Solubility. In water, 1:0.34; in alcohol, 1:2.2. Melting point. 149–150° C. Merck (Circular, No. 125, p. 801).

Hyoscyaminæ Sulphas.

Melting point. It is questionable whether there is any practical advantage in giving melting points, either so difficult to recognize that wide limits must be allowed, or where various authorities, all of whom are presumed to operate with care, obtain widely different results. The latter are probably due to difference between the samples examined and to personal error. It would seem best to omit all such uncertain figures from the Pharmacopœia. (Circular, No. 125, p. 802.)

Behavior to potassa, auric chloride, bromine, picric acid, platinic chloride. Wormley (A. J. Ph. 94, 513. Proc. 95, 1013).

Hyoscyamus.

Alkaloids. P. c. Dohme (A. J. Ph. 93, 481).

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

Schwickerath. With more or less modified Prollius' mixture. (Ph. Rdsch. 93, 282, & 94, 138. Bull. Ph. 93, 535.)

Beckurts finds that Keller's method gives the most uniform results. (Ph. Centralh. 94, 566. Am. Dr. 94, Nov. 328. Proc. 95, 535.)

Copper. P. c. (Ph. Ztg. 94, 30. Proc. 94, 566.)

Illicium.

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

Oil. Yield. Morrison & Jackson (Proc. 94, 682).

Infusa.

The Pharmacopœia should direct "expression" in addition to "straining." Caspari (Pharmacy, p. 216).

An infusion made in winter time is likely to differ from one made during warm weather, and a large quantity from a small one, because of the unequal cooling of the liquid. "Let it stand for half an hour:" it should be added "in a warm place."

Not all substances, suitable for infusions, can stand boiling water; calumba, for instance.

Infusum Digitalis.

England proposes to leave out the cinnamon, and to add 90 minims of ammonia to each pint. (A. J. Ph. 92, 361. Proc. 93, 425.)

Inula.

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

Inulin. Preparation, properties and chemistry. Tanret (J. de Ph. & Ch. 93, 354 & 449. Proc. 93, 853).

Iodoformum.

Moisture. So much of the iodoform at present in the market is more or less moist, that an allowance of loss on drying over sulphuric acid should be fixed. Vulpius thinks that 1 p. c. is sufficient. (Ph. Centralh. 94, 259. W. Dr. 94, 264. Proc. 94, 1210.)

Solubility. In 9 parts of boiling water. Vulpius (Ph. Ztg. 94, 114).

(Last paragraph.) "Unaffected by silver nitrate"—can not be fulfilled, as iodoform is slightly soluble in water (1:14,000). Merck (Index, p. 136).

Emulsum. With starch and glycerin. (Brit. Med. J. 93 . . . Proc. 94, 564.)

Since iodoform is to a slight extent soluble in water, silver nitrate solution will affect water that has been shaken with iodoform, even if the latter was free from soluble iodides. It is best to alter the text to read: "and should not be rendered more than faintly opalescent by silver nitrate, T. S.," etc.

Iodum.

Boiling point. At 187° C. (Merck, Index, p. 135.)

Soluble in 50 parts of glycerin. (Ibid.)

Pure. Preparation. A solution of 1 part of potassium iodide in 2 parts of water is saturated with iodine, and sufficient water added to precipitate a small portion. Decant after 24 hours, and precipitate completely with water. Wash and dry over calcium chloride. Sublime twice with, and twice without barium oxide. Meinecke (Ch. News, 93, 272. Proc. 94, 1030).——Precipitate a solution of equal parts of potassium iodate and potassium iodide with dilute sulphuric acid. Wash, and dry over sulphuric acid. Sublime as before. Meinecke (Ibid.).

Curtman calls attention to the fact that, while it is a comparatively easy matter to prepare a pure iodine on a small scale, such processes entail much loss, requiring the rejection of comparatively large fractions, and therefore cannot be employed on a large scale. He thinks that 98.63 p. c. is the best for adoption. (Circ. No. 112, p. 671.)

Estimation. Vitali proposes to make use of the reaction between iodine and sulphurous acid in presence of water, and then retitrate with normal Na. (Bollet. Ch. Farm. 94 . . . Proc. 94, 1032.)

In presence of bromides and chlorides. Add an excess of ferric chloride, and shake out with carbon disulphide as long as the latter gets colored. Titrate the disulphide solution directly with sodium hyposulphite. Villiers & Fayolle (Ch. Ztg. Rep. 94, 179. Ph. Rdsch. N. Y. 94, 244).

Sensitive Test. Denigès makes use of the acetone-iodoform reaction. To 10 Cc. of the filtered liquid add a drop of solution of potassa and 5 to 6 drops of a 10-p. c. aqueous solution of acetone, and lastly, a few drops of a solution of an alkaline hypochlorite. The precipitate, if any, is heated on a slide. After cooling, the microscope will show the hexagonal crystals of iodoform. (J. de Ph. & Ch. 93, 499. Ph. Rdsch. N. Y. 94, 40.)

In the test for *cyanide*, the ferric chloride, usually directed, has been omitted because only a trace of ferric salt is required, and this is obtained by the superficial oxidation of the ferrous sulphate. In the test for *chloride* and *bromide*, the test with ammonia and subsequent addition of an excess of silver nitrate, has been modified according to a suggestion of Salzer (Ph. Ztg. 91, 472 & 622), who has observed that, by the method adopted in the U. S. Ph. 1880, the filtrate is usually not clear, rendering the result somewhat uncertain. Power (Circ. No. 112, p. 671).

Ipecacuanha.

Microscopy. Key to the microscopical structure of the varieties. Holmes (Ph. J. & Tr. 93, Sept. 210. Proc. 94, 928).——Greenish (Ph. J. & Tr. 95, Febr. 689. A. J. Ph. 95, 472. Proc. 95, 879).——Hartwich (Oest. Zts. 94, 345. Proc. 94, 932).——Moeller (Ph. Post, 94, 165. Ph. Rdsch. N. Y. 94, 104. Proc. 94, 931).

Proportion of Wood and Bark in the commercial varieties. Cæsar & Loretz (Ap. Ztg. 92, 464. A. J. Ph. 92, 568. Proc. 93, 697).

Location of Emetine. Cork layer and the parenchym layer nearest to it. Dohme (Proc. 93, 169).

De-emetinizing of ipecacuanha (for use in dysentery). Exhaust with ammoniated chloroform, shake out the emetine with dilute sulphuric acid, and return the washed chloroform to the powder, allowing to dry spontaneously. Bird (Ph. J. & Tr. 93, Sept. 211. Proc. 94, 929).

Chemistry. Paul & Cownley arrive at the conclusion that, assuming that the medicinal properties are due to the alkaloids emetine and cephaëline, it may be inferred from the characters of these alkaloids that in galenical preparations a process is to be preferred which would insure their conversion into salts, since the alkaloids in a free state are liable to alteration under the influence of heat. (Ph. J. & Tr. 95, Febr. 692.)——See also same authors. (Ph. J. & Tr. 93,

July, 61 & 94, Aug. 111, & Nov. 373), and (A. J. Ph. 93, 484, & 95, 256. Proc. 95, 880 & 1011, & 94, 930.)——Also Cripps (Ph. J. & Tr. 95, Aug. 160).

Alkaloids. Yield. Value of stems, fancy and wiry roots: Fancy, 2 to 2.33 p. c.; wiry, 2.13 to 2.43 p. c.; stems, 1.77 to 2.15 p. c. Dohme (A. J. Ph. 95, 490 & 533. Proc. 95, 269).——Kebler found 1.67 and 2.39 p. c. (A. J. Ph. 95, 29. Proc. 95, 811.)——If the woody portions assay much higher than 0.5 p. c., it would indicate that the root had been moistened. Keller (Schweiz. Woch. 93, 473. Proc. 94, 550).——Moeller states that the woody portion contains from 0.6 to 1.6 p. c. of emetine. (Ph. Rdsch. N. Y. 94, 105.)

Influence of heat. Paul & Cownley find that even long-continued boiling of an acetic acid solution of emetine and cephaëline has very little effect. On the other hand, exposure to dry heat (water-bath temperature) results in loss of alkaloids, and apparently the air is the chief cause. (Ph. J. & Tr. 95, July, 2. A. J. Ph. 95, 528.)

Assay. Attfield points out that emetine is so easily attacked by acids and alkalies, that the assays of no two analysts will agree unless the conditions of the manipulations are constant. He recommends to extract with cold ammoniated chloroform first, then with hot, and evaporate at as low a temperature as possible. A reliable method has yet to be discovered. (Ph. J. & Tr. 93, July, 48. A. J. Ph. 93, 391. Proc. 94, 929.

Indicators, value. A. P. A. Comm. (Proc. 95, 192.)——Kebler & La Wall (A. J. Ph. 95, 505 & 506).

Titration better than the gravimetric method. Caspari & Dohme (A. J. Ph. 93, 477).——Kebler (Am. Dr. 94, Sept. 179).

Kottmayer reviews the different methods proposed (Zinofsky, Flueckiger, Kremel, Lloyd), and gives preference to the following, the principle of which is to fix organic acids and coloring matter with a heavy metal:—Digest the root with acidulated (HCl) alcohol at 40° C. for several days. Mix an aliquot part with an alcoholic solution of lead acetate and slaked lime, evaporate to dryness, and extract with chloroform. (Ph. Post, 93, 913 & 933. A. J. Ph. 92, 519. Proc. 93, 406.)

Keller. Exhaust with ammoniated ether-chloroform, shake with acidulated (HCl) water, alkalinize with ammonia, and take up with ether-chloroform. Titrate. (Schweiz. Woch. 92, 501 & 509, and 93, 473 & 485. A. J. Ph. 93, 82, & 94, 200. Proc. 93, 408 & 847, and 94, 549.)

Grandval & Lajoux. Treat with ammoniated ether-alcohol, and exhaust with ether. Shake the ethereal percolate with very dilute sulphuric acid, render alkaline with soda, and take up with ether. The yield should be 1.6 to 1.8 p. c. (J. de Ph. & Ch. 93, 152. Proc. 94, 548.)

Schwickerath. With more or less modified Prollius' mixture. (Ph. Rdsch. N. Y. 93, 285, & 94, 139. Bull. Ph. 93, 538. Proc. 94, 549.)

Ph. Helvet. Digest with acidulated water and alcohol, mix filtrate with acidulated water, evaporate off the alcohol, and titrate with Mayer's reagent. It demands 2¼ to 2½ p. c. emetine. (Ph. Rdsch. N. Y. 94, 68.)

Kebler. Comparison of Lyons, Flueckiger and Keller. He speaks highly of Keller's method. (Proc. 95, 340.)

Cripps prefers Lyons' process, and recommends a standard of not less than 2 p. c., nor more than 2.5 p. c., a standard which is easily obtainable. He prefers the Brazilian root. If Carthagena should be admitted, we might as well recognize the stems of the Brazilian root too. (Ph. J. & Tr. 95, June, 1093. A. J. Ph. 95, 470.)

Meyer. Extract with a 10 p. c. acetic acid, and titrate with solution of potassio-mercuric iodide. (Ap. Ztg. 93, 179.)

Iris.

Microscopical structure. Bastin (A. J. Ph. 95, 78).

Jalapa.

"12 p. c." is hardly obtainable in the market; 10 p. c. is the highest that can reasonably be insisted upon. Beringer (A. J. P. 93, 598). See also Caspari (Pharmacy, p. 281).

No more than 7 p. c. of the resin should be soluble in chloroform. Caspari (Ibid).

P. c. of resin and of ether-soluble resin. Robinson (Ph. J. & Tr. 93, Decbr. 531. Proc. 94, 605).

Juglans.

Analysis. Truman (A. J. Ph. 93, 426).

Kamala.

Ash. Flueckiger found as low as a little over 3 p. c. (Arch. Ph. 92, 240. A. J. Ph. 92, 410. Proc. 93, 652.)——Ph. Germ. allows only 6 p. c. of ash. (Ph. Rdsch. N. Y. 93, 281.)——There has been found as high as 60 p. c. (Ph. Centralh. 93, 20.)

Constituents. Perkins (Ph. J. & Tr. 93, Aug. 159, & Sept. 236. Proc. 94, 883).

Adulteration. Focke found starch from a Scitaminea, colored red with fuchsin. (Ap. Ztg. 95, 15. Ph. Rdsch. N. Y. 95, 39. Proc. 95, 858.)