," whereas in reality it forms a stiff paste (see also Proc. 97, 714). If the mixture with 3 parts of water be gently warmed it forms a clear solution, but, on cooling, it again forms an almost solid mass of acicular crystals of caffeine. The Swiss Pharmacopœia states that the compound is "readily soluble in four parts of hot water," which is quite correct.

The B. P. further states: "But more water (that is, more than three parts) dissociates the salt and affords a white precipitate of caffeine, which redissolves when *excess of water* is added." It would be somewhat strange if the compound should dissolve unchanged, as is implied, in exactly three parts of water, and that any further addition of water (how much "more water" is not stated) should dissociate it. It is quite well known, as the simplest experiment will prove, that the compound is dissociated as soon as it is brought in contact with water. If a little water be added to the warm solution, the caffeine separates out as a mass of acicular crystals, and not in a form which might be understood as a "white precipitate." This is said to "redissolve when *excess of water* is added"—an expression which does not seem to be very well chosen, and which is certainly not very precise. Power. (Ph. J. 00, 148.)

Calamus.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 314.)

Calcii Carbonas Præcipitatus.

Carles finds this salt superior to precipitated chalk in that it is composed of amorphous grains and is free from iron. (Ph. Post 99, 357.)

Formic Acid. Presence. Walther. (Ch. Ztg. 99, Rep. 284. Ph. Centralh. 99, 656. Proc. 00, 710.)

Calcii Chloridum.

Crude. Purification. Alcock. (Ph. J. 00, May, 524.)

Calcii Hypophosphis.

Assay. Jowett gives process and suggests standard of 98 p. c (Ph. J. 98, 173.)

Test. Power considers that the tests in the B. P. and U. S. P. need revision. (Ph. J. 00, 148.) (See Jowett in Ph. J. 98, 171.)

Calcii Phosphas Præcipitatus.

Use. Feil considers it undesirable in making medicinal preparations and recommends in certain instances the employment of washed pulverized pumice stone. (Proc. 98, 417.)

Examination. Patch. (Proc. 00, 206.)

Calcii Sulphas Exsiccatus.

Hardening. Karl confirms the theory that the hardening of gypsum is due to a chemical process. (Apoth. Ztg. 99, 504. Proc. 00, 711.)

Calendula.

Ash. Percentage in flowers. Hockauf. (Zeits. Œst. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.)

Medicinal Uses. Beringer. (A. J. Ph. 99, 268. Proc. 99, 539.)

Powder. Microscopical examination. Kraemer. (Proc. 98, 309.)

Calumba.

Ash. Moor and Priest. (Ph. J. July 00, 110.)

Monographic Description. Lloyd. (W. Dr. 98, 8.)

Powder. Microscopical examination. Kraemer. (Proc. 98, 299.)

Calx.

Gravimetric Determination. Hess. (J. Am. Ch. Soc. *22*, 477.)

Calx Chlorata.

Assay. A solution of chlorinated lime (about 1 p. c.) is poured into 5 Cc. of a potassium iodide solution (0.1 p. c.) acidified with

sulphuric acid. The iodine combines with the chlorine, forming ICl_5, and the solution becomes decolorized. Wolanski. (Ann. de Chim. Anal. 00, 235. A. J. Ph. 00, 410.)

Explosive Character. Mylius. (Ph. Ztg. 00, 497. Proc. 00, 684.)

Tests. Power criticises text of B. P. (Ph. J. 00, 147.)

Salicylic Acid Determination. Power reviews literature. (Ph. J. 00, 147.)

Quantitative Estimation. Kollo. (Apoth. Ztg. 99, 113. Ph. Post 99. Proc. 99, 719.)

Preservation. In zinc containers. Thompson. (Proc. Penn. Ph. Assoc. 97, 83. Proc. 98, 905.)

Examination. Harding. (Proc. Minn. Ph. Assoc. 97, 53. Proc. 98, 905.)——Stevens examined 32 samples: those in metallic cans gave an average from 9.07 to 26.16 p. c.; those in pasteboard boxes gave an average of 22.9 p. c.; and those in "bulk" gave an average of 23.75 p. c. of available chlorine. (Proc. Mich. State Ph. Assoc. 97, 42. Proc. 98, 906.)

Formation and Constitution. Ditz. (Zeits. Angew. Ch. *14*, 3. Ch. Centralbl. *72*, 247, 295. Ph. Rev. 01, 174.)

Calx Sulphurata.

Examination. Patch. (Proc. 00, 202.)

Cambogia.

Structural Characters. Wiesner. (Zeits. Oest. Ap. Ver. 99, 425. Apoth. Ztg. 99, 759. Proc. 00, 610.)

Adulteration. Wcolsey. (A. J. Ph. 98, 446. Proc. 99, 552.)

Ash. Moor and Priest. (Ph. J. July, 00, 110.)

Examination. La Wall and Pursel. (A. J. Ph. 99, 394.)

Powder. Microscopical Examination. Kraemer. (Proc. 98, 311.)

Camphora.

Solubility. Istrati and Laharia find camphor to be markedly soluble in concentrated hydrochloric acid and consider it probable that a definite chemical compound is formed. (Compt. rend. cxxvii, 557. Ph. J. 98, Dec., 583. Proc. 99, 669.)

Artificial. Woods has patented a process for preparing camphor from American oil of turpentine. (Ch. Ztg. 99, 945. Apoth. Ztg. 99, 661. Proc. 00, 583.)——Synthetic Preparation. (Ph. Ztg. *46*, 174. Ph. Rev. 01, 220.)

Cultivation in Florida. Dewey. (U. S. Dep. Agric. Div. Bot., Circ. No. 12. A. J. Ph. 97, 507. Proc. 98, 790.)

Acidum Camphoricum. Tests. Helbing and Passmore comment on the G. P. test. (Ch. and Dr. 00, 354.)

Cannabis Indica.

Holmes calls attention to the superiority of the Bengal to the Bombay drug. (Ph. J. 00, May, 522.)

Physiological Action. Dixon points out that the fresh drug differs from the dried in its effects, and also that the mode of administration causes a difference in action. (Br. Med. Jour. 99, p. 1354. Ph. J. 99, Dec., 521.)

Preservation. Prain finds that this drug is best preserved in perforated boxes, keeping its aromatic qualities for two or three years. (Ph. Rev. 98, 336.)

Ash. Percentage. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.) Moor and Priest. (Ph. J. July, 00, 110.)

Oil. Bonati. A strong narcotic. (J. de Ph. v. Els. Lothr. 98, 25. Ph. J. 98, 505.)

Macroscopic and Microscopic Characters. (Ph. J. 98, Jan., 32.)

Powder. Microscopical examination. Kraemer. Proc. 98, 298, 330.)

Cantharis.

G. P. Ed. IV. Ash limit 8 p. c. Cantharidin not less than 0.8 p. c. by method given.

Ash. Moor and Priest. (Ph. J. July 00, 110.)

Assay. Greenish and Wilson have devised a process in which the cantharidin is separated from the green resinoid matter. (Ph. J. 98, 255. Proc. 98, 885.)

Blistering Constituents. Snyder gives a description of the common blistering beetles. He also reports that the cantharidin prepared by the use of chloroform is much more effective than an oil which he extracted by the use of carbon disulphide. A volatile principle which affects the eyes appears to be present. (A. J. Ph. 98, 545.)

Powder. Microscopical examination. Kraemer. Cantharis not hairy; mylabris very hairy. (Proc. 98, 312.)

Capsicum.

Japanese Chillies. Holmes. (Ph. J. 97, 519.)

Constituents. Active. Norbitz. (Pharm. Woch. xiv, 525. Ph. J. 97, 298.)

Capsaicin. This substance has been obtained by Micko from the fruits of *Capsicum annuum* in the form of white crystals, melting at 63°–63.5° C., and he believes it to be the active principle of capsicum fruits. (Ch. Ztg. *23*, 26. Ph. J. 99, 383.)

Standards. Based on reliable samples. Kynaston. (Ch. News 00, 109.)

Ash. Moor and Priest. (Ph. J. July 00, 110.)

Microscopical Study. Leech and Sayre. (Proc. Kans. Ph. Assoc. 98, 27. Proc. 99, 526.)

Powder. Microscopical examination. Kraemer. (Proc. 98, 317, 322.)

Carbo Animalis.

Examination. Patch. (Proc. 00, 199.)

Carbonei Disulphidum.

Keeping. Elborne recommends that it be kept in a glass-stoppered bottle and in a dark place. (Ph. J. 99, 111. A. J. Ph. 99, 455.)

Commercial. Examination. La Wall and Pursel. (Proc. Pa. Ph. Assoc. 00, 160. A. J. Ph. 00, 377.)

Examination. Patch. (Proc. 00, 202.)

Cardamomum.

Ovoid. Fruit of *Amomum medicine* Low. (Ph. J. 98, 226.)

Ash. Greenish. (Ph. J. 01, 169, 264 and 393.)——Moor and Priest. (Ph. J. July, 00, 110.)

Cardamom Oil. Schimmel & Co. give the results of their examination of the following oils: Malabar, Siam, Kameroon and Grains of Paradise. (Rep. Oct., 97, 10. Proc. 98, 981.)——Parry has examined oil of Malabar and Mysore Cardamom. (Ph. J. 99, 105. A. J. Ph. 99, 453.)——Allen and Brewis obtain optical rotatory figures that do not agree with those obtained by Parry, while the sp. gr. figures agree. (Ph. J. 01, 329.)——Haensel distinguishes between Malabar and Cameroon oils. (Ch. and Dr. 01, 320.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 299, 314.) Greenish. (Ph. J. 01, 265.)

Carum.

Ash. Percentage. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.)

Vittae. Origin and Development. (Ph. J. 97, 259.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 319.)

Caryophyllus.

Collection. It is essential that the flower-buds are plucked singly and at the right time, *i. e.* when neither too green nor too ripe. (Apoth. Zeit. 98, 849. Proc. 99, 563.)

Royal Cloves. (Schweiz. Woch. *38*, 473. Ph. Rev. 00, 580.)

Ash. Percentage. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.)——Moor and Priest. (Ph. J. July, 00, 110.)

Powder. Kraemer. Microscopical characteristics. (Proc. 98, 319.) ——Jelliffe. (Dr. Circ. 00, 4.)

Cascarilla.

Alkaloidal Constituents. Naylor. (Ph. J. 98, 279. Proc. 98, 868.)
Ash. Moor and Priest. (Ph. J. July, 00, 110.)
Oil. Constituents. Fendler. (Apoth. Ztg. 99, 562. Proc. 00, 758.) See also (Arch. Ph. *238*, 671. Ph. J. 01, 79.)
Powder. Microscopical characteristics. Kraemer. (Proc. 98, 312.)

Cassia Fistula.

Volatile Oil. Haensel. (Ph. Centralh. *41*, 773. Ph. J. 01, 191.)
Ash. Moor and Priest. (Ph. J. July, 00, 110.)

Castanea.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 297.)

Catechu.

G. P. Ed. IV. Limit of matter insoluble in water, 15 p. c. and insoluble in boiling alcohol 15 p. c.
Monograph. Lloyd. (W. Dr. 98, 195.)
Ash. Moor and Priest. (Ph. J. July, 00, 110.).
Yellow Coloring Matter. Perkin (J. Chem. Soc. LXXI., 1135. Proc. 98, 849.)
Powder. Microscopical characteristics. Kraemer. (Proc. 98, 327.)
Substitute. Extract of *Brugneria gymnorrhiza.* (Schweiz. Woch. 99, 313.)

Caulophyllum.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 302.)

Cera.

Analysis. Dieterich conducted a series of experiments after the method of Hübl (hot saponification) and that of Henriques (cold saponification) on a considerable number of pure waxes. His results indicate that both methods may serve as standards, although the results by the cold method only in rare cases agree exactly with those obtained by the hot method. In doubtful cases, where uncertain results only are obtained by the hot method, the cold method results may be accepted as decisive. As a means of detecting adulterations (with the possible exception of cerasin) this method has fully sustained the claims made for it. The influence of various adulterants present in wax is also given. (Helfenberger Annalen. Am. Dr. 98, 313. Proc. 98, 884.)

Chinese Wax. Chemistry of its constituents. Henriques. (Ch. Ztg. xxi, 171. Ph. J. 97, 299.)

Cera Alba.

G. P. Ed. IV. M. P. 64° C.; sp. gr. 0.966—0.970; free acid no. 18.5 to 24.0; ester no. 72.8–75.0.

Acid and Saponification Number. Maisch favors the Pharmacopœial adoption of these constants. (Proc. Pa. Ph. Assoc. 00, 130, A. J. Ph. 00, 372.)

Tunisian. Bertainchaud and Marcille having examined a large number of samples find this wax to vary considerably from the English and French standards. (Monit. Scient. (4) xii, 533. Ph J. 98, Sept. 345.)

Cera Flava.

G. P. Ed. IV. M. P. 63–64° C.; sp. gr. 0.962–0.966; free and combined acid numbers same as for cera alba.

Constants. Funaro. (Orosi, *22*, 109. A. J. Ph. 00, 133.)

Resin Test. Arny considers it advisable to amend the official test so that it will read "no precipitate should be produced in the liquid after filtration through glass-wool or asbestos, by hydrochloric acid." (A. J. Ph. 00, 74.)

Examination. Werder. (Mon. Scientif. *15*, 128. Ph. J. 01, 192.) ——Dieterich gives the results of examination made with the tests of the G. P. on various adulterants of pure beeswax. (Ch. & Dr. 00, 968.)——La Wall and Pursel. (Proc. Pa. Ph. Assoc. 99, 157. A. J. Ph. 99, 396.)

Imitation. Funaro. (Ph. Jl. 00, May, suppl. *d.*)

Japan Wax as a Substitute. Pursel. (A. J. Ph. 99, 217.)

Cerata.

Therapo-Pharmacy. Hallberg. (W. Dr. 01, 58.)

Ceratum.

Pursel proposes 20 Gm. of Japan wax to 80 Gm. of lard as a formula. (A. J. Ph. 99, 217.)

Ceratum Camphorae.

Pursel proposes the use of Japan wax instead of white wax. (A. J. Ph. 99, 221. Proc. 99, 409.)

Ceratum Cantharidis.

Preparation. Pursel proposes the use of Japan wax instead of yellow wax. (A. J. Ph. 99, 217. Proc. 99, 409.)——Barksdale

says that the fault in the cerate of 1890 is the powdered flies are too coarse and that an unprepared powder would be more effective. He recommends that a physiological test should be made and that note should be made of the time necessary to produce a blister. (Proc. 00, 266.)

Ceratum Cetacei.

Pursel proposes the use of Japan wax instead of white wax. (A. J. Ph. 99, 217. Proc. 99, 409).

Ceratum Plumbi Subacetatis.

Haussmann recommends the use of 80 grammes of Adeps Lanæ and 20 grammes of lead subacetate solution. Melt the wool fat and incorporate the solution by stirring until cold. (A. J. Ph. 97, 576; Proc. 98, 666.)

Ceratum Resinae.

Pursel proposes the use of Japan wax instead of yellow wax. (A. J. Ph. 99, 217. Proc. 99, 409.)

Cerii Oxalas.

Composition and determination. Power and Shedden. (Jour. Soc. Chem. Ind. 00, 636.)

(Cerium.)

Salts. Job suggests the use of cerium salts as a substitute for permanganate in volumetric analysis, owing to their stability and oxidizing action. (Compt. rend. cxxviii, 102. Ph. J. 99, 75, 149. Proc. 99, 632.)

Cetraria.

Lichesteric Acid. Preparation and characters. Linnhold. (Arch. Ph. (98), *236*, No. 7, 504. Proc. 99, 703.)

Tincture. Anti-emetic properties. Deying and Bricemoret. (Rep. Ph. ix, 461. Ph. J. 97, 378.)

Chelidonium.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 300.)

Chenopodium.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 303.)

Chimaphila.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 298.)

Chirata.

Ash. Moor and Priest. (Ph. J. July, 00, 110.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 303.)

Chloral.

Assay. Alcock and Thomas find that the results obtained with the process of the Pharm. Br. are too high, and propose the following test which should be applied expeditiously: Mix 4 grammes of chloral hydrate in a stoppered bottle with 30 c.c. of sodium hydroxide solution, shake vigorously a few minutes, without heat and then titrate with sulphuric acid v. s., using litmus as indicator. (Ph. Jl. 99, Sept. 236.)—Sargeant in commenting on this test, states that the chloral hydrate should be added direct to the alkali without previous solution, and that secondary reactions are in inverse proportion to the amount of chloral hydrate and excess of alkali present, and in direct proportion to the heat applied. (Ibid., 236.)

Examination. Scholvein states that pure chloral hydrate melts at 50–51°; that the melting point is influenced but slightly by small amounts of chloral alcoholate, but more so by water. A variation between 49 and 53° should be allowable; also that the test of the new Pharm. Germ. for chloral alcoholate should be replaced by the iodoform or nitric acid test. (Ber. Berl. Pharm. Ges. 11, 78. Ph. Rev. 01, 221.) See also Scholvein. (Apoth.-Zeit. 01, 166.)

Properties. Schaer calls attention to some of the remarkable physico-chemical properties of this substance which it is thought will add to its usefulness in both pharmaceutical and analytical work. (Schweiz. Woch. 98, 402. Apoth.-Zeit. 98, 656. Proc. 99, 689.)

Interaction with Formaldehyde. Pinner. (Ber. 98, Sept. 26. Ch. News, 99, 287. Proc. 99, 690.)

Polymerization. Mallet. (Am. Chem. J. Ch. News, lxxvi, 280. Ph. J. 98, Jan. 46.)

Solidifying Point. Merck obtains 44° C. (Ch. & Dr. 98, 348.)

Chloroformum.

Preparation. Electrolytic. Lucchini. (L'Electricita 99, 664. Ch. Ztg. (Rep.) 99, 336. A. J. Ph. 00, 230.)——Apparatus for Manufacture. Arends. (Ph. Ztg. 98, 542. Proc. 99, 685.)

Purification. Pictet obtains crystals at 83° C. (Jour. Soc. Ch. Ind. 99, 231. A. J. Ph. 00, 41.)

Purification and Preservation. Masson recommends the following treatment: (1) Washing with distilled water; (2) treatment with 2.5 p. c. sulphuric acid for 2 or 3 days; (3) treatment with 3 p. c. soda

lye for 3 or 4 days; (4) washing with distilled water; (5) treatment with pure melted coarsely-powdered calcium chloride; this should be agitated for 3 or 4 hours, and then poppy-seed oil added; (6) distillation. The author states that the addition of one-thousandth part of poppy-seed oil will prevent any alteration of chloroform when exposed to direct sunlight, and two-thousandths part of the oil will preserve it intact for 3 years. (Jour. de Ph. (6) ix, No. 12. Ch. News, 99, 183.)

Preservation. Brown concludes after a number of experiments that lime is not a good preservative of chloroform. (Ph. J. 98, Dec., 669. Proc. 99, 687.)

Crystallization with Various Substances. Kassner. (Arch. Ph. 239, 47. Ph. Rev. 01, 173.)

Action on Alkaloidal Salts. Schaer. (Ph. J. March, 00, 308.)

Decomposition by Caustic Alkali. Thiele and Frankland. (Liebig's Ann. Chem. 98, *302*, 273 Apoth. Zeit. 99, 61. Proc. 99, 687.)

Determination of Alcohol. Behal and Francois propose a modification of the method of Nicloux, which depends upon the conversion of the alcohol into acetic acid by potassium dichromate and sulphuric acid, the quantity of alcohol being determined by that of dichromate consumed. (Ph. Zeit. 97, 528. Proc. 98, 997.)

Test. Power criticizes B. P. test; considers U. S. P. test practical and adequate (Ph. J. 00, 148.)

Chondrus.

Botanical Source. Kraemer states that the drug as now collected consists chiefly, if not entirely, of *Chondrus crispus.* (Proc. Penn. Ph. Assoc. 99, 113. A. J. Ph. Proc. 00, 568.)

Cimicifuga.

Inferiorities in. Culbreth. (Dr. Circ. 97, 210. Proc. 98, 765.)

Ash. Moor and Priest. (Ph. J. July, 00, 110.)

Cimicifugin. Yield. Pugh. (Ch. & Dr. 99, Aug. 299. Proc. 00, 505.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 303.)

Cinchona.

Cultivation. Alkaloidal contents of seedlings, cuttings and grafts. (Ch. & D. 98, 591. Proc. 98, 815.)——In Portuguese West Africa. (Ch. & D. 98, 591. Proc. 98, 815)——Quantity and quality. (Ch. & D. 98, 163. Proc. 98, 815.)——Culture in India and Java. Verne. (J. de Ph. et Ch. 01, 5. A. J. Ph. 01, 188.)——Culture in Java. (Apoth.-Zeit. 99, 310. Proc. 99, 540, and Apoth.-Zeit. 99, 601. Proc. 00, 602.)

Alkaloids. Formation in the leaf. Lotsy. (Ber. Berl. Pharm. Ges. 00, 124. A. J. Ph. 01, 145.) (See also Bull. Inst. Botan. Buitenzorg, 3, 1900.)——(Dr. Circ. 99, 53.)——Perbromides. Christensen has prepared the entire series of the bromine compounds of quinine, cinchonine and cinchonidine. (Videnskabernes Selskabs Skrifter 00, 253. Apoth. Ztg. 00, 294. Proc. 00, 811.)

Ash. Moor and Priest. (Ph. J. July, 00, 110.)

Assay. Wobbe substitutes a 10 p. c. solution of soda for the ammonia employed officially in the G. P., and shakes out the ethereal solution of the alkaloids with $\frac{N}{10}$ hydrochloric acid, titrating the excess with $\frac{N}{10}$ soda solution, and using the same indicators and factor as in the case of fluid extracts. (Apoth. Ztg. 99, 550. Proc. 00, 469.)——Ekroos employs KOH in place of ammonia, and a freshly prepared solution of haematoxylin as an indicator. The method may also be applied to extracts of cinchona. (Arch. Ph. 98, 328. Suedd. Ap. Ztg. 98, 649.)——Squibb finds that by the use of a 10 p. c. acetic acid menstruum, complete exhaustion of the drug is easily effected with a powder as coarse as No. 9. The apparatus and manipulation are however of much importance. (A. J. Ph. 99, 312.)——Twenty Gm. of bark (Loxa or Huanoco) are triturated with 10 Gm. of lime and a little water, dried, extracted with chloroform, the chloroform distilled off, the residue extracted with hot water containing 20 Cc. of 10 p. c. hydrochloric acid, and the solution filtered. The filtrate is mixed with 20 Cc. of 10 p. c. potassium hydrate solution, shaken out with 20 Cc. of chloroform repeatedly, the chloroformic solution evaporated and the residue dried to constant weight. (Apoth. Ztg. 99, 741. Proc. 00, 529.)——Lenz has utilized the well-known solvent action of a concentrated solution of chloral hydrate upon the dried cell contents, in the extraction of alkaloids in the assay process, but more particularly in the assay of cinchona The author points out that the method does away with the pulverization to extremely fine powder of the bark, the alkaloids are colorless and apparently purer than those obtained by the process of the P. G. Ed. IV, while the yield is greater. (Ph. Ztg. 98, 683. Proc. 99, 736.)——Ekroos proposes a modification of Keller's method. (Apoth.-Zeit. 98, 848. Arch. Ph. 98, No. 5. Proc. 99, 541.)——Comments on the assay methods of the G. P. Ed. IV.——(Ph. J. Sept., 00, 304).——Dewhirst comments on B. P. standarizations. (Ph. J. April, 00. 358.)——Gordin gives a modified alkalimetric process. (Proc. 00, 125. A. J. Ph. 01, 213.) ——Improvement of U. S. P. Method of Assay High. (Am. Dr. 99, 354.)——Van Ketel. (Zeits. Ang. Chem. 01, 313. Apoth. Zeit. 01, 225.)

Perbromides of Alkaloids. Christensen. (Ph. Zeit. 00, 119. Ch. & Dr. 00, 309.)

False. Hartwich describes 4 barks recently placed on the market as Cinchona. (Arch. Ph. 98, 641. A. J. Ph. 99, 397.)——A new supposed quinine bark. Pollard. (Ph. J. 01, 492.)——Hartwich. (Arch. Ph. 98, 336, No. 9, 641. Proc. 99, 541.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 316.)

(Cinnamomum.)

Cinnamon and Cassia Bark. Henry. (Ph. J. 98, 47. Proc. 98, 787.)

New South Wales Species. Baker. (Ch. & D. 98, 183.)

Adulteration. (Oest. Zts. Ph. *54*, 713. Ph. J. 00, 313.)

Ash. Percentage. Rupp. (Suedd. Ap. Ztg. 99, 267. A. J. Ph. 00, 489.)——Moor and Priest. (Ph. J. July, 00, 110.)

Chips. High ash content. (Zeits. f. Unter. d. Nahr. u. Genussm. 99, 209. Apoth. Ztg. 99, 493. Proc. 00, 584.)

Culilawan Oil. Examination. Gildemeister and Stephans. (Arch. Ph. 97, 582. Proc. 98, 789.)

Mucilage. Sayre. (Dr. Circ. 99, 75, 129.)

Histology. Sayre. (Dr. Circ. 98, 213.)

Cinnamomum Cassia.

Microscopical characteristics of drug and powder. Jelliffe, (Dr. Circ. 99, 98.)——Kraemer. (Proc. 98, 316.)

Cinnamomum Zeylanicum.

Histology. Hartwich. (Apoth.-Zeit. 00, 502.)

Powder. Microscopical characteristics of official barks. Kraemer. (Proc. 98, 316.)

Coca.

Origin. Rusby. (Dr. Circ. 1900, 225.)——Holmes. (Ph. J. 01, 3 and 81.)——Rusby. (Dr. Circ. 01, 48.)

Adulteration. With Jaborandi leaves. Barclay. (Ch. & Dr. 99, 1030. Proc. 00, 630.)

Acetone. Occurrence in *Erythroxylon Coca.* Van Romburgh. (Apoth. Ztg. 99, 459. Proc. 00, 797.)

Assay. Lamar believes that the extreme instability of the alkaloids of this drug accounts for the many discordant results obtained in assays of the same. The author recommends kerosene oil for the extraction of the drug, and employs the assay process described by Squibb (Ephemeris, Vol. III, p. 1104), except that he uses a dilute solution of ammonium hydrate instead of the solution of sodium carbonate for liberating the alkaloids from their natural combinations. (A. J. Ph. 01, 125).——Gordin. (A. J. Ph. 01, 167.)

Ash. Percentage. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.)——Moor and Priest. (Ph. J. July, 00, 110.)

General Description. Holmes. (Ph. Jl. 99, Nov., 496. Proc. 00, 630.)

Histological Characters. Of commercial varieties. Schneider. (W. Drug. 98, 540.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 299.)

(Cocaina.)

Identity. Lonnué-Moret prefers the microscopical examination of the precipitate formed with gold chloride or picric acid. (J. de Ph. et Ch. xxvii, 390.)——Garsed and Collie give method for determining cocaine in small quantity or mixed with benzoyl ecgonine and ecgonine. (J. Chem. Soc. *17*, 89. Ph. J. 01, 553.)

Cherry Laurel Water. Glücksmann opposes the statement of Declin that cocaine hydrochlorate is incompatible with genuine cherry laurel water. (Ph. Rdsch. 98, 473. A. J. Ph. 99, 87.)

Cocainæ Hydrochloras.

See also Cocaina.

Examination. Paul and Cownley. (Ph. J. 98, 586.)

Commercial Quality. Tuthill considers that the variation in the activity of various brands of cocaine as manufactured by different establishments is due either to the presence of secondary alkaloids, decomposition products, or both, which are present originally in the coca leaves, or which are produced in the drug by various manipulations to which it is subjected previous to or during the extraction of the desired alkaloid; that the presence of such undesirable constituents may be objectionable simply as diluents, or they may be of harmful physiological action. (Proc. N. Y. Ph. Assoc. 98. Dr. Circ. 98, 204.)

Maclagan Test. Gunther substantiates the opinions of Vulpius and concludes: (1) That Maclagan's reaction depends upon accidental conditions; (2) that the impurities that are supposed to prevent the reaction have not been determined, and (3) that there exists no difference in the physiological action of cocaines, so long as they conform to the requirements of the G. P., III., whether they also respond to the Maclagan test or not. (Ph. Centralh. 98, 1. Ber. (2), *9*, 38. Ph. J. 99, Mar. 251.)——Böhringer & Sons reply to Günther and maintain positively that a cocaine that does not respond to Maclagan's test contains isatropyl cocaine to such an extent as to make it unfit for use, since the latter is a powerful cardiac poison. To make Maclagan's test reliable, the following conditions are necessary: For 0.1 Gm. of cocaine hydrochloride dissolved in 85 Cc.

of water, at least 0.15–0.2 Cc. of ammonia solution (sp. gr., 0.960) must be added, and the stirring must be energetic to insure the separation of crystalline cocaine—this being prevented by the presence of isatropyl cocaine. (Ph. Centralh. 98, 141, and 99, 393.)——Zimmer and Co. accord with the foregoing, and maintain in addition that cocaine hydrochloride which does not respond to Maclagan's test should be regarded as impure and unfit for medicinal use. (Ph. Ztg. 99, 583. Proc. 00, 814.)——Paul and Cownley, while admitting the possibility of separating still other alkaloids from the crude cocaine, are nevertheless of the opinion that Maclagan's test is satisfactory for determining the purity of commercial cocaine. They find the solubility of pure cocaine to be 1 part to 1500 parts of water at 15.5° C. (Ph. J. 99, June, 525.)——Paul and Cownley emphatically express the opinion that a sample of cocaine hydrochloride that does not answer Maclagan's test is not sufficiently pure for medicinal purposes. (Ph. J. 98, 586.)

Chromic Acid Test. In view of the doubt expressed regarding the value of Maclagan's test, Schaeffer has devised a method which is based upon the fact that cocaine chromate is soluble in 500 parts of acidulated water, while the chromates of the objectionable alkaloids require 5000 parts for solution. (A. J. Ph. 99, 222.)——Cownley thinks, however, that the Maclagan test is to be preferred to the chromic acid test for determining the purity of the commercial salt, a salt of synthetic cocaine being probably the only one that would pass the chromic acid test. (Ph. Jl. 99, July 66.)——Merck in referring to the chromic acid test proposed by Schaeffer finds that the degree of concentration of the hydrochloric acid used in the test has an important bearing on the reaction. The age of the chromic acid solution is also of importance. The author also reports that in his experience so long as crude cocaine fails to respond to Maclagan's test, this failure is caused by impurities still present. (Ph. Zt. 99, 367. Proc. 99, 738.)

B. P. Tests. Power criticizes B. P. (Ph. J. 00, 149.)

M. P. Howard gives 98° C. (Ch. & Dr. 98, 675.)

Solutions. Legrand has carried out experiments which show that a 1 p. c. solution of cocaine may be sterilized if the process is conducted in the presence of water vapor, as for instance in the autoclave, without decomposition of the alkaloid. (Nouv. Remédes, 99, 109. Apoth. Ztg. 99, 222.)

Coccus.

Ash Determinations. True. (Ph. Rev. 99, 346.)——Merson. (Ph. J. March, 00, 309.)——Moor and Priest. (Ph. J. July, 00, 111.)

Assay. Merson. (Ph. J. March, 00, 309.)

Coloring Matter. Investigation. Liebermann and Voswinckel. (Ber. D. Chem. Ges. 97, 688. Ph. Centralb. 97, 422.)

Commercial. Examination. (Proc. Ill. Ph. Assoc. 99, 54. Proc. 00, 424.)

Codeina.

Basicity and Estimation. Maisch calls attention to the strong basicity of this alkaloid, which property is recognized by several authorities but overlooked by the Pharmacopœia, which states that it is neutral to litmus paper. The author finds it to decompose ammonium chloride in aqueous solution molecule for molecule, and suggests the indirect estimation of the alkaloid from the amount of ammonia liberated. (Proc. Pa. Ph. Assoc. 99, 149. A. J. Ph. 99, 357.)

Reagent. Mecke finds that a 5 p. c. solution of selenous acid in concentrated sulphuric acid yields a distinct green color with 0.005 Mg. codeine. (Suedd. Ap. Ztg. 99, 739. A. J. Ph. 00, 498.)

Solubility. Enell. (Med. Farm. För. 98, 1. Apoth. Ztg. 98, 629. Proc. 99, 371.

Tests. Power criticizes B. P. test. (Ph. J. 00, 149.)

(Cola.)

Botanical Source. Holmes. (Ph. J. 00, June, 665. Proc. 00, 624.)

Fruit. Description. (Ber. Berl. Pharm. Ges. 00, 67. A. J. Ph. 01, 142.)

Economic Uses. Bernegau. (Apoth. Ztg. 99, 563. Proc. 00, 624.)

Preservation. Bernegau finds that the fresh nuts may be preserved in sugar syrup to which a little citric acid has been added. (Ph. Ztg. 98, 683. Proc. 99, 550.)

Assay. Schumm. (Ph. Zeit. 98, 683; Proc. 99, 550.)——Determination of alkaloids. Dieterich agrees with results of Knox and Prescott. (Ph. Ztg. 97, 647. Proc. 98, 831.)

Effect of Roasting. Dieterich. (Proc. Soc. Germ. Nat. and Phys. 97. Am. Dr. 97, 244.)

Constituents. Schweitzer. (Ph. Ztg. 98, 380. A. J. Ph. 99, 84.)

False Cola. Hart. (Ph. J. 98, 184.)

Colchici Radix.

Ash. Moor and Priest. (Ph. J. July, 00, 111.)

Assay. Gordin and Prescott give method in which colchicine is saponified with standard alkali and titrated with standard acid. (Proc. 00, 133.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 319.)

Colchici Semen.

Ash. Moor and Priest. (Ph. J. July, 00, 111.)

Assay. Cowley and Catford. (Ph. J. 98, 131.)——Gordin and Prescott. (Proc. 00, 133.)

Tincture. Cowley and Catford make a comparison of the official process (B. P.) and one using dilute acetic acid as a menstruum. (Ph. J. 98, Feb. 131.)

Extract. Assay. (Ibid.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 318.)

(Colchicina.)

Identity. Barillot. (Bull. Soc. Chem. 97, 514. Proc. 98, 1047.)

Collodium.

Examination. Sieker presents data obtained by an examination of both official and commercial samples. He furthermore finds that collodion does not furnish an efficient test for the presence of carbolic acid in creosote. (Ph. Rev. 99, 377.)

Substitute. Thibault. (Bull. de Pharm. der Sud.-Est, 99, 656. Apoth. Ztg. 00, 64. Proc. 00, 445.)

Collodium Flexile.

Formula. Caldwell finding the official product too contractile suggests the following formula: Glycerin, 2 parts; Venice turpentine, 5 parts; Lard, 10 parts; Collodion, 83 parts. (Ph. Era, 99, 667. Proc. 00, 445.)——Klein recommends the addition of 10 per cent. of balsam of Peru to collodion. (Therap. Monatsh. 97, 238. Proc. 98, 662.)

Collodium Stypticum.

Formula. Caldwell recommends rubbing up the tannic acid with glycerin, afterward adding the alcohol, ether and collodion. (Ph. Era, 99, 667. Proc. 00, 445.)

(Collodium Vesicans B. P.)

Greenish and Wilson propose the preparation with liquor epispasticus made with cantharidin. (Ph. J. 98, 259. Proc. 98, 663.)

Colocynthis.

Monograph. Lloyd. (W. Dr. 98, 243.)

The ripe fruits are reported to be of a rich golden color and about twice as large as an ordinary orange. (The Garden (Nov. 26, 439). Ph. J. 98, Dec. 583. Proc. 99, 559.)

Cultivation in Cyprus. (Ph. Jl. 99, Jul. 9. Proc. 00, 636.)

Ash. Greenish. (Ph. J. 01, 169.)——Moor and Priest. (Ph. J. July, 00, 111.)

Powder. Microscopical characteristics, Kraemer. (Proc. 98, 323, 331.)

Confectio Rosæ.

Microscopical characteristics. Kraemer. (Proc. 98, 334.)

Conium.

Ash. Percentage. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.)——Moor and Priest. (Ph. J. July, 00, 111.)

Assay of Seed or Leaves. Gordin. (A. J. Ph. 01, 217.)

Coniine. Melzer calls attention to a statement of Blyth that coniine is sparingly soluble in carbon disulphide, which has not been contradicted for 39 years. The author then adds that solution does not take place at all, but that coniine being a secondary compound, unites directly with carbon disulphide to form a new compound. (Arch. Ph. 98, 701.)

Convallaria.

Schrader reports that the root contains about three times as much of the active principle as the flowers and stems. (Proc. Md. Ph. Assocn. 99, 128. Proc. 00, 577.)

Copaiba.

Monograph. Lloyd. (W. Dr. 98, 54.)

Copaifera Langsdorffii. Rice calls attention to the incorrect spelling of the specific name as "Lansdorffii," and refers to the fact that the name was applied in honor of George Heinrich Freiherr von Langsdorff. (W. Dr. 98, 489. Proc. 99, 566.)

British Guiana. Examination. Bell. (Ph. J. 00, 98.)

Surinam. Poole gives characteristics. (Nederl. Tydschs. v. Pharm. Ph. Ztg. 98, 129. Proc. 98, 853.) See also (Ph. Centralh. 99, 503. Proc. 00, 648.)

Rare Copaiba and Mecca Balsams. Dieterich gives results of examination. (Ph. Centralh. *40*, 311. Ph. J. March, 00, 227.)

Substitute. Tapia reports that the oil from *Nectandra caparrapi* has been long used in Columbia in place of copaiba. (Bull. Soc. Chim. (3) 19, 638. Schimmel & Co. Ber. 98, Oct. Proc. 99, 672.)

Examination. Patch. (Proc. 00, 202.)——Source and properties of commercial varieties. Umney and Bennett. (Ph. J. 66, 324. Ch. & Dr, 58, 436.)

G. P. Ed. IV. Sp. gr. 0.980–0.990; free acid no. 75.6–84; ester

no., 8.4; gives a clear or sometimes a slightly opalescent solution with chloroform, petroleum ether, amylic alcohol and absolute alcohol.

Constants. Dieterich has investigated some of the rarer varieties, together with Gurjun and Mecca balsam, and reports upon their constants. (Ph. Centralh. 99, 311. Proc. 99, 567.)

Tests. Umney and Bennett examine critically the characters and tests for copaiba in the various pharmacopœias. (Ph. J. 01, 324.)

Coriandrum.

Ash. Percentage. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.)——Moor and Priest. (Ph. J. July, 00, 111.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 319.)

Creosotum.

Composition. Kebler enumerates the phenols, and states that in his experience it is difficult to obtain creosote containing 20 p. c. of guaiacol, and in view of his and other recent analyses, it would seem that creosote containing 25 p. c. of this constituent would represent a fairly good article. (A. J. Ph. 99, Sept., 409.)

Collodion Test. Inefficiency, See Collodium.

Guaiacol. Determination. Kebler. (A. J. Ph. 99, 409.)

Guaiacol. Distinction. Vitali observes: Mix 1 drop of formaldehyde solution (1 p. c.) with 1 drop of aqueous solution of guaiacol, and then add about 1 Cc. of concentrated sulphuric acid, drop by drop, a beautiful violet color is produced. Creosote also gives a violet color, but produces a carmine red tinge, and on the addition of acid a turbid liquid results from which carmine-red flakes separate. In the case of guaiacol, the liquid remains clear, there being no separation. A solution of pure guaiacol forms a green liquid with concentrated sulphuric acid. Creosote gives in the above reaction, if acetaldehyde be substituted for formaldehyde, a carmine-red coloration. (Apoth.-Zeit. 98, 481. Proc. 99, 699.)

Quality. Power criticises text of B. P. (Ph. J. 00, 149.)

Valuation. Hafner and Kreissel base a valuation upon its methoxyl content, determined according to the method of Zeisel. (Zeits. Oest. Ap. Ver. *38*, 653. Ph. Rev. 00, 523.)

Creosotum Crudum. Tests in G. P. Ed. IV. (See Ph. J. Sept., 00, 305.)

Crocus.

G. P. Ed. IV. Loss at 100° C. not more than 12 p. c. Ash limit, 6.5 p. c.

Ash. Percentage. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1. Ph.

Rev. 98, 152.)——Moor and Priest. (Ph. J. July, 00, 111.)——Dott. (Ph. J. 98, 282.)

Moisture and Ash. Brazier. (Ch. & D. 99, May, 815. Proc. 99, 514.)

Volatile Oil. Hilger and Schüler are of the opinion that the volatile oil is produced by the splitting up of the coloring principle, this latter being identical with the carotin of other plants. (Apoth. Zeit. 99, 575. Proc. 00, 579.)

Tinctorial Value. Determination. Cæsar and Loretz. (Ph. Centralh. 99, 611. Proc. 00, 579.)——Dowzard. (Ph. J. 98, Oct., 443. Proc. 99, 513.)

Examination. Weakley. (A. J. Ph. 00, 119. Proc. 00, 578.)——La Wall and Pursel. (Proc. Pa. Ph. Assoc. 00, 161. A. J. Ph. 00, 378.)

Cultivation and Adulteration. In India. (Br. & Col. Dr., Dr. Circ. 00, 77. Proc. 00, 578.)

Adulteration. Wanters observes that a coal-tar derivative, which is itself adulterated with sodium chloride, is being used to adulerate this drug. (Ph. Jl. 98, Aug. 241.)——Daels found potassium borotartrate. (J. de Ph. d' Anvers, *56*, 417. Ph. J. 01, 2.)——Inferior grades. Holmes. (Ph. Jl. 00, Mar., 279. Proc. 00, 563.)

Microscopical and Chemical Distinctions. From carthamus and calendula. Kraemer. (Proc. Penn. Ph. Assoc. 98, 100. A. J. Ph. 98, 386.)

Powder. Distinction from Calendula and Carthamus. Kraemer. (Proc. 98, 325.)

Carthamus. Ash. Percentage in flowers. Hockauf. (Zeit. Oest. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.)

Cubeba.

Ash. Percentage. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.)——Moor and Priest. (Ph. J. July, 00, 111.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 317.)——Jelliffe. (Dr. Circ. 99, 172.)

Cupri Sulphas.

Examination. Patch. (Proc. 00, 202.)

(Cuprum.)

Analysis. Westmoreland employed electrolytic and iodine methods on copper foil, designated "pure for analysis" and observes that although samples which give 100 p. c. by the electrolytic test may possibly *not* be pure, samples which give lower results—say 99.5 p. c.—cannot possibly be pure. (Analyst, xxiii, 86. Ph. J. 98, 409.)

Assay. Catford proposes a modification of the cyanide process. (Proc. Liverpool Chem. Assoc. 98, Nov. 10. Ph. J. 98, Nov. 540.)

Reagent. Formaldoxime is reported as being a very delicate reagent for copper. (Compt. rend. (cxxviii, 363). Ph. J. 99, Apr. 15.)

Action of Gelatin. Lidof finds copper to be soluble to a certain extent in an alkaline solution of gelatin, and this solution, which is of a violet color when heated under pressure or treated with formaldehyde, yields a precipitate of copper and organic bodies. The so-called "biuret" reaction is attributed to the formation of this soluble organic copper compound. (Bull. Soc. Chim. *24*, 33. Ph. J. 00, Mar. 249.)

Cusso.

German. Unsatisfactory quality. Köster. (Ph. Ztg. 00, 306. Proc. 00, 641.)

Inferior. Koester finds samples to consist frequently chiefly of male flowers. (Ph. Centralb. *41*, 425. Ph. J. 01, 261.)

Ash. Percentage. Moor and Priest. (Ph. J. July, 00, 111.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 319.)

Cypripedium.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 300.)

Decocta.

Preparation. See Infusa.

Digitalis.

Austro-Hungarian. Benyschek finds the leaves gathered in several districts of this country to compare favorably with the English and German-grown leaves, the amount of active principles being in inverse ratio to the amount of moisture present, and thus smallest toward the fall when the leaves are fully developed. (Ph. Post. 99, 451. Proc. 00, 586.)

Preservation. Benyschek finds the drug to keep admirably in containers of dark-brown or black glass, hermetically closed, the drug remaining in good condition for 2½ years. Another method spoken of by the author is the enclosure of the drug in tins over lime, the object being to exclude all moisture since this decomposes the digitonin. (Ph. Post, 99, 451. Proc. 00, 586.)

German and English Leaves. Dohme and Engelhardt report results which show the digitoxin value of the English to be superior to the German drug, but at the same time state that the price of the former is 1000 times higher than the latter. (Proc. Md. Ph. Assocn. 99, 133. Proc. 00, 587.)

Percentage of Digitoxin. Caesar and Loretz report that leaves collected before the flowering of the plants contained 10 p. c. more pure digitoxin than leaves from the same plants in flower, the average yield being 0.3 p. c. Flowers with the calyx yielded the same percentage of digitoxin as the leaves of plants in the same locality. The authors also report that the usual method of storing the leaves in bales protected from light, is satisfactory. (Ph. Centralh. 99, 611. Proc. 00, 587.)——Estimation in leaves and stalks from many sources. Fromme. (Ph. J. 97, 283.)

Glucosides. Kiliani reports the results of further investigation of the character and chemical constitution of the digitalis glucosides. The author has also analyzed Nativelle digitalin, "digitaline cristallisée," and finds it to be closely related to, if not identical with, digitoxin. (Ber. xxxi, 2454. Proc. 99, 755.)

Chemistry. Dohme in reviewing this subject points out that the various digitalins of literature and commerce are more or less impure forms of the real active principle of digitalis, namely, digitoxin. Keller's test distinguishes it sharply from digitalin. (Proc. Md. Ph. Assoc. 98, 85. Proc. 99, 520.)——Contrary to an observation made by Kiliani some years ago, Cloetta maintains that there is no essential difference between the constituents of the leaves and seeds. (Arch. f. Exp. Pathol. u. Pharmacol. 98, 425. Apoth.-Zeit. 99, 178. Proc. 99, 521.)

Medicinal Activity. Böhm claims efficacy to depend on sum total of constituents; odoriferous principles being important. (Gehe & Co.'s Ber. Am. Dr. 98, 342. Proc. 98, 797.)——England accords with Boehm that the efficacy of digitalis depends not only upon the digitoxin present, but upon the sum of its constituents. (A. J. Ph. 99, 279. Proc. Pa. Ph. Assoc. 99, 158.)——The A. Ph. A. Comm. recommend investigation of digitoxin, digitalin and digitonin in order to determine which are physiologically active. (Proc. 98, 224.)——Derivatives. Kiliani. (Arch. Ph. 99, 446 *et seq.* A. J. Ph. 00. 179.) Also (Ber. d. Chem. Ges. 98, 2454. A. J. Ph. 00, 273.)——Keller-Kiliani Controversy. (Arch. Ph. 97, 425. Proc. 98, 794.)

Ferment. Brissemont and Joanne find that the ferment of digitalis, which was first discovered by Kossmann, is an oxydase, and probably analogous to the oxydases of other plants. They also report that while the fresh and recently dried leaves are rich in this substance, it disappears on keeping. Leaves a year old give a feeble reaction for its presence. (J. de Ph. et Ch. (6), *8*, 481. Ph. J. 99, Jan. 25. Proc. 99, 771.)

Examination. Cæsar and Loretz. (Geschäftsbericht Sept., 1900. Ph. Rev. 00, 523.)

Ash. Percentage. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1.

Ph. Rev. 98, 152. Proc. 98, 765.)——Moor and Priest. (Ph. J. July, 00, 111.)

Pharmacognosy. Jelliffe. (Dr. Circ. 00, 176.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 300.)

Digitalis Lutea. New yellow coloring principle. Adrian and Trillat. (Compt. rend. *129*, 889. Ph. J. 00, Jan., 69.)

Dulcamara.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 300.)

Elastica.

Coagulation of Latex. Biffen. (Ann. Bot. xii., 165. Ph. J. 98, 585.)

Cultivation. In Africa. (Ph. J. 97, 416. Proc. 98, 809.)——Mangabeira caoutchouc. Source. (Ph. Ztg. 99, 894. Proc. 00, 598.)

Production. In Africa. Sadebeck. (Ph. Centralh. 99, 471. Proc. 00, 661.)——In Madagascar. Jumelle. (Compt. rend. 128, No. 22, 1349. Ph. Ztg. 99, 694. Proc. 00, 598.)

Purification. Preyer. (Tropenpflanzer, 99, 327. Apoth. Zeit. 99, 760. Proc. 00, 662.)

Elaterinum.

Ash. Percentage. Moor and Priest. (Ph. J. July, 00, 111.)

(Elixira.)

N. F. In view of a possible recognition of a class of elixirs by the forthcoming Pharmacopœia, Dawson protests against those of the National Formulary on the ground of their disagreeable taste, stating that elixirs were originally designed to furnish a palatable mode of administration of medicines. (Am. Dr. 00, 129. Proc. 00, 447.)

Additional. Hommell suggests that at least 20 of the 85 elixirs of the N. F. become official. (Dr. Circ. 00, 176.)

Inversion of Cane Sugar. Woltersdorf and Richtmann. (Ph. Arch. 00, 101.)

Elixir Aromaticum.

Preparation. Murphy recommends magnesium carbonate for clearing this elixir. (Merck's Rep. 99, 349. Proc. 00, 427.)——Dawson proposes the following modification of the U. S. P. preparation: Tincture of sweet orange peel, 50 Cc.; deodorized alcohol, 200 Cc.; syrup, 375 Cc.; precip. calcium phosphate, 15 Gm.; water to make 1000 Cc. (Am. Dr. 00, 129. Proc. 00, 447.)

Inversion of Cane Sugar. Woltersdorf and Richtmann. (Ph. Arch. 00, 101.)

(Emplastra.)

Therapo-Pharmacy. Hallberg. (W. Dr. 01, 58.)

Emplastrum Belladonnæ.

Preparation. Ballard observes that while the official plaster is efficient, it does not supply the popular demand, being deficient in appearance, not sufficiently flexible, and uncomfortable to wear. (Proc. Ia. Ph. Assoc. 98, 46. Proc. 99, 417.)

Views of Physicians and Pharmacists. Williams finds in the replies indications that for the most part the official plasters are being superseded by the rubber combination plasters. (Proc. 00, 232.)

Assay. Smith suggests improvements on the published method of Williams and Parker, and gives the results of its application in the examination of commercial samples. (A. Jl. Ph. 98, 182, and 99, 32.)——Moerk. (A. J. Ph. 99, 105. Proc. 99, 522.)——Henderson. (Ph. J. 99, 110.)——Method of Extraction for Assay. Bird. (Analyst. Ph. J. 99, Aug., 146. Proc. 00, 450.)

Standardization. Owing to the variability of alkaloidal content of the commercial plasters, and also of the commercial extracts of the leaf, Caspari suggests, since convenient methods of assay are known, the introduction of methods of assay not only for the plaster, but also for the root and leaf and galenical preparations. (Proc. Md. Ph. Assoc. 99, 102. Proc. 00, 451.)——Standard. Williams. (Dr. Circ. 99, 5.).

(Emplastrum Resinæ.)

Preparation. Schneider suggests keeping this plaster over quicklime. (Ph. Centralh. 98, 935. Proc. 99, 417.)

Emulsa.

Preparation. Williams recommends the introduction of general formulæ for emulsifying either fixed or volatile oils. (Proc. Conn. Ph. Assoc. 97. Proc. 98, 674.)——Hiss reports upon the relative value of the various emulsifiers of fixed and volatile oils, his conclusion being that saccharated casein is the best emulsifier of all. Condensed milk is spoken of as being superior to acacia. (Bull. Ph. 99, 228. Proc. 99, 417.)

Estimation. Schneegans gives method for estimating the amount of oil in emulsions. (Chem. Zeit. 98, 12; Merck's Rep. 98, 182. Proc. 98, 675.) See also (Ph. Post, 99, 692. Proc. 00, 452.)

Cod Liver Oil. Having experimented with some of the emulsifiers

on the market, Arny is of the opinion that the use of the mortar and pestle is still to be preferred, and the best emulsifying agent is a mixture of acacia and Irish moss as originally suggested by Bedford. (Proc. 92, 432.) (Proc. Ohio. Ph. Assoc. 99, 39. Proc 00, 453.)

Ergota.

Deterioration. Meulenhoff is of the opinion that when ergot is properly dried and stored, it will retain its properties for two years at least. If fresh ergot is dried soon after the harvest, storage has no great effect provided it be stored in a place free from dampness. (Apoth. Zeit. 76, 665. Ph. Rev. 01, 33.)

Occurrence. Denniston describes ergot grains which grew upon wild rice, *Zizania aquatica*, L. (Ph. Rev. 00, 118.)

Preservation. Pées proposes keeping the drug in an atmosphere of formaldehyde. (Apoth. Zeit. 99, 85. Bull. Commerc. 99, 39. Proc. 99, 504.)——Preservation by means of Tolu Balsam. Aymonier. (J. de Ph. et Ch. vi, 359. Ph. J. 98, June, 24.)

Assay. (Ch. and Dr. Dec., 00, 1027.)

Ash. Percentage. Moor and Priest. (Ph. J, 00, July, 111.)

Active Constituents. Meulenhoff. (Ph. Centralh, 99, 656. Proc. 00, 572.)

Constituents. Jacobs. (Arch. Exp. Path. xxxix. Apoth. Zeit. xii, 494. Ph. J. 97, July, 84.)

Cornutine. Cæsar and Loretz discuss the feasibility of standardizing ergot on the basis of the percentage of cornutine. (Geschäftsbericht, 99, Sept. Ph. Rev. 99, 522.)——Meulenhoff regards cornutine as a decomposition product of ergotine and as having greater activity. (Nederl. Tijds. v. Ph. 13, 1. Ph. Rev. 01, 73.)

Ergotins. Description. (Merck's Ann. Rep. 99. Proc. 00, 459.)

Histology and Pharmacognosy. Dohme (Dr. Circ. 98, 80.)

Powder. Microscopical Characteristics. Kraemer. (Proc. 98, 296.)

Eriodictyon.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 298.)

Eucalyptus.

Baker describes two new species. (Ph. J. 99, Feb., 119.)

E. Loxophleba. Offensive odor of oil. Parry. (Proc. Br. Ph. Conf. 98, 345. Proc. 99, 562.)

E. Macrorhyncha or "Red Stringy-Bark," is considered by Baker and Smith to be the most important commercial tree of the genus. The yield of oil is from 0.28 to 0.31 p. c. and this contains about 50 p. c. of eucalyptol. (Ph. J. 99, Sept. 315. Proc. 00, 638)

Eucalyptol. Estimation. Kebler. (Proc. 98, 410.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 298.)

Euonymus.

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 111.)

Dulcite. The presence of this principle seems to be established. Hoehnel. (Ph. Ztg. 00, 210. Proc. 00, 658.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 312.)

Eupatorium.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 300.)

(Extracta.)

Assay. Extracts are dissolved in 45 p. c. alcohol, and the process given by Katz carried out (see Tincturæ Assay).

Solid Extracts. Consistence. Itallie is of the opinion that the amount of extract should have some definite relation to the drug, or that the final amount of extract should bear some definite relation to the absolute amount of dry substance contained in it. (Ph. Weekbl. 98, 28. Apoth. Zeit. 98, 629. Proc. 99, 426.)

Narcotic Extracts. Criticism of methods of preparation and assay by Altan. Schweiz. Woch. 99, 333. A. J. Ph. 00, 178.)

Menstrua. Schneider, in considering the question from the point of view of German pharmacy, points out some improvements for tinctures and extracts, and also discusses the special uses of various chemicals in increasing the solubility of vegetable compounds by the formation of salts, in splitting up sparingly soluble compounds, in modifying woody tissues, or in rendering undesirable constituents insoluble in the menstrum used. (Ph. Centralh. 99, 775 and 807. Proc. 00, 455).——Squibb discusses the question of the use of acetic acid as a substitute for ethyl alcohol in the extraction of drugs, and suggests that, in case the acetic acid preparations should be introduced into the U. S. P., the words "made with acetic acid" be placed conspicuously after the official title. (A. J. Ph. 99, 1.)——Stedem experimented with a 40 p. c. acetic acid. (Proc. Pa. Ph. Assoc. 98, 116. A. J. Ph. 98, 365.)——Ethyl and Methyl Alcohol. In view of the possible use of methyl alcohol for replacing ethyl alcohol in preparations, such as solid extracts, where the menstruum is afterward evaporated, Scoville made a series of experiments, in order to determine their relative value as menstrua, and his results were quite concordant. (Am. Dr. 99, 131.)

Oxidation. Stich attributes the changes in constituents of vegetable extracts to oxidizing enzymes. (Ph. Ztg. 99, 871. A. J. Ph. 00, 493.)

Green Narcotic Extracts. Assay and Standardization. Naylor and Bryant. (Proc. Brit. Ph. Conf. 98, 359. Proc. 99, 425.)

Dry Extracts. Schrieber finds gum arabic to be the best diluent for dry extracts. (Ph. Post 00, 5. Ph. Centralh. 00, 153. Proc. 00, 458.)——Pruys criticizes the retention of extracts of soft consistence in the G. P. Possibly the proposition made at the Pharmaceutical Congress at Brussels, that dry extracts only should be officially prepared and dispensed, may prove a way out of the difficulty. (Ph. Zeit. 97, 650. Proc. 98, 675.)

Powdered Extracts. Jenks gives their mode of preparation and extraction. (Alumni Rep. *36*, 3. Ph. Rev. 00, 185.)——Sayre finds that powdered extracts cannot be thoroughly desiccated over a water bath, but that drying over sulphuric acid or calcium chloride is satisfactory. (Dr. Circ. 44, 224.)

Scale Extracts. Preparation and strength. Lyons. (Ph. Rev. 99, 12.)

(Extracta Fluida.)

Dott looks forward to the next B. P. containing some such general instruction as the following: "It is not intended that the processes of preparation should necessarily be strictly followed. It is only necessary that the product should answer to the required character and tests, and be essentially similar in its properties and therapeutic value to the product resulting from the official process." (Ph. J. 01, 366.)

Fifty Per Cent. Fluid Extracts. Kelly, from experiments upon gentian, uva ursi and squill, concludes that repercolation does not completely extract drugs under the conditions given. (Proc. Kans. Ph. Assoc. 97, 40. Proc. 98, 684.)

Preparation. Patch mentions a number of fluid extracts in which changes could be made in menstrua with advantage. (Proc. 00, 202.)

Preparation on a Small Scale. Smeets. (Apoth.-Zeit. 99, 179. Proc. 99, 428.)——Howell and Swindell have prepared forty of the official fluid extracts in quantities of 200 Cc., and conclude that two-thirds of these could be made cheaper by the pharmacist on a small scale than they could be purchased, notwithstanding the increase in cost of the ingredients in small quantities. (Bull. Ph. 99, 317.)

Percolation. Norris demonstrates the advantage of a higher temperature. (Proc. Kans. Ph. Assoc. 97, 41. Proc. 98, 685.)

Repercolation. Musset gives a method by which only two percolators are required. (Ph. Centralh. 97, 862. Proc. 98, 683.)

Fluid Acetracts. Remington proposes this name for a class of fluid extracts prepared with acetic acid, more or less diluted. (A. J. Ph. 98, 543.)——Comparison with fluid extracts. Thompson. (A. J.

Ph. 99, 67.)——Acetic acid as menstruum. Experiments. Wulling. (Ph. Era 98, 796.)——Case protests against their introduction into the U. S. P. (Merck's Rep. 99, 507.) Note by Thompson and discussion by Remington, Kebler, Kilmer. (A. J. Ph. 99, 47.)

Lactic Acid. Menstruum. Marpmann. (Ph. Centralh. 98, 883. Proc. 99, 428.)

Standardization. Linde proposes standards based upon the percentage of their solid components. (Ph. Centralh. 97, 881. Proc. 98, 681.)——Valuation according to Sp. Gr. and dry residue. Bredemann. (Apoth.-Zeit. 01, 193, 208, 216.)——Schmitz. (Ibid. 00, 877.)——Frerichs. (Ibid. 00, 799.)——Keller. (Ibid. 00, 652.)

Assay. Lyons states that in the case of fluid extracts the tendency to emulsionize may be generally overcome by first adding to the fluid extract a certain quantity of dilute alcohol, repeating this addition as the liquid becomes too thick. The alkaloid so obtained must of course be purified. (Ph. Rev. 99, 558).

Astringent Extracts. Assay. For the assay of such extracts as that of cinchona, Lyons recommends the intervention of ferric chloride or lead subacetate. (Ph. Rev. 99, 558.)

Extractum Aconiti.

Assay. Kippenberger. (Apoth.-Zeit. 98, 664 and 672. Proc. 99, 726.)

Extractum Belladonnæ Folia.

Standards. Williams. (Dr. Circ. 99, 5.)

Commercial. Examination. Davoll. (Proc. Ill. Ph. Assoc. 99, 54. Proc. 00, 424.)

Yield with acetic acid menstruum. Stedem. (Proc. Pa. Ph. Assoc. 98, 116. Proc. 99, 423.)

Green Extract. Confusion with alcoholic extract in dispensing. Smith. (Ph. J. 99, Oct. 359.)——Assay. Naylor and Bryant give process and recommend the strength to be 1 p. c. (Ph. J. 98, 165. A. J. Ph. 98, 464.)

Assay. Kippenberger. (Apoth.-Zeit. 98, 664 and 672. Proc. 99, 726.)

Extractum Belladonnæ Radicis Fluidum.

Acetic Acid Menstruum. Squibb finds the U. S. P. menstruum to give the largest yield of alkaloid in the early part of the percolate and a much smaller yield of extractive matter, and in these respects superior to an acetic acid menstruum (10 p. c.); but for washing out the last portions of alkaloid, the acid menstruum has some advantage, the total alkaloids, U. S. P. being 0.683, and of acid, 0.688

p. c. In short, the finished preparations appear to be of equal value. (A. J. Ph. 00, 1.)

Examination. Dey found an old sample to be full of crystals of cane sugar. Dunston and Ransom recorded previously an extract that contained much dextrose. (Ph. J. 98, Feb. 179.)——White (Ph. J. 01, 196.)

Standard. Williams. (Dr. Circ. 99, 5.) Strength in B. P. 98. Contains 1 p. c. of alkaloids of the root.

Assay. Wilson gives a modification of the B. P. 1898 process. (Ph. J. 98, May 450.)——Puckner describes a direct process. (Ph. Rev. 98, 303.)

Extractum Cinchonæ.

Alcoholic and Aqueous Extracts. Methods of Assay. Kippenberger. (Apoth.-Zeit. 98, 664 and 672. Proc. 99, 726.)

Extractum Cinchonæ Fluidum.

Preparation. Wobbe finds the addition of alcohol to the official menstruum of the Pharm. Swiss to increase its efficiency in the extraction of alkaloid. (Apoth.-Zeit. 99, 550. Proc. 00, 468.)

Acetic Acid Menstruum. Squibb describes the details of experiments for ascertaining the relative value of acetic acid and ethyl alcohol for extracting cinchona, and summarizes his results as follows: (1) 10 p. c. acetic acid is a good menstruum for the exhaustion of cinchona; (2) the U. S. P. menstruum is a better one for rapid exhaustion, but the percolates are so loaded with organic matter from which the acetic extracts are comparatively free. For this and other reasons, both therapeutic and pharmaceutic, the author favors the acetic acid preparation. (A. J. Ph. 99, 305.)

Standardization. White shows by experiments that, owing to the extra purification enjoined by the B. P. (1898), less than half the weight of residue is obtained when carrying out the official process of standardization than is obtained when the directions of the 1885 edition are followed. The residue obtained by the present method is nearly colorless and distinctly crystalline, whereas the 1885 method yielded a dark amorphous residue. (Ph. J. 99, Sept. 316)——Wobbe. (Apoth.-Zeit. 99, 550. Proc. 00, 468.)——Gordin. (A. J. Ph. 01, 218).

Extractum Convallariæ Fluidum.

Preparation. Morgulin suggests that this fluid extract be made from the flowers, because they contain far more of the active glucoside than the root. (Farmazeft 99, 167. Apoth.-Zeit. 99, 223. Proc. 99, 434.)

Extractum Ergotæ.

Abraham states that this extract (B. P.) separates into two layers, and a question arises as to whether one or both layers are of medicinal value. (Ph. J. 00, Nov. 576.)

Acetic Acid Menstruum. Yield. Stedem. (Proc. Pa, Ph. Assoc. 98, 116. A. J. Ph. 98, 366.)

Adulteration. Cepellini has determined that elderberry juice may be added to extract of ergot to the amount of 30 per cent. without impairing the odor or taste, nor the characteristic formation of trimethylamine when alkali is added to the solution. A method of detection of the elderberry juice to the amount of 10 per cent. and upwards is given. (Boll. Chim. Farm. 98, 263. Ph. Centralh. 98, 353. A. J. Ph. 99, 277.).

Extractum Ergotæ Fluidum.

Menstruum. Remington finds that a 10 p. c. acetic acid menstruum is suitable for this preparation. (A. J. Ph. 98, 543.)—— Wulling also finds this menstruum satisfactory. (Ph. Era, 98, 796.)

Marpmann recommends a menstruum of 1 p. c. of lactic acid and 10 p. c. of alcohol. (Ph. Centralh. 98, 883. Proc. 99, 428.)

Extractum Frangulæ Fluidum.

Acetic. Squibb finds that a fluid extract made with a 10 p. c. acetic acid menstruum is superior in several respects to the official preparation. (A. J. Ph. 00, 311.)

Chemistry. Aweng. In preparing the fluid extract the author suggests that the glucosides should first be hydrolyzed by heating with citric acid solution, evaporating to dryness and then extracting with alcohol 96 p. c. (Journ. der Pharm. v. Els. Lothr. 97, 183. Ph. J. 98, Jan., 24.) See also (Apoth.-Zeit. 00, 537).

Extractum Gentianæ.

Acetic acid menstruum. Yield. Stedem. (Proc. Pa. Ph. Assoc. 98, 116. A. J. Ph. 98, 366.)

Extractum Glycyrrhizæ.

Adulteration. Kinzey has observed starch, pea meal and sugar. (A. Jl. Ph. 98, 23.)

Examination. Kinzey gives results of moisture, ash, insoluble matter and glycyrrhizin, and gives a method of analysis. (A. Jl. Ph. 98, 23.)——Fromme. (Apoth. Zeit. 01, 342.)——Zetsche. (Apoth. Zeit. 01, 343.)——Schmidt. (Apoth. Zeit. 00, 216. Proc. 00, 461.)——Dowzard. (Ch. & Dr. 99, Sept., 562.)

Glycyrrhizin. Estimation. Hafner. (Zeits. Oest. Ap. Ver. 00, 241.) In a further paper on the assay of the extract, Hafner points out that the use of an ammoniacal solution for the extraction of the roots, as directed in the U. S. P., is not justified from a chemical point of view. (Ibid. 00, 241, 913.) See also Zetsche. (Apoth. Zeit. 01, 343.)

Licorice Mass. Method of analysis. Mellor. (A. J. Ph. 98, 136.)

Powder. Microscopical examination. Kraemer. (Proc. 98, 314.)

Extractum Glycyrrhizæ Fluidum.

Preparation. Boa compares the U. S. P. and B. P. methods and concludes that water is the best menstruum for extracting the sweetness of licorice. If percolation of a coarser powder were substituted for double maceration and expression of the root in No. 20 powder, it would make the process less messy. Ammonia might continue to be used simply to prevent the decomposition or loss of sweetness and also to overcome the slight acidity in the B. P. preparation. A slight increase in the alcohol would make sure work of preservation and make a cleaner extract. (Ph. J. 98, Feb. 188.)

Extractum Hydrastis Fluidum.

Preparation. By repercolation. Smeets. (Apoth.-Zeit. 99, 179. Proc. 99, 429.)

Precipitates. Linde finds these precipitates to be composed mainly of berberine and hydrastine, together with a small proportion of phytosterine. The presence of hydrastine in these deposits is accounted for on the ground that the alkaloid is present in the fluid extract in the free state, in part at least, and owing to its comparative insolubility in the menstruum, is precipitated. (Arch. Ph. 98, 236, No. 9, 696. Proc. 99, 429.) See also Meine. (Apoth.-Zeit. 01, 316.)

Assay. Rusting. (Ph. Centralh. 98, 788. A. J. Ph. 99, 344.) ——Lyons. (Ph. Era, 98, 499.)

Extractum Hyoscyami.

Assay. Kippenberger. (Apoth.-Zeit. 98, 664 and 672. Proc. 99, 726.)——Assay green extract. Naylor and Bryant give process and suggest strength of 0.2 p. c. (Ph. J. 98, Aug. 165. A. J. Ph. 98, 464.)

Extractum Ipecacuanhæ Fluidum.

Examination. La Wall. (A. J. Ph. 97, 619.)

Permanence. Guyer found that liquid extracts of Rio and Carthagena roots depreciate exactly parallel. (Ph. J. 99, 622.) See also (A. J. Ph. 00, 83.)

Miscible Liquid Extract. Preparation. Bird. (Ph. J. 99, Jul. 85. A. J. Ph. 99, 445.)

Assay. Wilson gives modification of B. P. process for assay of Ext. Ipecacuanhæ Liq. (Ph. J. 98, Jul. 3. A. J. Ph. 99, 73.)—— Farr and Wright have compared several processes and give a method for rapid working. (Ph. J. 99, Jul. 85. A. J. Ph. 99, 442.)—— Naylor and Bryant give process. (Ph. J. 99, Jul. 87. A. J. Ph. 99, 446.)——Method and apparatus. Bird. (Ph. J. 00, Feb. 175, Mar. 334, Apr. 414.)

Acetic Extract. Preparation. Dunlop suggests the addition of a little glycerin. (Ph. J. 98, Mar. 295.)——A 60 p. c. acetic acid preparation keeps very well. Remington. (A. J. Ph. 98, 543.)—— Wulling finds that a 50 p. c. acetic acid menstruum gives a permanent preparation. (Ph. Era 98, 796.)

(Extractum Malti.)

Preparation. O'Sullivan shows the effect of certain temperatures on the relative proportions of maltose and dextrin. (Ph. J. 98, Feb. 183.)

Extractum Nucis Vomicæ.

Preparation. Sieker recommends solid paraffin instead of ether principally for the reasons that it separates practically everything that ether separates, and in addition an insoluble brown substance. (Ph. Rev. 01, 56.)

Alcoholic and Aqueous Extracts. Methods of Assay. Kippenberger. (Apoth.-Zeit. 98, 664 and 672. Proc. 99, 726.)

(Extractum Opii Liquidum.)

Strength B. P. 98. Each 100 c.c. contains 0.75 gramme of morphine.

Extractum Pilocarpi Fluidum.

Examination. Farr and Wright. (Ph. J. 99, Jul. 90. A. J. Ph. 99, 449.)

Assay. Jowett. (Ph. J. 99, Jul. 91. A. J. Ph. 99, 449.)

Pharmacology. Jowett and Marshall. (Brit. Med. Jour. No. 2076, 1076. Ph. J. 00, 464.)

Extractum Pruni Virginianæ Fluidum.

Preparation. Stevens says that the amount of menstruum is too small and that evaporation does not leave a trace of acid. (Proc. 00, 207.)

Strength. Patch suggests limit of hydrocyanic acid. (Proc. 00, 205.)

(Extractum Rhamni Purshianæ.)

Acetic Acid Menstruum. Yield. Stedem. (Proc. Pa. Ph. Assoc. 98, 116. A. J. Ph. 98, 366.)——Squibb finds that a fluid extract made with a 10 p. c. acetic acid menstruum is superior in several respects to the official preparation. (A. J. Ph. 00, 311.)

Examination. McDiarmid. (Ph. J. 01, 55.)

Aromatic. Scoville calls attention to a formula for this preparation. (Proc. Mass. S. Ph. Assoc. 99, 54. Proc. 00, 473.)——Aweng gives formula for active and tasteless preparation. (Oest. Zts. Ph. *55*, 6. Ph. J. 01, 191.)

Extractum Rhei Fluidum.

Menstruum. Aweng finds that a fluid extract prepared with water and glycerin is free from mucilage. (Ph. Centralh. 98, 277. Proc. 99, 433.)

Concentrate. See Fluid Extract.

Extractum Sanguinariæ Fluidum.

Remington finds that a 60 p. c. acetic acid menstruum gives a preparation which keeps perfectly. (A. J. Ph. 98, 543. Proc. 99, 426.)——Wulling finds a 55 p. c. acetic acid to give a permanent preparation. (Ph. Era 98, 796.)

Extractum Scillæ Fluidum.

Preparation. Stevens finds that the best results are had with full strength official alcohol. (W. Dr. 01, 241.)

A fluid extract made with dilute acetic acid (?) remained clear, though 10 years old. Remington. (A. J. Ph. 98, 543.)

Extractum Sennæ Fluidum.

Menstruum. Aweng. (Ph. Centralh. 98, 277. Proc. 99, 433.)

Aromatic. Preparation of an aromatic fluid senna. (Am. Drug. 98, 129.)

Extractum Taraxaci.

Deficiency in Glucoside. From an examination of a number of commercial samples, Sayre says that it would appear that the official method tends to decrease the active constituents and to increase those that are inert. He, therefore, recommends that the official extract be replaced by one having the active constituents in more concentrated form. Otherwise it would be better to drop this extract from the official list. (Dr. Circ. 00, 90.)

Examination and Assay. Sayre. (Dr. Circ. 00, 90.)

Extractum Taraxaci Fluidum.

Examination. Dey. (Ph. J. 98, Feb. 179.)

Extractum Valerianæ Fluidum.

Preparation. The Pharm. Germ. directs coarsely-powdered valerian root and a menstruum of diluted alcohol. (Apoth.-Zeit. 00, 233. Proc. 00, 473.)

(Extractum Zingiberis.)

Process. Idris recommends extraction with acetone. (Ph. J. 98, Aug. 178. A. J. Ph. 98, 466.)

(Ferri Arsenas.)

Preparation. Barrie. (Ch. & Dr. 00, 884.)——Criticisms of B. P. text. Power. (Ph. J. 00, 150.)

Ferri Carbonas Saccharatus.

Assay. Liverseege finds that using dilute phosphoric acid correct results were obtained, but that sulphuric acid indicated 2 or 3 per cent. of ferrous sulphate too much and that with hydrochloric acid the excess was 11 per cent. Heating on a water-bath for even ten minutes introduced an error of 25 per cent., even if phosphoric acid was used. Taking dilute phosphoric acid (B. P.) as of 4.6 equivalent strength and the official bichromate of potassium as $\frac{3}{10}$ N., saccharated carbonate of iron can be conveniently assayed by adding 10 Cc. of 3 equivalents phosphoric acid to ½ Gm. of the salt, allowing to stand for fifteen minutes, with an occasional stirring, adding 50 Cc. of water, and titrating with decinormal solution of bichromate of potassium. Multiplication of the number of Cc. used by 2.32 will give the per cent. of $FeCO_3$ present. (Ch. & Dr. 97, 492. Proc. 98, 712.)

Tests. Power criticizes B. P. text. (Ph. J. 00, 150.)

Ferri et Quininæ Citras.

Quinine Estimation. Use of chloroform better than ether. Power. (Ph. J. 00, 150.)

Ferri Hypophosphis.

Assay. Jowett gives method and suggests standard of 95 p. c. (Ph. J. 98, Aug. 174. A. J. Ph. 98, 465.)

Examination. Patch. (Proc. 00, 203.)

Ferri Iodidum Saccharatum.

Reaction. Haussmann calls attention to the inconsistency of the

statements concerning the reactions of this preparation and the syrup of ferrous iodide. (A. J. Ph. 01, 17.)

Ferri Lactas.

Examination. Patch. (Proc. 00, 203.)

Ferri Pyrophosphas Solubilis.

Orthophosphate Test. Ridenour finds the U. S. P. test to be unsatisfactory and proposes a modification of the method of Stieglitz. Boil 1 Gm. of the salt with 10 Cc. of potassium or sodium hydrate T. S. to remove the iron. Filter, acidulate the colorless filtrate with hydrochloric acid, and add a slight excess of ammonia water and a solution of magnesium sulphate (magnesium sulphate, 10 Gm.; ammonium chloride, 20 Gm.; water enough to make 120 Cc.), so long as a precipitate is formed; slightly acidulate with acetic acid, boil and filter. The filtrate should give no precipitate upon adding ammonia water in slight excess. (A. J. Ph. 00, 125.)

Ferri Sulphas Exsiccata.

Examination. Patch. (Proc. 00, 203.)
Tests. Power criticizes B. P. text. (Ph. J. 00, Jul. 150.)

(Ferri Tartras.)

Metallic Iron. Determination by Power. (Ph. J. 00, Jul. 150.)

Ferrum.

Estimation by means of a solution of potassium iodide and potassium iodate. Stock and Massaciu. (Ber. *33*, 467. Ph. Rev. 01, 174.)
Scale Salts. Identification. Mayer. (Dr. Circ. 01, 27.)

Ferrum Reductum.

Assay. Peck is of the opinion that the "mercuric" chloride method (U. S. P.) is to be preferred to either the "iodine" (Schmidt) or copper sulphate method (B. P.). (Tr. Br. Ph. Conf. 99, 377. Ph. J. 98, Aug. 159. A. J. Ph. 98, 461.) A further note. (Ph. J. 99, Jul. 109. A. J. Ph. 99, 454.)——Breustredt, in commenting on the iodometric method of the P. G., Ed. IV, recommends the use of a larger quantity of potassium iodide than is officially directed. (Apoth.-Zeit. 98, 520. Proc. 99, 633.)—— Metallic iron. Determination. Merck. (Ch. & Dr. 98, 348.)—— Peck. (Ch. & Dr. 98, 159, and 99, 109.) See also Power. (Ph. J. 00, 150.)
Tests. Having examined a number of samples in accordance with

the B. P. (1898), Peck recommends that to the official requirements more stringent tests should be added to insure the absence of sulphides, and of more than 1 per cent. of insoluble residue, and of alkaline carbonates; there should be a limit to the amount of arsenic present, and also that the assay process be modified. (Proc. Br. Ph. Conf. 98, 399.)

Fœniculum.

Ash. Percentage. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.)——Moor and Priest. (Ph. J. 00, July, 111.)

Adulteration. With Extracted Fruits. Neuman-Wender. (Apoth.-Zeit. 99, 703. Proc. 00, 609.) See also (Schweiz. Woch. *38*, 593. Ph. J. 01, 39.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 298, 320.)

(Formaldehyde.)

Detection. Taylor recommends Trillat's method, which depends upon the cloudiness on mixing equal volumes of a solution of 3 Gm. of fuchsin or magenta in a litre of distilled water with the liquid to be tested. (A. J. Ph. 98, 195.)——Riegler obtains a pink to red color with phenylhydrazine and caustic soda solution. (Ph. Centralh. *41*, 770. Ph. J. 01, 191.)

Estimation. Lederle. Add to 2 or 3 Cc. of the solution of formaldehyde 50–60 Cc. $\frac{N}{2}$ ammonia solution; shake well and let stand 12 hours, shaking occasionally. Then titrate with $\frac{N}{4}$ sulphuric acid, using coralline (rosolic acid) as an indicator. The number of Cc. of ammonia consumed, minus the number of Cc. of sulphuric acid, multiplied by the factor 2.35, gives the percentage of formaldehyde in the sample. In case the solution under examination is acid, the amount is first determined by fixed alkali and a corresponding correction made in the calculation. (Am. Dr. 97, 246.)——Smith has compared the different methods of assay. (A. J. Ph. 98, 86, 447.)——Clowes and Tollens give a method for estimation of free and combined formaldehyde. (Ber. d. D. Chem. Ges. *32*, 2841. Ph. Rev. 00, 33.)——Determination as Formic Acid. Blank and Finkenheimer. (Ber. d. D. Chem. Ges. *31*, 2979. A. J. Ph. 99, 486.)——Pilhashy finds that some of the published tests are not as reliable as reported. He considers phenylhydrazine hydrochloride to be the best reagent, and states that when it is used along with sodium nitroprusside and concentrated solution of sodium hydroxide, it will indicate the presence of 1 part of formaldehyde in 1 million parts. (J. Am. Ch. Soc. 00, *22*, 132.)

Tests. Pilhashy compares the various tests. (Ph. Rev. 00, 115.)

——Neuberg reports that paradihydrazine-diphenyl is an excellent reagent for the qualitative and quantitative determination. Aqueous solutions of the chlorhydrate of this hydrazine base give with dilute solutions of formaldehyde a flocculent yellow precipitate. In the presence of other aldehydes and ketones double the amount of alcohol is added, so as to hold their compounds with the reagent in solution. (Ber. *32*, 1961. Ph. Rev. 99, 463.)

Preservative. Roe finds it efficient in the proportion of 1:1000 to 1:3000 and in some cases even 1:10,000 as a preservative for various solutions and mixtures of organic substances in water, such as almond mixture, infusions and decoctions, hypodermic solutions, milk, etc. (Ph. J. 98, Feb. 215.)——Preservative Action. Clark. (Proc. Wis. Ph. Assoc. 99, 33. Proc. 00, 772.)——Groff. (Merck's Rep. 00, 145.)——As a Preservative for Cider. Bailey and Rankin. (Bull. Ph. 98, 394.)

Condensation Products. Henning. (Apoth.-Zeit. 98, 497. Proc. 99, 691.)

Frangula.

Active Constituents. Aweng has separated the active constituents into two glucosidal groups, the one class soluble, the other sparingly soluble, in water. In the preparation of medicinal preparations from the bark it is stated that hydrolysis of these constituents must be carefully avoided, and, therefore, neither acids nor alkalies should be used. He recommends as the best solvent for liquid preparations glycerin or 10 p. c. alcohol. (Ph. Centralh. 98, 776. See also (Schweiz. Woch. 98, 445. A. J. Ph. 99, 398. J. de Ph. v. Els. Lothr. 97, 183. Ph. J. 98, 24.)

Barks of different age. Dieterich finds that the process of drying does not injure the active constituents and recommends that the bark be heated during 48 hours at 100° C. before making the preparation or dispensing it. As to the solvents suggested by Aweng, the author finds the fluid extract to be unstable. (Ph. Centralh. 99, 277. Proc. 99, 575.)

Frangula Emodin. Properties. Oesterle. (Schweiz. Woch. 00, 45. A. J. Ph. 00, 593.)

Glucosides. Aweng. (Apoth.-Zeit. 99, 747. Proc. 00, 837.) (See also Apoth.-Zeit. 00, 537.)

Assay. Dieterich finds that the fresh bark, and the same heated to 100° for forty-eight hours, contain approximately the same amount of glucoside, and from his experiments suggests that the aging process now directed (keeping one year) can be replaced by heating to 100° for forty-eight hours. (Ph. Centralh. 99, 277. A. J. Ph. 00, 491.) See also Aweng. (Apoth.-Zeit. 01, 257.)

Preparations. Aweng suggests that the glucosides be hydrolyzed by heating with citric acid solution, evaporating to dryness and then extracting with alcohol (96 p. c.). The citric acid, if desired, may be removed. (J. de Ph. v. Els. Lothr. 97, 183. Ph. J. 98, Jan. 24.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 314.)

Galla.

Ash. Percentage. Moor and Priest. (Ph. J. 00, July 111.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 297 and 247.)

Gelsemium.

Ash. Percentage. Moor and Priest. (Ph. J. 00, July 111.)

Gelsemic Acid. Schmidt finds that this acid and β-methyl-aesculetin, $C_9H_5(CH_3)O_4$, a body which he has previously separated from scopola root and other solanaceous plants, are identical. (Arch. Ph. (98), *136*, No. 5, 324. Proc. 99, 722.)

Habitat. Knowlton. (Merck's Rep. 97, 725.)

Anatomy. Seiberling. (A. J. Ph. 98, 378.)——Thompson. (A. J. Ph. 99, 422.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 299, 315.)

Gentiana.

Ash. Percentage. Moor and Priest. (Ph. J. July 00, 111.)

Acetic Acid. Stedem. (Proc. Pa. Ph. Assoc. 98, 116. A. J. Ph. 98, 366.)

Pectin. Bourquelot and Hérissey. (J. de Ph. 1898, 8. Proc. 99, 530.) See also (Compt. rend. *132*, 571. Ph. J. 01, 423.)

Cellular Tissue. Bourquelot and Hérissey report that the drug after exhaustion with hot water, boiling alcohol and sulphuric acid heated to boiling, leaves a residue, which represents almost pure cellulose. (J. de Ph. et Ch. 99, 330. A. J. Ph. 00, 347.)

Description. Sterling and Sayre. (Dr. Circ. 00, 242.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 320, 325.)

Geranium.

Inferiorities in. Culbreth. (Dr. Circ. 97, 210.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 312.)

Glycerinum.

Ash. Ferrier. (Monit. Scientif. *14*, 808. Ph. J. 01, 28.)

Commercial. Examination. La Wall and Pursel are of the opinion that the U. S. P. test for fatty acids is either too rigid or, the

manufacturers are careless in its purification. (Proc. Pa. Ph. Assoc. 00, 160. A. J. Ph. 00, 377.)——Caspari states that a good glycerin answering the Pharmacopœial requirements is easily obtainable, and that the source, whether soap-lye or candle manufacturer's residue, does not affect the quality. (Proc. Md. Ph. Assoc. 99, 86. Proc. 00, 777.)——Examination. Gane. (Am. Dr. 00, 4.)——Good. (Proc. Mo. Ph. Assoc. 97, 95. Proc. 98, 1011.)——Patch. (Proc. 00, 203.)

Water. Struve finds that the purest glycerin obtainable contains from 6.02 to 8.0 p. c. of water, and that after drying under the receiver of the air-pump it still retains 1.52 p. c. (Zeits. Anal. Ch. 99, 95. Apoth.-Zeit. 00, 286. Proc. 00, 778.)

Synthesis. New. Piloty. (Berichte *30*, 3161. Ph. J. 98, Jan. 88. Ch. & D. 98, 164.)

Tests. Kirk recommends that the Sp. Gr. be not less than 1.2637–1.2640 at 15° C., with impurities not exceeding in character or quantity those named. He comments on the silver nitrate and sulphuric acid tests. (Proc. Ills. Ph. Assoc. 97, 89. Proc. 98, 1010.)——Sieker observes on the sulphuric acid for carbonizable impurities that on mixing 5 Cc. of each of the liquids (at 20° C.) the temperature rose spontaneously to about 75° C., while if 7 Cc. of each were mixed together the temperature rose to 90° C. The color of the mixture with pure material was yellowish but not dark colored. It follows that when using 5 Cc. or more of each, considerably more than a gentle heat is developed, and that more heat is neither necessary nor desirable. (Ph. Rev. 98, 14.)

Glycyrrhiza.

Indian. Rudolf says roots of Abrus precatorius form an excellent substitute. (Bull. Ph. 97, 401.)

Constituents. Tschirch. (Schweiz. Woch. 98, 189.)

Volatile Oil. (Ph. Centralh. 99, 533. Proc. 00, 645.)

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 111.)

Assay. Hafner. (Apoth.-Zeit. 99, 558. A. J. Ph. 00, 179.)

Adulterations. Huber. (Proc. Wis. Ph. Assoc. 99, 35.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 310, 315.)——Jelliffe. (Dr. Circ. 00, 112.)

Gossypium.

Seed Coats. Anatomy and Development. Zwaluwenburg and Schlotterbeck. (Ph. Arch. 99, 333.)

Solubility. Copper ammonium sulphate solution should read ammoniacal solution of cupric oxide. Power. (Ph. J. 00 (July) 149.)

Gossypii Radicis Cortex.

Microchemical and microscopical examination. Morgan. (A. J. Ph. 98, 427.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 312.)

Granatum.

New Alkaloid. Piccinni. (Ph. Ztg. *44*, 870. After Chem. Centralbl. *2*, 879.)

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 111.)

Grindelia.

Proximate Constituents. Glassford. (Merck's Rep. 98, 394.)

Histology. Glassford. (Merck's Rep. 98, 362.)

Powder. Kraemer. (Proc. 98, 302.)

Guaiaci Lignum.

Admixture with seeds of *Anacardium occidentale.* (Ch. & Dr. 98, 253.)

Ash. Percentage. Moor and Priest. (Ph. J. 00, July 111.)

Constituents. Schaer and Paetzold. (Proc. Germ. Naturalists and Phys. 99, Sept. 20. Apoth.-Zeit. 99, 572. Proc. 00, 621.)

Histology and Pharmacognosy. Dohme. (Dr. Circ. 99, 27.)

Guaiaci Resina.

Constituents. Schaer and Paetzold. (Proc. Germ. Naturalists and Phys. 99, Sept. 20. Apoth -Zeit. 99, 572. Proc. 00, 621.)

Ash. Percentage. Moor and Priest. (Ph. J. 00, July 111.)

Impurities. Evans. (Ph. J. 98, May 508.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 302.)

Guarana.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 318.)

Hæmatoxylon.

Ash. Percentage. Moor and Priest. (Ph. J. 00, July 111.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 332.)

Hamamelis.

Ash. Percentage in leaves and bark. Moor and Priest. (Ph. J. 00, 111.)

Anatomy and Chemistry. Grüttner gives a morphological and anatomical description of the bark, and also the results of a chemical examination. (Arch. Ph. 98, 278. A. J. Ph. 99, 277.)

Spring and Autumn Leaves. Cooley. (Jour. Pharmacol. 7, 52. Ph. J. 00, June 591.)

Hedeoma.

Powder. Kraemer. (Proc. 98, 298 and 301.)

Humulus.

Chemical Examination. Hantke. (Ch. Ztg. 99, 545. Ch. News 00, 109.)

Volatile Oil. Chapman. (Journ, Fed. Inst. Brewing 98, 224. A. J. Ph. 99, 279.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 330.)

Hydrargyri Chloridum Corrosivum.

Estimation. Volumetric Estimation in Bandages. Utz finds Archetti's method of precipitating with ammonia, and using phenolphtalein as indicator to be reliable. (Ph. Centralh. 42, 81. Ph. Rev. 01, 178.)

Solubility. Enell. (Med. Farm. För. 98, 1. Apoth. Ztg. 98, 629. Proc. 99, 371.)

Tablets. Utz notes that the glass tubes in which they are contained are alkaline, and that as a result the edges of the tablets that come into contact with the walls of these tubes change in color. (Ph. Centralh. 01, 81.)

Hydrargyri Chloridum Mite.

Corrosive Sublimate. Lewis inclines to the opinion that calomel is converted into corrosive sublimate by the acids of the stomach. (Proc. Kans. Ph. Assoc. 99, 42.) See also Soave. (Ann. di Farmacoter. e Chim. biol. 00, 325. Chem. Zeit. (Rep.) 00, 368. Apoth.-Zeit. 00, 878.)

Volatility. Soave. (Ann. di Farmacoter. e Chim. biol. 00, 325. Ch. Zeit. (Rep.) 00, 368. Apoth.-Zeit. 00, 878.)

Hydrargyri Cyanidum.

Adulteration. Soulard found it to consist of double cyanide of mercury and potassium. (Bull. Soc. Ph. Bord. *40*, 325. Ph. J. 01, 27.)

Hydrargyri Iodidum Flavum.

Color. Francois finds that pure amorphous mercurous iodide, precipitated and washed in the dark, is of a bright yellow color, resembling the tint of lead chromate. The yellowish-green preparations of commerce were all found to contain an excess of free mercury, and the varying tints of the samples could be reproduced

by mixing pure, bright yellow mercurous iodide by trituration with the indicated excess of mercury. (J. de Ph. et Chim. (6) vi, 529. Ph. J. 98, 87.) See also Ray. (J. Chem. Soc. *15*, 239. Ph. J. 00, Jan. 21.)

Crystals. Production. Bodroux. (Compt. rend. *130*, 1622. A. J. Ph. 01, 33.)

Commercial. Hancock finds much of the article very unsatisfactory, and thinks that it is made according to the formulas of former Pharmacopœias. (Proc. Md. Ph. Assoc. 99, 63. Proc. 00, 726.)

Preparation. Power summarizes the methods which have been advocated for the preparation of mercurous iodide, and gives the results of determinations of the amount of iodine or pure mercurous iodide contained in specimens of the compound made in different ways. The results indicate that precipitated mercurous iodide is quite uniform in composition and also sufficiently stable when properly protected. (Ph. J. 00, July, 86.)

Mecuroso-Mercuric Iodide. Francois finds it to be a mixture, separable by treatment with ether into mercurous and mercuric iodide. (J. de Ph. et Chim. (6) vi, 443. Ph. J. 98, 68.)

Sublimation. (Jour. Chem. Soc. *15*, 239.)

Hydrargyri Iodidum Rubrum.

Crystals. Production. Bodroux. (Compt. rend. *130*, 1622. A. J. Ph. 01, 33.)

Solubility. Enell. (Med. Farm. För. 98, 1. Apoth. Ztg. 98, 629. Proc. 99, 371.)

Hydrargyrum.

Australia as a source of supply. (Ph. J. 99, Nov. 422.)

Amalgams. Blomquist proposes a method for preparing amalgams of the alkaline earths and earth metals, whereby they may be had in permanent powdery form and with certain proportions of mercury. (Arch. f. Dermatol. u. Syphil. 99, xlviii, No. 1, 32. Apoth.-Zeit. 99, 250. Proc. 99, 649.)——Calcium Amalgam. Difficulty of preparation. Fersé. (Compt. rend. cxxvii, No. 17 (98). Ch. News 99, 11. Proc. 99, 650.)

Colloidal. Preparation. Lottermoser. (Jour. f. Prakt. Chem. 98, 484. Apoth.-Zeit. 98, 531. Proc. 99, 648.)——Properties and uses. Süss. (Ph. Centralh. 98, 553. Apoth.-Zeit. 98, 532. Proc. 99, 648.)——Characters. Werler. (Ph. Ztg. 98, 794. Proc. 99, 649.)

Hydrargyrum Ammoniatum.

Determination. Of mercury. Bennett. (Ph. J. 00, Nov. 575.)

Solubility. In acetic acid. Gaebler. (Ph. Ztg. 46, 173. Ph. Rev. 01, 220.)

Hydrastininæ Hydrochloras.

Relation to Cotarnine Hydrochloride. Owing to the close chemical relation of the hydrochlorides of cotarnine and hydrastinine, Freund carries out experiments which show a close relationship in their physiological action also, and which lead to the classification of hydrastinine with the hæmostatics. (Apoth.-Zeit. 99, 443. Proc. 00, 811.)

Hydrastis.

Inferiorities in. Culbreth. (Dr. Circ. 97, 210.)

Adulterations. Senft. (Ph. Post 99, 427. Proc. 00, 616.)——Huber. (Proc. Wis. Ph. Assoc. 99, 35.)

Ash. Percentage. Moor and Priest. (Ph. J. 00, July 111.)

Alkaloids. Dohme and Engelhardt find that the spring-dug drug is apparently richer in hydrastine than that dug in the fall, and the rhizomes contain more hydrastine than the rootlets, but that the rootlets still contain quite a good deal of the white alkaloids and are by no means to be rejected. (Proc. 99, 280.)

Hydrastine. Linde found that in two samples of rhizome, assaying 2.285 and 3.598 p. c. respectively of total hydrastine, the percentages of free alkaloid were 54.7 and 45.3. (Arch. Ph. 98, 236, No. 9, 696. Proc. 99, 429.)

Assay. Dohme and Engelhardt find that Keller's and Linde's methods are of about equal value and reliability, and that both appear to give higher results than Prescott's gravimetric process. They find that hydrastis contains between 2 and 3 p. c. of hydrastine. (Proc. 99, 280.)——Schmidt finds rhizome and rootlets to yield 2.69 p. c. hydrastine; rhizome alone, 2.75 p. c., and rootlets alone, 1.2 p. c. hydrastine. (Ph. Zeit. 98, 339. A. J. Ph. 99, 86.)——Gordin. (A. J. Ph. 01, 168.)——Rusting. (Ph. Centralh. 98, 787. Proc. 99, 429.)——Assay by the Periodide Method. Gordin and Prescott. (A. J. Ph. 99, 257. Proc. 99, 546.) (Also Proc. 99, 265 and 280.)——Iodometric and Gravimetric Results. Gordin and Prescott give comparisons. (Proc. 99, 271.)

Periodides of Hydrastine. Gordin and Prescott. (Proc. 99, 264.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 309.)

(Hyoscine.)

Percentage in Datura Alba. Continuing his experiments, Hesse finds that 92 p. c. of the total alkaloid of the flowers of *D. alba* is hyoscine. Owing to the purity of the alkaloid from this source, it

is thought probable that it will supersede the scopola alkaloid. (Ph. Jl. 00, Mar., 250.)——Contrary to the statements of E. Schmidt that hyoscine and scopolamine are identical, Hesse concludes after further investigation of *Datura alba* and hyoscine that: (1) The flowers of *Datura alba* contain considerable quantities of hyoscine; (2) this alkaloid has the formula $C_{17}H_{21}NO_4$, and is the same as that of hyoscine obtained from hyoscyamus; (3) the alkaloid is amorphous and easily soluble in cold water; (4) it suffers no change when separated by means of potassium carbonate; (5) it can not be converted into atroscin either by the action of moist oxide of silver or by soda solution. (Liebig's Ann. Chem. 98, *303*, 149. Apoth.-Zeit. 99, 67. Proc. 99, 746.)

Investigation. Hesse. (Ph. Jl. 00, Feb., 116.)

Hyoscinae Hydrobromas.

Patch asks if hyoscine hydrobromide and hyoscyamine hydrobromide are identical in therapeutical effect and in composition, why have both official. (Proc. 00, 203.)

Tests. Jowett. (J. Ch. Soc. 97, 679, and Ph. J. 98, Aug., 195.)

(Hyoscyamina.)

Gadamer having examined specimens of *Hyoscyamus muticus* from Egypt, confirms the statement of Dunstan and Brown that hyoscyamine is the principal alkaloid of this plant. By applying Keller's method to the dried material the following percentages of alkaloid were yielded by different parts of the plant: Seed capsules and seed, 1.34; leaves, 1.393; axils, 0.569; roots, 0.77. (Arch. Ph. 236, 704. J. Ch. Soc. *16*, 207. Ph. J. 00, Dec., 723.)

Hyoscyaminæ Sulphas.

Rotatory Power. Hesse finds that this salt does not suffer any change in rotatory power when kept for several years, but the free base shows alteration after two years. The rotatory power of pure hyoscyamine sulphate with $p = 4$ and $t = 15°$ was found to be $-28.2°$; with $p = 2$ it was $28.6°$, and from these data the amount of this salt in a sample of atropine can be estimated. (Ph. J. 00, Feb., 116.)

Tests. Jowett. (J. Ch. Soc. 97, 679 and Ph. J. 98, Aug. 195.)

Hyoscyamus.

Dunstan and Brown extracted an alkaloid from *Hyoscyamus muticus*, which they found to consist wholly of hyoscyamine, whereas the alkaloid extracted from *H. niger* under the same con-

ditions was mixed with atropine and scopolamine. (Ph. J. 98, Dec. 625.)

Ash. Percentage. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.)——Moor and Priest. (Ph. J. 00, July, 111.)

Assay. Puckner follows the modified method of A. W. Gerrard as given by Moerk on Belladonna leaves (A. J. P. 99, 105).—— Schmidt gives modification of Keller's method. (Apoth. Zeit. 99. Ph. J. 00, Jan., 22.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 299.)——Jelliffe. (Dr. Circ. 99, 74. Proc. 99, 496.)

Illicium.

Ash. Percentage. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.)

Oil. Adulterated with kerosene. (Ph. J. 98, Aug., 226.)

Shikimi. Lentz recommends Tschirch's test for detecting shikimi fruit in star anise. (Schweiz. Woch. 99, 45. A. J. Ph. 00, 75.) ——Hartwich. (Apoth.-Zeit. 01, 184.)

Skimmi. Henry. (Ph. J. 98, Jan., 47.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 320.)

Infusa.

Preparation. Conrady calls attention to the advantages of preparing infusions and decoctions by percolating the drug in a finely divided condition in a specially constructed apparatus with hot or boiling water. (Apoth.-Zeit. 99, 414. Proc. 00, 475).——Popowski suggests a method of preparation involving the principle of circulatory displacement. (Farmaz. Journ. 98, 359. Apoth.-Zeit. 98, 694. Proc. 99, 437.)——Benyscheck recommends maceration for 15 minutes in boiling water poured on the drug in a percolator, then percolating, except in the case of senega, water of a temperature of 60–65° answering best for this drug. (Ph. Post 98, 759. Proc. 99, 437).

Infusum Digitalis.

Preparation. Benyscheck finds that by percolating the drug with hot water in a percolator with double walls, through the intermediate space of which steam circulates continuously during the percolation, the leaves are exhausted more completely and with half the menstruum than when ordinary methods are used, while the loss of crude digitoxin is much reduced. (Ph. Post 99, 451. Proc. 00, 475.)

Inula.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 321.)

Iodoformum.

Production. Industrial. Otto. (Ch. Ztg. 00, 197. Apoth.-Zeit. 00, 166. Proc. 00, 768.)

Preparation. From Cuprous Iodide. Lean and Whatmonch. (Ch. News, 98, 56. Proc. 98, 907.)——Electrolytic Preparation. Elbs and Herz. (Zeit. f. Elektrochem. 98, 113. Ch. News, 98, 257.)——Foerster and Meres suggest an improvement in the electrolytic method. (J. prakt. Chem. Ph. J. 98, June, 586.)

Decomposition by Light. Fleury shows this decomposing action to be limited, and that this may be attributable to immediate coloring of the liquid to reddish-brown by the liberated iodine stopping the violet and ultra-violet rays on the surface and thus preventing the continuance of the reaction. (J. de Ph. et Ch. (6) vi, 97. Ch. News, 97, 183.)——Kremers and Koske have investigated the subject of Fleury's experiments and have not found any limit of the decomposition of the iodoform solution. (Proc. 98, 380.)——Bougault finds that the decomposition of solution of iodoform exposed to sunlight is due to the action of oxygen. (Jour. de Pharm. (99), viii, No. 5. Ch. News, 99, 71.)

Test. Colorimetric. Deniges. (Bull. Soc. Ph. Bordeaux, 99, 321. A. J. Ph. 00, 494.)——Deniges finds that by heating an ammonia compound of the aromatic series with iodoform a salt of rosaniline is formed, which by its intensity of color reveals the presence of mere traces of iodoform. (Bull. Soc. Ph. de Bordeaux, 99, Nov. Ch. News, 00, 35.)

Estimation. Meillére gives process of estimation in presence of organic matter. (Zeits. Anal. Ch. *38*, 674. Ph. Rev. 00, 32.)

Solubility. Enell. (Med. Farm. För. 98, 1. Apoth. Ztg. 98, 629. Proc. 99, 371.)

Substitutes. Roderfeld gives a resumé of the organic iodine compounds that have been introduced during the last decade. (Apoth.-Zeit. 98, 838. Proc. 99, 653.)

Iodum.

Occurrence. In air. Gautier. (Compt. rend. cxxviii, 643. Ph. J. 99, Apr., 383.)

Detection. Wachhusen finds paraldehyde a delicate reagent. (Ph. Ztg. 97, 95. Proc. 98, 908.)——Wentzky says that when only traces of iodine are present in sodium chloride, sodium bromide or potassium bromide the reaction prescribed by the G. P. with ferric chloride and starch does not occur until after some time, while if a few drops of dilute permanganate solution are added, the blue color will appear promptly. (Apoth.-Zeit. 98, 119. Proc. 98, 908.)

Estimation in Iodides. Dudderidge recommends the process proposed by Cook in 1885. The iodine is liberated by hydrogen peroxide in excess in the presence of acetic acid; shaken out with chloroform, the chloroform solution washed with water to remove any excess of peroxide, and the solution titrated with sodium hyposulphite in presence of starch paste. The method applies also to syrup of ferrous iodide. (Ph. J. 00, Feb., 152.)——Swinton. Determination in any mixture of haloids. (Ph. J. 97, Dec., 562.)

G. P. Ed. IV. M. P. 120° C.

Ipecacuanha.

Cultivation. In India. (Ph. J. 99, Apr. 384.)

Monographic Description. Lloyd. (W. Dr. 97, 346.)

Johore Ipecac. Umney and Swinton have made chemical examination. (Ph. J. 99, 89. A. J. Ph. 99, 449.)

False. New varieties. Hartwich. (Schweiz. Woch. 99, 521. Proc. 00, 606.)——Kraemer. (Proc. 00, 214.)——New Falsification. Dethan. (Ph. J. 98, Apr. 324.)

Ash. Percentage. Moor and Priest. (Ph. J. July, 00, 111.)

Chemistry. In addition to emetine and cephaeline, Paul and Cownley have isolated a third alkaloid, viz., psychotrine. The authors find that emetine and cephaeline both possess powerful emetic action; but the emetic dose of emetine is double that of cephaeline; while on the other hand, the nausea produced by cephaeline is double that of emetine. In regard to the Brazilian and Columbian Ipecacuanha, they state that while the total amount of alkaloid in the two kinds does not differ materially, the proportions of emetine and cephaeline are so different that the drugs can not be regarded as interchangeable. A method of assay concludes the investigation. (A. J. Ph. 01, 57 and 107.)

Emetine and Cephaeline. Paul and Cownley having determined the formula of emetine to be $C_{15}H_{22}NO_2$ and of cephaeline to be $C_{14}H_{20}NO_2$, they submitted samples of these alkaloids to O. Hesse for chemical examination. In the main Hesse's results agree with theirs. He, however, assigns a slightly different formula to the two alkaloids, viz., $C_{30}H_{42}N_2O_4$ for emetine and $C_{28}H_{38}N_2O_4$ for cephaeline. (Ph. J. 98, July, 98.)

Periodides. Gordin and Prescott. (Proc. 99, 263.)——Kippenberger. (Zeits. Anal. Ch. *39*, 435. Ph. Rev. 00, 523.)

Assay and Alkaloidal Value. Caesar and Loretz report the examination of samples of Rio and Carthagena ipecac by a modification of Keller's method, using ether in place of ether-chloroform, which is highly advantageous. Reference is also made to the method of the Japanese Pharmacopœia, which is very simple and requires the

drug to contain at least 2.5 p. c. of alkaloid. (Geschäftsbericht, Sept. 99. Ph. Rev. 99, 521.) See also (Ph. Rev. 00, 523.)——Gordin and Prescott have shown that most alkaloids form definite compounds when treated with excess of iodo-potassium iodide, and that it is possible to estimate the strength of aqueous solution of salts by means of standardized solutions of iodine and of sodium thiosulphate. They have applied this method to assay of ipecac. (A. J. Ph. 99, 14.) See also (Proc. 99, 279.)——Apparatus and Method. The special objects aimed at are rapidity and the isolation of the alkaloid in such a pure condition that the percentage is about the same whether determined volumetrically or gravimetrically. Bird. (Ph. J. 00, Feb. 175, Mar. 334 and Apr. 414.) See also (Ph. J. 00, Aug. 214.)——Gordin. (A. J. Ph. 01, 214.)——Bird compares the B. P. and other processes. (Ph. J. 00, Mar. 306.)——Dewhirst. (Ph. J. 00, Apr. 358.)——Iodometric and Gravimetric Results. Gordin and Prescott give comparisons. (Proc. 99, 271.)

De-emetinized. Paget. (Brit. Med. Jour. 98. Ph. J. 98, Apr., 385.)——Paul and Cownley. (A. J. Ph. 01, 57, 107.)

Examination. Patch. (Proc. 00, 204.)——La Wall and Pursel. (Proc. Pa. Ph. Assoc. 00, 160. A. J. Ph. 00, 377.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 316.)——Jelliffe. (Dr. Circ. 98, 286.)——Bamford. Ash of the powder. (A. J. Ph. 99, 511.)

Iris.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 315.)

Jalapa.

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 112.)

Assay. Schweissinger gives an improvement in the G. P. process. (Ph. Centralh. 01, 1. Am. Dr. 01, 44.)——Fromme. (Apoth.-Zeit. 00, 860.)——Dieterich. (Ibid., 868.)——Heineberg gives results of comparative examination of sp. gr., number of calcium oxalate crystals, and starch grains to the p. c. of resin in resinous and starchy tubers. (A. J. Ph. 00, 528.)——Kebler believes that 10 p. c. should be the lowest value of resin. (Proc. 00, 163. A. J. Ph. 00, 298.)——Patch found the average to be about 10 p. c. (Proc. 00, 204.)——Schweissinger found 12 p. c. of resin. (Ph. Centralh. 01, 1. Am. Dr. 01, 44.)——Sage examined a sample 28 years old which had a total resin content of 11.34 p. c., 7.5 p. c. of which amount was soluble in ether. (Ch. & D. 99, May, 815. Proc. 99, 530.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 313.)

Juglans.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 313.)

Kamala.

Examination. Patch. (Proc. 00, 204.)

Kino.

Australian Substitutes. Bosisto. (Tr. Br. Ph. Conf. 98, 445. Proc. 98, 852.)

Butea. Hooper finds this variety to be inferior to Malabar kino, for which it has been proposed as a substitute. (Ph. J, 00, June, 664.)

Eucalyptus Kino. Brownscombe expresses the opinion that the kino of *E. rostrata* is superior to any of the other eucalyptus kinos. (Ph. J. 99, May, 276.)

Macaranga. Hooper. (Agric.-Ledger 00, No. 7. Ph. J. 01, 617.)

Malabar. Samples examined by Hooper contained over 90 p. c. tannin in the dry substance. (Ph. J. 00, Mar., 226).

Pterocarpus erinaceus. The kino of *P. erinaceus* is reported to be a purer article than the ordinary kino, owing to the small percentage of ash. (Apoth.-Zeit. 99, 121. Proc. 99, 566.)

Scarcity. Cause, a want of knowleege. (Ch. & Dr. 98, 355.)

Quality. Will and Branch have found from experiments that the chief cause of variation is the difference in methods of drying, it being a disadvantage to boil the juice prior to drying. (Ch. & Dr. *53*, 56. Ph. Rev. 98, 427.)

Commercial. Examination. Cæsar and Loretz. (Geschäftsbericht 99, Sept. Ph. Rev. 99, 522.)

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 112.)

Solubility. Contrary to the U. S. P., Ware finds the best kino to be completely soluble in cold water. (Bull. Ph. 99, 191.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 327.)

Krameria.

Adulterant. Wardleworth. (Ch. & Dr. 01 473.)

Substitute. Marsden. (Ch. & Dr. 58, 473.)

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 112.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 315.)

Lactucarium.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 334.)

Lappa.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 303, 321.)

Limonis Cortex.

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 112.)
Powder. Microscopical characteristics. Kraemer. (Proc. 98, 309.)

Limonis Succus.

Composition. Langkopf. (Ph. Centralh. 00, 335. Proc. 00, 516.) See also Syrupus Acidi Citrici.

(Linimenta.)

Hommell points out certain objections to cotton seed oil, among others its unsaponifiable character, and proposes a return to olive oil as a basis for camphor liniment, and the dismissal of cotton seed oil from the Pharmacopœia. (Dr. Circ. 00, 48.)
Therapo-Pharmacy. Hallberg. (W. Drug. 01, 113.)

Linimentum Belladonnæ.

Standard. Williams. (Dr. Circ. 99, 5.)

Linimentum Camphoræ.

Assay. Dowzard recommends the polarimetric method for determining the percentage of camphor. (Ch. & Dr. 00, Feb., 338.)

Linimentum Saponis.

Preparation. From dried soap shavings, as the powdered soap is not as a rule made from pure olive oil soap. A. Ph. A. Comm. (Proc. 98, 224.)——Wilbert uses a *liquid soda soap* for this liniment. This soap is made as follows, using a portion of previously prepared liquid soda soap to facilitate saponification: To 200 p. of liquid soda soap, in a large bottle, add 250 p. of alcohol and 750 p. of water; shake well, add 175 p. of sodium hydrate (90 p. c.), and when it is dissolved, gradually add 1125 p. cotton seed oil, with constant shaking or stirring. Finally add 1000 p. of alcohol, followed by 500 p. of water. Then, to prepare the liniment, dissolve 360 p. of camphor and 80 p. of oil of rosemary in 5500 p. of alcohol, add 1600 p. of the soap, and finally enough water to make 8000 p. (A. J. Ph. 00, 212.)
Spiritus Saponatus. Meissen gives method of preparation in cold. (Ph. Ztg. 98, 526.)

Linum.

Ash. Percentage. Moor and Priest. (Ph. J. July, 00, 112.)

Commercial. Percentage of Oil. La Wall and Pursel. (A. J. Ph. 99, 393. Proc. Pa. Ph. Assoc. 99, 154.)

Linseed Meal. Percentage of oil and ash in the article supplied in England. Dowzard. (Ch. & Dr. 99, 522.)

Sophistication. Gane reports the examination of a sample of meal in which the natural oil had been expressed and its place supplied by a petroleum oil. (Am. Dr. 00, 4.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 331.)

(Liquores.)

Doubtful utility of several of them. Sayre. (Dr. Circ. 98, 260.)

Preparation. Rice. (W. Dr. 98, 491.)

Ferric Solutions. Preparation. Hemm points out that hydrogen dioxide can now be employed in place of nitric acid for oxidizing the ferrous salts without materially increasing the cost. (Am. Dr. 00, 199.)

Liquor Ammonii Acetatis.

On commenting on the method of the B. P., Hill suggests that the ammonium carbonate be kept in stock in a powdered and assayed condition, adjusted to the acetic acid, also of assayed strength to be used as required, a given weight of the salt being dissolved in a measured quantity of the acid. (Ph. J. 99, Jan. 59.)

Liquor Arsenii et Hydrargyri Iodidi.

Statistics collected by Sayre show that the use of this solution is so restricted as to warrant its elimination from the Pharmacopœia. (Dr. Circ. 98, 260.)

Liquor Calcis.

Preparation. Thum suggests that the lime should be strictly pure oyster-shell lime, perfectly burned, and hermetically sealed, such an article now being on the market in 2-pound cans. The contents of one of these cans is slaked in a decanting vessel provided with a spigot above the bottom. The vessel is then filled with water and the contents mixed. This first portion of water is drawn off and the vessel refilled. Then after mixing and allowing the contents to settle the solution is ready. (Proc. N. J. Ph. Assoc. 99, 59. Proc. 00, 481.)——Bear favors slaking the lime with hot water for the reason that the objectionable constituents are more soluble in it than in cold water, while the calcium hydrate is less soluble. Filtering the solution is recommended, as this removes the suspended

carbonate, and if dry paper is used only a trace of hydrate is lost. (Proc. N. J. Ph. Assoc. 99, 49. Proc. 00, 481.)——Evans finds that lime water can be made in a few minutes, if a fairly pure caustic lime be recently slaked before using. He also recommends an excess of lime in stock solutions. (Ph. J. 98, 204.)

Liquor Ferri Acetatis.

Sayre shows that the use of this solution is so restricted as to warrant its elimination from the Pharmacopœia. (Dr. Circ. 98, 260.)

Liquor Ferri Chloridi.

Preparation. Hemm suggests making this solution by dissolving freshly-made ferric hydrate in the proper proportion of pure hydrochloric acid, thus avoiding the disagreeable odor. (Am. Dr. 00, 199.)

Examination. Falieres observes that the official (Codex) solution of ferric chloride should contain 26 per cent. anhydrous ferric chloride, or 8.96 per cent. of iron; its density is then 1.26. It may, however, be adulterated and its density then brought up to the right point by the addition of salts of soda or potash. (Bull. Soc. Ph. Bord. July, 1897. Chem. News 97, 146.)

Assay. Falieres employs the alkalimetric titration of the quantity of acid in combination with the iron and the estimation of the chlorine by silver nitrate. (Bull. Soc. Ph. Bord. July, 1897. Chem. News 97, 146.)

Liquor Ferri et Ammonii Acetatis.

Precipitate. Deposits after a time a basic iron acetate amounting to 0.613 gramme when thoroughly washed and dried at 100° C. Haskins. (Merck's Rep. 98, 72.)

Liquor Ferri Nitratis.

Statistics collected by Sayre show that the use of this solution is so restricted as to warrant its elimination from the Pharmacopœia. (Dr. Circ. 98, 260.)

Liquor Magnesii Citratis.

Preparation. Bernhard recommends heating the water in which the acid is dissolved. (Bull. Ph. 97, 319.)——Schmidt boils and cools the water just previous to using, and adds the syrup of citric acid to the solution before filtering. (Proc. 98, 75.)——Ferti adds oil of lemon and orange to the magnesium carbonate. (Proc. 98, 75.)

Granular Effervescent Preparations. Determination of CO_2. Dyer

considers it necessary to state the least amount of CO_2 which should be yielded. (Ph. J. 98, 181. A. J. Ph. 98, 467.)

Liquor Plumbi Subacetatis.

Preparation. Haskins finds that by employing 10 grammes more of lead acetate than the official formula demands, a solution containing 25 per cent. of basic salt may be obtained. (Merck's Rep. 98, 72.)——G. P. process recommended. A. Ph. A. Comm. (Proc. 98, 225.)

Tests. Power finds that this solution (sp. gr. 1.277), when freshly prepared, requires for 1 gramme 19 c.c. of decinormal sulphuric acid for complete precipitation. The lower figure, 17 c.c., given by the B. P., would allow for the change which this solution rapidly undergoes. In the determination of the lead it is an advantage to dilute the solution with water and use methyl orange as an indicator. (Ph. J. 00, 149.)

Liquor Potassæ.

G. P. Ed. IV. Sp. gr. 1.138 to 1.140 and contains 15 p. c. of KOH.

Liquor Potassii Arsenitis.

Precipitate. Haskins finds it to be due to the red saunders and excess of alkali. The percentage of arsenic remains the same. (Merck's Rep. 98, 72.)

Liquor Sodæ.

G. P. Ed. IV. Sp. gr. 1.168–1.172 and contains 15 p. c. of NaOH.

Liquor Sodæ Chloratæ.

Preparation. The chief difficulty is to find a chlorinated lime of the required strength. Bottles containing the solution should be well closed and carefully protected from the light. Stronger solutions, up to 7 per cent. available chlorine, were not found to keep any better. Haskins. (Merck's Rep. 98, 72.).

Liquor Zinci Chloridi.

Preparation. In order to obviate the trouble occasioned by removing the iron from the zinc used in the official process, Hemm suggests dissolving 300 Gm. pure, powdered zinc oxide in 840 Gm. hydrochloric acid, U. S. P., in a porcelain capsule, stirring with a glass rod. Allow to stand until cool, filter through white paper or glass, and evaporate to 1000 Gm. (Am. Dr. 00, 199.)

Lithii Benzoas.

Pharmacopœial Characters. Kebler finds the official method for

estimating the pure salt unsatisfactory and proposes the following: Weigh about 0.5 Gm. of the dry lithium benzoate into a platinum capsule, add 2 Gm. of pure, *dry*, ammonium sulphate, mix well with a platinum wire and ignite. Apply the flame gradually at first, so as to avoid spurting. The residue is lithium sulphate, and by multiplying its weight by the factor 2.3256, the amount of pure benzoate is obtained. (A. J. Ph. 99, 57.)

Lithii Carbonas.

Description. Kebler defines in detail the properties which should characterize the official salt. (A. J. Ph. 98, 600.)

Loss of CO_2. Corrie finds that this salt loses its carbon anhydride at a temperature of 40° C. (Ph. J. 99, 368.)

Commercial. Kebler is of opinion that the so-called lithium bicarbonate of the market is in reality the carbonate. (A. J. Ph. 00, 580.)

Solubility. Enell. (Med. Farm. For. 98, 1. Apoth. Ztg. 98, 629. Proc. 99, 371.)

Lithii Citras.

Pharmacopœial Characters. Kebler has examined eight samples of this salt, and his data are of special importance as bearing on the description and tests of the U. S. P. (A. J. Ph. 99, 137.)

Purity. Merck gives determination. (Ch. & Dr. 98, 348.) Criticism of tests in B. P. and French Codex by Power. (Ph. J. 00, July, 151.)

Lithii Salicylas.

Pharmacopœial Characters. Kebler having examined five samples of this salt, presents a number of important data which have bearing on the description and tests of the U. S. P.

The method for estimating the amount of pure salt is the same as that given under lithium benzoate. (A. J. Ph. 99, 57.)

Lobelia.

Ash. Percentage. Dott. (Ph. J. 98, March. 282.)——Moor and Priest. (Ph. J. 00, July, 112.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 301.)

Lupulinum.

Ash. Moore. (J. Soc. Ch. Ind. 99, 987. A. J. Ph. 00, 231.) ——Moor and Priest. (Ph. J. July, 00, 112.)

Examination. Moore. (J. Soc. Ch. Ind. 99, 987. A. J. Ph. 00, 231.)

Microscopical Examination. Kraemer. (Proc. 98, 322.)

Macis.

Bombay and Banda. Distinction. Solstein. (Ph. Ztg. 97, 531. Proc. 98, 792.)

Fixed Oil. Schimmel and Co. find mace to contain 8.25 p. c. of a fixed oil. (Ph. Ztg. 98, 793. Proc. 99, 519.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 322.)

Magnesia.

Absorption of Carbonic Anhydride. Paul and Cownley think there is no justification of more than 5 p. c. of carbonate in this salt. (Ph. J. 98, Oct., 389.)

Commercial. Examination. Davoll. (Proc. Ill. State Ph. Assoc. 99, 54. Proc. 00, 424.)

Volumetric Determination. Handy. (J. Am. Ch. Soc. *22*, 31. Ph. J. 00, 115.)

Magnesii Citras Effervescens.

Examination. Scoville states that nearly all of the so-called granular effervescent citrate of magnesium consists of an effervescent sulphate of magnesium or sodium. The title has been preserved in the Pharmacopœia, but the preparation itself has been defunct for more than a decade. The substitutes offered have been mostly magnesium and sodium sulphate, combined with citric or tartaric acid, sodium bicarbonate and sugar. These substitutes have a better appearance, do not cost as much, and are less tedious to make than the official preparation. (A. J. Ph. 00, 175.)

Estimation of CO_2. See Liquor Magnesii Citratis.

Adulteration. Kebler found 24.67 p. c. of magnesium sulphate. (A. J. Ph. 99, 545.)

Mangani Dioxidum.

Occurrence in Brazil. Scott. (A. J. Ph. 01, 31.)

Examination. Patch. (Proc. 00, 205.)

Manna.

California. Source of Picolo's manna. Lloyd. (A. J. Ph. 97, 329.)

Microscopical Characteristics. Kraemer. (Proc. 98, 334.)

Marrubium.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 301.)

Massa Ferri Carbonatis.

Assay. Thompson. (A. J. Ph. 98, 343.)

Formula. Thompson also calls attention to the fact that the amount of sodium carbonate in the official formula is not sufficient to completely decompose all of the ferrous sulphate. (Ibid.)

Mastiche.

Commercial. Examination. Maisch. (A. J. Ph. 01, 169.)

Constants. Dieterich. (Ph. Centralh. 99, 453. Proc. 00, 760.)

Matico.

Examination. Schimmel and Co. are of the opinion that the drug, as it now occurs, is not obtained uniformly from the same plant. (Ph. Ztg. 98, 793. Proc. 99, 574.)

Varieties. Dethan and Bertant. (J. de Ph. et Ch. [6], vi, 537. Ph. Jl. 98, Jan., 25.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 301.)

Matricaria.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 333.)

Mel.

Ash. Percentage. Dott. (Ph. J. 98, 282.)

Commercial. Examination. La Wall and Pursel. (Proc. Pa. Ph. Assoc. 00, 161. A. J. Ph. 00, 378.)——Davoll. (Proc. Ill. State Ph. Assoc. 99, 54. Proc. 00, 424.)

Kousso Honey. Anthelmintic properties. Menilik. (Ph. Post, 98, 120. Proc. 98, 882.)

Poisoning by. Voorhees. (Therap. Gaz. xxii, 144. Ph. Rev. 98, 114.)

Properties. As modified by food of bees. Haenle. (Ph. Ztg. 99, 742. A. J. Ph. 00, 228.)

Mentha Piperita.

Cultivation. Curry. (Proc. Ky. Ph. Assoc. 98, 70. Proc. 99, 527.)——Eliel. (Proc. Ind. Ph. Assoc. 00. W. Dr. 01, 277.)

New Variety. Agnelli. (Ph. Post, *33*, 253. Ph. Rev. 00, 377.)

Ash. Percentage. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 301.)——Jelliffe. (Dr. Circ. 99, 252.)

Mentha Viridis.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 301.)

Menthol.

Compounds with Formaldehyde. Brochet. (Compt. rend. cxxviii, 612. Ph. J. 99, Apr. 383.)

Tests. Criticism of B. P. test by Power. (Ph. J. 00, 151.) See also (Schimmel & Co., Rep. Oct. 98.)

Methyl Salicylas.

See also Oleum Gaultheria.

Occurrence. Kremers and James enumerate plants in which it is found. Ph. Rev. 98, 100.) See also Kraemer. (A. J. Ph. 98, 412.) ——Romburgh. (Proc. Acad. Science, Amsterdam. Schimmel & Co., Ber. 98, Oct. Proc. 99, 677.)

Distinction Between Natural and Artificial. Adrian proposes a test depending on the reaction of gaultheriline in the natural oil with sulphuric acid. (Merck's Rep. 98, 369.)

Properties. Adrian has found that pure methyl salicylate distils over between 220° and 223°, and that its density at 15° is from 1.15 to 1.20. It is nearly insoluble in water, but dissolves easily in alcohol and ether. It takes a violet color on the addition of perchloride of iron in a dilute aqueous solution. It combines with potash, forming a crystalline salt. The author considers the density and boiling point of methyl salicylate to be important indications of its purity. (Jour. de Pharm. (6) vii, No. 9. Ch. News, 98, 47.)

Volumetric Estimation. Kremers and James propose a method based upon the volumetric determination of phenols—phenol, thymol, naphtol and salicylic acid—communicated by Messinger and Vortmann. (Ph. Rev. 98, 130.)

Mezereum.

Ash. Percentage. Moor and Priest. (Ph. J. July 00, 112.)

Powder. Kraemer. (Proc. 98, 329.)

Mistura Glycyrrhizæ Composita.

Preparation. Williams proposes a concentrated preparation, to which when dispensed an equal volume of water is added. He also adds glycerin in lieu of sugar. (Proc. Conn. Ph. Assoc. 97. Bull. Ph. 97, 408.)——Dohme proposes the use of 600 grammes of granulated sugar instead of syrup as in the official formula; the use of 8 Cc. of caramel and that the extract of licorice be made directly from the root. (Proc. Md. Ph. Assoc. 97, 41. Proc. 98, 705.)—— Schmidt, referring to an improved formula for this preparation (see Proc. 98, 705) recommends using one-fourth of the amount of sugar there proposed; he also suggests that a little paper pulp be added to

the fluid containing the extract of licorice, camphorated tincture of opium, wine of antimony and spirit of nitrous ether before filtration, the filtrate being returned until it becomes clear. The mucilage should be added *after* filtration of the mixed liquids. (Proc. Md. Ph. Assoc. 98, 69. Proc. 29, 445.)

Morphina.

Bibliography. Chemical. Brown. (Ph. Arch. 98, 17, 25.)

Reagent. Mecke finds that a 5 p. c. solution of selenous acid in concentrated sulphuric acid yields a distinct green color with 0.005 Mg. morphine. (Suedd. Ap. Ztg. 99, 739. A. J. Ph. 00, 498.)

Tests. Nearly all commercial morphine salts give a slight pink color with C. P. sulphuric acid. Patch. (Proc. 00, 205.)——Kobert uses a formalin solution. (Zeits. Oest. Apoth. Ver. 99, 368. A. J. Ph. 00, 130.)——Russwurm finds that if the chloroformic solution obtained by the usual procedure be evaporated to a small volume and a large excess of petroleum ether added, well formed crystals of the morphine are obtained. (Ph. Centralh. 99, 544. Proc. 00, 809.)

Estimation. Richard estimates by reduction with silver nitrate. (Ph. Zeit. 00, 987. Ch. Zeit. 00, No. 97.)——Wirthle. (Ch. Zeit. 01, 291. Apoth.-Zeit. 01, 247.)

Morphinæ Acetas.

Retention. Patch questions the advisability of retaining it. (Proc. 00, 205.)

Morphinæ Hydrochloras.

Tests. Power criticises the B. P. text, and says that this salt is described as forming "acicular prisms, or a white powder consisting of *minute cubical crystals.*" A similar description is given in the U. S. and Swiss Pharmacopœias, but it appears very doubtful whether the white powder form of the salt consists of minute *cubical* crystals. The G. P. describes it as occurring in "white needle-shaped crystals, or white cubical pieces (Stücke) of a micro-crystalline character." Beilstein ("Handbuch," Bd. iii., p. 898), referring to Hesse, states that by slow crystallization from alcohol the *anhydrous* salt is obtained in the form of short, four-sided rhombic prisms, and Guareschi ("Die Alkaloide," p. 371) gives a similar description, together with that of the G. P. The salt would evidently be more correctly described as "in acicular crystals, or a white micro-crystalline powder." It is possible that an explanation of the apparent error may be found in the fact that for some time past certain manufacturers have brought morphine salts into com-

merce in the form of small, artificially-formed cubes, but the crystals of which these are composed are not cubical. Compare also E. Merck (Ch. & D. 98, 348.)

G. P. Ed. IV. Soluble in 25 parts of water. 5 c.c. of a 1:30 solution of the salt should give on addition of 1 drop of potassium carbonate solution, at once or in a few seconds, a pure white crystalline precipitate, which should not become colored on contact with the air, and when shaken with chloroform it should not redden. 5 c.c. of the same solution should give a white ppt. with one drop of sol. of ammonia; this ppt. is soluble without color in solution of soda. This soda solution, when shaken with an equal volume of ether, should yield no appreciable amount of soluble residue on evaporation of the solvent. (Ph. J. 00, Sept., 282.)

Solubility. Enell. (Med. Farm. För. 98, 1. Apoth. Ztg. 98, 629. Proc. 99, 371.)

Moschus.

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 112.)

Mucilago Acaciæ.

Preservation. Hiss finds nothing so efficient as a few drops of formaldehyde. (Bull. Ph. 99, 498.)

Myristica.

Fictitious Nutmegs. Vanderplankin. (Ch. Ztg. (Rep.) *24*, 31. Ph. J. 00, June, 682.)

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 112.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 327.)

Liming. Object of. Tschirch. (Schweiz. Woch. 98, 21.)

Myrrha.

Botanical Source. That the plant figured by Bentley and Triemen in the "Medicinal Plants" is the true myrrh, rather than the *Commiphora myrrha* of Englér and the *C. schimperi* and *C. Abyssinica* is considered proved by specimens collected in Somaliland by Mr. and Mrs. Phillips. (Ph. J. 99, Apr., 295.

Commercial Varieties. Description. Holmes. (Ph. J. 98, Nov., 547.)——Method of distinguishing. Hanke. (Zeits. Oest. Ap. Ver. 00, No. 10–12, 274. Proc. 00, 653).

Structural Characters. Wiesner. (Zeits. Oest. Ap. Ver. 99, 425. Apoth. Ztg. 99, 759. Proc. 00, 611.)

Ash and Solubility. Merson. (Ph. J. 00, Jan., 42.)——Dieterich. (Ph. Centralh. 98, No. 19. A. J. Ph. 99, 85.)——Moor and Priest. (Ph. J. July, 00, 112.)

Bisabol. Examination. Tucholka. (Ph. Centralh. xxxviii, 500. Proc. 98, 866.)

Microscopical Characteristics. Kraemer. (Proc. 98, 333.)

Nux Vomica.

Ash. Percentage. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.)——Moor and Priest. (Ph. J. July 00, 112.)

Presence of Copper. Hill. (Ph. Jl. 00, Apr., 417.)——Beitter confirms Hill's observations on the presence of copper and gives tests for detection. (Ber. Berl. Pharm. Ges. 00, 411. Ch. & Dr. 01, 55.) See also (Am. Dr. 01, 140).

Brucine Heptaiodide. Prescott and Gordin. (Proc. 98, 363.)

Strychnine Heptaiodide. (*Ibid.*)

Assay. Use of acetic acid. Squibb. (A. J. Ph. 99, 1.)——Bird extracts with a maceration-pressure method, using a solvent composed of amylic alcohol, 1 vol.; chloroform, 3 vols.; and ether, 4 vols. (Ph. J. Nov. 00, 574.)——Gordin and Prescott give a modification of Dunstan and Short's method of separation by ferrocyanide. (Proc. 99, 278.)——Farr and Wright point out that wash-water at a stated temperature (38° C.) should be employed, a correction being made for the strychnine dissolved. (Ph. J. 00, 82, 140.)——Separate estimation of strychnine and brucine by the periodide method. Gordin and Prescott. (A. J. Ph. 99, 18. Proc. 99, 531.)——Richtman states that the quantity of decinormal sulphuric acid directed for the assay of the solid or fluid extract is not sufficient. (Ph. Rev. 99, 208.)——Gordin removes the alkaloid by means of Mayer's reagent and uses phenolphtalein as an indicator. (Proc. 00, 124.)——Iodometric and gravimetric results. Comparison by Gordin and Prescott. (Proc. 99, 271.)——Gordin. (A. J. Ph. 01, 211.)——Bird comments on the B. P. process. (Ph. J. 00, 214.)——Dewherst comments on Alcock's process and proposes that the ether solutions be washed. (Ph. J. 00, April, 359.)——Alcock gives a method for the assay of the extract, liquid extract and tincture of the B. P. (Ph. J. 00, Feb., 174.)——Assay of powder. Kippenberger. (Apoth. Ztg. 98, 664 and 672. Proc. 99, 726.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 301.)

Preparation. Use of acetic acid. Squibb. (Proc. 99, 1.)

(Oleata.)

Official and Unofficial. Notes by Naylor. (Ph. J. 01, 392.)

Therapo-Pharmacy. Hallberg. (W. Dr. 01, 57.)

Oleatum Hydrargyri.

Preparation. Mix 25 parts of yellow oxide of mercury in a porcelain mortar with 25 parts of alcohol, and add 75 parts of oleic acid. Triturate the mixture until it becomes sufficiently thick so that the heavier particles of oxide no longer deposit at the bottom. Let it stand 24 hours, then heat to 60° C. and triturate, continuing the heat until the weight of the product is 100 parts. (Ph. Era 98, 671.)

Assay. (Ph. Era 98, 671.)

Substitute. Sieker gives a method for mercury stearate which is a stable compound. 568 parts of stearic acid U. S. P. are fused in a porcelain dish, and 215 parts of yellow mercuric oxide are gradually added, just sufficient heat being applied to maintain the liquid condition until the mercuric oxide is dissolved. (Ph. Rev. 99, 396.)

(Oleoresinæ.)

Constants. Dieterich. (Ph. Centralh. 99, 453. Proc. 00, 760.)

Examination. The commercial frequently show the presence of acetone. Patch. (Proc. 00, 205.)

Preparation. Maisch recommends the Soxhlet extraction apparatus as the most suitable for preparing the official oleoresins, the apparatus being arranged in such a manner that only a small quantity of ether is required, as it is used over and over again. (Alumni Rep., Mar., 00. Proc. 00, 495.)

Oleoresina Aspidii.

Volatile Constituents. Dieterich states that it has not been proved that filicic acid is the only active constituent of male fern, the volatile oil being no doubt of value as a taenifuge, and any method of assay should therefore also take into account the volatile constituents. In order to insure efficiency he recommends using the oleoresin in as fresh a condition as possible, approving also of the addition of castor oil as suggested by Miehle. (Apoth.-Zeit. 98, 788. Proc. 99, 448.)

Standardization. Miehle recommends that in future editions of the G. P. the percentage of filicic acid be definitely adjusted by the addition of sufficient castor oil. This also prevents the precipitation of the acid and has a therapeutic advantage besides. (Apoth.-Zeit. 98, 788. Proc. 99, 447.)

Substitute. Laurén has prepared an ethereal extract of the rhizome of *Aspidium spinulosum*, Lev., which he finds to be an efficient taenifuge. (Finsk. Läkaresällskapets Handl., *39*, 9. Ph. Ztg. 98, 744. Proc. 99, 448.)——Poulson supports the foregoing observation. (Ph. Zeit. 98, 793. Proc. 99, 505.)

Olea Pinguia.

Ash. Determination. Delecoeuillerie proposes the following for burning of fats, previous to incineration: A weighed quantity of the sample is melted in a platinum dish, and then a small ash-free filter paper folded in four is stood in the melted fat and lighted, the fat being in this way quickly burnt off. (Rev. Pharm. de Flanders, v. 65. (Ph. J. 98, Aug. 217.)

Acid and Saponification Number. Maisch favors the recognition of these constants under all the fatty oils. (Proc. Pa. Ph. Assoc. 00, 132. A. J. Ph. 00, 374.)

Iodine Absorption. After a study of Hübl's solution, Wijs concludes that hypoiodous acid is the factor chiefly concerned in the iodine absorption by fixed oils, and suggests a method for its more direct employment. The reagent is used the same as Hübl's Solution, and is obtained as follows: 13 Gm. of iodine are dissolved in a liter of acetic acid (95 p. c.). The halogen content is determined, and chlorine, free from HCl, is passed in until the halogen content is doubled. (Ber. xxi., 750. Ph. Jl. 98, Oct. 417.)

Refractometer Test. Utz considers the use of the refractometer in examinations. (Apoth.-Zeit. 00, 441, 651.)

Peanut Oil. Thomas is of the opinion that this oil is especially adapted for use in the liniments of the Pharmacopœia. (Dr. Circ. 99, 152.)

Olea Volatilia.

Adulterations. Pancoast and Kebler treat of a large number of these oils and their adulterants. (A. J. Ph. 01, 1.)——Adulteration with terpenes of lemon oil. Schimmel & Co. (Rep. 99, Oct., 30. Proc. 00, 741.)——Dohme. (Proc. Md. Ph. Assoc. 99, 80. Proc. 00, 736.)

Classification. Sadtler. (A. J. Ph. 00, 220.)

Classification and Occurrence. Gage and Brandel. (Ph. Rev. 01, 21.)

Constituents. Classification and occurrence. Gage and Brandel (reported by Kremers). (Ph. Rev. 01, 21, 167.)

Carvone. Quantitative Estimation in volatile oils. Alden and Nolte. (Ph. Arch. 99, 81.)

Oxygenated Constituents. Solubility in aqueous solutions of sodium salicylate. Duyk. (Ann. de Pharm. *5*, 348, 1899.)——Schimmel & Co. Rep. 99, Oct., 58. Proc. 00, 737.)

Thymo-quinone. Brandel and Kremers report having isolated thymo-quinone from the volatile oil of *Monarda fistulosa* L. (Ph. Rev. 01, 200.)

Analysis. Duyk finds that when volatile oils are shaken with a

fairly concentrated solution of sodium salicylate, the oxygenated products, such as eucalyptol, geraniol, carvone and citral, are dissolved, while the hydrocarbons separate, thus affording a means of separating these two classes of constituents. This also affords a means of detecting terpenes in such substances as carvone and eucalyptol. (Bull. Soc. Ph. Brux. 99, 350. A. J. Ph. 00, 495.)

Analysis and Fractionation. Kleber. (A. J. Ph. 99, 566.)

Assay. Anthranilic Acid Methyl Ester. Hesse and Zeitschel. (Ber. *34*, 296. Ph. Rev. 01, 173.)

Ester and Alcohol Determination. Parry observes that in oils of sandal-wood, bergamot, lavender and peppermint there are constituents which retain potash when boiled with it in alcoholic solution. To partly meet these errors it is a fairly simple matter to actually estimate the acetic acid present in the case of acetic esters, or of that combining with alcohols in the case of these bodies existing in a free state, and thus more accurate results can, in most cases, be obtained by depending on a calculation for the percentage of potash used. Before acidifying the product of the saponification with sulphuric acid, it is necessary to boil off all traces of alcohol to ensure that no ethyl acetate is found. Oily bodies, such as free linalool, etc., can be more rapidly filtered off before distilling the acetic acid, in order to prevent bumping and also chances of recombination. (Ch. & D. 98, 51.)

Iodine Value. Determination. Marshall. (J. Soc. Ch. Ind. 99, *19*, 213. A. J. Ph. 00, 434.)

Examination. Physical and chemical. Dowzard. (Ch. & Dr. 00, 700.)

Solubility. Dowzard claims that in addition to the other physical tests the solubility of essential oils should be taken into account. According to his method 5 Cc. (accurately measured) of oil are mixed with 10 Cc. (accurately measured) of alcohol (sp. gr. .799 at 15.5° C.); water is then run into the solution from a burette until the solution becomes turbid. The number of cubic centimeters of water required is multiplied by 100, and this result is called the "solubility value." (Ch. & D. 98, Nov. 749.)

Solidifying Point. Determination by a modification of Beckmann's apparatus. Schimmel & Co. (Rep. 98, Oct. 43. Proc. 99, 660.)

Estimation. In Alcoholic Solutions. Wender. (Apoth.-Zeit. 00, 99. Ph. Post 00, 70. Proc. 00, 737.)——In spices. Mann. (Ch. Ztg. 00, 124. Apoth.-Zeit. 00, 124. Proc. 00, 737.)——In aromatic drugs. Wender. (Ph. Post 00, 344.)

Testing. Duyk gives a method based on the rise of temperature in a mixture of 4 Cc. of liquid paraffin; 2 Cc. of oil to be tested and

2 Cc of concentrated sulphuric acid. (Ph. Era 98, 324. Proc. 98, 964.)——Hartwich shows by elaborate tables that the data obtained by the use of the Refractometer are as reliable and distinctive in the analysis of volatile oils as is specific gravity and polarization index. (Apoth.-Zeit. 99, 384.)

Oleum Æthereum.

Commercial. Kebler finds this article to be very variable in character. He also states that it is well known that in the process of the U. S P. a little variation in temperature will influence the yield very greatly. He furthermore thinks that the low price warrants the conclusion that the commercial article is derived, for the most part, from the residue in the manufacture of ether. (Am. Dr. 00, 33.)

Preparation and Estimation. Scoville states that with care and proper conditions a yield larger than that generally reported can be obtained, although of variable quality, and reports in one instance a yield of 17 Cc. of official oil from 644 Cc. of alcohol. To obtain this result, however, a 96 p. c. sulphuric acid was used. The author also suggests a possible method of assay based upon an observation that when the oil is evaporated with an aqueous solution of barium chloride, an insoluble residue of barium sulphate is obtained. (Am. Dr. 00, 65.)

Oleum Amygdalæ Amaræ.

Adulterants. Panccast and Kebler. (A. J. Ph. 01, 6.)

Strength. Patch suggests that a limit of hydrocyanic acid be given. (Proc. 00, 205.)

Oleum Amygdalæ Expressum.

Detection of Apricot and Peach-kernel Oils. Umney and Swinton find that the nitric acid test can be relied upon to detect apricot oil, but not the peach-kernel oil. (Ph. J. 99, July, 106.)

Tests. Allen and Brewis say in view of the different sources of supply, it is unreasonable to expect absolute uniformity in the results of color reactions, etc., though the differences are only slight, and never reach a limit that would cause difficulty in distinguishing the genuine from adulterated oil. (Ph. J. 00, July, 87, 135.)—— Power criticizes the B. P., and says the U. S. P. (1890) had adopted the fuming nitric acid test for the detection of peach-kernel oil, and the Swiss Pharmacopœia gives it as a specific test for the latter (*Pfirsichkernöl*), as also for rape-seed oil (*Repsöl*). Umney's observations are of special interest, as the tests were made with pure oils of peach kernels and apricot kernels, obtained both by expression and by extraction with ether. There is, however, an explanation which

may serve to clear up this apparent discrepancy. According to Hirsch (Commentar zum Arzneibuch für das Deutsche Reich, p. 483), under the name of "Pfirsichkernen" (the only English equivalent for which is peach kernels), which are used in making the so-called *oleum amygdalarum gallicum*, are not to be understood to be the kernels of the common peach (*Prunus persica* Jess, *Amygdalus persica* Linné, or *Persica vulgaris* Mill), but a small sort of the bitter almond, a variety of *Amygdalus communis* Linné. This oil undoubtedly affords the reaction described in the Pharmacopœia. (Ph. J. 00, July, 145.)

Oleum Anisi.

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 6.)

Oleum Aurantii Corticis.

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 8.)

Terebinthinate Odor. Patch states that products answering all other U. S. P. tests do develop a terebinthinate odor and taste as ordinarily stored. (Proc 00, 205.)

Terpeneless. Commercial. Idris. (Tr. Br. Ph. Conf. 99, 447.)

Oil of Sweet Orange. Flatau and Labbe have discovered in this oil both myristic acid and myristicol, and also a new ether of very agreeable odor. (Bull. Soc. Chim. xx, No. 8. Ch. News, 98, Aug. 19.)

Oleum Aurantii Florum.

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 8.)

New Constituents. E. & H. Erdman report the presence of anthranilic acid, and also a pyrrol derivative in the Neroli oils. (Ber. D. Ch. Ges. *32*, 1213 and 1217. Ph. J. 99, June, 524.)

Yield. Gras reports that the oil content of the flowers is lowest at the beginning of the harvest, and increases as the season advances. Schimmel & Co. (Rep. 99, Oct., 41. Proc. 00, 746.)

Oleum Bergamottæ.

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 6).

Changes. Charabot finds that during the process of ripening of the fruit of *Citrus bergamia*, the essential oil loses free linalool and bergaptine, but increases in terpinic constituents, and in linalyl acetate. (Compt. rend. *129*, 728. Ph. J. 99, Dec., 577.)

Oleum Cadinum.

Cadinene. See Caryophyllene.——Schreiner and Kremers on Nitroso-Derivatives. (Ph. Arch. 99, 273, 293. Proc. 99, 158.)——Percentage of Cadinene. Troeger and Feldman. (Arch. Ph. 98, *236*, 692. Proc. 99, 662.)

Examination. Cathelinau and Hausser have separated the oil into a soluble and insoluble portion by treatment with 5 p. c. sodium hydrate solution. (Bull. Soc. Chim. (3) *21*, 378. Apoth.-Zeit. 99, 532. Proc. 00, 747.)

Oleum Cajuputi.

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 6.)

Oleum Cari.

Adulterants. Pancoast and Kebler. (A. J. Ph 01, 7.)

By-Products. Schimmel & Co. report finding methyl alcohol and furfurol in the water of distillation from Caraway. (Rep. 99, Oct., 11.)

Oleum Caryophylli.

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 7.)

Assay. Erdman finds that oil of cloves always contains a quantity of aceteugenol, which is formed through the action of the acid constituents of the oil. In Thoms' benzoyl method of assaying the oil, aceteugenol is reckoned in, and in order to get a correct number the oil should be saponified with alcoholic potash. (Ch. & D. 98, 490.)

Caryophyllene. Schreiner and Kremers on Nitroso Derivatives. (Proc. 99, 158 and 203.)——Schreiner and James. (Ph. Arch. 98, 209.)

Oleum Cinnamomi.

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 7.)

Cinnamic Aldehyde. Determination. Power criticizes B. P. text. (Ph. J. 00, 151.) See also Gildemeister and Hoffmann. ("Die Aetherischen Oele," 99, 505.)

Oleum Copaibæ.

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 7.)

Polarization Test. Short criticizes B. P. text. (Ph. J. 00, 54.)

Power says a specific test for gurjun oil might be adopted (A. J. Ph. 97, 579), although this would be indicated by a higher sp. gr. and higher optical rotation. (Ph. J. 00, 152.)

Oleum Coriandri.

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 7.)

Oleum Cubebæ.

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 7.)

Oleum Eucalypti.

Eucalyptus aggregata. Smith has examined the oil. (Jour. Roy. Soc., N. S. W. *34*, 75. Ph. J. 00, Oct., 387.)

E. globulus. Brownscombe contends that there is as much variation in the quality of the oil of *E. globulus* as of other eucalyptus oils. (Ph. J. 99, Mar., 227.)

E. macarthuri. Smith found in the oil of *E. macarthuri*, 60 p. c. of geranyl acetate. (Ch. News, *83*, 5. Ph. J. 01, Jan., 28.)

Eucalyptus punctata. Chemical investigation. Baker and Smith. (Jour. Roy. Soc. N. S. Wales, xxxi, 260. Ph. J. 98, Oct., 437.)

E. toxophleba. Parry has examined oil of leaves. (Ph. J. 98, 198. A. J. Ph. 98, 469.)

Stringy Bark. Baker and Smith find the oils of the so-called "Stringy bark" eucalyptus to answer all the tests of the Pharm. Br. except that of specific gravity. (Ph. J. 98, Dec., 635.)

Percentage. As a result of further study Baker and Smith find that the eucalyptus oils do not vary much in the same species, but the proportions vary according to the time of year the leaves are collected. (Ph. J. 99, Sept., 315.)

Eudesmol. Smith states that this constituent should be present at certain seasons of the year in all eucalyptus oils which are particularly rich in eucalyptol. (Ph. J. 99, Sept., 315.)

Eudesmic Acid Ester. Smith and Baker. (Jour. Roy. Soc., N. S. W., *34*, 72. Ph. J. 00, Oct., 387.)

Commercial. Examination. Dohme (Proc. Md. Ph. Assoc. 99, 80. Proc. 00, 736.)

Assay. Dott. (Ph. J. 99, Jan., 57.)

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 7.)

Oleum Foeniculi.

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 7.)

Oleum Gaultheriæ.

See also Methyl Salicylas.

Early History. Lloyd. (Ph. Rev. 98, 176.)

Irritant Body. Vidal found in the natural oil an irritant body when applied to the skin. This is not present in the synthetic oil. (Nouv. Rem. xiii., 615. Ph. J. 97, 459.)

Synthetic. Dohme states that the synthetic oil is easily obtained pure, and as it is composed entirely of methyl salicylate is to be preferred to the natural oil, which contains only from 90 to 95 p. c. of this principle. As a precaution in buying the synthetic product the author recommends placing a drop on bibulous paper, and if after

a few moments an odor of carbolic acid is noticed, it should be rejected, otherwise it may be accepted. (Proc. Md. Ph. Assoc. 99, 98. Proc. 00, 760.)

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 10.)

Oleum Gossypii Seminis.

Yield. Knowlton. (Merck's Rep. 99, 392.)

Georgia. Jacobs gives an account of industry. (Proc. 98, 187. A. J. Ph. 98, 497.)

Gossypol is a crystalline body obtained in the purification of the oil. Marchlenski. (Jour. f. prakt. Chem. *60*, 84. Ph. J. 99, Sept., 235.)

Value of Different Reagents. Mazar observes: (1) Nitric acid (10 Cc. sp. gr. 1.40 free from nitrogen, to 5 Cc. of oil) is an uncertain reagent; (2) Hirschsohn's reagent (10 drops of a 0.5 p. c. solution of auric chloride to 5 Cc. of oil) is not sensitive; (3) Becchi's reagent (5 Cc. of oil, 25 Cc. of absolute alcohol, and 5 Cc. of a 10 p. c. solution of silver nitrate in absolute alcohol) gives doubtful results; (4) Halphen's reagent, which consists in using equal parts of oil, amylic alcohol, and a saturated solution of sulphur in carbon disulphide, was satisfactory. (Jour. de Pharm. (99), viii., No. 5. Ch. News, 99, 72.)

Becchi's Reaction. Solstein found that oil obtained by medium of petroleum spirit contained sulphur, but cold expressed oil gave a doubtful reaction for sulphur. In the Beechi test silver sulphide is produced as well as reduction of silver, if sulphur is present. (Ztsch. öffentl. Chem. *5*, 309. Chem. Centralblatt, 99, 539. A. J. Ph. 00, 230.)

Test. Halphen mixes in a test-tube equal parts of the oil to be tested, amylic alcohol and sulphide of carbon containing 1 p. c. of sulphur in solution. This tube is plunged into boiling salt water, so that ½ to ⅔ is above the surface; after 10 minutes or a quarter of an hour the red coloration appears if cotton-seed oil is present. (J. de Ph. et Ch. 97, 463. Ch. News, 98, 11.)——Marpurgo experimented favorably with the methods of Ruggeri (Selmi, 98, 1) and Cavalli (Selmi, 97, 113). (Schweiz. Woch. 98, 184. A. J. Ph. 98, 526.)

Detection in Other Oils. Tortelli and Ruggeri modify Becchi's test as follows: 5 Gm. of the oil are saponified by boiling with alcoholic potash solution, then neutralized with acetic acid. Pour when boiling in a thin stream, with constant agitation, into a warm mixture of 50 Cc. of 10 p. c. lead acetate solution and 250 Cc. of water. This lead soap is washed with 3 successive portions of water (60–70° C.), cooled, well drained, then gently boiled in 120 Cc. of ether under a

reflux condenser for 20 minutes. After cooling the ethereal solution is decanted, filtered, and washed twice with 60 Cc. of 10 p. c. of HCl, and once more with dilute acid, and then with water, the acid washings containing lead chlorate being rejected. The ethereal solution is filtered into a small flask and the solvent distilled off. The flask is then washed out with a reagent consisting of 10 Cc. of 90 p. c. alcohol and 1 Cc. of 5 p. c. silver nitrate solution. The mixture is transferred to a test-tube, which is plunged into a water bath heated between 70°–80° C. If the original oil be pure, the liquid remains unaltered for 15 minutes or even for hours. If cotton-seed oil be present, however, even in as small a quantity as 1 p. c., the liquid quickly shows signs of reduction, which becomes more intense in time. (Ph. J. 98, May, 505.)

Detection in Animal Fats. Virchow alludes to the importance of the isolation and identification of the physosterin contained in cotton-seed oil as a means of detecting the latter in animal fats, and points to the characters distinguishing physosterin from the cholesterin crystals found in these fats as follows: (1) shape of crystals as seen under the microscope; (2) melting points (cholesterin, 144°-146°; physosterin, 136°–137°). (Ber. Berl. Pharm. Ges. 99, 198. A. J. Ph. 00, 496.)

Oleum Hedeomæ.

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 8.)

Oleum Juniperi.

Commercial. Examination. Dohme. (Proc. Md. Ph. Assoc. 99, 80. Proc. 00, 736.)

Oleum Lavandulæ Florum.

Portuguese Lavender Oil. Schimmel & Co. describe a specimen of this oil. (Rep. 98, Oct., 31. Proc. 99, 665.)

Chemistry. Charabot. (Compt. rend. *130*, 257. Ph. J. 00, Mar., 249.)

Sp. Gr. Henderson. (Ph. J. 00, Nov., 490.)

Adulteration. Umney calls attention to certain variations observed in so-called spike lavender oil at present occurring in the market, which variations point strongly to the presence of a rosemary oil. (Ch. & D. 98, Jan., 166.)—Pancoast and Kebler. (A. J. Ph. 01, 8.)

Physical and Chemical Examination. Kebler. (A. J. Ph. 01, 225.)

Oleum Limonis.

Preparation. Corio calls attention to the fact that oil obtained in March has a much higher percentage of citral than a November-pressed oil, yet the latter is much superior in flavor, combined with natural strength, and is preferred by the majority of perfumers. It is stated that by the "nasal-test" it is quite easy to detect the presence of oil of turpentine, whereas its presence might not otherwise be discovered. (Ph. Era, 98, July, 7.)

A New Constituent. Umney and Swinton. (Proc. Br. Ph. Conf. 98, 368. Ph. J. 196, 370.)

Methyl Anthranilate. New Constituent. Parry. (Ch. & Dr. 00, Mar., 462.)

Concentrated. Idris. (Ph. J. 98, 161. A. J. Ph. 98, 463.)

Terpeneless. Commercial. Idris. (Trans. Br. Ph. Conf. 99, 447. Ph. J. 99, 103.)

Terebinthinate Odor. Patch says that products answering all other U. S. P. tests develop a terebinthinate odor and taste as ordinarily stored. (Proc. 00, 205.)

Aldehydes. Estimation. Walther recommends a volumetric process depending upon the conversion of the aldehydes, citral and citronellal, into oximes by means of hydroxylamine hydrochloride, the quantity to be estimated by the amount of reagent required. (Ph. Centralh. 99, 621. Proc. 00, 744.)

Citral. Estimation. Schimmel & Co. (Rep. 00, Apr. 25. Proc. 00, 721.)——Percentage. The London Essence Co. obtained only from 3 to 4 p. c. in genuine oil. (Ch. & Dr. 99, Aug., 372.)——Estimation. Parry found from 5.67 to 5.61 p. c. He prefers the method of Tiemann, which depends upon the formation of citralidene-cyanacetic acid. (Ch. & Dr. 00, Mar., 376. See also Aldehydes.)

Examination. A specimen of pure lemon oil examined by Dowzard had a viscosity of 139.6, whilst that of citrene was found to be 105.8, and that of a mixture of citrene with 7.5 per cent. of citral was 114.9. Assuming the viscosity of lemon oil to be fairly constant, such a test may be of some value, but examinations of authentic samples are required. The author therefore concludes that useful information may be obtained by determining the viscosity of essential oils. (Ph. J. 00, 100.)

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 8.)——Adulteration with Stearin. Boswig. (Ch. & Dr. 99. Proc. 00, 745.)

Oleum Lini.

Examination. Gill and Lamb give constants. (J. Am. Ch. Soc. 99, 29. A. J. Ph. 99, 275.)

Tests. Tichborne suggests characteristics that should be made pharmacopœial. (Ph. J. Nov., 00, 573.)

Oleum Menthæ Piperitæ.

Constituents. Formation. Charabot concludes from experiments which he has made that the esters are found in the chlorophyll-bearing parts of the plant, and that menthone is formed in the flower by the oxidation of menthol. (Compt. rend. *130*, 518. Ph. J. 00, Mar., 277.)

Congealing Point. Sieker thinks it would be wise to insert in the text of the next Pharmacopœia the temperature at which the oil should congeal. (Ph. Rev. 01, 66.)

Menthene and its Nitrosochloride. Richtmann, James and Anderson. (Ph. Arch. 98, 107, 117.)

Tests. Patch says that a temperature of —12° C. should be indicated in carrying on the U. S. P. test. (Proc. 00, 205.)

Commercial Quality. Hunkel. (Proc. Wis. Ph. Assoc. 97, 58. Proc. 98, 973.)

Commercial. Schulze reports the examination of four samples by the tests of the U. S. P. (Proc. Md. Ph. Assoc. 98, 83. Proc. 99, 668.)

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 8.)

Substitutes from Coal Tar Oil. (Ph. Post 99, 567. Proc. 00, 751.)

Oleum Menthæ Viridis.

Russian. Schimmel & Co. observe that Russian oil has a sp. gr. of 0.885 at 15°; opt. rot. —25° 12′ at 17°; saponification figure of 25.9; forms a clear solution with 2 volumes of 70 p. c. alcohol; and possesses a stale odor. The constituents are probably: lævocarvone, 5–10 p. c.; lævo-linalool, 50–60 p. c.; cineol and lævo-limonene, 20 p. c. (Rep. 1898, April, 46.)

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 9.)

Oleum Morrhuæ.

Norway. Preparation and Adulteration. Ranitz. (D. Med. Wochenschr. 00, No. 13. Ph. Ztg. 00, 261. Proc. 00, 670.)

Commerce, Chemistry and Pharmacy. Mather, Stallman, Gane and Mayo. (Dr. Circ. 99, 33.)

Estimation of Iodine. Reboul. (Bull. Soc. Pharm. Sud. Ouest. III, 292. Ph. J. 98, Sept., 325.)

Tests. Baumann in criticising the German Pharmacopœia recommends Salowsky's test for the presence of vegetable oils as the most available, it depending upon the determination of the melting point

of cholestrin. The test for free acid with litmus paper is unsatisfactory, and a method of titration of an alcohol-ethereal solution of the sample with potassium hydrate is proposed. (Apoth.-Zeit. 98, 869. Proc. 99, 582.)

Oleum Myrciæ.

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 6.)

Oleum Myristicæ.

Tests. Allen and Brewis. (Ph. J. 01, 328.)

Oleum Olivæ.

Source of Oil in Ripe Fruits. Gerber. (Compt. rend. cxxv., 1897. Ph. J. 98, Jan., 46.)

Examination. Dowzard. (Ph. J. 00, 99.)

Adulteration. With cotton seed oil. Davoll. (Proc. Ill. Ph. Assoc. 99, 54. Proc. 00, 424.)

Sesame Oil. De Silva proposes the use of pyrogallol in place of the sugar in Baudouin's test. The reagent consists of 2 Gm. of pyrogallol and 30 Gm. of hydrochloric acid. Equal weights of this mixture and the oil to be examined are shaken together and after being allowed to stand a while the acid layer is separated and heated for 5 minutes. If sesame oil be present, a reddish-purple color appears. (Bull. Soc. Chim. xix., 88. Ph. J. 98, Feb., 139.)

Oleum Phosphoratum.

Preparation. (Ph. Ztg. *46*, 68. Ph. Rev. 01, 127.)

Changes on Keeping. From experiments which he has made Ekroos concludes that it is not desirable to keep this oil in stock. (Arch. Ph. 98, Nov. 627. Proc. 99, 447.)

Oleum Pimentæ.

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 8.)

Oleum Ricini.

Production in India. (Ph. Era 99, 479.)

Products. Of destructive distillation. Thoms and Fendler. (Arch. Ph. *239*, 1. Ph. Rev. 01, 172.)

Ricinine. Evans modifies Futon's method of extraction. (J. Ch. Soc. *17*, 195. Ph. J. 00, Feb., 115.)

Tests. Dowzard. (Ch. & Dr. 99, 814. Ph. J. 1900, 8.)

Dowzard gives physical and chemical constants. (Ch. & Dr. 01, 325.)

Oleum Rosæ.

Constituents. Schimmel & Co. refer to the long confusion in naming its constituents as having been finally settled and that those are recognized to be two alcohols—one $C_{10}H_{18}O$, constituting 75 p. c. of the oil, and the other $C_{10}H_{20}O$; the so-called rose-oil problem still remains in dispute, inasmuch as the controversy in regard to the proper names of these alcohols is still going on. (Rep. April, 1898, 40. Proc. 98, 979.) See also (Ph. J. 00, Nov., 571).——Dietz. (Suedd. Ap. Ztg. 98, 672. A. J. Ph. 99, 280.)

Phenyl-ethyl-alcohol. Soden and Rojahn find this alcohol in rose oil and rose water. (Ber. d. D. Chem. Ges. 00, 1720. Ch. & Dr. 00, 54.)——Walbaum has demonstrated that phenyl-ethyl-alcohol constitutes the greater portion of the oil obtained by the use of volatile solvents. (Ber. D. Ch. Ges. 00, *33*, 2299. A. J. Ph. 01, 199. See also (Ber. D. Ch. Ges. 00, *33*, 1720, and Ch. & Dr. 00, *56*, 961.)

German. Walbaum and Stephan report the presence of the following new constituents: normal nonylic aldehyde, citral, *l* linalool, normal phenyl-ethyl alcohol, and *l*-citronellol. The authors observe that an explanation is lacking for the presence of only a trace of phenyl-ethyl-alcohol in ordinary rose oils, while extracted oils contain large quantities of this alcohol. (Ber. 00, *33*, 2302. A. J. Ph. 01, 199.)

Otto of Rose. Constants. Garnett. (Ch. & Dr. 00, June, 961.)

Synthetic. Schimmel & Co. (Ph. Zeit. 01, 364.)

Guaiacum Oil as a Substitute. Dietze. (Ph. Ztg. 98, 793. Proc. 99, 674.)——Schimmel & Co. (Ber. 98, Oct., 38. Proc. 99, 675.)

Examination. Turkey and German Oils. Schimmel & Co. (Ph. Zeit. 01, 364.)

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 9.)——Adulteration. (Ph. J. 99, Nov., 455.)

Oleum Rosmarini.

Pinene. Gildemeister and Stephan have proved that pinene is a normal constituent of this oil, so that the presence of this terpene, unless in considerable quantity, is no evidence of adulteration with turpentine oil. (Archiv. Ph. 235, 582. Ph. J. 98, Jan., 88.)

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 9.)

Oleum Sabinæ.

Constituents. Schimmel & Co. (Rep. 00, Apr., 43. Proc. 00, 739.)

Quality. Dohme states that the official oil is an adulterated article, and that pure oil of savin is practically unknown. (Proc. Md. Ph. Assoc. 99, 80. Proc. 00, 736.)

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 9.)

Oleum Santali.

Oil of Santalum Album. Chemical properties. Guerbert. (J. de Ph. et Ch. 00, 225. A. J. Ph. 01, 140.)

East Indian. Constituents. Guerbert. (Compt. rend *130*, 417. Ph. J. 00, Apr., 357.) See also (J. de Ph. et Ch. *11*, 5, 224. Ph. J. 00, May, 496.)

West Indian. Holmes has confirmed the supposition that the botanical source of this oil is a plant belonging to the Rutaceæ, although to a new genus. (Ph. J. 99, Jan., 53.)——Chemical properties. Dausen. (Arch. Ph. 00, 144. A. J. Ph. 01, 140.)

Purified. Von Soden and Mueller. (Ph. Ztg. 99, 258. A. J. Ph. 00, 491.)

"*Gonorol*" is a name given to the purified oil. Beckurts. (Apoth.-Zeit. Proc. 99, 485.)

Constituents. Von Soden and Rojahn. (Chem. Centr. 00, 1274. Ph. Ztg. 00, 878. A. J. Ph. 01, 200.)——Parry. (Ph. J. 00, 97, 133.)

Santalenes and Santalols. Guerbert. (J. de Ph. et Ch. *11*, 595. Ph. J. 00, 161.)

Santalol. Von Soden and Mueller find that this body is a mixture of several alcohols. (Ph. Ztg. *44*, (99) 258. Proc. 00, 749. See also (Arch. Ph. *238*, 353.)

Physical and Chemical Examination. Kebler. (A. J. Ph. 01, 224.)

Commercial. Examination. Dohme (Proc. Md. Ph. Assoc. 99, 80. Proc. 00, 736.)

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 9.)

Oleum Sassafras.

Chemistry. Kleber. (A. J. Ph. 99, 27. Proc. 99, 518.)

Safrol. Hamelbeck has found this substance to manifest electrical properties. (Ch. Ztg. 99, 129. Proc. 99, 670.)

Examination. La Wall and Pursel. (A. J. Ph. 99, 397.) See also (Proc. Pa. Ph. Assoc., 98, 134).

Separation. La Wall has observed that when oil of sassafras is exposed to cold it will separate into two layers of different density, the lower one containing crystals of safrol if the temperature be sufficiently reduced. This necessarily has an important bearing on sp. gr. and other constants of the oil. The author suggests the importance of taking the sp. gr. at the right temperature, viz.: 15° C. He also reports the examination of samples of genuine oil which had a sp. gr. below 1.070. (Proc. Pa. Ph. Assoc. 98, 134. Proc. 99, 670.)

Adulterants. Pancoast and Kebler. (A. J. Ph. 01, 9.)

Oleum Sesami.

Detection in other oils. Tambon proposes the following test: One part of a solution consisting of 100 parts of hydrochloric acid to 3 or 4 parts of crystallized glucose is put into a test-tube with two parts of the suspected oil. The mixture is shaken vigorously two or three minutes, heated to boiling, agitated and allowed to stand. Even a trace of oil of sesame will cause the liquid to assume a rose color, passing to cherry-red. (J. de Ph. et Ch. 01, 57. A. J. Ph. 01, 189.)

Oleum Terebinthinæ.

Examination. Tyrer and Wertheimer have made a careful physical examination of American, Russian and French turpentine oils and terebene made therefrom, and propose, at some future date, to investigate similar products from all possible sources. As a general rule, they find that the higher the initial rotation of American turpentine, the smaller is the product of inactive mixture capable of steam distillation and the higher the specific gravity. French turpentine has a greater tendency to oxidize than American, being intermediate between that and the Russian oil. The authors also find that, with proper attention to the conditions of manufacture, the requirements of the B. P. with regard to terebene, when prepared from American oil, can be reasonably complied with. From the results of their experiments the authors are inclined to doubt the existence, under ordinary conditions of manufacture, of a distinct inactive modification of the constituents of American turpentine or of terebene prepared therefrom. (Ph. J. 00, July, 101, 141.)

Bordeaux. Tschirch and Bruenig give composition. (Arch. Ph. *238*, 648. Ph. J. 01, Jan., 79.)

Tests. Dudley and Pease. (J. Am. Ch. Soc. 98, 61. A. J. Ph. Aug., 99, xxvii.)

Commercial. Satisfactory Quality. La Wall and Pursel. (A. J. Ph. 99, 396. Proc. Pa. Ph. Assoc. 99, 156.)

Adulteration. With Gasoline. Kebler. (Am. Dr. 98, 97.)

Oleum Theobromatis.

Adulterants and Constants. Ruffin. (Ann. Chim. Anal. *4*, 344. Ph. J. 99, Nov., 445.)

Reichert-Meissl Value. Inefficiency. Lewkowitsch has shown that this constant alone is not sufficient to establish the purity of cacao butter, but that it must be used in connection with the saponification and iodine values. (Ph. Era, 99, 167, 168.)

Rancidity. Lewkowitsch shows that there is no question about cacao butter becoming rancid, but until further experiments are

made, considers the senses of taste and smell to be the best means of detecting this condition. (Jour. Soc. Ch. Ind. Ph. Era, 99, 167.)

Tests. Dieterich. (Pharm. Zeit. 00, 987.)——Welmans. (*Ibid.*, 00, 959.)

Specific Gravity. White finds that prolonged heating of the oil causes a molecular disturbance and consequent lowering of the sp. gr., and that this disturbance does not pass away entirely for several days. (Ph. J. 98, Jan., 69.)

Oleum Thymi.

Physical and Chemical Examination. Kebler. (A. J. Ph. 01, 226.)

Adulteration. Duyk finds it to be falsified by addition of oil of turpentine and abstraction of its natural phenols, thymol and carvacrol. (J. de Ph. d'Anvers. 99, 41. A. J. Ph. 00, 79.)——Pancoast and Kebler. (A. J. Ph. 01, 9.)

Oleum Tiglii.

Influence of Methods of Preparation. Javillier finds that the oil obtained by double digestion at 75° in alcohol at 95° differs considerably from that obtained either by simple pressure or by lixiviation with ether at 0 758, these latter being almost identical. (Jour. de Pharm. (98), vii, No. 11. Ch. News, 98, 255.)

Pure. Characters. (J. de Ph. d'Anvers. *55*, 294. Ph. J. 99, Sept., 219.)

Opium.

Cultivation and Collection. Bowers. (Proc. Me. Ph. Assoc. 99, 58. Proc. 00, 631.)

Bulgarian. Hartwich examined two samples which assayed 6.6 and 18.88 p. c. of morphine respectively. (Schweiz. Woch. 99, 121. A. J. Ph. 00, 81.)

Persian. Commercial form and adulteration. (J. de Ph. v. Els. Lothr. 98, 25. Ph. J. 98, May, 505.)——Adulteration for the Chinese market. (Ph. J. 99, Aug., 157.)

Ash. Percentage. Dott. (Ph. J. 98, 282.)

Morphine Tetraiodide. Analysis. Prescott and Gordin. (Proc. 98, 364.)

Assay. Proctor gives a modification of the B. P. process. (Ch. & Dr. 98, 20.)——Gordin and Prescott propose for the accurate estimation of morphine its volumetric assay as periodide, after its separation by successive treatment with benzene, acetone and lime water. The opium alkaloids are set free by the action of ammonia with certain solvents. The free narcotine, papaverine, codeine and thebaine are then removed by percolation with benzene, after which

the morphine is dissolved by percolation with acetone. The acetone is then evaporated off and the residual morphine taken up by lime water, which completely dissolves and purifies it. The filtered solution in lime water is then treated with dilute hydrochloric *to just perceptible acidulation*, and the morphine estimated as periodide. (Ph. Arch. 98, 121. Proc. 98, 840.) See also (Proc. 98, 370).—— In another communication these same authors recommend the hot extraction with chloroform, and give an adaptation to the use of standard acid for those who prefer it instead of iodine. (Proc. 99, 269 and 275.——In an improved process these authors now titrate by standard acid after the removal of the alkaloid and employ hot extraction with chloroform alone. (Proc. co, 124 and 126.)—— Dewhirst comments on the B. P. process. (Ph. J. co, April, 359.) ——Lamar found that by evaporating the aqueous extract to 20 Gm. and then adding 10 Gm. of alcohol as officially directed, a flocculent precipitate was produced. He now modifies the official process by adding 60 Gm. of alcohol instead of 10 Gm., filters off the precipitate produced, washes the filter with a mixture of alcohol and water of the same proportions until the washings are bitterless, then having added 35 Cc. of water, evaporates off the alcohol and concentrates to 14 Gm. for the original aqueous solution. The remainder of the assay is carried out as though the precipitation had not taken place. (A. J. Ph. co, 36.)

Examination. Dowzard. (Ph. J. co, July, 99.)

Adulteration. Tschirch employed Rœntgen rays in detecting lead balls. (Schweiz. Woch. 98, 219.)

Powdered Opium. Examination. Ilhardt. (Proc. Mo. Ph. Ass. 97, 84. Proc. 98, 841.)——Microscopical examination. Kraemer. (Proc. 98, 319.)

Pancreatinum.

Activity. Choay finds by experiment that the proteolytic power of the extract from the pancreas of the pig is superior to some of the product on the market. He also urges the importance of assaying all pancreatins. (Jour. de Pharm. (6), vii, No. 9. Ch. News 98, 47.)

Coagulation Point. Bird suggests use of ether with nitric acid in determining point at which coagulation no longer occurs. (Ph. J. co, July, 104, 139.)

Influence of Heat. The digestive power of pancreatin in aqueous solution is destroyed at 60° C. Harley. (J. de Ph. et Ch. 99, x, 195. Apoth. Ztg. co, 189. Proc. co, 855.)

(Paraffinum.)

Congealing Point. Kissling gives a simple method less liable to

error than those in common use. (J. Soc. Ch. Ind. xvii, 380. Merck's Rep. 98, 369.)

Pareira.

Holmes calls attention to the confusion arising from the close resemblance of the stem to the root, the latter being the official portion. (Ph. J. 00, Mar., 278.)

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 112.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 318.)

Pepo.

Oil. Physical and Analytical Constants. Poda. (Zeits. f. Unters. d. Nahr. u. Genussmittel, 98, 625. Apoth.-Zeit. 98, 696. Proc. 99, 703.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 329.)

Pepsinum.

Comparison with Papain. Harley. (Jour. de Pharm. [6], 10, 172. Ph. J. 00, Mar., 333.)

Influence of Heat. Harley finds that continuous heat weakens the digestive power and that this is completely destroyed in a solution at 68° C. (J. de Ph. et Ch. 99, x, 195. Apoth.-Zeit. 00, 189. Proc. 00, 855.)

Influence of Antiseptics. Keppler finds by experiment that the presence of boric acid or borax does not interfere with the action of pepsin. (Ph. Centralh. 99, 17. Proc. 99, 775.)

Solvent Power. Conditions. Effront. (Bull. Soc. Chim. (3), 21, 683. Apoth.-Zeit. 00, 218. Proc. 00, 854.)

Solubility. In alcohol (90 p. c.) varies from 17 to 37 p. c. Bird. (Ph. J. 00, July, 104, 139.)

Tests. G. and H. Frerichs are of the opinion that the wording of the test in the Pharm. Germ., requiring that all albumen except a few whitish flakes shall have dissolved ("leaving at most only a few, thin, insoluble flakes," U. S. P.—W. A. Puckner), introduces a source of variation, owing to a difference in its interpretation by each operator. The authors therefore recommend the determination of the amount of insoluble matter to be permitted. (Apoth.-Zeit. 15, 512. Ph. Rev. 01, 33.)

Proposed Test. Hoseason. (Ph. J. 00, Mar., 338.)

Allen's Test. Bardrick and Sayre consider the Allen method as affording an excellent confirmatory test of the U. S. P. method. (Proc. 99, 307.)

Assay. Sayre suggests a process. (Dr. Circ. 99, 4.)——Nagelvoort. (Pharm. Weekbl. 00, No. 4. Apoth.-Zeit. 00, 485.)——

Slis. (Ibid. 00, 351.)——Apparatus. Francis has constructed an apparatus for agitating pepsin during the test digestion. (Bull. Ph. *14*, 331. Ph. Rev. 00, 513.)

French Codex Test. Macquaire. (J. de Ph. et Ch. *12*, 67. Ph. J. 00, Aug., 161.)

Examination. Cameron. (Ph. J. 00, May, 570.)——Fromme. (Apoth. Zeit. 01, 342.)

(Petrolatum.)

Brigham thinks that the pharmacopœial recognition of hard and soft petrolatum has retarded the general use of the petroleum ointment bases, and therefore advises the re-adoption of the standard of 1880, with statements as to its consistency and quality, and also authority for its more extended use as a base. (Proc. Ala. Phar. Assoc. 99, 29. Proc. 00, 444.)

Tests. Miehle. (Apoth.-Zeit. 98, 830. Proc. 99, 412.)

Examination. Hoehnel. (Ph. Zeit. 01, 28, 391.)

Oxygenated. Wilbert gives a method for its preparation, and states that it is an excellent solvent for many medicinal substances. (A. J. Ph. 01, 220.)

Petrolatum Molle.

Examination. Hoehnel states that the characteristics which should be taken into account are: Color, melting point, behavior under oxidizing agents, stability under heat of 200°, reaction, homogeneity and viscosity. (Ph. Ztg. 01, 28. A. J. Ph. 01, 187.)

(Phenacetinum.)

Carbylamine Test. Cockburn calls attention to the unreliability of the test of B. P. (1898) by which the presence of acetanilid is detected in phenacetin. (Ph. J. 99, Apr., 367.)

Volatility. Moerk. (A. J. Ph. 98, 335.)

Phosphorus.

Form for Dispensing. Alcock. (Ph. J. 99, Oct., 415.)

Alleged Conversion into Arsenic. Winkler. (Ber. D. Ch. Ges. *33*, 1693. Ph. J. 00, June, 663.)——Sadtler. (A. J. Ph. 00, 343.)

Estimation in Oils. A concentrated solution of silver nitrate is added to a solution of the oil in about 20 times its volume of acetone. The black precipitate obtained is proportional to the amount of free phosphorus contained in the oil. Louise. (Compt. rend. *129*, No. 7, Aug. 14, 99. Ch. News, 99, 135.) See also Fraenkel. (Ph. Post, 34, 117. Ph. Rev. 01, 225.)——A criticism. Fraenkel. (Ph. Post, 34, 131. Ph. Rev. 01, 225.)

Determination in Organic Compounds. Marie. (Compt. rend, *129*, 766. Ph. J. 00, Jan., 69.)

Determination in Pastes. A solution of bromine in carbon disulphide of known strength is added carefully to a mixture of the paste with absolute alcohol, until the yellow tint produced remains unchanged for a few minutes. Reed. (Schweiz. Woch. 99, 467. Proc. 00, 693.)

Estimation in Phosphides. Frank. (Zeit. Anal. Chem. xxxvii. Ch. News, 98, 63.)

Physostigma.

False. Seeds of a species of Mucuna. (Bull. Ph. 98, 269. Proc. 98, 856.)

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 112.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 303, 318.)

Adulteration with seed of Entada scandens. Day and Lloyd. (W. Dr. 98, 101. Proc. 98, 856.)

Eserine Salts. Hallauer states that the development of color in the solutions of these salts may be prevented by the use of sulphurous acid or of a 4 p. c. solution of boric acid, these additions not affecting the physiological action. (Zeits. f. Augenheilk. Therap. Monatsh. *13*, 551. Ph. J. 99, Nov., 493.)

Physostigminæ Sulphas.

Power considers that it should be replaced by salicylate. (Ph. J. 00, July, 152.)

Tests. Power criticizes B. P. text. (Ph. J. 00, 152.) See also Guareschi. (Die Alkaloide, 495.)

Phytolaccæ Radix.

Inferiorities in. Culbreth. (Dr. Circ. 97, 210.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 316.)

Picrotoxinum.

Composition. Meyer and Bruger have examined the commercial article and find it to be composed of two distinct substances, viz.: about 54 to 55 p. c. picrotoxin and 45 to 46 p. c. picrotin, which crystallize together. (Ber. D. Ch. Ges. 98, *31*, 2958. A. J. Ph. 00, 78)

Identity. Meyer by repeated crystallizations has obtained a compound with M. P. 199–209° C., occurring in white prismatic needles, and separating into two bodies on prolonged boiling with benzene or chloroform. (Ber. d. D. Chem. Ges. 97, No. 16. Ph. Centralh. 97.

420. Proc. 98, 1086.)——St. Minovici uses a 20 p. c. solution of anisic aldehyde and sulphuric acid. (Ph. Centralh. *41*, 744. Ph. J. 01, 135.)

Commercial. Meyer found the melting point of this salt to vary from 193° to 200° C., which should not be, as it is easy to prepare a pure article. (Ph. Centralh., xxxviii, 421. Ph. J. 98, Jan., 45.)

(Pilocarpine.)

New Source. Rocher. (Rep. Ph. 99, 439. A. J. Ph. 00, 134.)

Relation to Pilocarpidine. Merck concludes, contrary to Petit and Polonovski, that pilocarpine and pilocarpidine are not isomeric, but entirely different in composition. (Arch. Ph. 98, 141.)——Herzig and Meyer have established the difference between the true pilocarpidine and the altered pilocarpine, to which the name pilocarpidine was applied by Petit and Polonovski. (Monatsh. 98, 56. Ph. J. 98, 449.)

Pilocarpinæ Hydrochloras.

Properties. Jowett. (Tr. Br. Ph. Conf. 99, 435. Proc. 00, 824.)

G. P. Ed. IV. M. P. 193–195° C. is now added to other tests.

(Pilocarpinæ Nitras.)

Test. Power criticizes B. P. text. (Ph. J. 00, July, 152.)——See also Jowett. (Ph. J. 99, July, 91, and J. Ch. Soc. 00, 473.)

Pilocarpus.

Description. Holmes. (Ph. J. *66*, 199.)

Cultivation. In Italy. Gaylio. (Ph. Ztg. 98, 130. Proc. 98, 826.)

P. Racemosus. Gaylio. The leaves yield 0.62 p. c. pilocarpine. (Rep. de Pharm. 99, 429. Ph. J. 99, Oct., 397. See also Apoth. Zeit. 98, 130.)

Substitute. Hart describes a bark from S. America under the name "Alcornoco bark," which is said to be more effective than jaborandi. (Schweiz. Woch. 99, 27. Proc. 99, 568.)

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 112.)

Alkaloids. Jowett reviews the work of recent investigators and also contributes his own results. (Ch. News 00, 128.)

Chemistry. Jowett. (Brit. Med. Jour. No. 2076, 1074. Ph. J. 00, Oct, 463.)——Pinner and Kohlhammer. (Ber. d. D. Chem. Ges. *33*, 1424. Ph. J. 00, July, 639.)

Assay. Estimation of pilocarpine as nitrate. Jowett. (Tr. Br. Ph. Conf. 99, 435. Proc. 00, 824.)——Dohme and Engelhardt have examined three of the varieties obtained in the New York market which they designate as "large," "medium" and "small" leaf,

but none of these grades come up to the standard strength of 0.35 p. c. of total alkaloids. (Dr. Circ. 00, 28.)

Commercial. Holmes states that the leaves of *Pilocarpus jaborandi* are extremely scarce, but that the Rio Janeiro drug (*P. selloanus*) or the Maranham drug (*P. microphyllus*) are abundant, not on account of actual scarcity of the former kind, but owing to the demand for the cheaper drug. (Ph. J. 00, Mar., 278.) See also (Ph. J. 01, 199.)—— Inferiority of commercial drug. Farr and Wright. (Trans. Br. Ph. Conf. 99, 381. Proc. 00, 619.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 298.)

Preparations. Brissemoret recommends process of maceration and says in an infusion pilocarpine is decomposed. (Rep. Ph. 97, 507. Am. Dr. 98, 6.)

(Pilulæ.)

Excipients. Scoville states that wheat flour is the best simple excipient for creosote, camphor-chloral, volatile oils, etc. A slight excess of flour is used and then sufficient syrup is added to make a plastic mass. A gelatin basis made by dissolving 5.5 parts of gelatin and 2.5 parts of sugar in 12 parts of hot water, and allowing to cool, yields a smaller pill. One grain of this basis is added to one minim of the fluid, thoroughly mixed, and sufficient powdered marshmallow used to make a mass. (Proc. Mass. Pharm. Assocn. Ph. J. 98, Jan., 23.)——Cohn gives a list of medicinal substances frequently prescribed in pill form and the excipients most suitable for each. (Merck's Rep. 00, 5, 56.)

Coating. Havasse. (Ph. Era, 98, 128. Proc. 98, 707.)——Hayden describes a method for salol coating. (Proc. Md. Ph. Assoc. 97, 43. Proc. 98, 707.)——See also (Ph. Era, 670. Ph. J. 98, Jan., 45.)

Potassium Iodide. Bultot proposes the following formula: Potassium iodide, 0.20; wheat starch, 0.05; dextrin, 0.02 grammes, and syrup q. s. Dry the pills rapidly, coat with tallow, and preserve in the dark. (Ch. Ztg. xxi, 281. Ph. J. 98, Jan., 90.)

Pilulæ Aloes.

Formula. Bedall. (Apoth.-Zeit. *16*, 34. Ph. Rev. 01, 128.)

Pilulæ Ferri Carbonatis.

Preparation. Hansen does not favor the use of magnesia as suggested by the German Pharmacopœial Commission, and recommends a formula containing althæa and honey. (Apoth.-Zeit. 99, 711. A. J. Ph. 00, 591.)——Mindes modifies the formula of the Swiss and Austrian Pharmacopœias. (Ph. Post, 1901. Am. Dr. 01, 45.)

Examination. Stuart has examined capsules of Blaud's pills of commerce. (Ph. J. 99, July, 108. A. J. Ph. 99, 454.)

Pilulæ Ferri Iodidi.

Preparation. Powdered iron, 2 Gm., and distilled water, 4 Gm., are triturated in a porcelain mortar with iodine, 4 Gm., until the brown color disappears. The mixture is immediately made into a mass with sugar, 4 Gm., althæa root, fine powder, 2 Gm., and as much finely powdered licorice as will give the proper consistence. The mass is divided into 100 pills, and these are rolled in powdered graphite and coated with ethereal solution of tolu. Dresden Apoth. Soc. (Apoth.-Zeit. 99, 741. Proc. 00, 497.)

Pilulæ Phosphori.

Preparation. Scoville says these pills may be made satisfactorily by dissolving 2 grains of phosphorus in 90 minims of chloroform, adding the solution to a mixture of 60 grains of powdered liquorice and 5 grains of tragacanth, incorporating thoroughly and adding 10 drops of glycerin and sufficient syrup to make a mass, after most of the chloroform has evaporated. (Proc. Mass. Ph. Assoc. Ph. J. 98, Jan., 23.)

Strength in B. P. 98. Each 100 grammes contains 2 grammes of phosphorus.

Pilulæ Rhei.

Formula. Extract of rhubarb, 6 Gm.; rhubarb, fine powder, 6 Gm. Make 100 pills. Dresden Apoth. Soc. (Apoth.-Zeit. 00, 242. Proc. 00, 497.)

Piper.

Mangalore Pepper. Hanausek. (Zeits. Unter. Nahr. Genuss. 98, 1, 153. A. J. Ph. 99, 304.)

Ash. Percentage in black pepper and Penang pepper. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.)——Percentage in black and white pepper. (Ph. J. 00, July, 112.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 302.)

Pimenta.

Ash. Percentage. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.)——Moor and Priest. (Ph. J. 00, July, 112.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 313.)

Pix Burgundica.

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 112.)

Pix Liquida.

Norwegian. Examination by Strom. (Arch. Ph. 99, 525. A. J. Ph. 00, 229.)

Plumbi Carbonas.

Adulteration. Hamberger reports on the frequent adulteration of this salt with calcium carbonate. (Apoth.-Zeit. 98, 777. Proc. 99, 639.)

(Podophyllin.)

Distinguishing Test. Willard gives the following for distinguishing the East Indian from the American Resin: To 0.3 gramme of the resin in a test-tube add 3 c.c. of diluted alcohol (0.920) and 0.5 c.c. of solution of potash (B. P.), and shake gently by rotating the test-tube. In the case of the Indian resin, the mixture becomes a semi-solid gelatinous mass in a few seconds, or under circumstances, after heating to boiling and cooling; whereas the official resin produces a dark fluid that shows no signs of gelatinizing even after standing several days. (Ph. J. 98, 302. Proc. 98, 713.)

The name *Podophyllin* recommended to be made official, as it is largely used all over the country. A. Ph. A. Comm. (Proc. 98, 225.)

Examination. Patch. (Proc. 00, 206.)

Podophyllum.

Indian and American. Dunstan and Henry on Constituents. (J. Chem. Soc. 98, 209.)——Power claims to have first proven the absence of berberine or any alkaloid in podophyllum. (Ch. News July 15, 98.)

P. Emodi. Mackenzie and Dixon find the podophyllum derived from this plant to be twice as effective physiologically as that derived from the American species. (Edin. Med. Jour. 98, Nov. Ph. J. 98, Nov., 525.)

Inferiorities in. Culbreth. (Dr. Circ. 97, 210.)

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 112.)

Assay. Process recommended to be adopted by U. S. P. by A. Ph. A. Comm. (Proc. 98, 225.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 253, 297, 303.)——Jelliffe. (Dr. Circ. 99, 196.)

Potassa.

Commercial. Smith calls attention to the fact that caustic soda is substituted for this salt by some dealers. On the other hand good potassium hydrate is obtainable. (A. J. Ph. 98, 392.)

Potassii Bicarbonas.

Decomposition. Cowie finds that this salt is decomposed at a temperature of 59.6° C. (Ph. J. 99, Apr., 368.)

Tests. Comments on G. P. Ed. IV. (Ph. Zeit. 00, 832.)

Potassii Bitartras.

Commercial. Examination. Davoll. (Proc. Ill. Ph. Assoc. 99, 54. Proc. 00, 424.)

Solubility. Enell. (Med. Farm. För. 98, 1. Apoth.-Ztg. 98, 629. Proc. 99, 371.)

Potassii Bromidum.

Solubility in water and alcohol. Greenish. (Ph. J. 00, Aug., 190.)

Thiocyanates. Smith suggests modification of B. P. test. (Ph. J. 01, 461.)

Potassii Chloras.

Solubility in Water. Pawlewski. (Ber. d. D. Ch. Ges. *32*, 99, 1040. Ph. Rev. 99, 313.)

Explosion. Berthelot. (Compt. rend. *129*, 926. Ph. J. *64*, 41.)

Potassii Cyanidum.

Commercial. Examination. La Wall and Pursel having examined samples of this salt, call attention to the interference of impurities with the end reaction when titrating with silver nitrate V. S., and also to the presence of sodium cyanide which interferes with the calculation for the potassium salt. (Proc. Pa. Ph. Assoc. 99, 156. A. J. Ph. 99, 395.)

(Potassium Ferro- and Ferri-Cyanide.)

Reactions. Meldrum has made an extensive study of the reactions of these salts with the salts of the metals, and finds some of them quite distinctive. (Ch. News, 98, 269. Proc. 99, 617.)

Potassii Hypophosphis.

Assay. Jowett gives process and recommends a standard of purity of 96 p. c. (Ph. J. 98, Aug., 173.)

Potassii Iodidum.

Determination. Barrie gives a process based on the principle that when a mixture of potassium chloride, bromide and iodide is dissolved in water and treated with a 5 p. c. solution of potassium bichromate and a 10 p. c. solution of sulphuric acid, iodine, and iodine only, is liberated. (Ph. J. 00, July, 58.)

Solubility. In water and alcohol. Greenish. (Ph. J. 00, Aug., 190.)

Titration. Vincent proposes a method based on the reaction between iodic acid and iodine as follows: $6HIO_3 + 5KI = 5KIO_3 + 3I_2 + 3H_2O$. Five-sixths of the iodine set free comes from the iodide, it being estimated by titration with sodium hyposulphite. (J. de Ph. et Ch. (6) x, No. 11. Ch. News, 00, 71.)

Potassii Sulphas.

Identity. To the U. S. P. description should be added: "A 5 p. c. aqueous solution of the salt yields with barium chloride T. S., a white precipitate insoluble in nitric acid." A. Ph. A. Comm. (Proc. 98, 224.)

(Potassii Tartras.)

Formula and Tests. Power criticizes text of B. P. (Ph. J. 00, July, 152.)

(Potassium.)

Estimation. Adie and Wood have devised a method whereby potassium cobaltinitrite in acid solution is titrated with a standard solution of potassium permanganate. (Proc. Chem. Soc. *16*, 17. Ph. J. 00, Feb., 171.)

Prunus Virginiana.

Constituents. Stevens found that the inner layer of the bark contained practically all the glucoside. (Proc. 00, 207.)

Deterioration. Stevens shows that there is a uniform decrease in the percentage of hydrocyanic acid with age, and states that the bark is best preserved unground in air-tight containers. (Ph. Rev. 99, 445.)

Inferiorities in. Culbreth. (Dr. Circ. 97, 210.)

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 112.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 315.)

Pulsatilla.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 301.)

Pulvis Aromaticus.

Microscopical examination. Kraemer. (Proc. 98, 316.)

Pulvis Effervescens Compositus.

Qualitative and Quantitative Examination. Huntingdon. (A. J. Ph. 00, 461.)

Determination of CO_2. See Liquor Magnesii Citratis.

Pulvis Glycyrrhizæ Compositum.

Microscopical examination. Kraemer. (Proc. 98, 299, 315.)

Pulvis Ipecacuanhæ et Opii.

Microscopical examination. Kraemer. (Proc. 98, 316.)

Pulvis Jalapæ Compositus.

Microscopical examination. Kraemer. (Proc. 98, 313.)

Pulvis Rhei Compositus.

Microscopical characteristics. Kraemer. (Proc. 98, 313.)

Pyrethrum.

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 112.)
Powder. Microscopical characteristics. Kraemer. (Proc. 98, 321.)

Pyrogallol.

Preservation in Solution. Bolling describes apparatus whereby the air admitted into the stock solution when portions are removed, is deprived of its oxygen and thus has no action on the pyrogallic acid. (Merck's Rep. 98, 504.)

Pyroxylinum.

Preparation. Senft finds the method of the Military-Pharmacopœia (German) of 1891, preferable for producing a permanently and uniformly ether-alcohol-soluble product. (Ph. Post 99, 907. Proc. 00, 788.)

Solvents. Schlumberger finds that the ether used for dissolving pyroxylin may be replaced by solutions of the following salts: ammonium chloride, calcium chloride, magnesium chloride, aluminum chloride, zinc chloride, sodium lactate, potassium acetate, ammonium acetate. (Ph. Centralh. xxxviii, 772. Ph. J. 98, Jan., 24.)

Quassia.

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 112.)
Powder. Microscopical characteristics. Kraemer. (Proc. 98, 320.)

Quercus alba.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 320.)

Quillaja.

Substitute. Hartwich describes a wood from Venezuela having similar properties. (Schweiz. Woch. 99, 522. Proc. 00, 626.)

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 112.)
Saccharose. Melliere. (Bull. Soc. Chim. *25*, 141. Ph. J. 01, 161.)
Powder. Microscopical characteristics. Kræmer. (Proc. 98, 315.)

Quinina.

Java. Quality and Commercial Assay. Nagelvoort pronounces this product to be of unusual excellence, and much purer than the pharmacists of the United States usually obtain. To effect the assay 1 Gm. of the sample is warmed in an air-bath at 100° C. for half an hour to break up any possible double salts, then transferred to an Erlenmeyer flask with 10 Cc. of water, well corked, and immersed in water at 60° C. during half an hour, with frequent agitation, then immersed in water at 15° C. for two hours, and shaken occasionally. The fluid is then filtered off in a two-inch funnel through a plain filter, and the filtrate tested by Vierner's process. Into a graduated test-tube of a little over 10 Cc. capacity, 5 Cc. of the filtrate are poured, followed by 4.5 Cc. of ammonia (sp. gr. 0.96), and the mixture cooled to 15° C. In the case of Java quinine a nearly clear solution results, the few curdy flocks remaining being dissolved on addition of 0.5 Cc. of the same ammonia. (A. J. Ph. 98, 345.)

Manufacture in Java. (Ph. J. 00, May, 502.)

Basicity. Howard and Howard state that whatever may be the theoretic conclusions formed as to the composition of the salts of quinine, there is no doubt of the convenience of the nomenclature adopted by the British, German, American, Dutch, and most other Pharmacopœias, which regard the ordinary sulphate as neutral and the soluble sulphate as the bisulphate. On the other hand, the French nomenclature conforms to the theoretical composition of these salts, and this fact must not be overlooked. (Ph. J. 98, Aug., 554. A. J. Ph. 98, 460.)

Thalleioquine Test. In applying this test, Wulling finds that instead of using chlorine water, the following will answer as well: Introduce a grain of potassium chlorate into an ounce bottle, add 3 drops official hydrochloric acid, stopper lightly, heat gently until the gas is evolved, and then add 6 fluid drachms of water and shake. In applying the test the author adds ½ gr. of quinine to a drachm of the chlorine water, and adds, after shaking, about half an ounce or more of water. Ammonia water is then added drop by drop until the green color appears. (Ph. Era 99, Mar., 338.)

Quininæ Hydrochloras.

Acid Quinine Hydrochloride. Merck (Ch. and Dr. 98, Aug., 349) has noted that it is practically impossible to titrate this salt with

normal alkali, the results with litmus as an indicator being too low, and with phenolphtalein, or methyl orange, excessively high.

Compound with Caffeine. Paul and Cownley. (Ph. J. 00, Apr., 438.)

Identity. Cownley says cinchonine, quinidine, cupreine are never present in quinine sulphate of any known commercial manufacture. (Ph. J. 98, April, 412.)

Cinchonidine Test. Cownley finds that a sample of quinine sulphate answering the requirements of the B. P. "should not yield more than 3 p. c. of crystals of impure cinchonidine," really means that quinine sulphate containing an admixture of 5.99 p. c. of crystallized cinchonidine sulphate would answer the requirements of the new B. P. (Ph. J. 98, April, 412.)

Kublis' "*Water Test.*" Weller maintains that it possesses no advantage over the ammonia test to establish the purity of quinine sulphate. (Ph. Zeit. 97. Ph. J. 97, 3.)

B. P. Test. Some interesting observations and criticisms relating to the B. P. test for this salt are noted by Cownley and by Howard. (Ph. J. 98, 412, 447, 472.)

Examination. Hemm. (Proc. Mo. Ph. Assoc. 97, 78. Proc. 98, 1055.)

Resina.

Composition. Henriques finds that resin contains no esters at all, only small quantities of acid anhydrides, and that it is mainly composed of free resin-acids and unsaponifiable constituents. (Ch. Revue 99, 106. Apoth.-Zeit. 99, 343. Proc. 99, 677.)

Constituents. Schiek considers that the main ingredient is an ester. (Zeits. Angew. Ch. 99. Apoth.-Zeit. 99, 43.)

Destructive Distillation. Methods and products. Holmes. (Ph. J. 99, Feb., 98.)

Carbonyl Figure. Kitt applies method of Strache as given in (Ch. Ztg. 91, 1207) for aldehydes and ketones. (Ch. Ztg. 98, 358. A. J. Ph. 98, 525.)

Tests. Sieker observes that the brief description in the U. S. P. answers all ordinary purposes, because it is evidently not subject to adulteration. It is, however, sometimes necessary to detect resin in other substances, and a study of its chemical and physical properties is therefore of value. Dieterich (in 1892) found in eight samples the sp. gr. to vary from 1.076–1.079; the acid number from 162.4–175.47; and the iodine number from 146.55–180.15. In 1895 he reported a variation in the sp. gr. from 1.071–1.083, and in the acid number from 154.0–172.2. Sieker examined a sample and found acid number to be 171.2, and iodine number 165.9–166.7. Dieterich

regards the iodine number as valueless. (Ph. Rev. 98, 15. Proc. 98, 877.) See also (Ph. Centralh. 98, No. 19. A. J. Ph. 99, 85.) ——Schiek finds that no definite iodine absorption number can be obtained, but he thinks that the index of refraction of a 20 p. c. solution in linseed oil may prove of analytical value. (Apoth.-Zeit. 99, 43.)

G. P. Ed. IV. Soluble in an equal weight of alcohol (90 p. c.) and in acetic acid (96 p. c.). Free acid No. 151.2–179.2.

Powder. Microscopical Examination. Kraemer. (Proc. 98, 310.)

(Resinæ.)

Chemistry. Tschirch. (Schweiz. Woch. 99, 470. A. J. Ph. 00, 495.)

Constants. Dieterich. (Apoth.-Zeit. 99, 509. Proc. 00, 612.)

Structural Characters. Wiesner. (Zeits. Oest. Ap. Ver. 99, 425. Apoth.-Zeit. 99, 759. Proc. 00, 611.)

Preparation. Hahn finds that acetone may replace alcohol in the preparation of resins of jalap, podophyllum and scammony. (A. J. Ph. 98, 21.)

Resins. Resinolic. Examination. Tschirch. (Apoth.-Zeit. 99, 572. Proc. 00, 762.)

Gum Resins. Percentage of nitrogen. Kandelaki. (Farmaz. Journ. 00, 273. Apoth.-Zeit. 00, 404. Proc. 00, 611.)

Resina Copaibæ.

Tests. Umney and Bennett give characters that should be made official. (Ph. J. 01, 326.)

Resina Jalapæ.

Powder. Microscopical examination. Kraemer. (Proc. 98, 307.)

Resina Podophylli.

See also Podophyllin.

La Wall and Pursel report the examination of a sample which had the characteristics of the powdered drug, rather than the resin. (Proc. Pa. Ph. Assoc. 00, 161. A. J. Ph. 00, 378.)

Resina Scammonii.

Solubility. Guigues finds that the solubility of this resin in ether is not a reliable test of its purity, since the same sample of resin varies greatly in solubility with ethers from different sources. The chief cause of this variation is the presence of alcohol and water in the ether. However, specimens of ether having the same sp. gr. and free from either impurity, but of different origin, varied greatly

in their solvent action. Furthermore, it is necessary to take into account the amount of ether used, as a saturated solution of the resin usually precipitates on further addition of the solvent. (Jour. de Ph. [3], 11, 529. Ph. J. 00, June, 687.)

Resorcinum.

Solubility. Grünhut finds that 100 Gm. of resorcin require 62.0 Gm. (= 74.31 Cc.) of 90 per cent. alcohol at 15° C., and according to Caldron 100 Gm. of resorcin are soluble in 67.89 Gm. of water at 12.5° C. and 43.74 Gm. at 30° C. (Ph. Centralh. 99, 399. Proc. 99, 701.)

Rhamnus Purshiana.

Ash. Moor and Priest. (Ph. J. July, 00, 110.)

Bitter Principle. Dohme. Examination of constituents. (Proc. 98, 340.)

Glucosides. Separation. Aweng. (Apoth.-Zeit. 99, 747. Proc. 00, 837.)

Valuation. Aweng. (Apoth.-Zeit. 01, 257.)

Preparations. Stevens. A review of previous experiments by different investigators. He recommends the use of diluted alcohol in conjunction with calcined magnesia for the preparation of a pleasant extract. (Proc. N. Y. Ph. Assoc. 97, 246. Proc. 98, 867.)

Adulteration. Perrot says the powder is sometimes adulterated with *R. frangula.* (J. de Ph. et Ch. 00, 161. Ph. J. 01, 261.)

Lichens growing on bark. Senft. (Ph. Post 97, 431. Proc. 98, 772.)

Histology. Dohme. (Dr. Circ. 98, 29.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 309.)——Jelliffe. (Dr. Circ. 99, 50.)

Rheum.

R. Franzenbachii. Mœller finds the roots of this plant to differ morphologically, and also in taste and odor from "true" Chinese rhubarb. (Ber. d. Deutsch. bot. Ges. Apoth.-Zeit. 99, 766.)

Ash. Percentage. Dott. (Ph. J. 98, March, 282.)——Moor and Priest. (Ph. J. 00, July, 112.)

Constituents. Hesse has made an extended investigation to determine the constituents of the different commercial rhubarbs. (Liebig's Ann. 99, *302*, 82. Apoth.-Zeit. 99, 777. Proc. 00, 585.) ——Chemistry. Hunkel. (Ph. Arch. 00, 201.)

Cathartic Acid. Examination by Stevens. (Proc. 98, 337.)——. Uhl and Sayre recommend adding to the list of "concentrates," cathartic acid as representing rhubarb. (Dr. Circ. 00, 198.)——

Williams questions if cathartic acid meets all the severe requirements for a representative of rhubarb. (Dr. Circ. 00, 224.)

Glucosidal Constituents. Aweng. (Ph. Centralh. 98, 777. See also (Schweiz. Woch. 98, 445. A. J. Ph. 99, 398. Apoth.-Zeit. 00, 537.)——Separation. Aweng. (Apoth.-Zeit. 99, 747. Proc. 00, 837.)

Valuation. Aweng. (Apoth.-Zeit. 01, 257.)

Adulterations. Huber. (Proc. Wis. Ph. Assoc. 99, 35.)

Powder. Characteristics. Jelliffe. (Dr. Circ. 98, 7.)——Kraemer. (Proc. 98, 309).——Sayre. (A. J. Ph. 98, 129.)——Detection of turmeric. Jaworowsky. (Zeit. d. Oest. Allg. Apoth. Ver. li. 727. Ph. J. 98, Feb. 126.)

Rhus Glabra.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 330.)

Rhus Toxicodendron.

Active constitutents. Pfaff. (Jour. Exp. Med. Bull. Ph. 97, 556. Proc. 98, 865.)

Rosa Pentifolia.

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 112.)
Powder. Microscopical characteristics. Kraemer. (Proc. 98, 325.)

Rosa Gallica.

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 112.)
Powder. Microscopical characteristics. Kraemer. (Proc. 98, 325.)

Rubus.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 313.)

Rubus Idaeus.

Microscopical examination. Kraemer. (Proc. 98, 330.)

Rumex.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 313.)

Sabina.

Ash. Percentage. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.)

Histology. Dohme. (Dr. Circ. 98, 29.)

Saccharum.

Sugars. Estimation. Schoorl gives an improved method for their

estimation with Fehling's solution. (Nederl. Tijdschr. voor Pharm. Chem. en Tox. 99, July. Apoth.-Zeit. 99, 442. Proc. 00, 791.)

Reducing Sugars. Gravimetric estimation by means of the centrifuge. Chapelle. (Jour. de Ph. et Ch. (6), X, No. 9. Ch. News, 00, 71.)

Inversion by Salts. Kahlenburg, Dain and Fowler. (J. Am. Ch. Soc. *20*, 1. Ph. Rev. 99, 158.)

Luminosity. Burke. (Ph. J. 99, Oct. 369.)

Pure. Schmidt thinks that a demand by druggists for a pure article would be followed by its supply, inasmuch as it is cheaper than that with added coloring matter. (Ph. Era, 00, 255.)

"*Blueing.*" Scoville states that the whitening of sugar is not now effected by the addition of ultramarine, but by the addition of Prussian blue and dyes of the methylene blue class. (Dr. Circ. 99, 221.) See also Cohn. (A. J. Ph. 01, 119.)

Caramel. Schweitzer finds two kinds in commerce, the aqueous solution of one yielding a brown precipitate with acetic acid and lead acetate, while the other remains clear. (Ch. Ztg. 00, Rep. 48. Ph. Centralh. 00, 284. Proc. 00, 790.)

Saccharum Lactis.

Fallacy of Sulphuric Acid Test. La Wall and Pursel having examined samples which responded to the polarization test, but which did not come up to the U. S. P. test with sulphuric acid, found upon further examination that the coloration was due to the string upon which crystallization had been effected. (Proc. Pa. Ph. Assoc. 98, 136. Proc. 99, 711.)

Salicinum.

Glucosidal Character. Voswinkel confirms the fact that salicin breaks up into saligenin and glucose, thus negativing the Pharmacopœial statement that it is "a neutral principle," etc. (Ber. Berl. Pharm. Ges. 00, 31. A. J. Ph. 00, 591.)

Salol.

Odor. Possesses a decidedly characteristic odor, and it is recommended to strike out words "odorless or" of the U. S. P. A. Ph. A. Comm. (Proc. 98, 224.)

Salvia.

Ash. Percentage. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 301.)

Sambucus.

Alkaloid. Alpers found an alkaloid somewhat resembling coniine. (Proc. 00, 190.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 326.)

Sanguinaria.

Sanguinarine Nitrate. Schlotterbeck finds that the commercial article is largely composed of chelerythrine. (Proc. 00, 256.)

Inferiorities in. Culbreth. (Dr. Circ. 97, 210.)——Adulterations. Huber. (Proc. Wis. Ph. Assoc. 99, 35.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 317.)

Santalum Album.

Ash. Percentage. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.)

Santalum Rubrum.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 328.)

Santonica.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 320.)

Assay. Thaeter. (Arch. Ph. 97, 401.)——Katz. (Arch. Ph. 99, 245. A. J. Ph. 00, 177.)

Santoninum.

Bibliography. Van Zwaluwenberg. (Ph. Arch. 99, 1. Proc. 99, 760.)

Identity. Jaworowsky. 1 or 2 centigrammes are dissolved by the aid of heat in 2 Cc. of sulphuric acid. Two Cc. of a solution (1 p. c.) of cerium sulphate containing 2 p. c. concentrated sulphuric acid are then added to the warm solution of the substance to be tested, drop by drop and with constant stirring, when in the presence of santonin, a cherry red color will develop. On cooling, this mixture becomes turbid, and if 8 Cc. of water are added, a violet precipitate occurs. If the mixture is then shaken with amyl alcohol and set aside, the aqueous layer will be colorless, while the amyl alcohol will be brown, and on addition of phosphorous chloride assumes a violet color. (Ph. Zeit. 97, 738. Proc. 98, 1084.)——Thaeter. 2 or 3 drops of an alcoholic solution of santonin are mixed with 1 to 2 drops of an alcoholic furfurol (2 p. c.) solution in a flat porcelain capsule and 2 Cc. of concentrated sulphuric acid are then added. Upon heating the mixture in a water bath, a purple-red color is developed after the alcohol has evaporated; this changes to a carmine-red, followed by blue-violet and deep dark blue, ending

finally in a black precipitation. Other substances as α-naphthol, β-naphthol, veratrine, prerotoxin and piperin, do not produce the shade or sequence of colors and the final black precipitation. (Arch. Ph. 97, 401. Proc. 98, 1084.)

Sapo.

Preparation. Sieker expresses the opinion that a soft soap can be prepared without the use of excess of alkali, as in process patented by E. G. Scott (J. Soc. Ch. Ind. 97, 811), in which the oil is first separated into glycerin and fatty acids by means of superheated steam the acids being then saponified. (Ph. Rev. 98, 15.)

Standard. Sieker says a good soft soap should be perfectly soluble in water and should not contain more than 3 per cent. of matter insoluble in alcohol (carbonate, sulphate, silica, etc.). It should not contain unsaponified fat, but about ¼ of 1 p. c. of free alkali; be transparent, of good consistence, not stringy; contain about 40 p. c. of fatty acids insoluble in water; be free from adulterants, as alkali, silicates, starch, etc.; and stored in well-closed containers in a comparatively cool place. (Ph. Rev. 98, 15.)

Tests. Sieker does not find all the tests of the U. S. P. to be accurate or convenient. Instead of determining the amount of water, he determines the percentage of fatty acids insoluble in water. The test for animal fat, revealed by gelatinization of a four per cent. alcoholic solution on cooling is probably not entirely reliable, since soaps containing only a small amount of animal fat will not gelatinize. The method for determining sodium carbonate cannot be regarded as accurate, and is suggested to be replaced by Dieterich's method proposed in Helfenberger Annalen, 1891. Dieterich's method for determining the limit of alkalinity is recommended. Lard and suet are not well revealed by the elaidin test reported by Knox in Proc. 94, 174. (Ph. Rev. 98, 94.)

Examination. Sieker. (Ph. Rev. 98, 15.)

Sapo Mollis.

Preparation. Wilbert suggests a method whereby heat is avoided. To 200 parts of alcohol, in a good-sized vessel, add 250 parts of green soap, allow it to dissolve, add 1250 parts of water and dissolve 450 parts of potassa (90 p. c.) in the mixture. Gradually add 2000 parts of linseed oil, stirring constantly. Allow the mixture to stand for an hour or two, then gradually add 1000 parts of water, with constant stirring, so as not to break the emulsion, afterward stirring occasionally for an hour or two to prevent separation. In from 12 to 24 hours, the saponification is complete. (A. J. Ph. 00, 212.)—— Scoville modifies the manipulation in the official method as follows:

The alkali solution is divided into three equal portions. The first portion is mixed with the heated oil and boiled or simmered from 5 to 8 minutes with frequent stirring. The second portion is added and heated in the same way 10 minutes. Then the third portion is added and the heating and stirring continued until a translucent greenish-yellow, jelly-like mass is formed, which is completely soluble in water. (Proc. Mass. State Ph. Assoc. 98, 56. Proc. 00, 506.)——According to Unger, 400 Gm. of linseed oil are heated in a suitable vessel and a mixture of 270 Gm. of 30 p. c. potassium hydrate solution and 40 Gm. of alcohol is added. Saponification is effected by constant stirring, after which 270 Gm. of water are added. (Apoth. Zeit. 99, 393. Proc. 00, 507.)

Sarsaparilla.

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 112.)
Histology. Jelliffe. (Merck's Rep. 99, 52.)
Powder. Microscopical characteristics. Kraemer. (Proc. 98, 300.)
Spurious. Hartwich. (Ph. Ztg. 98, 684. Proc. 99, 510.)

Sassafras.

History, Botany, Pharmacy and Commerce. By Lloyd, Bastedo, Diekman and Velsor. (Dr. Circ. 98, 277.)
Monograph. Lloyd. (W. Dr. 99, 450.)
Chemistry. Kleber. (A. J. Ph. 99, 27.)
Inferiorities in. Culbreth. (Dr. Circ. 97, 210.)
Powder. Microscopical characteristics. Kraemer. (Proc. 98, 317.)

Sassafras Medulla.

Microscopical characteristics. Kraemer. (Proc. 98, 333.)

Scammonium.

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 112.)
Ether Test. Guigues advises a careful study and revision of this test, with special reference to the quality and quantity of the ether employed. (J. de Ph. et Ch. 00, 529. A. J. Ph. 01, 147.)
Inferiority. Of present supply. Holmes. (Ph. J. 00, Mar., 278.)
Substitute. Georgiades. (J. de Pharm. (6), *10*, 117. Ph. J. 99, Sept., 335.)

Scilla.

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 112.)
Extraction. With acetic acid. Remington. (A. J. Ph. 98, 543.)
Powder. Microscopical characteristics. Kraemer. (Proc. 98, 306.)

Scoparius

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 112.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 301.)

Scoparin. Relation to Vitexin. Perkin. (Proc. Chem. Soc. *15*, 123. Proc. 99, 764.)

(Scopola.)

See Belladonnæ radix also.

Coblentz reviews the recent investigations of scopola rhizomes, particularly those of Hesse, and concludes that on account of its greater constancy in alkaloidal content, this drug is to be preferred to belladonna root in securing uniform preparations. This was also the opinion of European authorities whom he consulted. The desirability of the official recognition of the drug is therefore emphasized, it having been shown that nine-tenths of its alkaloid is practically identical with that of belladonna, and any difference in the other tenth being in its favor. (Ph. Era. 00, 285.)

Introduction into U. S. P. Rusby suggests character of work to be performed in order to determine whether or not scopola should be introduced into U. S. P. (Proc. 99, 292.)——Williams has collaborated statements of standard authorities. (Proc. 99, 285.)

(Scopolamine.)

Hesse applies the name "atroscine" to the base from scopola. (Ph. J. 00, Feb. 116.)

Scutellaria.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 301.)

Senega.

Constituents. Kain. (Ph. Post, 98, 329, 341. A. J. Ph. 99, 86.)

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 112.)

Assay. Criticism of method of assay based on the amount of methyl salicylate. Kremers and James. (Ph. Rev 98, 45.)

Description. Sayre suggests that the U. S. P. state that about ⅔ of the root is keeled. (Dr. Circ. 01, 26.)

Inferiorities in. Culbreth. (Dr. Circ. 97, 210. Proc. 98, 766.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 304.)

Senna.

Commercial Varieties. Holmes. (Ph. J. 00, Mar. 226.)

Ash. Percentage. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.)——Moor and Priest. (Ph. J., July, 00, 113.)

Ash. Greenish. (Ph. J. 01, 168 and 397.)——Bamford. (A. J. Ph. 99, 511.)

Chemistry. Dohme. (Dr. Circ. 00, 242.)——Tschirch and Hiepe. (Arch. Ph. *238*, 427. Ph. J. 00, Oct., 463.)

Constituents. Aweng. (Schweiz. Woch., 98, 445. A. J. Ph. 99, 399.)

Emodin Content. Tschirch and Hiepe. (Ph. Zeit. *46*, 117. Ph. J. 01, 486.)

India and Alexandria. Histological Distinction. Denniston. (Ph. Rev. 98, 105.)

Alexandria Senna. Spurious. Greenish. (Ph. J. 99, Nov., 470.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 298.)——Jelliffe. (Dr. Circ. 98, 7.)——Ash of Powder. Bamford. (A. J. Ph. 99, 511.)——Greenish. (Ph. J. 01, 397.)

Serpentaria.

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 113.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 304.)

Sevum.

Acid Number. Dieterich has examined into the causes of change in suet, and finds the acid number to furnish the most important clue for determining its purity. (Apoth.-Zeit. 99, 734. Proc. 00, 784.)

Sinapis Alba.

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 113.)

Assay. Dieterich's examination of the seed is to include assay of volatile oil, fatty oil, residue and ash determinations of the original and extracted powder. (Apoth.-Zeit. *15*, 658. Ph. Rev. 00, 517.)

Standards. Fennel. (Proc. 98, 229.)

Starch. Lloyd uses a potassium iodide solution which shows as little as 0.05 p. c. starch. (Proc. 98, 233.)

Histology. Pammel. (Am. Month. Micro. Journ. xviii, 206 and 313. Ph. J. 98, Jan., 25.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 332. A. J. Ph. 98, 433.)

Sinapis Nigra.

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 113.)

Standards. Fennel. (Proc. 98, 229.)

Starch. Lloyd gives a potassium iodide method for indicating the presence of 2 p. c. of starch with certainty and of 0.1 p. c. by closely observing the contrast in color. (Proc. 98, 22. A. J. Ph. 98, 433.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 232.)

Soda.

Estimation. In Presence of Carbonate. Dolringer. To 2.65 Gm. of caustic soda dissolved in 50 Cc. of water, add phenolphtalein, and titrate with normal sulphuric acid until the red color disappears. Then add 3 Cc. more of the normal acid, and boil for 5 minutes to drive off the carbonic acid; then titrate the excess of acid by normal soda. If *a* be the number of Cc. of normal acid used in the first titration, and *b* the number of Cc. of normal soda used in the second titration (after driving off the carbonic acid), then the proportion of caustic soda present will be 2 (2 *a*–*b*) p. c., corresponding to NaHO and 4 (*b*–*a*) p. c. of Na_2CO_3. (Zeits. Angew. Ch. xiv, 455. Ch. News, 98, 229.)

Commercial. Smith found 5 samples of crude caustic potash to be caustic soda of varying degrees of purity. (A. J. Ph. 98, 392.)

Sodii Acetas.

Solubility. Enell. (Med. Farm. För. 98, 1. Apoth. Ztg. 98, 629. Proc. 99, 371.)

Sodii Arsenas.

Instability. Lothian calls attention to the stability and other properties of potassium arsenate, KH_2AsO_4 which make it preferable to the sodium salt, principally on account of the incompatibility of the latter with strychnine salts. (Ph. J. 00, Feb., 183.)

Tests. Power in his criticisms of the B. P. notes (Ph. J. 00, July, 152) that Barrie (Ch. & Dr. 00, 884) has justly criticized the official method for the quantitative determination of the purity of this salt by means of lead acetate. It is quite certain that no careful analyst would think of employing this method, and a quantitative determination can hardly be considered of value unless it is reasonably accurate. Moreover, the figures given for the test appear to be wrong, for, as Barrie has noted, 1 Gm. of the salt would require 3.05 Gm. of lead acetate for precipitation, instead of 2.03 Gm., the B. P. having assumed that an acid, and not the neutral lead arsenate, is formed, or there is possibly a typographical error. See also (Ph. J. 99, 324, 355.)

Sodii Bicarbonas.

Limit of Carbonate. Skubich proposes a test based upon the requirements of Pharm. Germ. (Apoth.-Zeit. 98, 644.)

Test for Mono-Carbonate. Kubli. (Apoth.-Zeit. 98, 815. Proc. 99, 625.)

Solubility. Enell. (Med. Farm. För. 98, 1. Apoth.-Ztg. 98, 629. Proc. 99, 371.)

Temperature of Decomposition. Cowie finds that carbonic anhydride begins to be given off between 52.6° and 54.6° C, the salt being completely decomposed at 70° C. (Ph. J. 99, 258.)——Dyer is inclined to doubt the correctness of the foregoing statement, and says that at temperatures below 100° C. dry sodium bicarbonate decomposes slowly, below 60° scarcely at all, and above 120° rapidly. (Trans. Br. Ph. Conf. 00, 88. Ph. J. 99, July, 96.)

Sodii Boras.

Borates. In the volumetric determination, Wolff employs a solution of ferric salicylate in sodium salicylate as an indicator for the titration of boric acid and its salts by acidimetry. (Compt. rend. *130*, 1128. Ph. J. 00, June, 663.)

Quantitative. Merck criticizes the B. P. test as being too stringent. (Ch. & Dr. 98, 348.)

Sodii Bromidum.

Solubility in water and alcohol. Greenish. (Ph. J. 00, Aug., 190.)

Sodii Carbonas.

Solubility. Enell. (Med. Farm. För. 98, 1. Apoth.-Ztg. 98, 629. Proc. 99, 371.)

Sodii Chloridum.

Dissociation products at high temperatures. Meldrum. (Ch. News, 98, 225.)

Solubility in water and alcohol Greenish. (Ph. J. 00, Aug., 190.)

Sodii Hypophosphis.

Assay. Jowett gives methods and suggests standard of 96 p. c. (Ph. J. 98, Aug., 172.)

Sodii Iodidum.

Examination. Umney found commercial sample to yield between 81 and 91 p. c. of anhydrous salt. (Ph. J. 97, 317.)

Solubility. In water and alcohol. Greenish. (Ph. J. 00. Aug., 190.)

Sodii Nitris.

Preparation and properties of pure salt. Divers. (Ch. News, 98, 313.)

Neutral Reaction. Darbon states that the pure salt is absolutely neutral, thus correcting an error in most chemical treatises. (Ch. Ztg. 99, 173. Ch. News, 99, 145.)

Estimation. Moerk. (Proc. Pa. Ph. Assoc. 00, 136. A. J. Ph. 00, 368.)

Sodii Phosphas.

Anhydrous. Whilock and Barfield find that at a temperature of 180° the salt loses all water within an hour, and that above 223° the change to pyrophosphate begins. (Am. Ch. J. *22*, 214. Ph. Rev. 01, 75.)

Arsenic. Presence in commercial salt. Bird. (Ch. & Dr. 00, 1073.)——Pinchbeck. (Ph. J. 00, Aug., 216.)

Dried. Hiss recommends the introduction of dried sodium phosphate into the Pharmacopœia. To prepare it, heat the crystallized salt on a water bath until it ceases to lose weight, stirring until it becomes dry; then continue the heat on a sand bath or at 120° C. until 100 parts are reduced to 40 parts. (Bull. Ph. 99, 498.)

Neutral. Brunner finds the preparation impracticable. (Zeits. Anal. Ch. 98, 740. A. J. Ph. 99, 548.)

Sodii Sulphas.

Preparation. The A. Ph. A. Comm. recommend that it be deprived of its water of crystallization in order to ensure a more uniform and stable product. (Proc. 98, 225.)

Sodii Sulphis.

Test. In commenting upon the B. Ph. test of estimating the SO_2 by iodine, Dott states that the best results are obtained by dropping the weighed salt (in powder) into a known slight excess of iodine solution, dissolving quickly, and titrating the excess of iodine with thiosulphate. (Ph. J. 99, Jan., 58.)

Spigelia.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 297 and 304.)

Spiritus Aetheris Compositus.

Boyd comments on the unsatisfactory character of the compound spirit of ether, and states that it and ethereal oil are frequently confused. He therefore recommends that both be withdrawn from the U. S. P. (Proc. 00, 254.)

Spiritus Aetheris Nitrosi.

Preparation. Spilsbury proposes the following modification of Dunstan and Short's process: Sodium nitrite (95 p. c.), 12 oz., 45 gr.; sulphuric acid, 8 oz., 114 gr.; alcohol, 1 gal. (Imp. meas.). The sulphuric acid is gradually mixed with half the alcohol, keeping it cool by surrounding with cold water, and this is added to the remainder of the alcohol containing the sodium nitrite. A glass

vessel of the capacity of 1½ gallons well stoppered constitutes the apparatus required. The mixture is shaken about twice a day until the reaction is complete, or until it no longer gives a precipitate with barium chloride and is only faintly acid. (Ph. J. 99, Apr., 309.)——Henderson describes apparatus for making ethyl nitrite on a more extensive scale than was contemplated in the original method of Dunstan and Dymond. (Ph. J. 99, Feb., 167.)——White suggests an apparatus for preparing small quantities. (Ch. & D. 99, Mar., 506. Proc. 99, 684.)——Feil gives short method. (Proc. 99, 303.)——Patch says cold process is better suited for wants of pharmacists. (Proc. 00, 206.)——Gilmour emphasizes the directions of the B. P. (Ph. J. 01, 54.)

Preservation. Scoville reports that the strength of the alcohol used is an important factor, a spirit made with absolute alcohol keeping better than samples made with weaker grades of alcohol. It also keeps better in an amber than in a flint bottle. (Proc. Mass. State Ph. Assoc. 99, 53. Proc. 00, 512.)——The addition of glycerin it is stated retards deterioration. Investigation is desired. A. Ph. A. Comm. (Proc. 98, 225.)——A time limit is suggested by Feil. (Proc. 98, 238.)——Deterioration under shop conditions. Pittuck and Merson. (Ph. J. 00, Feb., 282.)

Assay. Fischer and Anderson are in favor of the volumetric process on account of ease of manipulation. In regard to the purpose of assay they state that if sweet spirit of nitre is intended to be merely an alcoholic solution of ethyl nitrite the process of the U. S. P. must be regarded as quite satisfactory. But on the other hand if the by-products of the old process are of importance, the question becomes more complicated. (Ph. Arch. 98, 161–167, 169–172. Proc. 99, 454.)——Davoll has not found the U. S. P. method satisfactory, and proposes a modification of Eykman's process. (Proc. Ill. Ph. Assoc. 99, 64. Proc. 00, 764. See also Dr. Circ. 00, 113.)——Cowley and Catford propose a method based upon the reaction between nitrous acid and metaphenylene diamine which produces the azo-compound known as "Bismarck-brown." (Ph. J. 99, Nov. 471.)——Smith proposes a chlorate method. Into a 100 Cc. flask of white glass, place successively 10 Cc. of distilled water, 5 Cc. of a cold aqueous saturated solution of potassium chlorate, 5 Cc. of the spirit to be tested, and 5 Cc. of 10 p. c. nitric acid. Quickly insert the stopper and shake frequently during 30 minutes. Then add 10 Cc. of $\frac{N}{10}$ silver nitrate, shake briskly for a moment, add 10 drops of ferric ammonium sulphate solution and titrate the excess of silver with $\frac{N}{10}$ potassium sulphocyanate *without delay.* (A. J. Ph. 98, 273, 402.)——Gasometric estimation. Moerk. (Proc. Pa. Ph. Assoc. 00, 136. A. J. Ph. 00, 367.)

Commercial. Examination. Davoll. (Proc. Ill. Ph. Assoc. 99, 54. Proc. 00, 424.)

Strength. Barclay finds that this preparation falls below the minimum requirements of the Pharm. Br. in 60 days under ordinary shop conditions; that an alkaline carbonate slightly retards loss of strength, and that if kept in full bottles in a cool, dark place it diminishes but little in strength. (Ch. News 99, 1030. Proc. 00, 764.)

Green color with antipyrine. Caspari considers it due to the formation of isonitroso antipyrine and that it occurs only in presence of *free* nitrous acid. This is obviated in prescriptions by adding potassium or sodium bicarbonate. (Ph. Rev. 98, 12. Proc. 98, 718.)

Spiritus Ammoniæ Aromaticus.

Formula. Alpers. (Proc. 00, 266.)

Formula of B. P. Corrèction. White. (Ph. J. 00, Feb. 144.)

Barium chloride test for carbonate may be rendered more accurate by the addition of sodium or ammonium chloride. Bird. (Ph. J. 00, 104, 139.)

Spiritus Camphoræ.

Assay. Eschenburg. (Zeits. Oest. Apoth. Ver. 98, 49. A. J. Ph. 99, 82.)

Examination. Schimatolla. (Apoth. Zeit. 01, 349.)

Spiritus Limonis.

Examination. Mitchell. (Jour. Am. Ch. Soc. 21, 1132.)

(Stannum.)

Estimation. Froenkel and Fasal. (Ch. News, 98, 97.)

Staphisagria.

Holmes states that the plant in the English botanic gardens is really another species, namely, *D. Pictum* Willd. (Trans. Br. Ph. Conf. 99, 390. Proc. 00, 617.)

Alkaloids. Katz. (Ph. J. 00, Oct., 387.)

Staphisagroine. Ahrens has obtained a fifth alkaloid from the seeds of stavesacre to which he has given the name staphisagroine. (Apoth.-Zeit. 99, 361. Proc. 99, 749.)

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 113.)

Stillingia.

Histology. Sayre. (Dr. Circ. 98, 5.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 313.)

Stramonii Folia.

Ash. Percentage. Hockauf. (Zeits. Oest. Apoth. Ver. 98, 1. Ph. Rev. 98, 152.)——Moor and Priest. (Ph. J. 00, July, 113.)

Crystals. Kraemer. (Bull. Torrey Bot. Club, 00, 37. Ph. J. 00, June, 639.)

Assay. Schmidt gives modification of Keller's method. (Ph. J. 00, Jan. 22.)

Adulterants. Ward. (Ph. J. 01, 327.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 298.)

Stramonii Semen.

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 113.)

Atropine. Thomann is of the opinion that the alkaloid (atropine) is a reserve food material rather than a product of excretion. (Bot. Centralbl. *80*, 461. Ph. J. 00, Mar., 249.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 332.)

(Strophanthin.)

Glucoside. Kohn and Kalish doubt the correctness of Fraser's view that strophanthin is a glucoside. (Ber. Berl. Pharm. Ges. 97, 514. Apoth.-Zeit. 98, 232.)——Kohn and Kalish have studied the properties of the alkaloid isolated from the seeds of *Strophanthus hispidus*, Kombé. (Monatsh. f. Chem. 98, 19, 385. Apoth.-Zeit. 98, 889. Proc. 99, 756.)——Dowzard describes a method whereby the polariscope is used for determining the strophanthin in the tincture and extract. (Proc. Br. Ph. Conf. 98, 358. Proc. 99, 757.)

The Nitrogenous Bodies associated with strophanthin are separated, according to Thoms, from strophanthin by precipitating the strophanthin in aqueous solution with ammonium sulphate instead of with tannin. (Ber. d. D. Ch. Ges. xxxi, 271 and 404. Ph. J. 98, April, 323.)

Hydrolysis. Feist. (Ber. Berl. Pharm. Ges. 97, 534. Apoth.-Zeit. 98, 232.)——Holmes discusses Feist's paper. (Ph. J. 00, Oct., 388.)

Strophanthus.

S. hispidus. Monographic description. Lloyd (W. Dr. 97, 403. Proc. 98, 805.)

S. Kombe. Holmes states that at his suggestion arrangements have been made for obtaining the genuine Kombe seeds, these being shipped in the pods and bearing the mark "Mandala Brand." (Ph. J. 99, July, 34.)——Holmes considers the commercial seeds. (Ph. J. 01, 486.)

Varieties. Perredés shows that every histological character upon

which the identification of the different varieties of "Kombé" seeds has hitherto been based exists in seeds obtained from one and the same pod. (Ph. J. 00, July, 136, 174, 241, 265.)——Hartwich gives critical examination of the subject. (Apoth. Zeit. 01, 155, 165.)

Ash. Percentage Moor and Priest. (Ph. J. 00, July, 113.)

Chemistry. Feist calls attention to the importance of using a pure glucoside of known activity and gives the characters distinguishing strophanthin and pseudo-strophanthin. (Apoth. Zeit. xv, 469. Ph. J. 00, 314. A. J. Ph. 00, 500.)

Constituents. Thoms. (Ber. D. Chem. Ges. 98, 271.)——Feist. (Ibid. 98, 535.) See also (Schweiz. Woch. 98, 323. A. J. Ph. 99, 279.)

Oil. Constituents. Bjalobrsheski. (Farmaz. Jour. 01, 199. Apoth. Zeit. 01, 343.)

Assay. Dohme considers the results obtained by Barclay's method to be more correct than those obtained by the methods of Elborne and Fraser. (Dr. Cir. 00, 132.)

Test. Holmes calls attention to the fact that this drug is not now obtainable of official quality (B. P.) owing to admixture of seeds having no value. Kombe seed may be distinguished from inferior grades by the green color produced with sulphuric acid. (Ph. J. 00, Mar. 278.) See also (Ph. J. 01, 592.)

New Admixtures. Perrédes. (Ph. J. 01, 518.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 301, 330.)

Strychnina.

Salts. Relative solubility in chloroform. Hill. (Ph. J. 00, Feb. 185.)

Double Salts. Conrady calls attention to some recent experiments whereby very soluble double compounds of sodium salicylate with strychnine nitrate and strychnine hydrochloride were obtained. (Apoth.-Zeit. 99, 492. Proc. 00, 816.)

Hydriodide. Hill gives character, composition, etc. (Ph. J. 98, 389.)

Dichromate Test. Wharton devised a method some years ago which was a modification of this test. It consisted in reducing the strength of the potassium chromate by intimately mixing it with about 500 times its own weight of calcined calcium sulphate, and then sprinkling the dry powder so obtained into a solution of strychnine in concentrated sulphuric acid. A further modification of the process is now proposed for use in post-mortem examinations. (Dr. Circ. 98, 260.)——Other tests. Wharton. (Dr. Circ. 01, 48, 72.)

Ptomaine Resembling. Mecke and Wimmer. (Ph. Zeit. 98, 300. A. J. Ph. 99, 88.)

Styrax.

Origin in Plant. Moeller has determined that this balsam is not produced in the bark, but in the wood, and that it is not a physiological secretion, but a pathological product resulting from injury to the wood or bark. (Centralbl. f. Bakt. u. Parsitenkunde, *5*, 412. Ph. J. 99, Aug , 139.)

Characters and Purification. Dieterich. (Apoth.-Zeit. 99, 449.)

Solubility and Ash. Dieterich. (Ph. Centralh. 98, No. 19. A. J. Ph. 99, 86.)

Sulphur Præcipitatum.

Examination. Wulling. (Merck's Rep. 97, 38.)——Sayre. (Drug. Circ. 97, 318.)

Powder. Microscopical Examination. Kraemer. (Proc. 98, 310.)

Sumbul.

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 113.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 304.)

Suppositoria.

Preparation. White and Braithwaite consider conditions necessary to their preparation. (Ph. J. 97, 437.)——Delaye prefers a basis of gelatin and glycerin, without previously softening the former with water, since he finds that on keeping the preparations made with water-softened gelatine lose their shape and consistence. (J. de Ph. d'Anvers, liii, 225. Ph. J. 98, 504b. Proc. 98, 723.)——Barksdale uses a wooden shaper. (Proc. Va. Ph. Assoc. 97, 64. Proc. 98, 722.) ——See also (Am. Dr. 98, 245.)——Murphy. The ingredients are mixed and the mass rolled out by hand, cut into divisions, and the suppositories after being superficially formed are introduced into a mold previously dusted with lycopodium. In hot weather it is advantageous to add a little fixed oil, and in winter 5 p. c. of petrolatum to the cacao butter. (Merck's Rep. 99, 350.)

Agar-Agar. Buchtwilz finds that the agar-agar jelly in proportion of 1:29 does not liquefy at the heat of the body. A uniform solution requires the use of heat under pressure; and the finished suppository is brittle and difficult to introduce. (Ph. Wochen. xv, 263. Proc. 98, 725.)

Gelatin. Le Mieux does not favor their use, and gives formula prepared after the manner of making the mass for printer's rollers or copying pads. (Proc. Wis. Ph. Assoc. 97, 60. Proc. 98, 724.)

Glycerin. Rauanne gives a formula for making a glycerin-gelatin mass. (Ph. Centralh. 97, 425. Proc. 98, 724)——Cacao butter, 40; spermaceti, 10; glycerin, 25; castor oil, 25. Mix and make into

suppositories weighing 2 Gm. each. Dresden Apoth. Soc. (Ph. Post 00, 52. Apoth.-Zeit. 00, 84. Proc. 00, 517.)——Sayre. (Dr. Circ. 01, 6.)

Therapo-Pharmacy. Hallberg. (W. Dr. 01, 7.)

(Syrupi.)

Apparatus. Kopp has devised an automatic percolator. (W. Dr. 97, 517.)

Preparation. Williams expresses regret that the Pharmacopœia should make the process of percolation secondary, and says that an essential direction was omitted, viz.: that as the fluid begins to drop, the orifice should be closed for 12 hours, allowing the sugar to dissolve somewhat before permitting the syrup to flow. Instead of a plug of sponge "pressed down into the neck of the percolator," he uses a grooved cork placed in the neck and covered by a thin, broad piece of fine sponge, with a nipple-shaped projection—double the thickness of the rest—in the centre, to rest on the cork, and serving as a diaphragm to give the most satisfactory results. (Proc. Conn. Ph. Assoc. 97. Bull. Ph. 97, 406.)——Apparatus. Hensel. (Merck's Rep. 98, 628.)

Density. Scoville calls attention to the importance of considering the density in the case of syrups having a tendency to fermentation. In discussing the relative merits of granulated and loaf sugar, he said that the form or character of the sugar used appeared to be secondary to the amount. (Dr. Circ. 99, 221.)

Inversion. Woltersdorf and Richtmann, after having made a series of experiments to determine the rapidity of inversion of the cane sugar in official syrups, conclude as follows: (1) In all cases heat increases the rapidity of inversion, while cold retards it; (2) wherever a free acid is present alone, whether it be organic or inorganic, inversion takes place, the inversion being more rapid in the presence of the latter than of the former; (3) the presence of a neutral salt retards the inversion by acids somewhat, and this is particularly true of potassium citrate, and the greater the quantity of neutral salt present the less is the rate of inversion; (4) alcohol does not have any effect as a preventive against inversion, nor does (5) glycerin prevent the inversion of cane sugar. (Ph. Arch. 00, 81 and 101. Proc. 00, 521.)——Haussmann finds that the presence of directly fermentable sugar in acid syrups is a favorable condition for the liability of rapid fermentation. (A. J. Ph. 98, 585.)——Kahlenberg comments on the foregoing, and says that the results are in line with the researches of Ostwald and others. (Ph. Rev. 99, 10.)

Spoliation. Cohn considers the impurities contained in sugar as the most frequent cause of their deterioration, and regards ultrama-

raine as the chief of these, owing to its chemical properties. (A. J. Ph. 01, 119) ——See also Scoville. (Dr. Circ. 99, 221.)

Moulds. Krauss has examined the moulds of medicinal syrups microscopically, and finds that they are invariably due to *Penicillium glaucum.* He found the official syrup to give evidence of a fungous growth after a few weeks, and though it did not reduce Fehling's solution when first made, rapidly reduced it after the formation of the mould. (Ph. Centralh. 98, 737. Proc. 99, 459.)

Rock-Candy Syrup is claimed to be fully equal and superior to sugar syrups. (Dr. Circ. 97, 216. Proc. 98, 727.)

Syrupus Acaciæ.

Preparation. Haussmann suggests the following formula: Mix 20 Gm. of sugar with 8.5 Gm. granulated acacia, and add to 25 Cc. distilled water previously warmed. Stir until dissolved, continuing a gentle heat, and add sufficient syrup to make 1000 Cc. of product. (A. J. Ph. 99, 156.)

Preservation. Scoville regards the quality of gum as of prime importance. The density of the syrup should also be borne in mind, as with all syrups liable to fermentation. (Dr. Circ. 99, 221.)

Syrupus Acidi Citrici.

Examination. Borntraeger gives analysis of juices of ripe and unripe fruit and comparisons with lemon syrup. (Zeits. Unter. Nehr. Genuss. 98, 225. Analyst, 98, 176. A. J. Ph. 98, 494.)

Inversion of Cane Sugar. Woltersdorf and Richtmann. (Ph. Arch. 00, 92.) —See Syrupi.

Syrupus Acidi Hydriodici.

Preparation. If made with crystallized rock candy it is stated that it will keep perfectly. Investigation is desired. A. Ph. A. Comm. (Proc. 98, 224.)——Patch says less sugar should be used. (Proc 00, 206.)——Haussmann finds that a slight increase in the proportion of potassium iodide and tartaric acid is necessary to produce a 1 p. c. syrup. The prolonged washing of the precipitated potassium bitartrate is objectionable; the washing out of the hydriodic acid with diluted alcohol should be continued until a definite volume of solution is obtained, this diluted with water without previous evaporation of the alcohol, and the sugar dissolved without heat. (A. J. Ph. 99, 121.)——Wells suggests the use of syrup—650 Gm. to make 1 litre—made from pure white rock candy crystals in the preparation of this syrup, on account of its purity. He also cautions against keeping it in a warm place. (A. J. Ph. 99, 254.)

Inversion of Cane Sugar. Woltersdorf and Richtmann. (Ph. Arch. 00, 86.)

Density. Scoville states that a sugar strength of three-fifths of that now directed is satisfactory. He finds that commercial brands of the syrup are lighter in sp. gr. and more limpid than the official preparation. It therefore appears that the experience of large manufacturers is in favor of a thin syrup. (Dr. Circ. 99, 221.)

Syrupus Althææ.

Formula. Haussmann omits the glycerin in the official formula and increases the sugar to 750 Gm. He heats the infusion of althaea to boiling, clarifies with purified talcum and dissolves the sugar in the filtrate by the aid of heat. (A. J. Ph. 99, 153.)

Density. Scoville finds that a slight reduction in the quantity of sugar hastens fermentation. (Dr. Cir. 99, 221.)

Syrupus Amygdalæ.

Preparation. Haussmann finds that by rubbing up 10 Gm. of acacia, in granular powder, with the other ingredients, as in the official process, a syrup is obtained which does not separate as readily as the official. (A. J. Ph. 00, 226.)

Inversion of Cane Sugar. See Woltersdorf and Richtmann under Syrupi.

Syrupus Aurantii.

Preparation. Haussmann states with regard to the official syrup that a simpler process is desirable and that the product should contain less alcohol. He therefore suggests that 50 Gm. of freshly grated peel (free of the white inner layer) be macerated in 100 Cc. of alcohol for 24 hours. The mixture is then percolated with alcohol until 100 Cc. of percolate are obtained. This is mixed in a mortar with 50 Gm. precipitated calcium phosphate and 150 Gm. of sugar, set aside in a warm place until most of the alcohol has evaporated, then diluted with 300 Cc. of water and filtered. The remainder of the sugar, 750 Gm., is dissolved in this filtrate without heat, and water added to make 1000 Cc. (A. J. Ph. 00, 69.)——Williams uses in addition to the U. S. P. process pumice, in lumps, 100 Gm. This is ground and triturated with the orange peel and percolated with hot alcohol. (Am. Dr. 98, 125.)

Syrupus Ferri Iodidi.

Preparation. Dohme recommends: Iodine, 83 Gm.; iron, 25 Gm.; solution of hypophosphorus acid (50 p. c.) 5 Cc.; sugar 850 Gm.;

distilled water sufficient. The solution of ferrous iodide is made as usual; dissolve 50 Gm. of sugar in it before filtering and while yet in contact with the iron. Filter the solution into a bottle containing the remainder of the sugar, and wash the filter with water (q. s.) to make the finished syrup 1000 Cc., dissolving the sugar by the aid of gentle heat, straining and adding the solution of hypophosphorous acid last. (Proc. Md. Ph. Assoc. 97, 40. Proc. 98, 728.)——Haussmann proposes a modification of Dohme's method which consists in a reduction of the amount of sugar to 600 Gm., the substitution of 20 Cc. of dilute hypophosphorous acid, U. S. P. for 5 Cc. of 50 p. c. acid. (A. J. Ph. 00, 217.)——The Committee on Pharmacy of the Md. Ph. Assoc. comment favorably on the process proposed in 1897 (see Proc. 98, 728) by Dohme; and the only improvement suggested is the addition of a portion of the sugar to the iodine, iron and water reacting on each other. (Proc. Md. Ph. Assoc. 98, 74. Proc. 99, 459.)——Use of glucose. Lyon. (Ph J. 00, Dec. 755.)——Meredith. (Proc. Md. Ph. Assoc. 00. A. J. Ph. 00, 468.)

Discoloration. Haussmann is of the opinion that this change is due to the influence of the iron salt, and also to the influence of heat in some instances. In addition he points out that the statements of the Pharmacopœia concerning the reaction of ferrous iodide are contradictory, the saccharated iodide being stated to have a slightly acid, and the syrup a neutral reaction. (A. J. Ph. 01, 16.)

Inversion of cane sugar. Woltersdorf and Richtmann. (Ph. Arch. 00, 85.)

Preservation. Macy substitutes 20 to 25 p. c. of glucose for syrup in U. S. P. preparation. He says U. S. P. syrup keeps in perfect condition if exposed to sunlight. (Can. Ph. J. 97, 77. Proc 98, 728.)——Barksdale says an improvement is the addition of sugar (148 Gm.) sufficient to convert the added solution of ferrous iodide into syrup of equal sugar content as the syrup to which it is officially directed to be added. (Proc. Va. Ph. Assoc 97, 64. Proc. 98, 729.)——The main point to be observed is the protection of the ferrous salt by a proper amount of sugar. The proportion of sugar directed by the U. S. P. is sufficient provided the hygroscopic character of sugar be taken into account. (Dr Circ. 99, 221.)

Strength in B. P. 98. 1 grain of ferrous iodide in each 11 minims.

Assay. Alcock gives a method which obviates the difficulties attending the precipitation of iron as carbonate in the process of the Pharm. Br. (Ph. J. 99, Oct., 378.)——Grützner states that the titration of iodine in the presence of iron in neutral media is attended with some difficulty, but is readily accomplished in acid solution. Accordingly, 10 Gm. of the syrup, accurately weighed, are diluted with 200 Gm. of water; 5 Cc. of nitric acid and 40 Cc. $\frac{N}{10}$ solution

of silver nitrate are added with gentle shaking, followed by 1 Cc. of ferric alum solution (1.10) or ferric sulphate solution (1.10). On now adding $\frac{N}{10}$ solution of ammonium sulphocyanide, from 7.8 to 7.9 Cc. of this should be required before the liquid above the precipitate acquires a rose tint. In the presence of silver nitrate the sulphocyanide does not react with the ferric salt until the silver has been completely precipitated as colorless silver sulphocyanide. The amount of this salt corresponds to the excess of $\frac{N}{10}$ silver nitrate originally added. (Ph. Ztg. 00, 210. Proc. 00, 524.)——Rupp gives method dependent upon the liberation of iodine by $K_2Mn_2O_8$. (Arch. Ph. 00, 159.)——Swinton gives short method. (Ch. & Dr. 98, 837. A. J. Ph. 98, 524.)——Dohme has experimented with the methods of Elborne, Fraser and Barclay, but believes that a method more nearly correct than any of these can be devised. (Dr. Circ. 00, 132.)

Commercial. Examination. Davoll. (Proc. Ill. Ph. Assoc. 99, 54. Proc. 00, 424.

Syrupus Ferri, Quininæ et Strychninæ Phosphatum.

Defects of Official Formula. Haussmann points out that the free acid causes a caramelization of the sugar—a defect common to all syrups containing much free acid. Experiments show that the excess of acid is necessary to hold the alkaloids in solution. The author concludes that a new formula is desirable. (A. J. Ph. 00, 219.)

Inversion. Of Cane Sugar. Woltersdorf and Richtmann. (Ph. Arch. 00, 89.)

Preparation. Lyon says the B. P. process is satisfactory during the colder portion of the year, but that during the summer season it is necessary to increase the p. c. of phosphoric acid to 7.25 or 8.25. (Ph. J. 01, Jan., 29.)

Syrupus Hypophosphitum.

Density. This syrup appears to be more permanent if a denser syrup than now official is employed. Scoville. (Dr. Circ. 99, 221.)

Inversion. Of Cane Sugar. Woltersdorf and Richtmann. (Ph. Arch. 00, 89.)

Manipulation. Haussmann suggests triturating the salts in 350 Cc. of water, allowing the undissolved portion to subside, decanting and dissolving the residue by trituration in the diluted hypophosphorous acid. (A. J. Ph. 00, 216.)——Diehl observes that if the syrup is kept for some time, it invariably acquires an unpleasant terebinthinate odor and taste. It is recommended to change the

flavoring ingredient or permit the addition of spirit of lemon when the syrup is being dispensed. (Proc. 00, 519.)

(Syrupus Hypophosphitum Compositus.)

Preparation. Lyon improves the B. P. C. formula by using instead of 2 drachms of hypophosphorous acid to each pint but ½ drachm, and 10 grains (to the pint) of citric acid added. (Ph. J. 01, Jan., 29.)

Precipitate. Sieker finds it to be calcium citrate. (Ph. Rev. 00, 410.)

Solution without sugar. Sieker gives formula. (Ph. Rev. 00, 409.)

Syrupus Ipecacuanhæ.

Inversion of Cane Sugar. Woltersdorf and Richtmann. (Ph. Arch. 00, 91.)

Syrupus Picis Liquidæ

Preparation. Dohme recommends: Alcoholic solution of tar (washed tar 50 Gm., alcohol q. s. ad. 500 Cc.), 50 Cc.; magnesium carbonate, 10 Gm.; granulated sugar, 850 Gm.; water q. s. Rub the tar solution with magnesium carbonate and 50 Gm. of sugar, then with 400 Cc. of water gradually added. Allow mixture to stand several hours, agitating occasionally; then filter, dissolve the remainder of the sugar in the filtrate by gentle heat, strain the syrup through flannel, and add water to make whole measure 1000 Cc. (Proc. Md. Ph. Assoc. 97, 40. Proc. 98, 728.)

Syrupus Pruni Virginianæ.

Strength. Patch suggests limit of hydrocyanic acid (Proc. 00, 205.)

Preparation. Lucas recommends a process of maceration and expression as a method of extracting the bark. (Ph. J. 99, June, 526.) ——Haussmann suggests reducing the amount of glycerin in the official process to about 75 Cc., and increasing the sugar to 750 Gm. The author also favors making the glycerin a part of the percolating menstruum. (A. J. Ph. 00, 71.)——Stevens suggests that the maceration be carried on in the percolator in which the drug is to be percolated, and percolated directly upon the sugar. (Proc. 00, 207.)

Acetous. Remington suggests the following formula: Moisten 150 Gm. of wild cherry in No. 20 powder, with 50 Cc. diluted acetic acid, macerate for 24 hours in a close glass or earthenware vessel, pack in a non-metallic percolator, and percolate with diluted acetic acid into a receiver containing 150 Cc. of glycerin until 450 Cc. of liquid are obtained. In this dissolve 700 Gm. of sugar without

heat, strain, and pass enough diluted acetic acid through the strainer to make 1000 Cc. of finished syrup. (A. J. Ph. 99, 209. Proc, 99, 461.)——Haussmann reduces the glycerin to 100 Cc. and adds it to the first portion of the percolating menstruum. (A. J. Ph. 00, 71.)

Syrupus Rhei.

Preparation. Haussmann proposes the following: Mix together 100 Cc. of fluid extract of rhubarb and 4 Cc. of spirit of cinnamon, add a solution of 10 Gm. of potassium carbonate in 375 Cc. of water and allow the mixture to stand for two hours with occasional agitation; then filter, passing enough water through the filter to bring the measure up to 475 Cc., and in this dissolve 750 Gm. of sugar by agitation without heat; strain and add water to make 1000 Cc. (A. J. Ph. 99, 267.)

Syrupus Rosæ.

Preparation. Haussmann suggests mixing 125 Cc. of fl. ext. of rose with 300 Cc. water and 10 Cc. diluted sulphuric acid. The mixture is allowed to stand 2 hours, filtered, and 750 Gm. of sugar dissolved in the filtrate, and finished in the usual manner. (A. J. Ph. 00, 73.)

Syrupus Rubi Idæi.

Preparation. Noerr recommends: To the expressed juice of fresh raspberries 2 p. c. of sugar is added; allow to stand in a cellar for 4 or 5 days or until a filtered sample will remain clear on addition of alcohol. Strain the juice, heat to boiling; remove from fire, add white of one egg to each 4 L. of juice, filter into warmed wine bottles and allow to settle for one day. Filter, preserve as juice or convert into syrup. (Ph. Post, 97, 534. Proc. 98, 730.)——(Ph. Ztg. 99, 550. Proc. 00, 515.)

Syrupus Scillæ.

Inversion of cane sugar. Woltersdorf and Richtmann. (Ph. Arch. 00, 91.)

Syrupus Scillæ Compositus.

Formula. Cinnamon, 5 p.; ginger, 5 p.; macerate for 3 days in vinegar of squill, 100 parts. Filter and dissolve 150 parts of sugar in the filtrate. Dresden Apoth. Soc. (Apoth.-Zeit. 00, 270. Proc. 00, 523.)

Preparation. Williams gives process similar in principle to that under Syrupus Senegæ. (Proc. Conn. Ph. Assoc. 97. Bull. Ph. 97, 406. Proc. 98, 728.)

Syrupus Senegæ.

Preparation. Williams recommends: Senega, 10 troy oz.; stronger ammonia water, 3 fl. dr.; alcohol, 4 fl. oz.; water, 20 fl. oz. Macerate in a closed vessel for 3 days, express and strain. Re-macerate the dregs in a mixture of stronger ammonia water, 1 fl. dr.; alcohol, 4 fl. oz.; water, 6 fl. oz.; express and strain as before. Mix the liquors, add 1 oz. of ppt. chalk, filter and pass enough water through the filter to make 25 fl. oz. Percolate this through 38 troy oz. of sugar and make up to 48 fl. oz. (Proc. Conn. Ph. Assoc. 97. Bull. Ph. 97, 406. Proc. 98, 728.)

Krauss finds this syrup to keep better than any of the other official syrups, which quality he attributes to the small quantities of salicylic acid derived from the methyl salicylate of the senega root. (Ph. Centralh. 98, 737. Proc. 99, 459.)

Syrupus Tolutanus.

Changes with Age. Crouzel observes that if this syrup is not prepared with pure sugar and carefully clarified, it assumes an unpleasant odor. This he attributes to a splitting up of the cinnamic acid with the ultimate formation of acetylene. The change may also be brought about by the influence of micro organisms. (Rep. de Pharm. 99, 147. Apoth.-Zeit. 99, 251. Proc. 99, 462.)

Preparation. Farr and Wright do not find either the U. S. P. or the B. P. process satisfactory, and so recommend the following: Take 4 parts of balsam and dissolve in 12 of alcohol (90 p. c.), then add to 26 of water, previously heated to 70° C., and placed in a bottle; shake vigorously, then set aside for 24 hours; filter and mix the filtrate with 7 times its volume of simple syrup. (Trans. Br. Ph. Conf. 99, 366. Ph. J. 99. 107.)——Hiss does not find either the process of 1880 or 1890 satisfactory, and advises a return to the process of 1870. If the magnesium carbonate be considered objectionable, it can be replaced by calcium phosphate or purified talcum. (Bull. Ph. 99, 498.)——Kiedaisch recommends percolation. (Proc. 99, 75.)——Ferti uses an ethereal solution of Tolu and powdered pumice stone. (Proc. 99, 75.)

Syrupus Zingiberis.

Preparation. This syrup is prepared by adding 4 parts of a concentrated tincture of ginger—prepared by percolation with diluted alcohol in the proportion of 1:2 to 96 parts of syrup and then filtering. Dresden Apoth. Soc. (Apoth.-Zeit. 00, 270. Proc. 00, 523.)

Tabacum.

Nicotine. Estimation. Sinnbold. (Arch. Ph. 98, *236*, No. 7, 522. Proc. 99, 525.)——Keller. (Schweiz. Woch. 99, 309. Apoth.-Zeit.

99, 759. Proc. 00, 592.)——Distinction from Coniine. Schindelmeiser finds that nicotine will give an intense rose-red reaction if a drop of 30 p. c. formaldehyde, which must be free from formic acid, is added to the unresinified alkaloid, followed by a drop of concentrated nitric acid. (Ph. Centralh. 99, 703. Proc. 00, 827.)

Poisonous Constituent. Thoms has isolated a very poisonous oily body from tobacco smoke, to which the toxic effects of the drug are attributed. (Ph. Centralh. 99, 706. Proc. 00, 592.)

Tanacetum.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 301.)

Taraxacum.

Alkaloidal constituent. Sayre. (Proc. 98, 341.)——Zwaluwenburg and Gomberg do not find an alkaloid. (Proc. 99, 305.)

Assay and Composition of Fresh Root. Sayre. (Dr. Circ. 00, 90.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 305.)

Terebenum.

See also Oleum Terebinthina.

Glycerole. Preparation. (Bull. Commerc. xv, 466. Proc. 99, 656.)

Examination. Ough found only 1 sample in 12 to be in strict accord with B. P. requirements. (Trans. Br. Ph. Conf. 99, 396. Ph. J. 99, Jul., 104.)

Terebinthina.

Abies Pectinata. Tschirch and Weigel give the composition of Strasburg turpentine. (Arch. Ph. *238*, 411.)

Larix Decidua. Tschirch and Weigel give the composition of the oleo-resin. (Arch. Ph. *238*, 409.)

Picea Vulgaris. Tschirch and Bruening give the constituents of Jura turpentine. (Arch. Ph. *238*, 616.)

Tests. Dieterich. (Ph. Centralh. 98, No. 19. A. J. Ph. 99, 86.)

Terebinthina Canadensis.

Constituents. Tschirch and Bruening. (Arch. Ph. *238*, 487.)

Terpini Hydras.

Preparation. Keutmann states that by mixing one part of hydrogen peroxide, two parts of nitric acid and eight parts of oil of turpentine, and allowing the mixture to stand a few hours, terpin hydrate crystals will be formed. (Ph. Ztg. *43*, 296. A. J. Ph. 01, 200.)

(Theobromine.)

Estimation. Francois. (J. de Ph. et Ch. (98), vii, No. 11. Ch. News, 98, 255.)——Kunz. (Schweiz. Woch. 98, 301. A. J. Ph. 99, 145.)

Identification. Francois. (J. de Ph. et Ch. 98, 521. A. J. Ph. 99, 36.)

Thymol.

Compound with formaldehyde and iodine. (Apoth.-Zeit. 98, 799. Proc. 99, 669.)

Monarda Oils. Kremers reports that specimens of the volatile oil of *M. punctata* contained 60 p. c. of a phenol which is principally composed of thymol. The volatile oil of *M. fistulosa* was found to contain about 68 p. c. of phenols, which consisted mostly of carvacrol, there being not more than 2 p. c. if any, of thymol present. (Ph. Arch. 99, 73. Proc. 99, 668.)

Substitute. Thymol carbonate is recommended. Pool. (Ph. Centralh. *40*, 403. Proc. 00, 777.)

Tincturæ.

Jackson suggests the name "Percolates" as a distinctive title for 50 p. c. tinctures, if such should be admitted into the Pharmacopœia (U. S.), as has been proposed by a committee of the Am. Ph. Assocn. (Am. Dr. 99, 193.)

50 per cent.—The A. Ph. A. Comm. recommend the dismissal of all tinctures having a fluid extract of the same drug official, and all fluid extracts having a tincture of the same drug official, and substitute for such tinctures and fluid extracts a 50 p. c. tincture under a *distinctive* title. (Proc 98, 225.)

Process. Weber considers the method of maceration much superior to percolation (Dr. Circ. 98, 216.)——Edel commenting on the foregoing opinion states that percolation combined with maceration, as recommended in the Pharmacopœia, is to be preferred to either process alone. (W. Dr. 99, 57.)——Williams contends that while probably no process for tinctures is capable of so wide an application as maceration followed by displacement of marc, still the method of percolation is firmly entrenched in the U. S. and gaining ground abroad. (Dr. Circ. 98, 236.) See also Ecale. (Apoth.-Zeit. 00, 559.)——Maceration. Dunlap criticises the B. P. (98) directions. (Ph. J. 99, Dec., 603.)——Shorter processes. Stedem. (A. J. Ph. 99, 162.)

Resinous Tinctures. Duncan gives method for emulsification with water alone. (Ph. J. 98, Jan., 82.)

Standards of B. P. McWalter gives the results of numerous de-

terminations of the specific gravity of tinctures, and of the weights of residues left after evaporation of known volumes of such preparations. The latter show much greater variation than the specific gravities, and it is suggested that official standards for residues would be of but little use on account of the very wide limits that must be allowed. (Ph. J., 00, July, 85.)

Assay. Seyler determined the p. c. of alkaloid and of solid matters in commercial (B. P.) tinctures of nux-vomica, belladonna, hyoscyamus, aconite, cinchona and opium. He found in all cases a considerable variation from the alkaloidal standard in different samples of the same tincture, and that with the exception of the tincture of opium, nothing like an approximate correspondence between the amount of solids and alkaloid existed, and here only to the extent that those with the most alkaloid generally contained a larger amount of extract. (Tr. Br. Ph. Conf. 97, 420. Proc. 98, 741.) ——Katz. Agitate 25 Cc. of the tincture containing 45 p. c. of alcohol in a separator with 50 Cc. of ether and 1 Cc. of sodium hydrate solution (33 p. c.). Decant the ether, and repeat the operation twice with 25 Cc. containing 10 p. c. of alcohol. Agitate the united ether solutions with 2 or 3 Gm. of gypsum to remove water, and filter into a stoppered flask. Titrate the ether solution with centi-normal HCl, using iodeosin, in alcoholic solution, as indicator. In the case of alkaloids requiring chloroform as a solvent (as strychnine), a mixture, of chloroform, 1 part, and ether, 3 parts, is used, the separation of the solvent from the aqueous layer being here accelerated by the addition of 2 or 3 Gm. of sodium chloride, and the chloroform-ether solution is also washed with a salt solution. (Ph. Zeit. 98, 273. Proc. 98, 1047.)

Tinctura Aconiti.

Assay. Kippenberger. (Apoth.-Zeit. 98, 664 and 672. Proc. 99, 726.)

Examination. Seyler. (Tr. Br. Ph. Conf. 97, 420. Proc. 98, 741.)

Strength in B. P. 98—1 Gm. of aconite root for 20 Cc. of tincture.

Tinctura Asafœtidæ.

Stedem recommends macerating the drug in coarse powder for 48 hours, and then percolating it. (A. J. Ph. 99, 162.)

Tinctura Aurantii Amari.

Kinds of Peel. Robins finds that the bitter properties of the peel are fully developed in the unripe fruit, and that preparations from the peel of the latter serve the purpose of tonics as well as those

made from ripe fruit, but they are not so pleasant. The author also finds that tincture made from Messina fruit is superior in aroma to that made either with Malaga or Seville fruits, although there appears to be no difference in bitter properties. (Ph. J. 99, Nov. 495.)

Tinctura Aurantii Dulcis.

Preparation. Dawson percolates 200 Gm. of the grated oil-bearing portion of the rind with deodorized alcohol until 1000 Cc. of percolate are obtained. He advises care in the selection of the oranges, and prefers the large-sized, deep-colored "Messina Naval" grade. (Am. Dr. 00, 129.)——Williams reduces the fresh orange peel with an equal quantity of pumice, in lumps, in a wedgewood mortar to powder. (Am. Dr. 98, 125.)

(Tinctura Belladonnæ.)

Assay. Kippenberger. (Apoth.-Zeit. 98, 664 and 672. Proc. 99, 726.)

Examination. Seyler. (Tr. Br. Ph. Conf. 97, 420. Proc. 98, 741.)

Strength of B. P. 98. In each 100 Cc. there are 0.048–0.052 Gm. of alkaloids of the root.

Tinctura Belladonnæ Foliorum.

Standard. Williams (Dr. Circ. 99, 5.)

Tinctura Calumbæ.

Stedem states that this tincture may be readily prepared by placing a No. 20 powder loosely into the percolator and percolating with the official menstruum, without previous moistening. (A. J. Ph. 99, 162.)

Tinctura Cantharidis.

Preparation. Greenish and Wilson suggest use of cantharidin. (Ph. J. 98, 259.)

Tinctura Cinchonæ.

Strength in B. P. 98. Each 100 Cc. contains 1 Gm. of alkaloids.

Acetic Acid. Extraction. Squibb. (A. J. Ph. 99, 305.)

Definite Strength. Sarthou finds that alcohol of 60° is the most efficient solvent, but that percolation should be avoided, as in this way the tincture becomes loaded with tannin, resin, coloring matter and starch. The proportions of alcohol and bark should be such that the product shall contain 1 p. c. of total alkaloid, and cold alcohol should be employed for the extraction. The bark is assayed and the calculated quantity of alcohol added. (An assay process is given, which see under Cinchona.) (Apoth.-Zeit. 99, 241. Proc. 00, 529.)

Assay. Kippenberger. (Apoth.-Zeit. 98, 664 and 672. Proc. 99, 726.)——Squibb, use of acetic acid. (A. J. Ph. 99, 305.)
Examination. Seyler. (Tr. Br. Ph. Conf. 97, 420. Proc. 98, 741.)

Tinctura Cinchonæ Composita.

Strength in B. P. 98. Each 100 Cc. contains 0.5 Gm. of alkaloids.
Examination. Seyler. (Tr. Br. Ph. Conf. 97, 420. Proc. 98, 741.)

Tinctura Digitalis.

Fat-Free. England has prepared a fat-free tincture which not only appears to be free from the nauseating effects of the official tincture, but is also found to be free from irritating properties. (Proc. Penn. Ph. Assoc. 99, 158. A. J. Ph. 99, 332.)

Tinctura Ferri Chloridi.

Preparation. The A. Ph. A. Comm. recommend that it be required to stand at least 12 months before being used. (Proc. 98, 225.)

Tinctura Guaiaci.

Stedem recommends triturating the powdered resin with the menstruum gradually added, afterward filtering. (A. J. Ph. 99, 162.)

Tinctura Guaiaci Ammoniata.

Stedem recommends triturating the powdered resin with the menstruum gradually added, afterward filtering. (A. J. Ph. 99, 162.)

Tinctura Hyoscyami.

Assay. Kippenberger. (Apoth.-Zeit. 98, 664 and 672. Proc. 99, 726.)
Examination. Seyler. (Tr. Br. Ph. Conf. 97, 420. Proc. 98, 741.)

Tinctura Iodi.

Preparation. Brown says in 15 to 20 minutes by percolation the tincture may be prepared. (Proc. Ala. Ph. Assoc. 97, 15. Proc. 98, 745.)——Stedem suggests preparing this tincture by percolation. (A. J. Ph. 99, 162. Proc. 99, 471.)
Deterioration. Feil says that it will remain of U. S. P. strength for a month if kept in an ordinary bottle on shelf exposed to light, but will keep 2 months when kept in a dark closet. (Proc. 98, 239.)
Hydriodic Acid. Richard estimates this acid on the principle of the decomposition of hydriodic acid by potassium iodate. (L'Union Pharm. 97. Can. Ph. J. 97, 43. Proc. 98, 745.)
Standardization. Sayre calls attention to some of the changes which this tincture undergoes on keeping, and is of the opinion that

in view of a possible difference in physiological action due to this change, an additional test should be added to the official method of standardization, as this applies only to the free iodine present. (Dr. Circ. 00, 46.)

Commercial. Examination. Davoll. (Proc. Ill. Ph. Assoc. 99, 54. Proc. 00, 424.)

Decolorized. Sieker gives a method based on an analysis of the tincture of the National Formulary, which he designates as "tincture of iodides." It is made by dissolving 48.9 Gm. sodium iodide and 47.3 Gm. ammonium iodide in 155.0 Cc. of distilled water, adding 10.0 Cc. ammonia water (10 p. c.) and then sufficient alcohol (of assured purity) to make 1000 Cc. (Ph. Rev. 99, 306.)

Tinctura Kino.

Gelatinization. Hill is of the opinion that the glycerin in this tincture is of no practical value except as a lubricant for the stopper, thus preventing evaporation. He is also of the opinion that the gelatinization of the tincture is not due to any difference in the kino, but to evaporation of the menstruum, and so the suggestion is made to reduce the strength of the tincture somewhat, and also to keep it well stoppered. (Ph. J. 00, Apr. 417.)

Tinctura Myrrhæ.

Percolation. Merson has made the tincture from No. 20, 30 and 40 powder respectively, using maceration in one set and percolation in the other, with results which show the superiority of the process of percolation, the No. 40 powder being perfectly extracted by this method. (Ph. J. 00, Jan., 44.)——Stedem recommends preparing this tincture by percolation. (A. J. Ph. 99, 163)

Tinctura Nucis Vomicæ.

Preparation. Emanuel reports that he has received frequent complaints from physicians who find the official tincture to be less efficient than that made direct from the drug. Following the directions of the older method and adjusting the strength of the finished product so that 100 Cc. contained 0.3 Gm. of alkaloid, the tincture gave perfect satisfaction. (Am. Dr. 99, 3.)——Squibb. Use of acetic acid. (A. J. Ph. 99, 1.)

Strength B. P. 98. Each 100 Cc. contains from 0.24 to 0.26 Gm. of strychnine.

Assay. See Tincturæ Assay. Kippenberger. (Apoth.-Zeit. 98, 664 and 672. Proc. 99, 726.)

Presence of Copper. Hill. (Ph. J. 00, Apr., 417.)

Examination. Seyler. (Tr. Br. Ph. Conf. 97, 420. Proc. 98, 741.) ——Harding. (Proc. Minn. Ph. Assoc. 97, 53. Proc. 98, 742.)

Tinctura Opii.

Etymology of word and probable origin. Dodd. (Gard. Chron. xxiii, 166. Ph. J. 98, 183.)

Preparation. Kohl and Sayre having carried out experiments with the view of obviating the use of calcium phosphate in the official formula, find that if a granulated opium is used instead of the fine powder officially directed, not only is the process more speedy, but the extraction of morphine is more complete. (Dr. Circ. 98, 154.)——Williams mixes the opium with an equal weight of powdered pumice. (Am. Dr. 98, 252.)

Assay. Procter. (Ch. & Dr. 98, 20.)

Commercial. Examination. Barclay. (Ch. & Dr. 99, Dec., 1030.) ——Seyler. (Tr. Br. Ph. Conf. 97, 420. Proc. 98, 741.)

Tinctura Opii Camphorata.

Preparation. Williams uses Tr. opii deodorati and proceeds as follows: Dissolve the benzoic acid, camphor and oil of anise in the alcohol (400 Cc.), add the glycerin and then the water (400 Cc.), very slowly and in divided portions, agitating after each addition. Lastly add the Tr. opii deod. (40 Cc.), filter, make to 1000 Cc. with dilute alcohol. (Am. Dr. 98, 252.)

Deodorized. Wiegand proposes a method whereby the opium is first deodorized with ether. (A. J. Ph. 99.)

Tinctura Opii Deodorati.

Stedem has used petroleum benzin instead of ether in the preparation of this tincture. (Proc. Pa. Ph. Assoc. 98, 116. Proc. 99, 423.)——Patch concludes that benzinum or petroleum is not adapted for use in washing narcotine, etc., from opium, on account of its uncertain character, its low range of solvent power and its disagreeable odor. Methyl acetate and acetone are much better, because of greater uniformity and greater solvent power, but are inferior to ether because of their disagreeable odor. (Proc. 98, 378.)——Gordon proposes the use of paraffin instead of ether. (A. J. Ph. 00, 576.)

Tinctura Rhei Aromatica.

Preparation. Lucas recommends maceration for the corresponding tincture of the B. P. (Ch. & Dr. 99, Dec., 959.)

Tinctura Strophanthi.

Strength B. P. 98. 2.5 Gm. of strophanthus seeds for 100 Cc.

Assay. Dowzard gives quick polarimetric method for determination of strophanthin in B. P. Extract and Tincture. (Ph. J. 98, Aug., 199. A. J. Ph. 98, 469.)

Removal of Fat. Loewe and Scoville have tried a number of processes for removing the fat, but find none more efficient than that of chilling the tincture for 2 hours to 14° C., and filtering as near as possible at that temperature. The resultant tincture remains perfectly clear. (Ph. Rev. 99, 496.)

Tinctura Vanillæ.

Preparation. Williams recommends maceration; keeping the tincture for at least one year before being used; decantation. (Proc. Conn. Ph. Assoc. 97. Bull. Ph. 97, 402. Proc. 98, 743.)——Kalish prefers the Mexican bean and says the contact with iron destroys the flavor quickly. To the coarsely cut vanilla he adds boiling water and then cuts the vanilla as fine as possible. (Bull. Ph. 98, 107. Proc. 98, 744.)——Henning recommends use of vanillin. Simple syrup should be added to the alcoholic solution of vanillin and the preparation be allowed to stand for several weeks before being used. (Bull. Ph. 98, 182. Proc. 98, 744.)

Characteristic. Hess states that the resin of the vanilla bean furnishes a means of distinguishing a genuine preparation from an artificial product. (Ph. Rev. 99, 254. See also Ph. Rev. 99, 7.)

Tragacantha.

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 113.)

Syrian. Chemical Examination. Hilger and Dreyfuss define tragacanth as essentially a single colloidal carbohydrate, named bassorin. It is gradually and completely dissolved by cold potassium hydrate solution (about 15 p. c.), alcohol precipitating from this solution a dextro-rotatory body possessing reducing properties. (Apoth.-Zeit. 99, 575. Proc. 00, 644.)

Pentoses. From different kinds. Tollens and Widlove. (Ber. d. D. Ch. Ges. 00, *33*, 132. Apoth.-Zeit. 00, 299. Proc. 00, 789.)

Powder. Microscopical characteristics Kraemer. (Proc. 98, 306.)

Triticum.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 333.)

Triturationes.

For convenience and accuracy in dispensing Stevens recommends the use of triturates of such substances as strychnine, arsenic, etc. These should be made in the proportion of 1 part of medicament to 11 of sugar of milk, then 1 gr. of the triturate will contain $\frac{1}{12}$ gr. of

the drug, etc. Ten per cent. triturates should also be kept on hand for metric prescriptions. (Am. Dr. 99, 354.)

(Trochisci.)

B. P. Lozenges. Davis gives analysis showing quantity of active principles in each lozenge. (Ph. J. 99, July, 99. A. J. Ph. 99, 451.)

Trochisci Potassii Chloratis.

Strength of B. P. 98. Each contains 3 grains of potassium chlorate.

Trochisci Sodii Bicarbonatis.

Strength of B. P. 98. Each contains 3 grains of sodium bicarbonate.

Ulmus.

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 315.)

(Unguenta.)

Oitment Bases. St. Onge gives the results of experiments to determine the amounts of water, alcohol and glycerin, respectively, that will be absorbed by different ointment bases; the list embraces a very large variety of animal, vegetable and mineral fats. (Merck's Rep. 97, 601.)——Unna recommends a base prepared by mixing 20 parts of yolk of egg with 30 parts of almond (or peanut) oil, 1 p. c. of balsam of Peru being a preservative. While incompatible with a number of substances, this base is useful for balsams, tars, ichthyol, etc. (Monatsh. f. pr. Derm. 99, 375. Apoth.-Zeit. 99, 646. Proc. 00, 442.)——Skinner proposes a formula for a base which contains 15 parts each of lanolin soap and anhydrous lanolin and 60 parts of distilled water. The soap is dissolved in the water, the lanolin added and the mixture triturated until it becomes homogeneous. (Brit. Jour. Dermat., Oct. 98. Proc. 99, 410.)

Cearin. Consists of 1 part Carnauba wax and 4 parts of liquid paraffin. Issleib. (Ber. Berl. Pharm. Ges. 98, 127.)

Gelatin Ointments. Pelagatti calls attention to a new class of ointment bases which consist of a zinc gelatin mixed with lanolin or other fats and the desired medicament. (Monatsh. f. prakt. Derm. 99, 92. Proc. 99, 411.)

Japan Wax. Pursel proposes the use of Japan wax as a substitute for bees' wax in the official ointments and cerates, on the ground that while it perfectly replaces bees' wax, it is more easily obtained pure and costs about one-fourth as much. (A. J. Ph. 99, 217. Proc. 99, 409.)

Petrolatum. Wilbert recommends petrolatum as an ointment base

on account of economy, non-absorption and permanence. (A. J. Ph. 00, 513.)

Solidified Petroleum. Conrady proposes a formula for a petroleum base that will permit incorporation of water, is emollient and does not melt at a moderate temperature. (Apoth.-Zeit. 99, 767. Proc. 00, 444.)

Preparation. Nunn and Lyon comment on B. P. ointments. (Ph. J. 00, Dec. 754.)

Identification. Strobl has determined the chemical reactions which may be utilized for the identification of a large number of ointments. (Zeits. Anal. Ch. 99. Ph. Post, 99, 427. Proc. 00, 435.)

Saponification. Kahlenberg says that it would seem that those ointments in which a certain degree of saponification of the base takes place would be more effective than those that are mere mechanical mixtures. In this case ointments made with lard and wax as the base would be superior to those made with vaseline; but lanolin is better than either of these. Moreover, an ointment prepared at a high temperature is better than one prepared at the ordinary room temperature. (Ph. Rev. 00, 156.)

Valuation. Fonzes-Diacon gives a method applicable to the quantitative determination of any substance insoluble in ether contained in an ointment. (Bull. Ph. Sud.-Est. ii, 198. Ph. J. 97, 251.)

Presence of Living Organisms. Eldred has examined a number of samples, and from his results it would appear that most, if not all of our ointments, contain living organisms, and that heat alone does not completely destroy them unless the temperature be higher than 100° C. (Proc. Ind. Ph. Assoc. 98, 38. Proc. 99, 409.)

Unguentum.

Pursel suggests the use of Japan instead of yellow wax. (A. J. Ph. 99, 217.)

Unguentum Acidi Carbolici.

Mack proposes a basis of 1 part of yellow wax and 4 parts of olive oil. (Ph. J. 98, Dec. 629.)

Strength in B. P. 98. Each 100 Gm. contains nearly 4 Gm. of phenol.

Color Test. This ointment assumes a dirty green color with ferric chloride, changing on addition of water to violet. Strobl. (Zeits. Anal. Ch. 99. Ph. Post, 99, 427. Proc. 00, 435.)

Unguentum Aquæ Rosæ.

Formula. Alpers states that the expressed oil of almond is the disturbing factor and proposes the following formula: White wax,

150 parts; paraffin oil, 600; water, 240; borax, 9; oil of geranium, 1; oil of rose, 10 to 20 drops. Dissolve the wax in the oil by the aid of a gentle heat; dissolve the borax in the water; bring both solutions to the same temperature, not exceeding 60° C., and pour the aqueous solution into the oil in a continuous stream. Stir gently a minute or two, adding the essential oils, and pour into jars before cold. (A. J. Ph. 01, 117.)——Wilbert calls attention to a formula in which oil of cotton seed is substituted for the expressed oil of almond. (A. J. Ph. 00, 518.)——Stedem states that owing to the deterioration of ointments of metallic oxides and other medicinal substances when made with the official cold cream, that the borax should be omitted or the preparation dropped from the Pharmacopœia. (Proc. Penn. Ph. Assoc. 97, 86. Proc. 98, 665.)——Parker substitutes distilled water for rose water and the subsequent addition of oil of rose. He also cools the mixture by arranging a vessel around the vessel containing the cold cream so that there is a constant inflow of ice water. (Merck's Rep. 97, 723.)——Patton. (Proc. Pa. Ph. Assoc. 00, 116. A. J. Ph. 00, 387.)——Pursel suggests the use of Japan wax as a substitute for the white wax. (A. J. Ph. 99, 217.) ——Method of G. P. III. Manipulation. Loos. (Ph. Ztg. 99, 515.)——Birnbaum. (*Ibid.* 99, 528. Proc. 00, 437.)

Unguentum Belladonnæ.

Standard. Williams. (Dr. Circ. 99, 5.)

Strength in B. P. 98. Each 100 Gm. contains 0.6 Gm. of the alkaloids of belladonna root.

(Unguentum Cantharidis.)

Preparation. Greenish and Wilson suggest the employment of cantharidin. (Ph. J. 98, March, 259.)

Strength in B. P. 98. 10 Gm. of cantharides per 100 Gm. of ointment.

Unguentum Diachylon.

A formula which is used in pharmacies in Berlin is given. (Ph. Centralh. 98, 930. Proc. 99, 412.)

Unguentum Hydrargyri.

Estimation. Ceruti. (Boll. Chim. farmac. 99, 7. Ph. Centralh. 99, 297. Proc. 99, 412.)

Valuation. Wulling. (Merck's Rep. 98, 234.)

Commercial. Examination. Wulling found in inferior grades charcoal, sulphur, slate or blue stone and lamp-black. (Merck's Rep. 98, 234.)

Unguentum Hydrargyri Nitratis.

Formula. Hemm proposes that unless the elaidin of this ointment is essential, it be prepared by mixing the official solution of mercuric nitrate with petrolatum. (Am. Dr. 00, 199.)——Lyon recommends the B. P. 1885 process. (Ph. J. 01, Jan., 29.)——Patton suggests replacing one-third of the amount of lard by petrolatum. (Proc. Pa. Ph. Assoc. 00, 116. A. J. Ph. 00, 386.)

Unguentum Hydrargyri Oxidi Flavi.

Formula. For a 10 p. c. ointment Sieker recommends heating 10 parts of mercury stearate (see under Oleatum hydrargyri) and 10 parts of liquid petrolatum to fusion and then incorporating 8 parts of liquefied anhydrous lanolin, stirring until cool. (Ph. Rev. 99, 396).——Freshly prepared mercuric oxide (10 Gm.) is triturated with sufficient distilled water to make a thin paste, then make a smooth mixture of 25 Gm. of hydrous wool fat and finally incorporated with a sufficient quantity of soft petrolatum to make 100 Gm. (Am. Dr. 98, 130. Proc. 98, 668.)——Schweissinger uses recently precipitated oxide. (Zeits. Oest. Apoth. Ver. 98, 6.)

Strength. Wilbert states that a 2 p. c. ointment is preferred by oculists, the 10 p. c. ointment being irritating. (A. J. Ph. 00, 517.)

Unguentum Iodoformi.

Formula. The Dresden Apothecaries' Society uses iodoform, 1 part; American vaselin, 9 parts. (Apoth.-Zeit 00, 277. Proc. 00, 437.)

Unguentum Picis Liquidæ.

Base. Skinner reports that an ointment prepared by melting 2 parts of paraffin, then stirring in 5 parts of tar until cold, has been found an efficient substitute for the B. P. preparation. (Br. Jour. Derm. 00, May. Ph. J. 00, June, 617.)

Formula. The Dresden Apothecaries' Society uses tar, 1 part; lard, 2 parts. (Apoth.-Zeit. 00, 277. Proc. 00, 437.)

Instead of the yellow wax, Pursel proposes Japan wax. (A. J. Ph. 99.)

Unguentum Potassii Iodidi.

Color Test for ointment official in G. P. (Zeits. Anal. Ch. 99. Ph. Post. 99, 427.)

Unguentum Veratrinæ.

Color Test. This ointment gives a green-yellow color with sul-

phuric acid, changing to brown-red and finally to red. Strobl. (Zeits. Anal. Ch. 99, 435. Ph. Post, 99, 427.)

Strength in B. P. 98. Each 100 Gm. contains 2 Gm. of veratrine.

Unguentum Zinci Oxidi.

Preparation. Wilbert. (A. J. Ph. 00, 517.)——Burrows recommends making a paste with the zinc oxide and an equal weight of water, and, after incorporating with this a certain proportion of wool-fat, then stirrlng in enough white petrolatum either cold or heated above the congealing point to make the desired quantity of ointment. The proportions conforming to the U. S. P. would be: Zinc oxide, 20 parts; water, 20 parts; wool fat, 10 parts; white petrolatum, 50 parts. (Merck's Rep. 00, 101.)——Thomas. (Proc. Pa. Ph. Assoc. 00, 117. A. J. Ph. 00, 385.)——Patton. (Ibid. 00, 116. A. J. Ph. 00, 386.)——Williams states grittiness of this ointment may be obviated by replacing 10 p. c. of the benzoinated lard with castor oil. (Ph. 98, Jan. 23.)——Pursel proposes the addition of 3 Gm. of Japan wax to 97 Gm. of benzoinated lard as a basis. (A. J. Ph. 99, 219.)

Uva Ursi.

Description. Knowlton. (Merck's Rep. 99. 7.)

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 113.)

Yellow Coloring Matter. Perkin. (Ch. News, 98, 208.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 299.)

Valeriana.

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 113.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 317.)

(Vanilla.)

Collection and curing. (Apoth.-Zeit. 98, 879. Proc. 99, 516.).

Cultivation in German East Africa. Busse. (Apoth.-Zeit. 98, 894. Proc. 99, 517.)——Cultivation in Mexico. Dietz. (Am. Dr. 99, 99.)

Monographic Description. Lloyd. (W. Dr. 97, 548.) Account of its distribution, habitat and curing by Rusby; microscopical structure, by Jelliffe; chemistry, by Coblentz; commerce, by Henning; pharmacy, by Kalish. (Merck's Rep. 98, 74, 104.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 320.)

Assay. Busse. (Arb. Kaiserl. Ges. (1898), 1. J. Soc. Ch. Ind., *18*, 952. A. J. Ph. 00, 231.)

Vanillin. Estimation. Busse. (Apoth.-Zeit. 98, 894. A. J. Ph. 00, 379.)——Percentage. Busse. (Zeits. f. Unters. d. Nahr. u. Genussm. *6*, 519. Ph. J. 99, Oct., 377.)

Coumarin and Vanillin. Hess and Prescott describe a method for the separation and estimation of these substances in flavoring extracts, the separation depending upon the aldehydic character of vanillin. (Ph. Rev. 99, 7.)

(Vanillin.)

Production. Busse records observations which tend to show that this principle is formed from an odorless glucoside by hydrolysis. (Apoth.-Zeit. 00, 63. Proc. 00, 840.)——Behrens feels warranted in assuming that this principle is formed by the splitting up of a glucoside during the process of curing. (Tropenpflanzen 99, 299. Apoth. Ztg. 99, 760. Proc. 00, 581.)——Production from potato peels. Braeutigam. (Ph. Ztg. 00, 164. Proc. 00, 840.)——Isolation from Corkwood. Braeutigam. (Ph. Centralh. 98, 725. Proc. 99, 761.)

Melting Point. In view of the reported adulteration of vanillin with acetanilid, Dietze has examined the melting points of admixtures of these substances, and finds that while in nearly all cases the beginning of the melting lies between 62° and 67°, the complete melting-point is higher than that of vanillin itself if the quantity of acetanilid exceeds 25 p. c., while with the lower percentages of 25, 20, etc., the melting-point is lower than that of pure vanillin. (Ph. Centralh. 98, 485.)

Commercial. Kebler reports the market product to be of fair quality. (Am. Dr. 99, 161.)

Adulteration. Kebler found one lot to consist of 6 p. c. of true vanillin and 94 p. c. of acetyl-iso-eugenol, another of coumarin entirely, while a third lot consisted of 90 p. c of gum benzoic acid. (Proc. Pa. Ph. Assoc. 99, 117. A. J. Ph. 99, 355.)——Schimmel and Co. call attention to a product which contained only 35.26 p. c. vanillin, the remainder being acetylisoeugenol. (Ber. 99, Apr., Proc. 99, 762.)——Hefelmann reports the presence of nearly 27 p. c. of acetanilid in a sample of vanillin from Switzerland. (Apoth.-Zeit. 98, No. 49. Proc. 99, 762.)——With Benzoic Acid. (Ph. Ztg. 00, 415. Proc. 00, 581.)

Veratrina.

Identity. Laves mixes 3 or 4 drops of a solution (1 p. c.) of furfurol with 1 Cc. of concentrated sulphuric acid, and adds 3 to 5 drops of this mixture to the substance to be tested. A dark-colored streak proves veratrine. (Ph. Ztg. xxxvii, 338.)

Viiali's Test. Kondakow states that if veratrine is treated with concentrated nitric acid, and the product evaporated to dryness, on a water-bath, a yellowish residue is obtained, which when moistened with a 10 p. c. alcoholic potassium hydrate solution becomes blood-

red, while with small quantities of the substance a raspberry-red color. The odor of coniine is also developed, it having been proved by tests. (Ch. Ztg. 99, 4. Apoth.-Zeit. 98, 25. Proc. 99, 744.)

Commercial. Frankforter and Pease having examined a number of samples upon the market, find that the principal part of this alkaloid, at the present time, is identical with cevadine, which agrees with the previous observation that cevadine is the principal constituent of veratrine. (A. J. Ph. 99, 130.)

Veratrum Viride.

Monographic Description. Lloyd. (W. Dr. 97, 447.)

Alkaloids. Localization. (Svensk farm. Tidskrift 01, 114. Ph. Zeit. 01, 394.)

Assay. White Hellebore. La Wall. (Proc. Pa. Ph. Assoc. 97, 75. A. J. Ph. 97, 351.)

Histological Comparison. Denniston. (Ph. Arch. 98, 68.)

Viburnum Opulus.

Comparison of structure with other viburnum barks. Denniston. (Ph. Arch. 98, 137.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 315.)

Viburnum Prunifolium.

Inferiorities. Culbreth. Dr. Circ. 97, 210.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 314.)

(Vina.)

Definition. Owing to the variable composition of wines, Holtz urges that a single wine, from a single source, and easily obtainable, of uniform quality and composition, should be adopted as the official wine to be employed in all preparations. (Apoth.-Zeit. 99, 332, 341. Proc. 99, 474.)

Composition. Holz reports that white port wine appears to be the only one suitable for making the galenical preparations of the G. P. (Apoth.-Zeit. 99, 341. Proc. 99, 341.)

Madeira. Analysis. Thoms and Mannich. (Ber. Berl. Pharm. Ges. 11, 91. Ph. Rev. 01, 224.)

Non-Toxic Alkaloidal Constituent. Guérin. (J. de Ph. et Ch. 98, 323. Ph. J. 98, June, 525.)

Test. For artificial decoloration. Bimm. (J. de Ph. et Ch. (6) vii, 9. Ph. J. 98, Aug. 118.)

Detannated. Bird. (Trans. Br. Ph. Conf. 99, 363. Proc. 00, 535.)

Presence of Boric Acid. Carles. (Rep. de Ph. 98, 256. Ph. J. 98, Jul. 73.)

Vinum Album.

Artificial. For detection see Vinum rubrum.

Vinum Ipecacuanhæ.

Assay. Process by Farr and Wright. (Ph. J. 99, 85. A. J. Ph. 99, 443.)——Naylor and Bryant give process. (Ph. J. 99, Jul., 87. A. J. Ph. 99, 446.)

Vinum Rubrum.

Artificial Decoloration. Hugounenq. Use of animal charcoal and potassium permanganate producing white wine. Detected on incineration; or by the use of 1–2 Cc. of potassium hydrate solution and 1 Cc. of hydrogen peroxide to 11 Cc. of the suspected sample. An artificially decolorized wine will give a deep red-brown color. (J. de Ph. et Ch. 98, 321. Ph. J. 98, 525.)

Vitellus.

Pharmaceutical uses and composition. Bernegau. (Apoth.-Zeit. 98, 721.)

Diastasic Ferment. Müller. (Münch. med. Woch. 99, 1583. Apoth.-Zeit. 99, 727.)

Sugar. Meyer has obtained a sugar from the albumin of egg-yolk, as have other investigators from the white of egg. (Ber. d. D. Ch. Ges. *32*, 274. Ph. J. 99, Mar., 227.)

Xanthoxylum.

Fraxinus Americana. Structure. (Ph. Arch. 98, 6.)

Powder. Microscopical characteristics. Kraemer. (Proc 98, 299, 315.)

Zea.

Microscopical characteristics Kraemer. (Proc. 98, 333.)

Zinci Chloridum.

Turbidity. Wiskirchen finds the addition of acid to the solution for preventing turbidity unnecessary, and states that if solution be effected with hot water or if dilution be made with hot water, a clear solution results. (Ph. Centralh. 99, 508.)

Zincum.

Estimation. Pouget recommends a method depending upon the precipitation of zinc as sulphide, decomposition of the sulphide with

iodine solution and titration of the excess of iodine with thiosulphate. (Compt. rend. *129*, 45. Ph. J. 99, Sept., 235.)

Zingiber.

Cultivation. Preparation for the market. Kilmer. (A. J. Ph. 98, 65.)——Cultivation in Martinique. Landes. (Rev. des Cult. Coloniales, *5*, 329. Ph. J. 00, May, 567.)

Ash. Percentage. Moor and Priest. (Ph. J. 00, July, 113.)

Standard. Bennet suggests the following standard: "Should yield not less than 5 p. c. resin extract to 90 p. c. alcohol. Should yield not less than 1.5 p. c. of soluble ash when incinerated with free access of air, and not less than 8.5 p. c. of a cold water extract indicating absence of 'spent' or exhausted sugar." (Ph. J. 01, April, 524.)

Commercial. Clayton examined 37 samples including the following varieties: Jamaica, Cochin, Bengal, Japan and Africa, in various conditions—whole, ground, washed, unwashed, spent, scraped and cut. (Analyst *24*, 122.)

Powder. Microscopical characteristics. Kraemer. (Proc. 98, 309, 317.)

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NOTE.

Correspondence regarding the contents of this Digest may be addressed to any member of the Committee. But all correspondence referring to its *distribution* should be addressed to the Chairman.

The addresses of the members will be found on page v.