The salt is not entirely insoluble in water, since water will remove some acid, rendering the salt more basic. Power (Circ. No. 86, p. 405).

Arsenic. Respecting the advisability of leaving out tin-foil, see "Bismuthi Subcarbonas." The words "and a small piece of tin-foil added" have been cancelled.

The light subnitrate contains a certain quantity of subcarbonate. Carles (J. de Ph. & de Ch. 94, 202. Proc. 95, 238).

Tellurium. A test for tellurium should be added. Hoffmann (Ph. Rdsch. N. Y. 94, 182).

Bromum.

Solidifies at 7° C. (Merck, Index, p. 54.)

Specific Gravity. "3.187." (Ibid. p. 54.)

Boiling Point. "63° C." (Ibid. p. 54.)

Curtman examined seven specimens of American bromine and found them to contain traces of a carbon compound (probably CBr_4) and an amount of chlorine varying from 3.40 to 5.13 per cent. Two samples of imported (German) bromine contained 0.53 and 0.68 per cent., respectively. (Circ. 261, p. 1277.)

Bryonia.

Chemistry. Masson (J. de Ph. & de Ch. 93, 300. A. J. Ph. 93, 278. Proc. 93, 644).

Caffeina.

Melting Point. "229° C." Eccles states that the melting point was obtained by means of rising and falling temperature. On a rising temperature Flueckiger & Schmidt's figures were obtained (230 to 230.5° C.), and on a falling temperature 228° C., as the bath can not be made to heat and cool with exact equality. When the thermometer reaches 230° on a descent, the melting point will be below the reading; when it reaches 228° on an ascent, it will be above. Strecker, who obtained 234° to 235° C., evidently worked with a rapid rise. (Circular No. 125, p. 804.)

Estimation. In coffee. Grandval & Lajoux (J. de Ph. & Ch. 93, 545. A. J. Ph. 93, 338. Proc. 93, 832, & 94, 541).——In coffee and tea. Guillot (Ap. Ztg. 93, 132. Proc. 94, 541).——In tea. Sokoloff (Ch. & Dr. 93, 210. Proc. 94, 541).

Sublimes at 235° C. (Merck, Index, p. 57.)

Solubility. In "9" parts of chloroform. Ph. German. (Ph. Ztg. 93, 608).

Caffeina Citrata.

The Committee has information that there still exists much confusion and ignorance regarding the nature of the so-called "citrate of caffeine" formerly on the market, on the one hand, and the alkaloid caffeine, and the pharmacopœial "citrated caffeine" on the other hand. Old-fashioned pharmacists, who have known and dispensed *caffeine* under the old misnomer of *citrate of caffeine*, persist in ordering the article under the latter name, and in a majority of cases it is almost certain that the former is wanted. Again, physicians frequently prescribe "Caffein. Cit." in combination with sodium bicarbonate and other substances with which the official citrated caffeine is incompatible, not knowing that a different substance is dispensed now, when "Caffein. Citr." is ordered. And moreover, many of them do not know that "citrated caffeine" contains only 50 per cent. of the alkaloid. All this confusion is regrettable, but the Pharmacopœia can certainly not cater to ignorance and lack of progressiveness. Rice.

Calamus.

In sections of various length, "unpeeled." "How many druggists have the official?" Beringer (A. J. Ph. 93, 522). Would it not be better to transfer the "unpeeled" to the description?—"The unpeeled rhizome."

Calcii Bromidum.

Identity. There is no occasion to be so sparing with the chlorine water in this test (sixth paragraph), since it requires 2.5 Cc. of chlorine water to liberate all the bromine from 5 Cc. of a solution of calcium bromide, while in the iodine test it should be used with caution, drop by drop, so that it may not convert the iodine first liberated into ICl_3, which with water rapidly forms HIO_3, which is colorless. Curtman (Circ. No. 112, p. 634).

Curtman also shows that the existence of the hydrate $CaBr_2 + 6H_2O$ is very probable. All the commercial calcium bromide was found to contain more or less of water. (Circ. 258, p. 1268.)

Strontium. Is found in many of the American calcium salts, due to the fact that most of our western and many of the eastern limestones, marbles, etc., contain notable percentages of it. A test might be given. Curtman (Circ. No. 112).

Calcii Carbonas Præcipitatus.

Solubility. Fresenius states the solubility in cold water to be 1:16,600, and 1:8,860 in boiling water. Flueckiger 1:27,777 (26 Mgm. in one liter). The solubility is increased by CO_2 and by ammonium salts, and is almost entirely prevented by alkaline hydrates. Curtman (Circ. No. 112, p. 635).

It is sometimes contaminated with calcium oxide, which may easily be detected by moistened turmeric paper. Mylius (Oest. Zeits. 94, 291).

Calcii Chloridum.

Solubility. In water, according to Mulder, 1:509 at 15° C.; Kremers, 1:58 at 15° C.; Hammerl, 1:4 + at 10° C. The crystallized salt, $CaCl_2 + 6H_2O$, at 15° C. 1:0.226, Hammerl. Curtman (Circ. No. 112, p. 636).

No fused calcium chloride can be found which is not at least very slightly decomposed, and thereby rendered partially insoluble in alcohol and water from loss of HCl and formation of CaO. On the manufacturing scale it is impossible to prevent the decomposition. The residue left undissolved should be completely dissolved in dilute HCl. Some manufacturers add at the close of fusing a little ammonium chloride or HCl to prevent the formation of CaO, but these are rapidly volatilized, and it is a mere fortunate accident if fused $CaCl_2$ is obtained anhydrous, and yet absolutely free from CaO. Curtman (Circ. No. 112, p. 637).

Strontium. See the foregoing article.

Calcii Hypophosphis.

Identity. In the test with cupric sulphate (sixth paragraph) it should be stated distinctly that the aqueous solution should be acidulated, else the test does not succeed. Curtman (Circ. No. 112, p. 638).

Arsenic. (Ninth paragraph.) "Nor by an equal volume of hydrogen sulphide" should not the ";" be replaced by a ","? As it stands, it is not rendered imperative to acidulate the solution for the examination for arsenic. Nagelvoort (Proc. 94, 283).

Phosphite. A test for calcium phosphite would appear to be necessary. Roe (Ph. J. & Tr. 93, Dec. 473).

Calcii Phosphas Præcipitatus.

This salt occasionally contains di-calcium phosphate ($CaHPO_4$) in varying quantities, and with some processes of manufacture it will also contain water, which is not entirely given off by drying at 100° C. When freshly precipitated, it is soluble in water 1:12,500, and after ignition 1:30,000. (Voelker.) The official salt differs from that of the Ph. Germ., in that the yellow color by argentic nitrate remains after ignition, while that of Ph. Germ. turns white. Curtman (Circ. No. 112, p. 640).

Most of the salt sold as "U. S. P." is made by dissolving bone-ash in HCl and precipitating with caustic soda, using at last a little ammonia to finish. As soda ash is often used with omission of ammonia, and the acid often contains iron, various impurities are introduced. Sometimes phosphorite is employed, or the residue of fertilizer phosphates, which would in addition introduce sulphate. A small limit of chloride should be allowed, for even in the best process ($CaCl_2$ + Na_2HPO_4 + NH_3) chloride may be introduced into the final product. Curtman (Ibid.).

It is for physicians to decide whether the di-calcium phosphate of Ph. Germ. is not to be preferred to the official tri-calcium phosphate. Curtman (Ibid., p. 641).

(Eighth paragraph). Ammonium molybdate test. Nagelvoort protests against the use of a "gentle heat," stating that the heat changes the phosphoric acid reaction into an arsenic reaction. (Apoth. 95, 3. Proc. 94, 283.)

Calcii Sulphas Exsiccatus.

Solubility. The solubility of the crystallized sulphate, with 2 mol. of water, at 15° C. is 1:390, at 38° C. 1:368, and at 100° C. 1:451. Curtman (Circ. No. 138, p. 869).

Calx.

Solubility. Michaelis quotes at 15.6° C.: Wittstein, 1:731; Dalton, 1:778; Maben, 1:780.5. At 99° C.; Maben, 1:1,650. At 100° C.; Wittstein, 1:1,311 to 1:1,495; Dalton, 1:1,270. Lamy shows that great difference exists in the solubility of lime burnt from marble, calcium nitrate and from pure hydrate. From marble at 15° C. 1:769; from nitrate, 1:783; from hydrate, 1:744. Curtman (Circ. No. 112, p. 642).

Sources of Lime. Shells make very good lime, and are extensively used in some parts of the United States. Only few limestones contain baryta, most contain strontia, and a great number of them contain magnesia, alumina and silica. As to marble, only marble from certain restricted localities gives a tolerably pure lime; most varieties of marble contain quite as much impurities as limestone. Curtman (Ibid.).

Calx Chlorata.

Estimation. Curtman prefers to weigh out a larger quantity, to mix thoroughly with water in a large stone jug, then to filter, or decant, and to take out an aliquot part of the liquid. (Circ. No. 112, p. 644.)——A table of the p. c. of chlorine in solutions of various specific gravities. Lunge and Bachofen (Zeits. Angew. Ch. 93, 326. Proc. 94, 579).

Calx Sulphurata.

Examination of commercial. Becker (A. J. Ph. 95, 601).

Solubility. In 20 parts of glycerin. (Merck, Index, 148.)

Strength. The p. c. of calcium sulphide depends largely on the time of heating. Campbell & Waters (Am. Dr. 95, xxvii, 285).

Cambogia.

Eberhard suggests that at least 75 to 80 p. c. should be soluble in alcohol, and that the iodine test be worded so as to distinguish between traces and appreciable quantities. (A. J. Ph. 96, 374.)

Camphora.

Estimation of camphor, see under "Spiritus Camphoræ."

The list of preparations, containing camphor, is not complete: Add: Linimentum Belladonnæ, Linimentum Sinapis Compositum and Pulvis Morphinæ Compositus. Beringer (A. J. Ph. 93, 523).

Camphora Monobromata.

Nagelvoort proposes a test of identity: Liberate the bromine by nascent hydrogen, and test with chloroform and chlorine. (Apoth. 95, 4.)

Cannabis Indica.

Percentage of copper. (Ph. Ztg. 94, 30. Proc. 94, 566.)

Cantharis.

Assay. Macerate with acetic ether containing a little sulphuric acid, neutralize with barium carbonate, exhaust with acetic ether, distil off the ether, and purify with benzin and alcohol. Dieterich (Helfbrg. Annal. 92, 1. A. J. Ph. 93, 388. Proc. 93, 714, & 94, 959).——Should be assayed for cantharidin, and the p. c. of ash and fat given. Nagelvoort (Apoth. 95, 4).——Portes finds an average of 0.7 to 0.8 p. c. of cantharidin. (Ch. & Dr. 93, 354. Proc. 94, 541.)

Capsicum.

Analysis. Pabst (Arch. Ph. 92, 108. A. J. Ph. 92, 370. Proc. 93, 702).

Capsaicin is found not only in the placenta, but also in the outer red integument. Vedroedi (Ap. Ztg. 93, 626. A. J. Ph. 94, 142. Proc. 94, 938).

Carbo Animalis Purificatus.

Hodgkin, some years ago, thoroughly investigated the different processes for the purification of animal charcoal, and came to the conclusion that none of the official processes gives a product answering the requirements of the respective pharmacopœias. (Year-Book

92, p. 371.) The animal charcoal he used was composed of 7.773 water, 76.647 ash and 15.580 carbon, equivalent to 83.107 p. c. ash and 16.893 p. c. carbon in the anhydrous substance. After treatment by the Br. Ph. process, he got 0.146 water, 77.042 ash and 22.812 carbon, or 77.155 p. c. ash and 22.845 p. c. carbon (anhydrous). By the U. S. Ph. (1880) process he obtained 0.841 water, 16.008 ash and 83.071 carbon, or 16.12 p. c. ash and 83.88 p. c. carbon (anhydrous). By boiling first with three times its weight of HCl and twice its weight of water, and then with half the above quantity of acid and water, washing and drying at stove heat, he obtained 7.847 water, 13.871 ash and 78.282 carbon, or 15.05 p. c. ash, and 84.95 p. c. carbon (anhydrous).

Markoe experimented with American charcoal (bone-black), one in fine powder containing 83.50 ash, 4.60 water and 11.90 carbon, and the other, granulated, containing 81.20 ash, 7.00 water and 11.80 carbon. He followed the process as given in U. S. Ph. 1890, varying the proportions of acid and water, and the degree and time of heating, as follows:—1) 100 Gm. in fine powder were gently boiled for 14 hours with 200 Gm. acid and 200 Cc. water, then 600 Cc. boiling water added, strained and the charcoal again boiled with 100 Gm. acid and 100 water for 6 hours, strained and washed, then dried at 120° C. The yield was 9 415 Gm. purified charcoal, which gave 2 p. c. of ash. A second trial gave 2.15 p. c. ash. 2) 100 Gm. of the same charcoal was boiled for 36 hours with 150 acid and 750 boiling water, then strained, washed and dried at 120° C. The ash amounted to 6.5 p. c. 3) 100 Gm. of granulated charcoal (No. 10 sieve) was boiled for 3 hours with 175 Cc. acid and 75 Cc. boiling water, then 66 Cc. boiling water added, strained, the charcoal again boiled for 3 hours with 80 acid and 80 boiling water, drained, washed and dried. It gave 4 p. c. ash. Three more experiments with varying amounts of acid, water and time of boiling, were made, giving from 2.1 to 5 p. c. ash (the last with only one boiling). These experiments show that a minimum of ash is obtained by repeated boiling with acid for several hours, thorough washing and drying not under 120° C. (Circ. No. 222, pp. 1192–1194.)

On page 79, line 8, the following change has been made: "Add to it 100 Gm. of Hydrochloric Acid mixed with an equal quantity of Boiling Water." Rice.

Decolorizing Power. Carswell finds that charcoal, as such, possesses no inherent power of decolorizing, this depending partly on the aggregation of cellular spaces, and chiefly on the mineral constituents. He thinks that attempts to purify it are based on erroneous ideas. (Ph. J. & Tr. 93, Jan'y, 615. Proc. 93, 766.)

Carbonei Disulphidum.

Refractive Index. Edwards (Proc. 93, 150).

Deodorization. Treat with solution of mercuric chloride, decant and filter. (Proc. 93, 763.)

Uses in Analysis. Musset (Ph. Centralh. 93, 737. Proc 94, 1021).

Cardamomum.

The list of preparations, containing cardamom, is not complete. Add Extractum Colocynthidis Compositum, Tinctura Gentianæ Composita and Tinct. Rhei Dulcis. Beringer (A. J. Ph. 93, 523).

Caryophyllus.

Adulterations. Examination. Kraemer (Proc. 94, 159).

Tannin. Nature of it. Peabody (A. J. Ph. 95, 300).

Ash. Should not be over 7 p. c., of which only 1 p. c. should be insoluble in HCl. (Schweiz. Woch. 92 . . . Ph. Centralh. 93, 238.)

Cascarilla.

Should be omitted. Beringer (A. J. Ph. 93, 470).

Catechu.

Gambir. The microscopical examination might serve to distinguish between catechu and gambir. Gambir is obtained from the young twigs, bearing leaves and flowers, of Uncaria Gambir, while catechu is obtained from the central portion of the trunk of Acacia Catechu. Gibson (Ph. J. & Tr. 94, Febr. 624. Proc. 94, 900). See also Cæsar & Loretz (Ph. Centralh. 4, 536. Proc. 95, 864).

Caulophyllum.

A fluid extract is wanted. Beringer (A. J. Ph. 93, 470).

Cera Alba.

Is the specific gravity of white wax correct? Ch. & Dr. states that no natural wax approximates 0.970. Parry & Estcourt found only 0.962 to 0.963. It is proposed to make the numbers 0.960 to 0.964. (Ch. & Dr. 94, Nov. 645 & 692.)

Cera Flava.

Chemistry. Mangold. (Ch. Ztg. 92, 709. A. J. Ph. 92, 533. Proc. 93, 726.)

Tests. Buchner, while he acknowledges that Huebl's method is rapid and gives constant results, objects that a mixture of 35 parts of stearic acid, 165 parts of Japan wax, and 300 parts of ceresin gives the same figures. (Ch. Ztg. 93, 918. A. J. Ph. 93, 380. Proc. 94, 955.)

Kebler arrives at the result, that of all the tests proposed, the volume of hydrogen evolved from 1 Gm. of wax (53 to 57.5 Cc.), and the p. c. of hydrocarbons (12.5 to 14.5 p. c.), are the most reliable data securable—the former being vitiated by all adulterants except tallow, and the latter by all except suint-wax. He finds the sp. gr. of pure yellow wax to be 0.960 to 0.964; melting point, 62 to 64° C.; the acid number, 19 to 21 Mgm.; the ether number, 73 to 76 Mgm.; iodine fixed by 1 Gm. of wax, 8 to 11. (A. J. Ph. 93, 593. Proc. 94, 956.)

Kremel examined the various methods proposed, and found that Huebl's method, although not sufficient, is still the most reliable, but must be supplemented with the specific gravity and with special tests for stearin, rosin and Japan wax. (Oest. Zts. Ph. 94, 626. Ph. Rdsch. N. Y. 94, 255. Proc. 95, 894.)

Tallow. Mansfeld proposes to make use of the fact that pure wax contains no glycerin. Saponification of the suspected sample, and splitting off the glycerin by dilute sulphuric acid. (Ph. Centralh. 94, 596. Proc. 95, 894.)

Paraffin. Nagelvoort points out that the direction of U. S. Ph. (sixth paragraph) to "dilute with water" is rather dangerous, and should read: "Pour the mixture into a large quantity of water." (Apoth. 95, Nov. 49.)

Examination of commercial. Parry & Estcourt (Ph. J. & Tr. 93, Sept. 189. Am. Dr. 93, Sept. 158. Proc. 94, 956).

(Cerata.)

Boa objects to the stirring while cooling, because it will introduce a quantity of air, thus promoting rancidity. He proposes to allow it to cool, and then to triturate beginning at the surface. (P. J. & Tr. 94, April, 861.)

Ceratum.

In view of the great variations in temperature between winter and summer, and the difference in this respect between Northern and Southern States, it would be well to make an allowance in the proportion of the wax.

Ceratum Cantharidis.

The activity is greatly increased by the addition of an acid to the flies. For every 250 Gm. of the powdered cantharides Dieterich adds to the melted mass 1 Gm. of sulphuric acid and 10 Gm. alcohol (90 p. c.), keeps the mass for two hours at 70° C., and finally adds 2 Gm. of barium carbonate rubbed up with 6 Gm. of alcohol. (Ph. Centralh. 92, 425. Proc. 93, 416, & 558.)

"Occasionally stirring" (p. 84, U. S. Ph.). Caspari advises to stir continuously. (Pharmacy, p. 379.)

Cerii Oxalas.

(Sixth paragraph.) Behavior toward potassium hydrate. On this behavior is based the distinction from aluminum and zinc, both of which are soluble in potassa. (See last paragraph.) The "National Dispensatory" has an erroneous statement that cerium oxalate is soluble in boiling potassa. Curtman (Circ. No. 93, p. 449).

Cetaceum.

Constants. Kebler finds that the constants of the U. S. Ph. are those of cetin and not those of cetaceum. The melting point of cetaceum varies from 48.9 to 55.5° C.: the specific gravity from 0.905 to 0.945 at 15° C.; the saponification number from 125.8 to 134.6; and the acid number varies with the age. (A. J. Ph. 96, 10.)

"Odorless." There is a faint, peculiar odor.

If the alcoholic solution be mixed with an equal quantity of water, no copious precipitate must be caused. German Comm. (Apoth. Ztg. 94, 176.)

Chloral.

The title is not exact. It should be "Chloral Hydras." A. P. A. Comm. (A. J. Ph. 95, 484. Proc. 95, 240.)

(Fifth paragraph.) "Alcoholic solution permanently neutral." Ph. Germ. says "a faint reddening appears on drying the litmus paper." Hirsch states that the acid reaction of the aqueous solution disappears on adding alcohol, and the alcoholic solution acquires an acid reaction on the addition of water. (Ph. Rdschau. N. Y. 93, 241.)

Alcoholate. Hirschsohn states that Lieben's iodoform test hardly indicates 5 p. c., and recommends Ankum and Schaer's nitric acid test, which indicates 1 p. c. Pour 1 Cc. nitric acid (1.38) over 1 Gm. chloral hydrate: a yellow color should not appear within 10 minutes, even when the mixture is warmed. (Ph. Ztg. Russl. 93, 817. A. J. Ph. 94, 141. Proc. 94, 1201.)

Boiling point, 97° C. (Merck, Index, 67.)

Chloroformum

Refractive Index. Edwards (Proc. 93, 150).

Preparation. From acetone and sodium chloride by electrolysis. (J. de Ph. & Ch. 93, 276. W. Dr. 93, 149. Proc. 93, 909.)

Decomposition. Biltz recapitulates the essential facts regarding the decomposition of strictly pure, alcohol-free chloroform, which facts are often lost sight of by the different claimants for "pure" chloroform. He lays especial stress on the fact that the preservative power of alcohol is only relative, commensurate with the proportion employed, and can not replace the keeping in a dark place.——Squibb states, that with ordinary precautions the presence of 1 p. c. of alcohol guarantees for several years. (Ph. Rdsch. N. Y. 93, 152. A. J. Ph. 93, 354.)——Brown takes issue with Biltz respecting the statement that "decomposition products cannot be detected until all the added alcohol has been consumed," and further "that the decomposition products give reactions similar to those of alcohol." (Ph. J. & Tr. 95, Mrch. 836. Proc. 95, 1066.)

Specific Gravity. 1.502. (Merck, Index, 68.)

Preservation. Allaire proposes to preserve it by the addition of $\frac{1}{1000}$ part of sulphur. (Ph. J. & Tr. 95, Sept. 261.)——Dott comes to the conclusion that the addition of any substance which is prone to oxidation (and soluble in chloroform) will prevent or at least greatly retard decomposition. (Ph. J. & Tr. 96, Mrch. 249.)

Purification. "Avoiding exposure to bright daylight during 24 hours," it would be better to direct the mixture to be kept "in a dark place."——"Distil at a temperature not exceeding 67.2° C." The last Pharmacopœia (1880) had the direction more correctly so, that "the temperature in the retort does not rise above 67.2° C." Hirsch (Ph. Rdsch. N. Y. 93, 242).——Ekenberg mixes chloroform with 5 to 10 volumes of liquid paraffin, and distil at 60 to 70° C. On heating the paraffin to 120° C. it will become sufficiently purified for further use. (Ch. Ztg. 94, 1240. Ph. Rdsch. 94, 243. Proc. 95, 1067.)

Alcohol. Nagelvoort proposes to introduce a table calculating the p. c. of alcohol from the specific gravity. He refers to Schmidt's "Lehrbuch." (Apoth. 95, Nov. 51.)

Tests. Brown prefers to use ZnI and starch to baryta water (sixth paragraph). (Ph. J. & Tr. 93, Mrch. 792. A. J. Ph. 93, 241. Proc. 93, 912.)——Squibb gives detailed directions for applying the official tests, as follows:

(Fourth paragraph). "The porcelain or glass plate is made so warm that it can just be held in the hands." Proceeding according to the Pharmacopœia, "just as the last greasy look disappears from the filter paper, it is subjected to the sense of smell with close observation. The first inhalation may give too much chloroform, but the next will give the foreign odors."

(Fifth paragraph.) Shake the chloroform and water for five minutes. After complete separation, pour off about 5 Cc. into a test-tube and, after testing with litmus paper, add four drops of argentic nitrate solution, and stir with a clean glass rod (shaking with the thumb over the tube-mouth, introduces cutaneous secretions). Look down through the long axis of the tube. As this test is hyper-sensitive, a slight degree of opalescence may be disregarded. Into another test-tube pour a fresh portion of the wash-water and add 1 Cc. of potassium iodide solution. Chlorine is indicated by a more or less pronounced yellowish-green tint.

(Seventh paragraph.) The chloroform and acid should not be left in contact longer than is necessary for the shaking and separation, because under favoring conditions of light and air, traces of the products of decomposition will very soon appear.

(Eighth paragraph.) A slight odor of india-rubber or gutta-percha is not uncommonly met with, but when not too pronounced, is unobjectionable. (Ephemeris, 94, pages 1434 to 1439.)

In the directions, under "Purification," the receiver need not be tared, as the distillate is received up to a certain volume.

Chrysarobinum.

Solubility. Millard finds that commercial chrysarobin is soluble only to the extent of 60 p. c. in hot alcohol. (Ch. & Dr. 93, 174. Proc. 94, 900.)

Cimicifuga.

Microscopical structure. Bastin (A. J. Ph. 95, 121).

Cinchona.

Hartwich calls attention to two false barks, one a Ladenbergia and the other the former "China Trujillo," now called "Cinchona rubiginosa." (Ph. Centralh. 94, 569. Proc. 95, 878.)

The description of the "quills" (first paragraph) excludes from pharmacy a large quantity of bark of excellent quality, imported in the form of shavings or chips. (Ph. J. & Tr. 93, Sept. 222.)

Rusby calls attention to the fact that Cinchona Calisaya var. Josephiana has been enormously cultivated, and distributed to herbaria, as Cinchona Calisaya: it is not a mere variety, but a quite distinct species. (A. J. Ph. 94, 244. Proc. 94, 926.)

Not only the bark proper, but also the corky layer contains a considerable p. c. of quinine: Java up to 2 p. c. Schaefer (Oest. Zts. 93, 1. Ph. Rdsch. N. Y. 93, 40. Proc. 93, 694).

Copper. Percentage. (Ph. Ztg. 94, 30. Proc. 94, 566.)

Assay. Kuersteiner moistens the bark with a mixture of dilute HCl and alcohol, and after 3 hours macerates with ammoniated ether for 6 hours, extracts the ethereal layer with acidulated water, liberates the alkaloids with ammonia, and shakes out with ether-chloroform, weighing the alkaloids. (Ph. Ztg. 92, 750. A. J. Ph. 93, 74. Proc. 93, 404.)

Keller shakes the bark with ammoniated ether, and then proceeds in the main as above. The alkaloids are titrated with $\frac{N}{10}$ HCl. (Oest. Zts. 93, 563 & 586. A. J. Ph. 94, 46. Proc. 94, 532.) Another process with ammoniated ether-chloroform and ammonium chloride, see (Oest. Zts. 96, 154).

Ledden-Hulsebosch. Shake with ammoniated ether-alcohol in his "perforator." To an aliquot part add a little dilute HCl. Evaporate the ethereal liquid, alkalinize with soda, and take up with ether. (Ph. Centralh. 93, 289. Am. Dr. 93, June, 372. Proc. 93, 404.)

Schwickerath. With more or less modified Prollius' mixture (see "General Remarks"). (Ph. Rdsch. 94, 57 & 137. Bull. 94, 56. Proc 94, 542.)

Ph. Helvetica uses Keller's method, but does not titrate, merely evaporates to dryness and weighs; the alkaloids should amount to at least 5 p. c., and the quinine must be at least 1 p. c. of the bark. (Ph. Rdsch. 94, 66.)

Schmidt uses Ludden-Hulsebosch method, but converts the alkaloids into tartrates by Rochelle salt. (Ph. Centralh. 92, 594. Ph. Era 93, 102. Proc. 93, 405.)

Schneider calls attention to the fact that the alkaloids retain chloroform quite stubbornly, so that the final weight is increased. The remedy is to dissolve the residue in alcohol, when the last traces of chloroform can easily be evaporated. (Ph. Centralh. 94, 18.)

Kebler gives comparative results of the methods of U. S. Ph., Lyons, Haubensack, Kuersteiner, Keller and his own, an ether-chloroform method with ammonia. He comes to the conclusion that methods which direct the shaking of immiscible solvents, containing the alkaloids in solution, with acidulated water, give satisfactory results. Still he prefers the methods of Lyons, Haubensack and his own. He correctly says, that while the pharmacist does not require as elaborate a method as the manufacturer of quinine, yet he should be in possession of a process that yields no less accurate and satisfactory results in a comparatively short time. (A. J. Ph. 96, 79.)

Eschenbach compares the methods of Hager, Schacht, Flueckiger, Squibb, Meyer (Hielbig), Ph. Germ., Ph. Helvet. (Haubensack), and finds that at present no method is known which gives good results with an expenditure of little time and without practical experience. He proposes the following: Boil Flueckiger's mixture of bark and lime with "solvent oil" (petroleum) for one hour, filter off, and treat the residue with ether, mix the two filtrates, distil off the ether, and shake the petroleum in a separator with sulphuric acid water. Evaporate the acid solution, precipitate with soda or sodium carbonate, shake with chloroform, which on evaporation gives the pure alkaloids. (Ap. Ztg. 96, 148.)

Emulsionizing. Grandval and Lajoux obviate the inconvenience of the emulsionizing of the chloroformic liquid with acidulated water, by heating the emulsion in a water-bath, when the chloroform will be set free. Filter through a moistened filter, and treat the filtrate with soda in presence of chloroform. (J. de Ph. & Ch. 93, 99 & 152. Proc. 94, 543.)

Preparations. Kremel recommends to macerate, or percolate the bark with the addition of 10 p. c. of lime. This will set free the alkaloids and precipitate cinchona-red and cinchotannin. (Ph. Ztg. 94, 101.)

Cinchona Rubra.

"Not less than 5 p. c. of its peculiar alkaloids." The proportion of quinine should be stated, because red bark varies greatly in this respect. (Ph. J. & Tr. 93, Sept. 222.)

(Cinchonidina.)

Micro-chemical reactions. Behrens (J. Ch. Soc. 94, 491. Proc. 95, 997).

Cinchonina.

Microchemical reactions. Behrens (J. Ch. Soc. 94, 491. Proc. 95, 997).

(Cinnamomum.)

Key to the microscopical structure of eleven varieties. Pfister (Oest. Zts. 94, 70. Proc. 94, 896. Ph. J. & Tr. 94, May, 941).

Cinnamomum Cassia.

Nature of tannin. Thornton (A. J. Ph. 95, 400).

Ash should not amount to over 5 p. c., of which 1 p. c. should be insoluble in HCl. (Schweiz. Woch. 92 . . . Ph. Centralh. 93, 238.)

Cinnamomum Saigonicum.

This cinnamon is not directed to be used in a single preparation. Beringer (A. J. Ph. 93, 472).

It is stated to be the unscraped bark of Cinnamomum Cassia. The American "Saigon" is the "China Cinnamon" of the London market. Pfister (Oest. Zts. 94, 70. Ph. J. & Tr. 94, May, 942. Proc. 94, 896).

Coca.

Chemistry. Hesse (Annal. No. 271, p. 180. Proc. 93, 670).

Microscopy and analysis. Dohme (Proc. 93, 159).

A distinction should be made between the leaves of Erythroxylon Bolivianum (Huanuco leaves) and those of Erythroxylon Spruceanum (Truxillo leaves), there being a microscopical difference and a decided difference in the alkaloidal yield. A. P. A. Comm. (A. J. Ph. 95, 484. Proc 95, 240).

Assay. Should be introduced. A. P. A. Comm. (Ibid.)

Comparison of methods of assay: Keller, 0.79 p. c.; Beckurts, 0.265; Schweissinger, 0.505; Thomson, 0.27; Lyons, 0.165; Lyons modified, 0.31. Dohme (A. J. Ph. 95, 489. Proc. 95, 268).——Comparison of different methods: Squibb, 0.67 p. c.; Lyons, 0.516; Marck, 0.485; Pfeiffer, 0.58; Keller, 0.536. Kebler (A. J. Ph. 95, 572. Proc. 95, 339).

Schwickerath. With more or less modified Prollius' mixture (See "General Remarks.") (Ph. Rdsch. N. Y. 93, 284. Bull. Ph 93, 537. Proc. 94, 544.)

Keller. With ammoniated ether, etc. (Ph. Rdsch. Prag. 96, 18.)

Grandval & Lajoux. Treat with ammoniated ether-alcohol, exhaust with ether, etc. (J. de Ph. & Ch. 93, 99 & 152. Proc. 94, 544.)

Indicators. Relative value. Kebler (A. J. Ph. 95, 504).

(Cocaina.)

Technical manufacture and separation from its accompanying alkaloids. Einhorn & Willstaetter (Berichte. xxvii, 1523. A. J. Ph. 94, 397). Criticism by Liebermann (Berichte. 94, 2051. Proc. 95, 999).

Preparation from its salts. Precipitate solution of the hydrochlorate by ammonia, shake with chloroform, separate chloroformic solution, free it from water, and evaporate. Kochan (W. Dr. 92, 380. Proc. 93, 839).

Anæsthetic effect is lost in acid solution, and is most decided in presence of free alkali. Bignon (Ph. Rev. 92, 200. Proc. 93, 838).

Cocainæ Hydrochloras.

Melting Point. Kinzel gives it as 201 to 202° C. (Ph. Ztg. 93, 25. Proc. 93, 839.)——Hesse is inclined to ascribe the high melting point to the use of a sulphuric acid bath. In Roth's apparatus he got only 181.5° C., and not exceeding 186° C. (Annal. 93, 308 & 342. Ph. J. & Tr. 93, Oct. 301. Proc. 94, 1109.)——Francis, on the other hand, contends that the variations observed are rather due to the length of time the heat was applied, and he is inclined to think that this salt has no true melting point, but a variable decomposition point. (Bull. Ph. 93, 541. Proc. 94, 1110.)

Identity. To a solution of 0.02 Gm. in 1 drop of water add 1 Cc.

of sulphuric acid and 1 drop of solution of potassium bichromate. On heating, the yellowish color changes to green. Schaerges (Ph. Ztg. 93, 602. A. J. Ph. 93, 553. Proc. 94, 1109).

The test with calomel can hardly be regarded as an identity test, since pilocarpine hydrochlorate gives the same reaction. Nagelvoort (Ph. Rdsch. N. Y. 93, 286. See also Proc. 94, 1110).

Zinc. Since Henriques has taken out a patent for extracting cocaine by exhausting the leaves with a solution of a zinc salt, it would become necessary to examine the salts of cocaine for zinc. (Ph. Centralh. 95, 92. Proc. 95, 999.)

"Hydrochloras" should be "hydrochloridum." A. P. A. Comm. (A. J. Ph. 95, 484. Proc. 95, 240).

Coccus.

Adulteration. Texeira found cochineal mixed with extracted cochineal colored with rosaniline, and formed into granules. (Boll. Farm. . . . Merck, Report, 93, 176.)

Codeina.

Constitution of its salts. Goehlich (Ap. Ztg. 93, 95. Ph. J. & Tr. 93, 805. Proc. 93, 841).

The former statement, that this salt does not lose its water of crystallization under 120° C., has been shown to be erroneous by Eccles and Rice. (Circular No. 125, p. 810.)

Tests. Detection of codeine in mixtures, pills, etc. Nagelvoort, who recommends the use of isobutylic alcohol in preference to the amylic alcohol generally employed, being much more agreeable to work with. (Proc.·94, 273 & 277.)

Indicators. Relative value. Kebler (A. J. Ph. 95, 503).——Codeine is alkaline to litmus paper. Hirsch and other authorities.

(Codeinæ Sulphas.)

Might be introduced. Beringer (A. J. Ph. 93, 523).

Colchici Radix.

It is named "Radix" and stated to be a "Cormus." Beringer (A. J. Ph. 93, 472).

Assay. Schwickerath. With more or less modified Prollius' mixture. See "General Remarks." (Ph. Rdsch. 93, 284. Bull. Ph. 93, 537. Proc 94 544.)

Colchici Semen.

Assay. Schwickerath. With more or less modified Prollius' mixture. (Ph. Rdsch. 93, 288. Bull. Ph. 93, 537. Proc. 94, 544.)

Collodium.

Acetone may replace alcohol and ether, pyroxylin dissolving readily in it. Morrison (Proc. 94, 281).

Collodium Cantharidatum.

Hemm prefers to use ether, and suggests a solution of 4 parts of cantharidin in 1000 parts of flexible collodium. (A. J. Ph. 94, 393. Proc. 95, 554.)

Acetone can be used with advantage to replace the chloroform for the extraction of the cantharides. Morrison (Proc. 94, 282).

"Cylindrical percolator." Caspari recommends a closed percolator with stop-cock. (Pharmacy, p. 285.)

Collodium Stypticum.

Acetone may replace the ether and alcohol. Morrison (Proc. 94, 282).

Colocynthis.

Microscopical examination of powder. Wagner (Proc. 93, 179).

Cultivation in the United States. Sayre (A. J. Ph. 94, 275. Proc. 94, 132 & 876.)

Localization of colocynthidin. Braemer (Ph. J. & Tr. 94, Febr. 623. Proc. 94, 1096).

Confectio Sennæ.

"Separate the coarser portions with the hand, etc." Caspari objects to the direction to use the hand, as unpharmaceutical. When the fruits during digestion are occasionally worked or stirred with a porcelain spatula, or thick glass-rod, there will be no necessity for rubbing through the coarse sieve with the hand. (Pharmacy, p. 335.)

Conium.

Localization of coniine. Clautriau (Ph. J. & Tr. 94, Nov. 355. Proc. 95, 980).

Yield of Alkaloid. If the collection takes place at the proper stage of development, and the fruit is carefully dried, it should yield about 2 p. c. of hydrochlorate. Farr & Wright (Ph. J. & Tr. 93, Sept. 188. Proc. 94, 548).

Assay. Schwickerath. With more or less modified Prollius' mixture, or with a mixture of water, benzin and ammonia (see "General Remarks"). The alkaloid is freed by sodium carbonate. He follows Lilienstrom's suggestion to receive the percolate at once in $\frac{N}{20}$ sulphuric acid, in view of the easy decomposability of coniine, and also to let the ether (or benzin) evaporate spontaneously. (Ph. Rdsch. N. Y. 93, 284. Bull. Ph. 93, 537. Proc. 94, 545, and Ph. Rdsch. N. Y. 94, 136 & 138.)

Copaiva.

Distinction between African and South Americam balsams. Umney (Ph. J. & Tr. 93, Sept. 215. A. J. Ph. 93, 544. Proc. 94, 898).

Specific Gravity. 0.950–1.000. (Merck, Index, 75.)

Tests. Kebler arrives at the following conclusions:—The color and the fluorescence or non-fluorescence are of no practical value. The wide range of specific gravity makes that factor practically valueless. The solubility or insolubility are rather uncertain factors, because samples of undoubtedly genuine balsam behave differently. The specific tests for turpentine, fixed oils and paraffin oils are reliable. The ammonia tests are misleading. The acid number cannot be relied on. Hager's test is not reliable with less than 25 p. c. gurjun balsam. The carbon disulphide test is fairly reliable with a moderately large p. c. of gurjun balsam present, although some pure balsams give a nearly similar color. The glacial acetic acid test is perfectly reliable, even when not more than 5 p. c. of gurjun balsam be present. He finds that gurjun balsam is even more variable in composition than copaiva. (A. J. Ph. 95, 397.)

Gurjun balsam. 1) Add 2 to 4 drops of the suspected balsam to 1 or 2 Cc. of a solution of 1 Gm. pure sulphuric acid in 25 Gm. pure acetic acid. No red or violet color should be produced. Pure copaiva gives only a yellow or pale-brownish color. Ten p. c. can easily be detected (Hager's test). 2) Shake the balsam with 3 to 4 volumes of water, filter through a wetted filter, and mix the filtrate with an equal volume of HCl (1.12). No red color should appear within 15 minutes. Pure copaiva does not change. Hirschsohn (Ph. Ztg. Russl. 93, 673. A. J. Ph. 94, 36. Proc. 94, 900).——Add 4 drops of pure nitric acid (1.42) to 1 Cc. of glacial acetic acid in a test-tube, mix well, then add carefully 4 drops of the balsam on top. In presence of gurjun balsam a reddish zone will be observed within a few minutes between the balsam and the acids. On shaking, the whole assumes a reddish or purplish color. Dodge and Olcott (A. J. Ph. 95, 396).——To a mixture of 4 Cc. of acetic ether and 2 drops of sulphuric acid add 6 to 8 drops of balsam; no red or violet color should be noticed within 15 minutes. If no distinct coloration is noticed, add a small drop of water, and shake: no red-colored precipitate must appear. Ennel (Ph. Centralh. 95, 460. Ph. Rdsch. N. Y. 95, 217).——Boil a mixture of 1 volume of balsam, 3 of alcohol and 1 Gm. of stannous chloride until solution is effected. Ten p. c. of gurjun balsam gives an intensely red color, which within 30 minutes changes to violet and blue. Hirschsohn (Ph. Ztg. Russl. 95, 500. Ph. Rdsch. N. Y. 95, 265).

Rosin. Mix 1 part of balsam with 10 parts of ammonia. A more or less turbid mixture results, which must not within one day gelatinize, nor separate a jelly. Germ. Ph. Comm. (Oest. Zts. 94, 267.) ——Cæsar and Loretz hold that this test is indispensable. (Ph. Rdsch. Prag. 93, 889.)——Hirschsohn points out that the ammonia test does not hold good with all kinds of rosin. (Ph. Zts. Russl. 95, 516.)

Castor Oil. Pure balsam, dropped into water, forms round drops; in presence of castor oil the drops are egg-shaped, the point upward, and provided with a small, clear bubble, which is the castor oil. Warm water hastens the separation. (Ph. Centralh. 95, 495. Ph. Rdsch. N. Y. 95, 241.)

Fixed Oil. Add 1 or 2 Cc. of a solution of 1 part of soda in 5 parts of alcohol to 20 or 40 drops of balsam, boil up several times, and, after cooling, add twice the volume of ether. A jelly will indicate fixed oil. Hirschsohn (P. Zts. Russl. 95, 498).

Paraffin Oil. Add 1 Cc. of the balsam to 4 Cc. of 95 p. c. alcohol in a test-tube, and shake well. Suspend the tube in boiling water until the contents begin to boil. Paraffin oil will separate and sink to the bottom. Kebler (A. J. Ph. 95, 395).

Lime test. Musset considers it very valuable. Equal parts of stiff paste of lime (with water) and balsam yield a crumbling mass, which on warming becomes friable. (Ph. Centralh. 93, 720. Proc. 94, 897.)

Solidification. Since the balsam is officially directed only for the "Mass," a test for solidification should be added.——Snow states that the power to solidify is in direct ratio to the p. c. of resin; less than 48 p. c. of resin gives an unsatisfactory mass. (W. Dr. 92, 325. Proc. 93, 669.)

Creosotum.

It should not darken on exposure to sunlight. Ph. Germ. (Ph. Rdsch. N. Y. 93, 281.)

Boiling Point. 205 to 220° C. (Merck, Index, 79.)

Solubility in water increased by quillaia tincture. Carles (Rep. de Ph. 93, 199. A. J. Ph. 93, 389. Proc. 93, 566).

Emulsion with casein saccharate. Leger (Union Ph. 93, 297. A. J. Ph. 93, 452. Proc. 94, 563).

Pills. With licorice, soap and acacia. England (A. J. Ph. 95, 331. Proc. 95, 591).——Benzoin, borax, glycerin, etc. Goetting (Ph. Rdsch. N. Y. 94, 34. Proc. 94, 593).——Magnesia, extract of licorice, etc. Dieterich (Ph. Centralh. 93, 633. Proc. Ibid.).——Tolu. Stern (Ph. Post, 94, 122. Proc. 94, 595).——Licorice root and glycerin. Vulpius (Ph. Era, 93, 509. Proc. Ibid.).——Acacia and glycerin. (W. Dr. 93, 364. Proc. Ibid.)——List of excipients proposed. (Am. Dr. 94, 248. Proc. 94, 596.)

Creta Præparata.

It will not do to exact too great a purity from prepared chalk; a little more or less of magnesia may be allowed, hence the present allowance of "not very turbid" instead of the former "not more than faintly turbid." Nor is it necessary to be very strict in regard to strontium carbonate, which occurs in traces in many chalks. But barium should be rigidly excluded, the more so as there are beds of witherite (barium carbonate) occurring in some parts of the country which look very similar to chalk, and might be mistaken for it, and thus furnished as raw material to careless grinders. It may be possible that gypsum, kaolin and barytes have been used as adulterants, but it is unlikely that the practice is general, for they are higher in price than the crude chalk, which fact is a sure preventive. Curtman (Circ. No. 112, p. 649).

Crocus.

Ash. The amount allowed is probably too high. It might have been added that the ash is "non-fusible." Beringer (A. J. Ph. 93, 523).

Barclay gives a table with the p. c. of moisture and of ash of 33 samples. (P. J. & Tr. 94, Febr. 693. Proc. 94, 892.)

Adulterations. Vinassa has published a very comprehensive and detailed investigation of possible adulterants. (Arch. Ph. 92, 353. Proc. 93, 657.)——Ranvez calls attention to an adulteration with the stamens. (Ph. J. & Tr. 95, Febr. 644.)——Flour is best detected by microscopical examination in fixed oil. Herz & Hanausek (Ph. Ztg. 93, 40. A. J. Ph. 93, 134. Proc 93, 656).——"Feminell" is generally colored with logwood. Moisten a few fibres with water, and rub off on a piece of white paper. Pure saffron gives a yellow stain, feminell a purplish-red. Brierre (Ph. Post, 95, 568).

Cubeba.

Description of false berries, or at least the distinguishing color reactions might be given. Beringer (A. J. Ph. 93, 523).

Spurious berries. Holmes (Ph. J. & Tr. 92, Aug. 121 & 93, April 846, and Brookes Ph. J. & Tr. 93, Mrch. 734. A. J. Ph. 92, 494, & 93, 303. Proc. 93, 685, 686).——Ten different varieties. De Wevre (Oest. Zts. 95, 121. Ph. J. & Tr. 94, Oct. 314, & 95, Mrch. 95, 757 & 797. Proc. 95, 873).——Classification of true and false. Nogl (Ph. Post, 94, 481. Proc. 95, 873).

Commercial cubebs appear to be chiefly the ripe fruit. Emanuel (A. J. Ph. 94, 360. Proc. 95, 873).

Comparative action of different solvents (ether, acetone, alcohol, benzin). Hyers (A. J. Ph. 95, 519).

Cupri Sulphas.

The crystals are transparent and not merely translucent; it is easy to read print through a crystal of 5 Mm. thickness. It is not exactly "almost insoluble" in alcohol, the solubility being about 1:400 at 15° C. It is completely decomposed at nearly a white heat, a "red heat" not being sufficient. The efflorescence takes place in *very* dry air. After dehydration, the white powder attracts from moist air its full $5H_2O$ again. Curtman (Circ. No. 112, p. 651).

Soluble in 3.5 parts of glycerin. (Merck, Index, 77.)

Iron. Pour 5 Cc. of a 10 p. c. ethereal solution of salicylic acid upon 5 Cc. of a 20 p. c. solution of cupric sulphate. In presence of iron a violet color will appear at the point of contact. Griggi (Boll. Farm. 93, 549. Ph. Centralh. 94, 28. Proc. 94, 1024).

(Cuprum.)

Identity. If to a solution, too dilute to give a sensible reaction with potassium ferrocyanide, be added a solution of potassium iodide, a yellow coloration is produced, which becomes violet with starch paste. This test shows as little as 1:500,000. Thoms (Zts. Analyt. Ch. 94, 464. Proc. 95, 944).

The smallest traces of copper in solutions are shown by dropping into the acidulated solution finely powdered potassium ferrocyanide. Each particle will be found surrounded by a red zone. Kral (Ph. Centralh. 94, 411).

Jawarowski adds an excess of ammonia to 5 Cc. of the liquid to be examined, and 1 to 2 drops of carbolic acid. Shake well, and let stand for a half hour. (Ph. Zts. Russl. 96, 83.)

Add one drop of the liquid in question to 1 Cc. of concentrated hydrobromic acid, when the liquid will become colored violet to deep purple, according to the quantity of copper present. Hydrobromic acid may be replaced by potassium bromide and syrupy phosphoric acid. It will then be necessary to heat and again allow the liquid to cool, before judging of the color. Shows $\frac{1}{10}$ Mgm. Sabatier (Bull. Soc. Ch. 94, 683. Ph. Rdsch. N. Y. 95, 162. Proc. 94, 1024, & 95, 945).

Cusso.

Adulteration with male flowers should be noticed. Of late, bundles appear to become scarce; a good deal of the cusso comes loose. Meyer & Sandlund (Ph. Ztg. 93, 99. Proc. 94, 925).