with the precautionary remark on p. 482, second paragraph, nor with the exacting chemical requirements of the pharmacopœial processes. Beringer (A. J. Ph. 94, 95).

46. *Weight.* Study of grain weight. Lloyd (Proc. 94, 137).——Oldberg proposes a "fluigramme," the volume of 1 Gm. of pure water at 20° C. (Bull. Ph. 96, 3.)

Acacia.

Tests. The best test for pectic compounds is ruthenium red. Mangin (Am. Dr. 93, 361. Proc. 93, 795).

Guichard distinguishes between the various acacias by their rotatory power. (Ch. & Dr. 93, 1444. Proc. 94, 901.)

Dextrin. Heat a solution of acacia to boiling with aniline sulphate. Pure gum gives a straw color, presence of dextrin an orange or brownish-red. Pietro (Am. Dr. 94, 328. Proc. 94, 901). ——To a 20 p. c. solution of acacia add a solution of 15 drops of ferric chloride solution, 15 drops of a saturated solution of potassium ferrocyanide, and 5 drops of HCl (1.165), in 60 Cc. of water. If the gum was pure, the mixture will acquire a yellow color which does not alter within 8 to 10 hours; in presence of dextrin the color will become blue within 1 to 2 hours. (Ph. Post 94, 563. Proc. 95, 867.)

Acetanilidum.

Reactions. Color reactions with sulphuric acid and potassium bichromate, potassium ferrocyanide, manganese dioxide, potassium permanganate, ceric oxide, nitric acid, bismuth subnitrate. Schaer (Arch. Ph. 94, 253. Proc. 95, 665).

Schweitzer states that mixtures of acetanilid and phenacetin, no matter in what proportions, begin to melt at 92° C. and clear up at 106–134° C. (Ph. Era 95, xiv, 683. Am. Dr. 95, xxvii, 234.)

Ritsert gives the following distinctions from methacetin and exalgin: 0.1 Gm. of acetanilid dissolves, on shaking, in 1 Cc. HCl, but separates out after a few minutes as hydrochlorate, while methacetin and exalgin remain dissolved. (Ph. Ztg. 93, 598.)

Acetum Opii.

Assay. Kebler states that the method of assay is unpractical. Each 100 Cc. contains 20 Gm. of sugar, and after preparing for the assay, in addition 8 Gm. of calcium acetate and about 5 Gm. of extract of opium, a total of 33 Gm. of solids. The final evaporation has to continue to a weight of 14 Gm. He, therefore, proposes the following modification: 100 Cc. are rendered alkaline with strong ammonia (8 to 10 Cc.), and 2 Cc. ether added to prevent frothing. Shake vigorously for 10 minutes, and set aside for at least 6 hours.

Pass through a filter, previously wetted with water, and wash the precipitate sparingly. Transfer while still moist to a capsule, add 10 Cc. of 5 p. c. sulphuric acid, warm, let stand for at least one hour, filter and wash. Now evaporate to 14 Gm., and proceed further as directed in the U. S. Ph. Ascertain the purity of morphine by the lime water test. (A. J. Ph. 94, 136. Proc. 94, 554.)

"It should yield from 1.3 to 1.5 Gm. of crystallized morphine."

Acetum Scillæ.

Preparation. No. 30 powder is too fine, and gives a glairy liquid, difficult to filter. Macpherson (Ph. J. & Tr. 94, Mch. 782).——Caspari thinks that No. 20 powder is sufficiently fine; he advises to strain the mixture with expression, and states that it will be advantageous to allow the strained liquid to stand for three or four days before filtering it. (Pharm. p. 254.)

(Acida.)

In order to make the dilute acids acidimetrically uniform, it will be necessary to start, not from the percentage of the pure acid, but from the molecular weight, exactly as with test-acids. Hirsch (Ph. Rdsch. N. Y. 93, 233).

Description. German Comm. states that the first part of the description should give the necessary properties which establish the identity of the acids. (For instance, Hydrochloric acid, that it gives with argentic nitrate a curdy, white precipitate, soluble in ammonia; and so on.) (Ap. Ztg. 93. . . .)

Acidum Aceticum.

Specific Gravity. Nickels overcomes the difficulty of the increase up to 80 p. c. and subsequent decrease, by taking the sp. gr. as usual, then diluting with water, and taking the sp. gr. again. If there is an increase of sp. gr., the higher p. c. may be assumed to be correct; if there is a decrease, then the lower p. c. is correct. (Ch. Ztg. 92, 1793. Proc. 93, 802.)

Test for Mineral Acids. Griggi uses a 25 p. c. solution of fuchsin in alcohol, one drop to 1 Cc. of the acid. If pure, the color is red; in presence of mineral acid, the color will be dirty-yellow. (Ph. Ztg. 93, 675. Proc. 94, 1075.)

The color of a dilute solution of methyl-violet turns blue with nitric acid, and green with hydrochloric and sulphuric acids. (Boll. Ch. Farm. . . . Proc. 93, 802.)

Percentage. Estimation by refractometer. Edwards (Proc. 94, 305).

Acidum Aceticum Glaciale.

Refraction. Edwards (Proc. 93, 155).

Acidum Arsenosum.

Sublimation. Sublimes at 137.6° C. (Merck. Index 4.)

Tests. Nagelvoort points out some of the loose language of the Pharmacopœia, respecting reactions. (Proc. 94, 282.)

Thiele states that hypophosphorous acid precipitates arsenous acid without boiling, in a solution strongly acidulated with HCl. The addition of KI facilitates the reaction. (Annalen. cclxv. 55. Proc. 93, 756.)

Bettendorf's Test. Both Power and Curtman concur in the opinion that Bettendorf's Test, although not the most sensitive, is sufficiently delicate for pharmacopœial purposes, as it is neither practicable nor necessary in most cases to require "absolute" freedom from arsenic. Curtman states that, for practical purposes, 0.03 Mgm. is the utmost limit of sensitiveness necessary. He prefers metallic tin (except in the examination of antimonial and bismuthic preparations) and heating. (Circ. 75, p. 296. A. J. Ph. 94, 387. Proc. 95, 935.)

Gutzeit's Test. Nagelvoort combines this method with Klein's, conducting the current of hydrogen over finely powdered argentic nitrate packed over glass-wool in a U-tube. (Ph. Rdsch. N. Y. 94, 109. Proc. 94, 1208.)——Kral recommends a piece of frosted glass instead of the filtering paper. (Ch. Ztg. 92, 1767. Ph. Ztg. 93, 43.)

Marsh's Test. The brown spots on the porcelain are not metallic arsenic, but arseniuretted hydrogen in the solid state. Retgers (Ph. Centralh. 94, 445. Proc. 94, 1011).

Acidum Benzoicum.

The natural and artificial acids should have been kept separate. Physicians state that the artificial acids have some undesirable by-effects. Beringer (A. J. Ph. 93, 518).

"Friable needles." Is "friable" the proper term to use?

Solubility. Soluble in 10 parts of glycerin. (Merck, Index 4.) ——"Sparingly soluble in benzin," Power states that 1 part dissolves in 106.3 parts at 15° C. (Ph. Rdsch. N. Y. 89, 288.)

Melting Point. At 120° C. (Merck, Index 4.)——The melting point of the Pharmacopœia refers to toluene-benzoic acid. (Merck, Index 5.)

Boiling Point. At 250° C. (Merck, Index 4).

Chlorine Test. (Paragraph seven on p. 8) "More than traces of chlorine." Is this not too rigid a test in view of the permission to keep toluene-benzoic acid? (Ph. Ztg. 93, 599.)

Distinction of benzoin-acid from that derived from other sources.

Add resorcin and sulphuric acid to the alcoholic solution of the acid. Pure acid gives a beautiful red color. This is the well-known aldehyde test. Goeldner (Ph. Ztg. 92, 697. A. J. Ph. 93, 12. Proc. 93, 804).

Acidum Boricum.

Solubility. In 3 parts of boiling water. German Comm. (Ap. Ztg. 93, 212).

"In 10 parts of glycerin" is not correct; it should read "5" parts. Macpherson (P. J. & Tr. 94, Mch. 782).

Acidum Carbolicum.

Nomenclature. It would have been more in accordance with chemical nomenclature to make "Phenolum" the title, and "Acidum Carbolicum" the synonym. Beringer (A. J. Ph. 93, 518).

Volumetric Estimation. Urban compares three methods:—Standard bromine; $5NaBr + NaBrO_3$; and standard I. (W. Dr. 93, 9. Proc. 93, 925.)

Congealing Point. Of different mixtures with water. (Ph. Post, 93, 247. Proc. 93, 927.)

Melting Point. Should not be higher than 38.8° C. Nor the

Boiling Point higher than 182° C. Coull. (Ph. J. & Tr. 94, Dec. 533.)——Rice states that it would be useless to give a definite melting point, since hardly two experimenters are likely to agree. It is preferable to specify the congealing point. (Circ. 120, p. 776.)

Red Coloration. Is due to oxidation, and will rapidly appear in presence of ammonia, dust, or direct sun-light. On shaking the red acid with stannous chloride, the latter acquires a green color. Hanko (Ch. Ztg. 95, 1143. Ph. Rdsch. N. Y. 95, 191.)

Distinction from creosote. "Coagulates albumen" (paragraph 9, p. 9). This is certainly an error; it is creosote which coagulates albumen. (Ph. J. & Tr. 93, Sept. 241.)

Acidum Carbolicum Crudum.

Explanation of the Manufacturing Terms. One hundred, etc., p. c. is based upon the solubility in soda solution:—25 to 30 p. c. contains 2 to 3 p. c.; 40 to 60 p. c. contains 3 to 5 p. c.; 80 p. c. contains 50 p. c.; and 90 to 100 p. c. contains 80 p. c. Seiler (Schweiz. Woch. 92, 365. A. J. Ph. 92, 566. Proc. 93, 924). Jayne shows these to be unreliable. (A. J. Ph. 94, 117.)

Manufacture. Jayne (A. J. Ph. 94, 113).

Requirements. Jayne proposes the following:—The crude acid should not be soluble in less than 15 parts of water at 15° C., which solution should not show an alkaline reaction. On treating with a

10 p. c. soda solution, it should not leave more than 5 p. c. insoluble. It should not show more than 2 p. c. of water, and 90 p. c. should distil under 225° C. The official test is unpractical. A 60 p. c. acid answered the requirements of the Pharmacopœia, but after distillation, to remove tarry matter and about 11 p. c. of water, showed 30 p. c. insoluble. (A. J. Ph. 94, 119. Proc. 94, 1215).

Acidum Chromicum.

It would probably be more correct to make "Chromic Trioxide" the title, and "Chromic Acid" the synonym. Beringer (A. J. Ph. 93, 518).

Last paragraph, but one. ". . . should yield nothing soluble to water" "(absence of alkalies)" should be added.

Acidum Citricum.

Salzer states that finely powdered citric acid, slowly heated, becomes anhydrous at 55° C. (Arch. Ph. 94, 514. Proc. 95, 972.)

Identity. Add to a solution of the acid a few drops of $\frac{N}{10}$ potassium permanganate, and heat until the red color disappears, then add 3 to 4 drops of bromine water which causes an opalescence or white precipitate on addition of soda solution, when a distinct odor of bromoform will be noticed. Stahr (Ch. Ztg. Rep. 95, 187. Ph. Rdsch. N. Y. 95, 190).

Lead. Lead has repeatedly been found in citric acid, hence a specific test would be advisable. Buchet (Un. Ph. 92, 203. Proc. 93, 816), and Warrington (Soc. Ch. Ind. 93, 97. Proc. 94, 1089).

Tartaric Acid. Crismer adds 1 Gm. of the acid to 1 Cc. of a 10 p. c. solution of ammonium molybdate, and then a few drops of diluted H_2O_2 (1 : 400). If the acid was pure, a yellow color is developed, which remains unchanged on heating for three minutes to 100° C.; in the presence of tartaric acid, the color becomes blue. (Bull. Soc. Ch. 93, 23. Ph. J. & Tr. 93, Mch. 757.)——Stark improves this test as follows:—Add 1 Gm. of the acid as above to ammonium molybdate solution. If any blue color develops, warm until colorless. Now add 5 Cc. of H_2O_2 (0.25 p. c.) when an intense yellow color will be noticed. If heated for five minutes on a water-bath, the color disappears in presence of tartaric acid. A blank experiment should be carried out for comparison. (Ph. J. & Tr. 93, Mch. 758.)

Acidum Gallicum.

Melting Point. At 220–240° C. (Merck, Index 11.)

Acidum Hydrobromicum Dilutum.

Examination of the commercial. LaWall (A. J. Ph. 95, 13).

Preparation. Beringer proposes to make it by treating bromine water with hydrogen sulphide. (A. J. Ph. 95, 51.)

Acidum Hydrochloricum.

Strength. Estimation by refractometer. Edwards (Proc. 94, 297).

Purity. (Fourth paragraph). Leaving no residue "if the acid was perfectly pure." "Absence of fixed impurities" would be more correct. Hirsch (Ph. Rdsch., N. Y., 93, 234).

Boiling Point. At 76.75° C. Merck Index 12.)

Acidum Hydrocyanicum Dilutum.

Assay. See under AQUA AMYGDALÆ AMARÆ.

Second Formula. "5 Cc. HCl" is an excess; 6 Gm. of argentic cyanide require only 5.1 Gm. HCl, and 5 Cc. HCl weigh 5.8 Gm. U. S. Ph. 1880 directed only 5 Gm. Hirsch (Ph. Rdsch., N. Y., 93, 234).

Acidum Hypophosphoricum Dilutum.

Beringer prefers a 50 p. c. acid, as being more stable. (A. J. Ph. 93, 519.)

Acidum Lacticum.

Strength. Estimated by mixing 4 to 5 Gm. of the acid with 20 to 25 Cc. of water, adding 50 Cc. (or an excess) of $\frac{N}{1}$ potassa and a few drops of phenolphtalein solution. Boil for 15 to 20 minutes, and ascertain excess of alkali by $\frac{N}{1}$ oxalic or $\frac{N}{1}$ sulphuric acid. Multiply number of Cc. of alkali required by 2. (Am. Dr. 93, 384. Proc. 93, 809.)

Test for Mannite, Sugar and Glycerin. The ether test of Ph. Germ. (III) is liable to fail when these substances amount to less than 10 p. c. Rice (Circ. No. 120, p. 782).

Acidum Nitricum.

Strength. Estimated by refractometer. Edwards (Proc. 94, 300). ——Curtman states that the acid sold as "U. S. P." seldom reaches over 1.22. The present strength (1.414) can be easily made from either a higher or lower grade acid by fractional distillation. The higher acid, on boiling, loses stronger acid until the boiling point becomes constant at 120.5° C., and an acid of sp. gr. 1.414 remains, which distils over unchanged. The lower acid will, on boiling, lose water until sp. gr. 1.414 is reached. An acid of 1.42, as required in U. S. Ph. 1880, is not to be obtained from the manufacturers except on special order. Power concurs in the above. (Circ. No. 75, p. 310.)

Iodic Acid. To test for this acid, Pieszczek prefers metallic tin, because it does not combine with the liberated iodine. (Ap. Ztg. 93, 322. A. J. Ph. 93, 383. Proc. 94, 1003.)

Nitrites. Add to a very dilute solution of a nitrite a few drops of potassium ferrocyanide solution and a little acetic acid, when a yellow color will appear. Deventer (Ph. Centralh. 93 . . . Proc. 93, 793).

Acidum Oxalicum.

Identity. A solution of this acid produces a yellow color in a solution of ferrous phosphate (Fe_32PO_4) with excess of phosphoric acid. Mineral acids interfere, destroying the color. Gunn (Ph. J. & Tr. 93, Nov. 408. Dr. Circ. 94, 9. Proc. 94, 1083).

Melting point. At 160° C. The anhydrous acid melts at 189.5° C. Guareschi (Ch. & Dr. 94, July 21).

Acidum Phosphoricum.

Specific Gravity is 1.725. (Merck, Index, 19.)

Silicic Acid. Not unfrequently found; a test would therefore be necessary. Coull proposes: "When mixed with an equal volume of distilled water, no precipitate should be formed." (Ph. J. & Tr. 92, Sept. 236.)

Metaphosphoric Acid. Dropped into a diluted solution of albumen, no opalescence should be noticed.

Acidum Salicylicum.

Manufacture. (Avoidance of distillation by superheated steam.) To the crude liquid add some stannous chloride solution, which precipitates a dark, oily mass, leaving the supernatant liquid clear as water. Separate, and precipitate by HCl; wash and centrifuge. Hoffmann (Ph. Centralh. 92, 412. Proc. 93, 812).

Methyl Salicylate Reaction. Nagelvoort proposes the following improvement: Dissolve 5 Mgm. of the acid in 1 Cc. of methyl alcohol, and add from a pipette 1 Cc. of sulphuric acid in drops, keeping the test tube surrounded with cold water. Heat in a water-bath to the boiling point for two minutes, allow to cool, then heat again until the odor is noticed. The odor is more readily perceived when no hot vapors of methyl alcohol interfere with it. (Apoth. 95, 98.)

Benzoic Acid. The sublimation test, relied upon by several chemists, is no criterion for the presence or absence of benzoic acid, since every pure salicylic acid will sublime, if not rigidly freed from moisture. Curtman.——Power states the same, and adds that there is no simple test for benzoic acid, although advantage might be taken of the greater solubility in benzin of the latter acid, together with the difference in the crystalline form and the melting point. (Circ. No. 144, p. 912.)

Acidum Stearicum.

Crystallizes from alcohol in brilliant leaflets. (Merck, Index, 22.)

Acidum Sulphuricum.

Strength. Estimation by refractometer. Edwards (Proc. 94, 303).

Indicators. Relative value. Kebler & La Wall (A. J. Ph. 95, 302. Proc. 95, 190).

Selenium. A test for selenium is necessary. Stratify in a test tube with an equal volume of HCl, containing in solution a granule of sodium sulphite: the zone of contact should not become colored red. Curtman (Circ. No. 75, p. 317).

Acidum Sulphuricum Aromaticum.

Strength. Power proposes to make the strength referable to the "absolute" acid instead of to the "official" acid, which would but be in conformity with the plan of the other dilute acids. This would, of course, require a different proportion of sulphuric acid in the formula. (Circ. No. 75, p. 319.)

Acidum Sulphurosum.

Preparation. Ph. Germ. uses instead a fresh solution of sodium sulphite and dilute sulphuric acid. (Ph. Centralh. 93, 354.)

Test Paper. Make 2 Gm. of wheat starch into a paste with 100 Cc. of boiling water, and mix with a solution of 0.2 Gm. of potassium iodate in 5 Cc. of water. Soak filtering paper with it, and let dry. When moistened it shows free sulphurous acid by the blue coloration. For sulphites, it will be necessary first to moisten the paper with dilute HCl (1:100). (Suedd. Ap. Ztg. 92, 219. A. J. Ph. 92, 463. Proc. 93, 755.)

Acidum Tannicum.

Assay. By powdered albumin. Fleury (J. Ph. & Ch. 92, 499. Proc. 93, 814).

Purification. May be effected by amyl alcohol, in which the impurities are insoluble. Precipitate with benzol or benzin. Hagemann (Ph. & J. & Tr. 95. Mch. Appendix, 88).

Gallic Acid. Although even the purest tannic acid is colored momentarily pink on addition of a solution of potassium cyanide, it should not be colored permanently red, which would indicate presence of gallic acid. Vulpius (Ph. Rdsch. Prag. 95, 42. Proc. 95, 976).

Acidum Tartaricum.

Test for Oxalic Acid. To a water-white solution of ferrous phosphate, containing excess of phosphoric acid, add a solution of tartaric acid, when a yellow color will be noticed. Mineral acids interfere with this reaction. Gunn (Ph. J. & Tr. 93, Nov. 408. Dr. Circ. 94, 9. Proc. 94, 1083).

(Aconitinum.)

Should be introduced. Beringer (A. J. Ph. 93, 598).

Aconitum.

Assay. Dohme comes to the conclusion that, until we know more about the alkaloids and other constituents of the root, no reliable assay can be devised. (Proc. 95, 210.)——Prescott thinks that Squibb's physiological test (see "Digest," 1890, 284), is still the most reliable test which we have. (Proc. 95, 210.)——Kebler considers the volumetric more reliable than the gravimetric test. (Am. Dr. 94, Sept., 179.)

Keller extracts with ammoniated ether-chloroform, shakes out with acidulated water (1 p. c. HCl), makes alkaline with ammonia, and takes up the alkaloids with ether. (Schweiz. Woch. 94 . . . Ph. Ztg. 94, 345. Proc. 95, 539.)

Schwickerath. With benzin, chloroform, water, etc. (Dr. Bull. 94, 246, etc. Ph. Rdsch., N. Y., 94, 137. Proc. 94, 533.)

Alkaloids. Comparison of German, English and French varieties. Dunstan & Carr (J. Ch. Soc. 93, 491. A. J. Ph. 93, 297. Proc. 93, 820).

Yield. 100 Kg. gave 80–100 Gm. amorphous and 100–150 Gm. crystallized aconitine. Adrian (Bull. de Ph. 92, 486. Proc. 93, 819).——Keller found from 0.87 to 1.23 p. c., and that the root with the lowest yield showed the largest proportion of sugar. (Schweiz. Woch. 94 . . . Ch. & Dr. 94, 858. Proc. 94, 538, and 95, 539.)

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

Adeps.

(Second paragraph.) "Insoluble in water," is not absolutely correct; it is "slightly soluble." (Merck, Index, 145.)

Adulterations. Taylor's scheme for differentiating pure from adulterated lard depends on the time necessary to solidify. (Nat. Dr. 92, 103. Proc. 93, 717.)

Neufeld thinks that neither Huebl's test nor the silver reaction are of much use in testing for small quantities of adulterants. (Ch. Centralbl. 93, 778. Proc. 94, 634.)

Cottonseed Oil. Pure white filtering paper is just moistened with a 12 p. c. solution of argentic nitrate, and held over a small sample of the lard, which is gradually heated in an oil-bath to 240° F. (115.5° C.), when, if even less than 1 p. c. cottonseed oil is present, the paper will turn light-brown to nearly black. Pure fresh lard does not affect the paper. Crooks (Analyst, 93, 221. Proc. 94, 634).

Gantter dissolves 1 Gm. of the anhydrous fat in 10 Cc. benzin, and shakes the solution with 1 drop of sulphuric acid. Pure lard shows a pale-straw or reddish-yellow color; in the presence of even 1 p. c. of cottonseed oil the color is brown. (Ch. Rep. 93, 166. A. J. Ph. 93, 379. Proc. 94, 1181, and 95, 1054.)

Schweitzer and Lungwitz propose phosphomolybdic acid, which gives no coloration with a solution of pure lard in chloroform or ether, but a blue color with cottonseed oil. The iodine number is rapidly obtained by keeping the lard at a temperature of 45° C. for 25 minutes. They also attach considerable value to the temperature of crystallization. (Ch. & Dr. 94, 758. Proc. 94, 635.) See also Welmans (Nat. Dr. 93, 112. Proc. 94, 955).

Gantter states that he has met with samples of cottonseed oil which answered the silver test very poorly. (Ztg. Anal. Ch. 93, 308. Proc. 94, 634.)

Bevan points out a source of error in the silver test for cottonseed oil. The surface portion of lard is so affected by the air, that it reduces the silver solution. (Ch. & Dr. 94, April, 551. Proc. 95, 630.)

Soltsien calls attention to an empirical test for the presence of cottonseed oil and tallow, which consists in observing the behavior on solidifying. Pure lard invariably solidifies with a concave surface, the addition of either of the two causes the surface to become level. (Ph. Ztg. 94, 350.) See also Utescher (Ap. Ztg. 95, 9).

Beef fat. Stock's test is based on the slight solubility of beef fat in ether at 13° C. (Analyst, 94, 2. Proc. 94, 636.)

Adeps Benzoinatus.

Beringer much prefers to mix the lard with powdered benzoin, keep the lard fluid for six hours, occasionally stirring, and straining. When tied in a bag, only a small portion comes in contact with lard. (A. J. Ph. 93, 519.)

Adeps Lanæ Hydrosus.

Dieterich points out that lanolin is liable to become rancid. A sample had in 1886 the acidity figure of 0.84, and in 1893 the figure was 17.36. (Ph. Post. 93, 426. A. J. Ph. 93, 491. Proc. 94, 636.)

"Miscible with twice its weight of water . . ." depends on the temperature. At the normal temperature only an equal weight can be incorporated, but on warming the mortar, twice as much. Beringer (A. J. Ph. 93, 519).

Purity. A mixture of 0.1 Gm. of lanolin with 10 Cc. of sulphuric acid shows an intensely red color with green fluorescence. On shaking this mixture with 10 Cc. of chloroform, on separation the chloroformic layer will be bright-red, and on the line of contact a black line will be noticed. Astolfi (Ap. Ztg. 94, 94. Proc. 94, 637).

Chlorine. Is detected by boiling lanolin with alcohol, filtering after cooling, and adding an alcoholic solution of argentic nitrate. (Nat. Dr. 94, 27. Proc. 94, 638.) See also Beckurts and Liebreich (Ph. Ztg. 94, 408 and 470).

Æther.

(Last paragraph) "(absence of aldehyde, etc.)" The "etc." should be defined. Beringer (A. J. Ph. 93, 520).

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

Dott states that most of the commercial ether contains methyl ether. Dott (Ph. J. & Tr. 93, Jan'y, 618. Proc. 93, 915).

Purification. Ekenberg purifies ether by mixing it with 5 to 10 p. c. of its bulk of liquid paraffin, and distilling at 40 to 50° C. On heating the paraffin to 120° C. it will become sufficiently pure for further use. (Ch. Ztg. 94, 1240. Ph. Era xiii. 95, 302. Proc. 95, 1067.)

Purity. Cautiously dropped into well-cooled sulphuric acid, it should dissolve without color. Ph. Helv. (Ph. Rdsch. N. Y. 94, 84.)

Hydrogen Dioxide. It should remain colorless when shaken for half an hour in a glass-stoppered bottle with ten volumes of a 10 p. c. solution of potassium iodide. Nagelvoort (Apoth. 95, 68).

In the test for aldehyde, potassium hydrate T. S. is to be used, instead of potassium iodide T. S., which was given in the first issue.

Æther Aceticus.

Examination of commercial ether. Leake (Ph. Rev. 92, 201. Proc. 93, 916).

(Eighth paragraph.) The "ether-water" test is only reliable when a tolerably pure ether is examined. It would be better to replace the water with glycerin. Nagelvoort (Apoth. 95, 99).

Hirsch gives the spec. grav. at 0.906, and the solubility in water as 1 in 16 to 17. It should not be soluble in less than 13 to 14 parts. (Handbuch d. prakt. Pharm. i. 319.)

Alcohol.

It should conform to the requirements of deodorized alcohol, and the latter be dropped. Beringer (A. J. Ph. 93, 520).

Test of Identity. Where the usual methods are not applicable, Tsheppe recommends to shake the liquid with nitric acid (70 p. c. absolute acid). In presence of alcohol an emerald-green line appears at the zone of separation, and the odor of nitrous ether is noticeable. (Nat. Dr. 93, 186. Proc. 93, 904.)

Specific Gravity. Influence of temperature. Fletcher (Ch. & Dr.

93, 394. Proc. 94, 505). The terms of temperature, here and under the following three articles, should be 15.6° C. (60° F.), instead of 15° C. (59° F.), for the reason given on page xliii of the Preliminary Notices. Rice.

Strength. Estimation by refractometer. Edwards (Proc. 94, 307).——Smith estimates it by noticing the rise in temperature on mixing alcohol with water. This is a rough method, not being sensitive to less than 5 p. c. (J. Ph. d'Anv. 95, 121. Proc. 95, 1059.)

Freezing Point of mixtures with water. Pictet (Compt. Rend. 94, 678. Proc. 95, 1062).

Methyl Alcohol. Ashby mixes a freshly prepared 1 p. c. solution of sodium nitroprusside with an equal volume of alcohol, or the distillate of an alcoholic liquid, adds a few drops of ammonia, and allows it to stand for fifteen minutes. Methyl alcohol is indicated by a red color. (Analyst. 94, 261. Ph. Era 95, xiii. 136. Proc. 95, 622, 1061.)

Alcohol Absolutum.

Belongs properly to "Reagents" and "Test-solutions." Beringer (A. J. Ph. 93, 520).

Refractive Index. Edwards (Proc. 93, 155).

Dehydration. Wislicenus and Kaufmann dehydrate it with aluminum amalgam. (Bull. Ph. 96, 82.)

Squibb concludes that up to the present no really absolute alcohol has been obtained. He states, however, that no alcohol should be called absolute that contains less than 99.4 p. c. by the best determinations. (Ephemeris, 94, 1445. Proc. 94, 1184.) See also (Ph. J. & Tr. 93, Sept. 181).

Squire formulates the proper requirements as follows:—Two drachms of alcohol, shaken with 8 grains of anhydrous cupric sulphate, should not show a blue color within seven minutes. The permanganate test is in so far fallacious, that the crystals may be covered with oxide, and therefore not show the presence of 2 to 3 p. c. of water. The crystals should be well-crushed. As to the carbon bisulphide test, it is best to add to 1 Cc. of alcohol 5 Cc. of bisulphide, and note the temperature at which the clear mixture becomes turbid on cooling, or the turbid mixture becomes clear on warming. (Ch. & Dr. 93, 118. W. Dr. 94, 9. Proc. 94, 1185.)

Nagelvoort states that alcohol containing 3 to 4 p. c. of water does not show a blue color with anhydrous cupric sulphate within 6 to 8 hours. He proposes the following micro-chemical test:—A small quantity of gelatinized starch is poured over a large watch crystal so as to produce a thin film, which is thoroughly dried at 100 to 105° C. Add sufficient iodine to the alcohol to produce a light-brown color, and pour over the starch film. In the absence of water no blue color will appear. (Apoth. 95, 179.)

Alcohol Dilutum.

Spec. grav. at 15.6° C. (60° F.) is nearer 0.938 than 0.936. Has been altered. Rice.

Alcohol Deodoratum.

Should be dropped: see under "Alcohol." Beringer (A. J. Ph. 93, 520).

(Aloe.)

The length of time that has elapsed since the collection of the juice, before it is evaporated, is an important factor in determining the characteristics of the finished product. The sooner the juice is dealt with, the larger the proportion of water-soluble matter. Holmes (Ph. J. & Tr. 92, Sept. 232. Dr. Circ. 92, 273. Proc. 93, 669).

Tests of Identity. Kremel has investigated the different tests proposed, especially with a view of proving the presence of aloes in mixtures, etc. He finds that the bromine test, Borntraeger's (benzin and ammonia), and the borax and chrysammine tests are the only reliable ones. (Ph. Post 95, 422. Ph. Rdsch. N. Y. 95, 261.)

Schontelen's borax test is based on the fact that a solution of borax added to a liquid containing aloes, causes a green fluorescence. It is sensitive to 1:10,000 within 25 minutes. (Zts. Anal. Ch. 92, 723. Proc. 93, 669.)

Aloe Socotrina.

Flueckiger calls attention to the fact that there is hardly any true Socotrine aloes in commerce, and that what there is, does not come from *Aloe Perryi*. (Ap. Ztg. 93, 426.)

Aloinum.

"Nataloin" has been left out. Is there any reason for this? (See reactions and tests by Curtman in Circ. No. 144, p. 913, 914.)

Most of the aloin of the American market is "barbaloin." Up to within a few years ago large quantities of aloin were made from so-called "Curaçao" aloes. In England "nataloin" is the kind usually sold. It is notorious, that there are stocks of aloin in the market, which are mixtures of several kinds, new lots (of a different origin) having been added to former remnants; and it is practically impossible to distinguish the several aloins, when mixed together. Rice (Circular No. 125, p. 797).

Solubility. La Wall calls attention to the conflicting statements made regarding the solubility of aloin in water and in ether by various authorities. He himself found the solubility in water to vary from 1:100 to 1:70, in alcohol from 1:40 to 1:20, and in ether from 1:2,500 to 1:800. (A. J. Ph. 95, 367.)

Melting Point. This should be given. A. P. A. Comm. (A. J. Ph. 95, 484. Proc. 95, 240).

Purity. Shake one grain of finely-powdered aloin with 20 Cc. of water, and allow to stand for one minute. The solution should be perfectly clear. Serre (Dr. Circ. 95, 8).

Identity. Color reactions on treating aloin with nitric acid, followed by potassium cyanide, ammonia and potassa. Formanek (Ph. Post, 95, 179. Ph. Rdsch., N. Y., 95, 242. Proc. 95, 978).

Preparation. Dissolve aloes in boiling water, let stand to separate the resin, evaporate to thin syrupy consistence, and acidulate with HCl. Free the crystals from mother liquor by expression, and triturate repeatedly with acidulated water. Ough (Ch. & Dr. 92, 837. Ph. Rdsch., N. Y., 93, 41).

Alumen.

Solubility. In "8" parts of water. Germ. Comm. (Ap. Ztg. 94, 175).

Test for Zinc. Power calls attention to a peculiar error of the U. S. Ph. of 1880, which is also found in both Dispensatories, and occurs in Hirsch's works and Schmidt's Pharm. Chem. "The clear solution in potassa or soda should yield no precipitate with ammonium sulphide." As a matter of fact, the aluminum itself is precipitated as a hydrate by this reagent. (Circ. No. 73, p. 282.)

Alumini Hydras.

Should be omitted, as it is never used. Beringer (A. J. Ph. 93, 520).

Molecular Weight. Curtman gives it 156.04. (Circ. No. 73, p. 284.)

Alumini Sulphas.

Water of Crystallization. Although this salt is stated by several authorities to contain 18 H_2O, both Curtman and Power have repeatedly examined the pure sulphate, and never found more than 16 H_2O. (Circ. No. 73, p. 285.)

Ammoniacum.

Chemistry. Tschirch & Lutz (Arch. Ph. 95, 540).

Ammonii Bromidum.

Nagelvoort objects to the iodine test, that if more chlorine be added than needed, small quantities of iodine may be overlooked.

He prefers to add one drop of freshly gelatinized starch solution to the aqueous solution of the salt, and then one drop of strong chlorine water. (Apoth. 95, 180.)

(Sixth paragraph—test with chlorine water). Add to the end "(absence of iodine)."

Ammonii Carbonas.

Nomenclature. The name should be changed to conform with the basic character of the salt. A. P. A. Comm. (Proc. 95, 240).

Soluble in "5" parts of glycerin. Merck (Index, 34).

(Last paragraph). The reason for directing 7.84 Gm. to be dissolved, when the equivalent of only 2.613 Gm. is to be used, is not apparent. Beringer (A. J. Ph. 93, 520).

Ammonii Chloridum.

Solubility. In 5 parts of glycerin. (Merck, Index, 35.)

Heating. On heating to 100° C., it loses considerable in weight. In five hours 2.2 p. c., in 269 hours 48.9 p. c. Kraut (Ph. Ztg. 94, 77).

The *pink color* is not always due to the presence of a sulphocyanide, but may often be caused by a trace of a coal-tar color. (Ph. Centralh. 95, 167. Ph. Rdsch., N. Y., 95, 105.)

Ammonii Iodidum.

This salt keeps better when, on evaporation, 0.3 p. c. of potassium carbonate be added instead of the usual addition of ammonia. (Ch. & Dr. 96, . . . Ph. Ztg. 96, 88.)

Iodate. To a solution of 1 Gm. of ammonium iodide in 5 Cc. of water add a small quantity of barium chloride, when, in the presence of only 0.002 p. c. of iodate, a granular precipitate will be thrown down. Spica (Gazz. Ch. 94 . . . Ph. Ztg. 94, 309. Proc. 94, 991).

Ammonii Nitras.

Its retention is hardly warranted. Beringer (A. J. Ph. 93, 521).

Melting Point. At 152° C. (Merck, Index, 36.)

Ammonii Valerianas.

Butyrate. Beckurts and Hirsch state in "Handbuch" that the concentrated solution should give no precipitate with acetate of copper (absence of butyrate). Power asserts that this is a mistake, since the valerianate also gives a precipitate. He knows of no good qualitative test for the presence of a butyrate. (Circ. No. 73, p. 291.)

Amyl Nitris.

As there is no little danger in handling it, the Pharmacopœia should recommend "caution."

Soluble in chloroform. (Merck, Index, 38.)

"Burning with a fawn-colored flame"—it should be added that the flame is sooty. Germ. Comm. (Ap. Ztg. 94, 175).

On shaking 1 Cc. with a mixture of 1.5 Cc. of argentic nitrate solution, 1.5 Cc. of absolute alcohol and a few drops of ammonia, no brown or black color should be noticed. Germ. Comm. (Ap. Ztg. 94, 175).

Assay. Nagelvoort thinks that the Pharmacopœia should provide for the assay of a preparation stronger than the officinal. He also calls attention to the fact that the volume of gas evolved increases within several hours. The Pharmacopœia should therefore name a certain time for reading the volume. (Apoth. 95, 99.)——It will be advisable to use a control experiment, leaving out the amyl nitrite. The volume of gas generated to be deducted from that found in the assay proper. Beringer (A. J. Ph. 93, 521).

Antimonii et Potassii Tartras.

Nomenclature. The English name should read "Potassium and Antimonyl Tartrate." A. P. A. Comm. (A. J. Ph. 95, 485. Proc. 95, 240).

Soluble in "20" parts of glycerin. Merck (Index, 41).

Solubility. The solubility in cold water varies slightly with the amount of water of crystallization present. According to Dunstan (Ph. J. & Tr. 88, Nov. 387), the anhydrous salt is soluble in 14.53 parts of cold water.

Heating. As the heating of such substances is generally done on platinum foil, it might not be unnecessary to add a caution, that in the case of this salt platinum foil would be destroyed, and the heating should be done on porcelain. Curtman (Circ. No. 86, p. 375).

Arsenic. In this test tin-foil should be omitted, since it reduces antimony as well as arsenic. Curtman (A. J. Ph. 94, 389). See also Umney (Ph. J. & Tr. 93, Nov. 439. Proc. 94, 1012).——Nagelvoort thinks that one hour is too short. The quantity of HCl necessary for solution might be specified. He states that 3 Cc. are sufficient. (Apoth. 95, 183.)

The words "together with a small piece of tin-foil" have been canceled.

Antimonii Oxidum.

Arsenic. See remarks under "Antimonii et Potassii Tartras."

The words "together with a small piece of tin-foil" have been canceled.

Antimonii Sulphidum.

"Striated, crystalline fracture" . . . Power states that, although the native sulphide certainly has a radiate fracture, when fused the appearance is decidedly striated. (Circ. No. 86, p. 377.)

Antimonium Sulphuratum.

Nomenclature. Power suggests as a more distinctive name—"Antimonium sulphuratum rubrum." (Circ. No. 86, p. 379.)

(Fourth paragraph. Heating with HCl, etc.) Nagelvoort observes that if this test is not carefully performed, a precipitate of oxychloride of antimony will be found on the filter, and will be weighed as a residue. (Apoth. 95, 1.)

Apomorphinæ Hydrochloras.

The adjective should be changed to "hydrochloridum." A. P. A. Comm. (A. J. Ph. 95, 484. Proc. 95, 240).

"Soluble in 45 parts of water." Merck states that it is soluble in 6.8 parts. (Index, 42.) See also U. S. Ph. 1890.

The solubility is given differently by various authorities: Flueckiger says 1:30; Ph. German, 1 in about 40; Rice, 1:43.3 to 44; and Eccles, 1:40 to 58. Eccles says that a slight difference in temperature, or the presence of HCl in minute quantity, influence the solubility. (Circular No. 125, p. 803.)

Aqua.

Action upon Glass. Mylius & Forrester (Zts. Anal. Ch. 92 . . . Ch. News, 92, 73. Proc. 93, 947).

Expansion and Specific Gravity at different temperatures. Curtman (Ph. Era, 94. 392).

Sterilization. Fremont asserts that keeping water for twenty minutes at 80° C. will be sufficient. (Ph. J. & Tr. 95. Mrch. Appendix, 79.)

Purity. In fixing the standard for such natural water as may be used in pharmaceutical processes, our main consideration should be to exclude any water containing ingredients incompatible with such purposes. This is quite different from the standard to be fixed for *potable* waters. There are many ingredients of natural water which are not injurious to health, but which are highly objectionable in the manufacture of many chemicals. It would not be a very great tax to use water, purified by boiling, filtering or distilling, instead of the natural water of questionable purity. In view of the fact that boiling destroys many bacteria and removes several salts, the Pharmacopœia might direct all water to be boiled before being used. Curtman (Circ. No. 86, p. 382).

Power has collated the limits allowed by the Germans (Kubel, Tiemann, Gaertner), as given in Ph. Germ. (III), p. 650. Column "A." International Pharm. Congress (A. J. Ph. 85, 527). Column "B." Associat. of Swiss Chemists (Ph. Ztg. 88, 738). Column "C." U. S. Ph. 1890. Column "D."

QUANTITIES IN GM. IN 1,000 PARTS.

	A.	B.	C.	D.
Solid residue . . .	0.5	0.05	0.5	0.5
Sulphuric acid . . .	0.08–0.1	0.06	Variable.	0.1
Chlorine . . .	0.02–0.03	0.008	0.02	0.0088
Nitric acid	0.005–0.015	0.002	0.02	?
Nitrous acid	None.	None.	None.	?
Ammonia, free . .	None.	0.005	Trace.	?
Organic matter . . (Calculated for $K_2Mn_2O_8$).	0.008–0.01	0.02	0.01	0.0158

(Circ. No. 86, p. 380, 381.)

Both Curtman and Power think that the limit for "residue" instead of 0.5 Gm. might be only 0.25 Gm. (Ibid.)

(Aquæ Medicatæ.)

Preparation. Since calcium phosphate is not as bulky as the magnesia formerly used, the quantity might advantageously be doubled. Beringer (A. J. Ph. 93, 521). England (A. J. Ph. 94, 351. Proc. 95, 652). Miner wants the quantity to be increased five-fold, when the mixture with oil will be pulverulent (Apoth. 94, 113.)——England proposes hot boiled water. (A. J. Ph. 94, 352.) Hallberg (W. Dr. 94, 4). Alpers (A. J. Ph. 95, 484), and A. P. A. Comm. (Proc. 95, 239).

Widlund uses in addition filtering paper. (Proc. 93, 490.)——Elborne recommends a novel method. He incloses the essential oil, camphor, chloroform, etc., in a bag of parchment paper, and makes the water by osmosis. (Ph. J. & Tr. 95, Jan'y, 581.)

Assay. Dissolve sodium chloride in the water, shake with ether, separate the ethereal solution, and remove water by calcium chloride. Mix with a weighed quantity of olive oil, and evaporate off the ether. Ranwez (J. Ph. d'Anv. 92, 445. Am. Dr. 93, April, 205. Proc. 94, 1140).

Copper. Biltz has pointed out already in 1874 that distilled aromatic waters are liable to contain copper. (Ap. Ztg. 95 . . . Ch. & Dr. 95, March, 383.)

Aqua Ammoniæ.

Strength. Estimation by refractometer. Edwards (Proc. 94, 299). Nessler's test appears to be unreliable in the presence of alcohol. DeKoninck finds that alcohol not only prevents the yellowish-brown precipitate, but also the coloration. It is quite possible that other organic substances act in the same way, or, perhaps, give the ammonia reaction, when really no ammonia is present. (Zts. Anal. Ch. 93, 188. Am. Dr. 93, 386. Proc. 93, 756, and 94, 1247.)

The lime water test may be improved by using a mixture of equal parts of ammonia and lime water, which should show only a slight precipitate on boiling. Hertkorn (Apoth. 95, 101).

The official lime water test, according to Biltz, will exclude more than $\frac{1}{40}$ to $\frac{1}{50}$ of one p. c. of carbonic acid gas. Power (Circ. No. 86, p. 383).

Aqua Amygdalæ Amaræ.

Since the oil contains more or less hydrocyanic acid, Miner proposes to use oil deprived of the acid, so much the more as the water is chiefly used as a flavoring agent. (Apoth. 94, 17.)

Coblentz proposes a substitute containing 1 p. m. of HCN by dissolving 6.46 Gm. of chloral cyanhydrate in 1 liter of distilled water. (Pharmacy, p. 221.)

Assay. Gregor prefers Volhard's method with argentic nitrate, ferrous sulphate and potassium sulphocyanide. (Zts. Anal. Ch. 94, 30. Proc. 94, 556.)——Glucksmann adds sodium hydrate, and titrates with argentic nitrate. The p. c. of HCN is obtained by multiplying the number of Cc. of the silver solution with 0.108. (Ph. Post, 94, 145, 273, 403. Proc. 95, 555.)

Aqua Aurantii Florum Fortior.

"Loosely-stoppered bottles." It is proposed to stopper the bottles with a pledget of absorbent cotton.

Aqua Camphoræ.

Hallberg contends that hot water poured upon the camphor in small pieces is superior to the alcohol and calcium phosphate process. (W. Dr. 94, 4.)——This is at variance with Rother's assertion that ice-cold water dissolves more camphor than hot water. Elborne (Ph. J. & Tr. 95, Aug. 109).

Aqua Chlori.

Since liquid chlorine is now an article of commerce, it is recommended to use this for making chlorine water extemporaneously. (A. J. Ph. 94, 223. Proc. 94. 557.)

In view of the easy deterioration, it has been proposed to make chlorine water extemporaneously from potassium chlorate and hydrochloric acid, which preparation has been declared therapeutically unobjectionable. (40 grains of potassium chlorate, ½ fluid-drachm of acid and water up to one pint.) (W. Dr. 94, 4.)

Estimation of Chlorine. The presence of even small amounts of alkali silicates appears to interfere seriously with the accuracy; using standard silver and potassium chromate. Fairly (Analyst, 93, 222. Proc. 94, 1022).

Aqua Chloroformi.

It contains $\frac{1}{200}$ of its volume, or $\frac{1}{134}$ of its weight of chloroform. Hirsch (Ph. Rdsch. N. Y. 93, 237).

Aqua Destillata.

A new still by Lloyd. (A. J. Ph. 95, 190. Proc. 95, 552.)

Preparation. Of 1000 parts, 100 parts are to be thrown away and 800 kept. This would leave only 100 parts in the apparatus, which Hirsch thinks is too close, considering that the distillation is over a naked fire. He recommends to collect only 650 to 700 parts. (Ph. Rdsch. N. Y. 93, 237.)

Purity. Since most of the distilled water will be found to contain carbonic acid, it would be appropriate to direct that the water should be boiled before use, in order to expel the carbonic acid. Beringer (A. J. Ph. 93, 521).

Lloyd sums up the chief results of his investigations, as follows: The permanganate test is not too rigorous, but it becomes of no use if made in an impure atmosphere. It is impracticable (because of inorganic impurities) to make distilled water in glass, stone or ordinary metal condensers so that it will stand the pharmacopœial test. (A. J. Ph. 96, 4.)——Power proposes to sterilize the condenser by allowing steam to pass through the uncooled condenser for about ten minutes before allowing the condenser to be cooled and the distillation to proceed. (Circ. No. 86, p. 389.)

Aqua Hydrogenii Dioxidi.

The direction to "make it freshly, when wanted" (U. S. Ph., p. 53, 2d paragraph), is scarcely practicable for the retail pharmacist, since it takes at the very lowest three hours, with quite undivided attention.

Strength. Squibb finds that when left in an open vessel it becomes stronger instead of weaker, indicating that the water evaporates faster than the dioxide decomposes. It also becomes stronger on freezing, as the water is easily frozen out, apparently without loss. He also found that by heating it on a water-bath at a temperature not exceeding 60° C., it loses chiefly water, and may be so concentrated as to contain 50 volumes dioxide. (Ephemeris, 94, Jan'y, 1557 & 1560. Proc. 94, 1026.)——Shiloff starts from the ordinary 3 p. c. solution by rendering it slightly alkaline with sodium carbonate, and shaking out with 10 to 12 volumes ether, which takes up about one-half of the dioxide. The ethereal solution is separated and the ether distilled off. He succeeded in this way in obtaining a solution containing 54 to 79 p. c. of dioxide. (Ph. Zts. Russl. 93, 373. W. Dr. 94, 370. Proc. 94, 1027.)——See also Wolffenstein (Ph. Ztg. 94, 778. Am. Dr. 95, Jan'y, 38 & 43. Proc. 95, 947), and Patch (Proc. 94, 202).

At ordinary temperature, and with ordinary agitation (in handling and carrying by rail, etc.), it will decompose within eight weeks. Squibb (Ephem. 94, 1556).

"Add to it barium dioxide in such a way that it shall not form lumps." (U. S. Ph., p. 51.) Squibb recommends sifting the barium dioxide into the water. (Ephemeris, 94, 1548.)

Pure. Dissolve peroxide of barium in a slight excess of HCl, and shake out repeatedly with ether. The ethereal solution is shaken with water, which takes up the dioxide. Crismer (Ph. Centralh. 93 . . . Merck, Rep. 93, 150).

Commercial Examination. Endemann (W. Dr. 95, 99).——Lloyd (A. J. Ph. 93, 276. Proc. 93, 772).——La Wall (A. J. Ph. 95, 372).

Test. Griggi recommends to take up the blue color of chromic anhydride with amylic alcohol instead of with ether, because with the former the color does not disappear for 4 to 6 hours. (Orosi, 92, 295. Proc. 93, 771.)

Assay, Rapid. Moerck uses a modification of the official method, requiring a large excess of water. Add 5 Cc. of dilute sulphuric acid to 500 Cc. of water, and a sufficient quantity of permanganate solution to a pink tint (to counteract any reducing action of the water). Now add 5 Cc. of the dioxide, and run in sufficient of the permanganate solution until the pink color is no longer discharged. Divide volume of permanganate used by 10, and the result will be the volume of oxygen liberated from one volume H_2O_2. (A. J. Ph. 93, 65. Proc. 93, 772.)

It should be kept in dark-brown bottles. Curtman (Ph. Rdsch., N. Y., 93, 158).

Preservation. Squibb finds that 1 p. c. of boroglyceride retards decomposition for quite a considerable period. (Ephem. 94, Jan'y, 1561.)

Statement of Manufacturers and Real Strength. Squibb points out that there are three ways (two correct and one incorrect) ways of stating the strength. One is by giving the p. c. of H_2O_2 in any given solution, the second by giving the number of volumes of available oxygen that one volume will yield on decomposition in use. The third and incorrect way is by giving the number of volumes of oxygen given by the reaction between one volume of the solution and its equivalent of potassium permanganate, thus counting in the oxygen yielded by the permanganate as if it was given by the solution. This latter method is in almost universal use by manufacturers. (Ephem. 94, Jan'y, 1569.)

Aqua Rosæ.

"Preparation: Unguentum Aquæ Rosæ," is not correct, since the Pharmacopœia directs the use of "stronger" rose-water. Beringer (A. J. Ph. 93, 522).

Aqua Rosæ Fortior.

Preservation. This water should be occasionally exposed to the air, else it acquires a musty odor. Galen, Jr. (Am. Dr. 94, 31. Proc. 94, 557, & 95, 554).

The direction to keep it in well-stoppered bottles, should therefore be altered; and it is proposed to keep the container stoppered with a pledget of absorbent cotton.

Argenti Nitras.

"Protected from light" is, strictly speaking, not necessary, since the really chemically pure nitrate is unaffected by light, not even by direct sunlight, provided no organic matters (dust, etc.), chloride or bromide are present. Photographers, as long as the wet process was in use, were in the habit of purifying their silver nitrate solution by exposure to sunlight. Curtman (Circ. No. 86, p. 392).

Solubility. "Soluble in water, 1:0.6 parts." Curtman states that it is still more soluble, 1:0.52 parts. (Ibid.)

Solutions of this salt become gradually less clear, if the glass of the bottles contains considerable alkali. Spil (A. J. Ph. 93, 387. Proc. 94, 1063).

Lead. In the test for lead, it is recommended to add the dilute sulphuric acid "warm," else sulphate of silver may separate, which re-dissolves with difficulty, and might be mistaken for lead. (Ph. Centralh. 93, 9.)

Argenti Nitras Dilutus.

(Last paragraph.) "0.5 Cc. of $\frac{N}{10}$ silver nitrate solution." It would be better to make it "0.5 to 1," as the Germ. Ph. has it, since the quantity really needed is "0.58 Cc." Hirsch (Ph. Rdsch., N. Y., 93, 238).

Argenti Nitras Fusus.

The calculations in the last paragraph are not absolutely correct. Twenty Cc. $\frac{N}{10}$ sodium chloride precipitate 0.3391 Gm. argentic nitrate, but 0.34 Gm. contain only 0.3196 Gm., hence there will be an excess of 0.00691 sodium chloride which will precipitate 0.0195 argentic nitrate, and 1 Cc. $\frac{N}{10}$ argentic nitrate solution will not be sufficient. Instead of 20 Cc. only 19 Cc. should be directed, or 0.36 instead of 0.34 Gm. moulded nitrate of silver, or the quantity of T. S. should be doubled. Hirsch (Ph. Rdsch. N. Y. 93, 238).

Melting Point. At 218° C. (Merck, Index, 211.)

Argenti Oxidum.

Quantitative Test. Both Power and Curtman consider the conversion of the oxide into metallic silver by heat much more easily accomplished, without loss or inaccuracy, than the conversion into chloride. (Circ. No. 86, p. 396.)

Arnicæ Flores.

Should be freed from calyx and receptaculum. Hirsch (Ph. Rdsch. N. Y. 93, 276).

Arseni Iodidum.

Solubility. It dissolves without residue in much water, but when digested with a little water, it is decomposed into hydriodic acid and a compound of the formula $2AsOI+3As_2O_3+12H_2O$, which crystallizes in thin, pearly laminæ. Wallace (Fehling's Handwbch., I, 762). The determination of the exact degree of solubility will therefore appear to be attended with some difficulty. Power (Circ. No. 86, p. 397).

It absorbs ammonia gas with great avidity, forming a white compound. Curtman (Ibid).

Melting Point. At 394 to 414° C. (Merck, Index, 43.)

Strength. A test for p. c. of iodine should be given, since samples have differed as much as between 12 and 37 p. c. of iodine. Nagelvoort (Apoth. 95, 1.)

Asa Foetida.

Ash. Limit should be given. Hirsch (Ph. Rdsch. N. Y. 93, 238). ——It varies from 2.08 to 53.75 p. c. (Ap. Ztg. 95, 126.)

Solubility in Alcohol. 60 p. c. is rather too high a requirement for the commercial article. (Ph. Rev. 96, 58.)

Adulterations. Tests should be given for the detection of white turpentine and of resin. (Ibid.)

Aspidium.

The author's name should be "(Linné) Schott," since the name appeared first in Linné's Spec. Plant, 1753, and Schott's authority dates from 1834. Suttie (Bull. Ph. 93, 496).

Activity. According to Kobert, the activity is probably due to the volatile oil, and on removing the fixed oil nearly all the volatile oil is removed too. Pure filicic acid does not possess much activity. (Ph. Post, 92, 1325. A. J. Ph. 93, 135. Proc. 93, 652.)

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

Aspidosperma.

Assay. With modified Prollius' mixture. The alkaloids should be weighed and not titrated. Schwickerath (Ph. Rdsch. N. Y. 93, 285, and 94, 139. Bull. Ph. 93, 538. Proc. 94, 549).

Atropina.

Melting Point. Should be 115° C. A. P. A. Comm. (A. J. Ph. 95, 484. Proc. 95, 240). Ph. Germ. gives it as 115.5° C.——According to Hesse, 108° C. is the melting point of pure hyoscyamine. (Ph. J. & Tr. 94, May, 975.)

Merck (Darmstadt), being the largest manufacturer of atropine and kindred alkaloids, gives the melting point as 109 to 113° C. Dohme gives 114.5° C. (Circular No. 125, p. 799.)

"It is always accompanied by a small proportion of hyoscyamine. . . ." Umney states that this is inaccurate, in as much as the alkaloid in the plant is nearly entirely hyoscyamine, and, besides, this does not agree with the physical and chemical properties given. The definition should be modified so as to show that the hyoscyamine present is a small proportion of the original alkaloid, unconverted into atropine by the process of extraction. Both the melting point and the gold chloride test should be modified so as to fit the contaminated salt. (Ph. J. & Tr. 94, May, 975.)

Tests. Behavior to potassa, gold chloride, bromine, picric acid, and platinic chloride. Wormley (A. J. Ph. 94, 513. Proc. 95, 1013).——The presence of strychnine obscures the reactions of atropine. Fabris (Gaz. Ch. 92, 347. J. Ch. Soc. 92, 1534. Proc. 93, 826, & 94, 1100). See also Vitali (Bollet. 94, 449. Proc. 95, 987), and Monegaggi (Bollet. 94 . . . Ph. Rdsch., N. Y., 94, 89).

The physiological test might have been given, but for prudential reasons has been omitted.

The modification of the odor test by potassium dichromate, is also obtained by the addition of potassium permanganate, or ammonium molybdate. Curtman (Circ. No. 144, p. 914), who also states that atropine reduces ferric ferricyanide to Prussian blue quite as rapidly as morphine.

Atropinæ Sulphas.

Melting Point. Ph. Germ. has 183° C.——Merck (Index, 45) has 181 to 191° C.

Solubility. Ph. Germ. has 1:1 water, and 1:3 alcohol. (Ph. Rdsch. 93, 238.)

Merck gives the solubility as 1:0.6. Dohme the melting-point as 201° C. (Circular No. 125, p. 800.)

Ignition. Eccles states that on platinum foil the speed of ignition is exceedingly well marked with a number of alkaloids. With this test alone it would be possible to tell atropine sulphate from quinine sulphate or strychnine sulphate. Most sulphates are dissipated slowly, quinine bisulphate very slowly, atropine and codeine go like a flash when ignited. (Ibid.)

Aurantii Amari Cortex.

Distinction from lemon peel. Moisten with HCl, the color turns dark-green, the color of lemon peel does not alter. Clayton (Analyst, 19, 134. A. J. Ph. 94, 361. Proc. 94, 933).

Auri et Sodii Chloridum.

The present mechanical mixture should be replaced by a definite chemical compound ($AuCl_3NaCl.H_2O$). A. P. A. Comm. (A. J. Ph. 95, 485. Proc. 95, 240).

Estimation. The method of P. German. (ignition in a crucible, and washing out NaCl) is objectionable in as much as it requires prolonged ignition in order to completely expel the chlorine. The oxalic acid method is preferable to ferrous sulphate, because the filtrate from the precipitated gold is better adapted for the detection of foreign metals. Power (Circ. No. 86, p. 398).——Curtman states, that with proper attention to dilution and avoidance of heat, Hempel's volumetric method may be used, which is as follows: Reduce the salt by an excess of $\frac{N}{10}$ oxalic acid, filter, wash out precipitate, and measure the excess of oxalic acid by $\frac{N}{10}$ potassium permanganate. (Ibid.)

(Balsams.)

Schneider states that the value of the acid, ester, saponification and iodine numbers is questionable, because of the variable proportions of resin and volatile oil. (Ph. Centralh. 93, 9.)

Balsamum Peruvianum.

Nomenclature. Taylor contends that "Balsam of Peru" is incorrect; it should be "Peru Balsam." (Am. Dr. 93, Nov. 289.)