

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 (AuCl₃NaCl.H₂O). 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. Centrall. 93, 9.)

Balsamum Peruvianum.

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

Chemistry. Trog comes to the conclusion that the balsam is formed from the tannin of the bark, and therefore a pathological product. (Arch. Ph. 94, 70 & 95. A. J. Ph. 94, 401. Proc. 94, 903.)

Specific Gravity. Wimmel found the sp. gr. never below 1.138, nor above 1.150. (Ap. Ztg. 93, 443. Proc. 94, 904.)—Contrary to the statement of Gehe & Co., that adulterated balsam never has the proper sp. gr., Musset states that he found three specimens with respectively 1.159, 1.152 and 1.151. (Ph. Centralh., 93, 787. Ph. Rdsch., N. Y., 94, 39. See also Ph. Centralh., 95, 76. Proc. 95, 866.)

Tests. Gehe & Co. repeat, what they have stated several times before, that while several of the proposed tests give reliable results in experienced hands, they are apt to be misleading in the hands of inexperienced chemists. (Report, Sept. 94. Ph. Rdsch., N. Y., 94, 245.)

Rosin, Turpentine and Canada Balsam. Hirschsohn makes use of the fact that the benzin extract of true Peru balsam is indifferent toward a solution of copper acetate, while all of the above become green when shaken with the copper acetate solution. Besides this test, he requires the balsam to stand the following tests:—1. The benzin extract, after evaporation, should not be colored, when HCl (1.19) is poured over it. 2. On mixing the balsam with half its volume of calcium hydroxide, and heating the mass in a water-bath for a half hour, a solid mass should not result. 3. One part of balsam, mixed with 4 volumes of 80 p. c. acetic acid, should give an opalescent, or slightly turbid solution, from which no oily drops should separate. He also gives the behavior to nitric acid, acetic acid, and a solution of bromine in chloroform. (Ph. Zts. Russl. 93, 369, 385, 401. Am. Dr. 93, Sept. 170. Proc. 94, 903.)

Lime Test. Musset recommended the calcium hydroxide test, but found that it has to be kept under water. Equal parts of stiff lime paste and balsam are to be mixed. (Ph. Centralh. 93, 720, 738. Proc. 94, 904.) Later he found that several parcels, undoubtedly genuine balsam, did not respond to this test, so he falls back upon the sp. gr., the proportion soluble in benzin, and the sp. gr. of the ester, as the only reliable tests. (Ph. Ztg. 95, 113. Ph. Rdsch., N. Y., 95, 91.)

Benzin Test. Benzin extract evaporated, and residue treated with nitric acid, must give a yellow color, but not a bluish-green. Schade points out that it will be necessary to heat the residue for at least ten minutes on a water-bath, before adding nitric acid. (Ph. Ztg. 94, 214. Ph. Rdsch., N. Y., 94, 141.)—Schacht states that the reliability of the benzin test depends on the complete absence of benzol, which can be removed by treating benzin with nitric acid. (Ap. Ztg. 95, 29.)—Gehe & Co. find that, even then, undoubtedly pure bal-

sams do not always respond to this test. (Report, Sept. 94. Ph. Rdsch., N. Y., 94, 245.)

Turpentine. Is detected by the behavior of the balsam to sulphuric acid. Pure balsam is colored cherry-red; in the presence of turpentine, however, sulphur dioxide is given off, and the mixture blackens. (Bollet, 93 . . . Ph. J. & Tr. 94, July, 19.)

Castor Oil. May be suspected from the shape of the drops, when dropped into water. From pure balsam the drops are perfectly round; in the presence of castor oil, the drops are elongated, the point being formed by a small, colorless vesicle. (Ph. Centralh. 95, 495. Ph. Era, xii, 94, 487.)

Tacamahac. This resin cannot be detected by any of the usual tests, and its presence is only revealed by the odor given off on heating the balsam to over 150° C. Schacht (Ph. Ztg. 95, 24).

Cinnamein. Gehe & Co. state that the two most valuable tests are the p. c. of cinnamein and its saponification number. A good balsam should contain from 57 to 60 p. c. of cinnamein, and the saponification number should be between 235 and 238. (Report, April, 95. Ph. Rdsch. N. Y. 95, 143. Proc. 95, 866.)

"*Balsamum Peruvianum Depuratum.*" Musset proposes to make use only of the benzin-soluble portion of the balsam, considering the several resins as quite valueless. (Ph. Ztg. 95, 113. Ph. Rdsch. N. Y. 95, 91.)

Balsamum Tolutanum.

Nomenclature. Taylor contends that "Balsam of Tolu" is incorrect, and that it should be "Tolu Balsam" or merely "Tolu." (Am. Dr. 93, Nov. 289.)

Chemistry. Oberlaender shows that it is a pathological product, probably from the tannin of the bark. (Arch. Ph. 94, 595. Ph. Rdsch. N. Y. 95, 41. Proc. 95, 866.)

Rosin. Braithwaite proposes to word this test as follows: When 5 parts of the balsam are warmed gently with two successive portions of 25 and 10 parts, respectively, of carbon disulphide, and the solvent decanted into a tared flask, the residue, after the disulphide is distilled off, should be distinctly crystalline, and every 1,000 parts should require for saponification not less than 300 parts of potassium hydrate. (A. J. Ph. 95, 472.)—Schmidt dissolves the residue of the carbon disulphide solution in acetic acid, and adds sulphuric acid. A red color indicates rosin. (Ph. Centralh. 93, 9.)—Hirschsohn rubs the balsam to a fine powder, and shakes vigorously for 10 to 15 minutes with 4 to 5 times its weight of benzin, filters, and shakes the filtrate with an equal volume of a solution of cupric acetate (1:1,000). A green color will indicate rosin. (Ph. Zts. Russl. 95, 514.)

Turpentine. On adding sulphuric acid, sulphur dioxide is given off, and the balsam blackened. Pure balsam becomes cherry-red. Lucas (Ph. J. & Tr. 94, Febr. 675).

Barii Dioxidum.

Estimation. Squibb modifies the official method as follows: Put 0.211 Gm. of the more or less coarse powder in a porcelain capsule, mix with 2 Cc. of water and 0.6 Cc. of syrupy phosphoric acid (1.70), and stir until a clear or nearly clear solution is obtained. Then add 3 Cc. more of water. Drop into this from a burette, with constant stirring, a volumetric solution of potassium permanganate until a final drop gives a pink tint which is permanent for at least one or two minutes. Note the quantity used. (Ephemeris, 94, Jan'y, 1547.)

Belladonnæ Folia.

Microscopy. Kraemer (Am. Dr. 94, 358. Proc. 94, 938).

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

Time of Gathering. Since the flowers contain more alkaloid than the leaves (in the flowering season), should not the time of gathering be mentioned? (Bull. Ph. 96, 153.)

Assay. Should be introduced. A. P. Comm. (A. J. Ph. 95, 484).

By titration. Caspari & Dohme. (A. J. Ph. 93, 477.)

Schwickerath. With modified Prollius' mixture. (Ph. Rdsch. N. Y. 93, 282. Bull. Ph. 93, 535. Proc. 94, 538, and Ph. Rdsch. N. Y. 94, 137.)—Keller. With ammoniated ether-chloroform. (Ph. Ztg. 94, 345. Am. Dr. 94, Aug. 96. Proc. 95, 541.)—Beckurts finds that Keller's method gives uniform results. (Ph. Centralh. 94, 566. Am. Dr. 94, Nov. 328. Proc. 95, 535.)

Value of indicators. A. P. A. Comm. (Kebler). (A. J. Ph. 95, 499. Proc. 95, 192.)

Alkaloidal p. c. according to Guenther, Lefort, Dragendorff (A. J. Ph. 93, 479).—Adrian found 11 to 12 Gm. in 100 Kos. fresh stems and leaf stalks, and 32 to 34 Gm. in 100 Kos. herb. (Nouv. Rem. 92, 244. Bull. Ph. 92, 486. Proc. 93, 819.)—Keller found 0.38 to 0.40 p. c. atropine. (Ph. Ztg. 94, 345. Am. Dr. 94, Aug. 96, Proc. 95, 541.)

Standardization of Preparations. Cripps (Ph. J. & Tr. 95, Mrch. 793).

Belladonnæ Radix.

Microscopy. Kraemer (Am. Dr. 94, 358. Proc. 94, 938).

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

Gathering. The time of collection should be mentioned. Both Werner and Budde find that the autumnal root contains most alka-

loid. ("Digest" on U. S. P., 1880, p. 36.)—Schmidt found that the two-year-old root contains no atropine. (Ibid, p. 290.)

Assay Should be introduced. A. P. A. Comm. (A. J. Ph. 95, 484).

Schwickerath. With modified Prollius' mixture. (Ph. Rdsch., N. Y., 93, 282. Bull. Ph. 93, 535. Proc. 94, 538), and (Ph. Rdsch., N. Y., 94, 137.)—Keller. With ammoniated ether alcohol. (Ph. Ztg. 94, 345. Am. Dr. 94, Aug. 96. Proc. 95, 541.)—Beckurts finds that Keller's method gives very reliable results. (Ph. Centralh. 94, 566. Am. Dr. 94, Nov. 328. Proc. 95, 535.)

By titration. Caspari & Dohme (A. J. Ph. 93, 477).

Alkaloidal p. c. Guenther, Lefort, Dragendorff (A. J. Ph. 93, 479).

—Adrian obtained 250 to 350 Gm. atropine from 100 Kilos. fresh root. (Nouv. Rem. 92, 244. Bull. Ph. 92, 486. Proc. 93, 819.)—Keller found 0.66 p. c. (Ph. Ztg. 94, 345. Am. Dr. 94, Aug. 96. Proc. 95, 541.)

Standardization of Preparations. Cripps (Ph. J. & Tr. 95, March, 793.)

Benzinum.

Examination of commercial. McCloskey (A. J. Ph. 95, 364).

Purification. Ekenberg mixes it with 5 to 10 volumes of liquid paraffin, and distils at 60 to 70° C. The paraffin is purified sufficiently for further use by subjecting it to a heat of 120° C. (Ch. Ztg. 94, 1240. Ph. Rdsch. 94, 243.)—Shake for 24 hours with a mixture of 1 part of potassium permanganate, 50 water and 8 sulphuric acid; after separation, shake for 24 hours with 1 potassium permanganate, 50 water and 2 potassa. (Ph. Centralh. 94, 451. Proc. 95, 1064.)

(Last paragraph.) "Odor of bitter almonds"—The reliability of this test is questioned, it being stated that at times an absolutely benzo'-free benzin gives off this odor. (Ph. Ztg. 93, 606.)

Benzoinum.

Constituents. Of Sumatra. Salkind (Ph. Post, 93, 330. A. J. Ph. 93, 385. Proc. 94, 945). Luedy (Arch. Ph. 93, 43, 94. A. J. Ph. 93, 224. Proc. 93, 707, & 94, 944).—Of Siam. Luedy (Arch. Ph. 93, 461. A. J. Ph. 93, 459. Proc. 94, 945). Both concur in the view that benzoin is a pathological product, from the tannin of the bark.

Siam. Collection and amount. (Kew Bull. 95. A. J. Ph. 95, 523.)

Should the Pharmacopœia not state the country or commercial appellation? Hirsch (Ph. Rdsch. 93, 238).

Commercial Benzoin. Luedy recommends especially the Palembang for the preparation of benzoic acid, as it is considerably cheaper than the Siam. These two varieties contain only benzoic acid, Sumatra and Penang benzoin (which latter variety is hardly found in

commerce) contain in addition not inconsiderable quantities of cinnamic acid. (Arch. Ph. 93, 500, 513. A. J. Ph. 93, 495. Proc 94, 944.)

Benzolum.

Commercial "90 p. c." contains about 70 p. c., and "50 p. c." about 46 p. c. pure benzol. The commercial terms refer to the proportion of the mixture which passes over below 100° C., when the commercial product is distilled. (Ch. & Dr. 95, Mrch, 435.)

Bismuthi Citras.

Objection has been made to the process of the U. S. P. (Evans, Ph. J. & Tr. 86, Jan'y, 602,) that the salt is not entirely soluble in ammonia. Power states that this is due to the presence of chloride or sulphate; a perfectly pure citrate is readily soluble. (Circ. No. 86, p. 400.)

Bismuthi Subcarbonas.

The chemical formula has been omitted, because the subcarbonate is not of constant composition, and the commercial product rarely corresponds with the formula given in U. S. P. 1880. Hirsch (Universal-Ph., p. 210), says that the amount of Bi_2O_3 varies in practice between 82 and 90 p. c. Power (Circ. No. 86, p. 402).

Nitrate Test. Curtman thinks it advisable to state the exact number of drops of indigo solution to be added. (Circ. No. 86, 403.)

Arsenic. In Bettendorf's test the tin-foil should be omitted, since it reduces bismuth as well as arsenic. Curtman (Ph. Rdsch. N. Y. 94, 157. A. J. Ph. 94, 389). And Umney (Ph. J. & Tr. 93, Nov. 439. Proc. 94, 1012).—The words "and a small piece of tin-foil added" have been cancelled.—Janzen contends that a bismuth salt, which does not stand the stannous chloride test, should be rejected, whether the brown coloration is due to arsenic or tellurium. (Ap. Ztg. 94, 519.)—Nagelvoort finds fault with the direction to dissolve in the stannous chloride solution. The proper way is to dissolve in HCl and then add the stannous solution. He states that both the subcarbonate and the subnitrate may be strongly contaminated with arsenic, although the U. S. P. test may appear to show its absence. (Apoth. 95, 184.)

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

Bismuthi Subnitras.

The chemical formula has been left out because of the varying chemical composition. Moerck has shown that the water varies from 2.35 to 2.95 p. c., and the bismuth oxide from 80.35 to 81.85 p. c.

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 CBr₄) 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