(Koumiss.)

Preparation and varieties. Davies (Ph. J. & Tr. 92, Oct. 301. Proc. 93, 936).

Lactucarium.

Would it not be advisable to state expressly that the so-called "German" lactucarium is intended?

Limonis Cortex.

The description "in narrow, thin bands," etc., does not agree with the requirements of Spiritus Limonis (the only preparation in which it is used) which directs "freshly grated." The description should read "the outer or yellow epidermal surface, grated from the ripe fruit." Beringer (A. J. Ph. 93, 598).

Distinction from Orange Peel. Strong hydrochloric acid imparts a green color to orange peel, but only heightens the color of lemon peel. Clayton (A. J. Ph. 94, 361. Proc. 94, 933).

Linimentum Ammoniæ.

There is no apparent reason for the retention of cotton-seed oil, which is admittedly inferior to olive oil. That good olive oil is obtainable, is conceded by the Pharmacopœia, which directs 6,000 Gm. in the formula for lead plaster. Why not use sesame oil, which is stated to make a good liniment?

The beneficial effects of alcohol do not last long. (Ph. Post, 95, 447.)

Linimentum Belladonnæ.

Cripps proposes a strength of 0.25 of alkaloids in 100 fluid parts. (Ph. J. & Tr. 95, Mrch. 795.)

Linimentum Camphoræ.

Assay. Distil in a current of steam, which carries over all the camphor and fatty acids; saponify the distillate with soda, and take up the camphor with ether. Manseau (Bull. Ph. Bordeaux, 93, 222. A. J. Ph. 93, 497. Proc. 94, 895).

Linimentum Saponis.

Preparation. It is better to digest the soap in hot water, so as to form a translucent jelly, which is then readily dissolved in alcohol. Beringer (A. J. Ph. 94, 391), and Caspari (Pharmacy, p. 381).—— Wentsky makes it from olive oil and solution of potassa in the cold way. Arato prefers the hot way. (Ph. Ztg. 93, 654. Proc. 94, 612.) ——Soap made from olive acid and soda is superior. (W. Dr. 94, 138.)

Linimentum Saponis Mollis.

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

Smith proposes to make the soap extempore, by shaking a mixture of fixed oil, solution of potassa and alcohol until saponification, and then adding the remainder. (A. J. Ph. 96, 187.)

Linimentum Sinapis Compositum.

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

Linum.

"Not less than 25 p. c. of fixed oil" is too low. Flaxseed readily yields 32 to 35 p. c. Beringer (A. J. Ph. 93, 599).

(Last paragraph.) "Filtered infusion" is rather unpractical, the infusion is too mucilaginous. Lloyd (A. J. Ph. 95, 463. Proc. 95, 196).

Test for Starch. Lloyd proposes the following wording:—Boil 1 Gm. of ground flaxseed with 20 Cc. of water, and allow to cool. Mix 0.2 Cc. of the T. S. of iodine with 10 Cc. of a 10 p. c. sulphuric acid. To 8 Cc. of the flaxseed mucilage add 2 Cc. of this iodine compound, when a blue coloration will result in the presence of as little as 0.5 p. c. of starch. (A. J. Ph. 95, 463. Proc. 95, 196.)

Liquor Acidi Arsenosi.

This solution must contain more or less chloride of arsenic. Hirsch (Ph. Rdsch. N. Y. 93, 281).

Liquor Ammonii Acetatis.

The former second formula, in two solutions, should have been retained. Beringer (A. J. Ph. 93, 599).

"Freshly made when wanted." It would be easier to keep the two solutions. It is not believed to be practicable to construct a formula which will produce absolutely uniform results, and it is at the same time believed that the solution should be made with cold dilute acetic acid in order to retain as much carbon dioxide in solution as possible, and that the acid should be left slightly in excess, in order to render the mixture acidulous and pleasant to the taste. Oldberg (Circ. No. 160, p. 987).

Liquor Calcis.

Commercial. Examination. Greenawalt (A. J. Ph. 95, 562).

It is suggested to let the first water stand a couple of days before throwing it away, and to repeat this operation twice. The contaminations are seldom removed by a single short treatment. (Ph. Ztg. 94, 143.)

Liquor Ferri Acetatis.

"Boiling water" (last line on p. 228). Hirsch queries the usefulness of using "boiling" water for washing. (Ph. Rdsch. N. Y. 94, 10.) See, however, Reinitzer ("Digest" on U. S. P. 1880, p. 92).

Ph. Germ. "Nachtrag" tests also for sulphuric acid. (Ap. Ztg. 95, 92.)

Volumetric Estimation. 0.56 Gm. of solution of acetate of iron of a theoretical strength of 7.93 p. c. of metallic iron should require 7.93 Cc. of $\frac{N}{10}$ sodium hyposulphite. It will, however, not be advisable to demand more than 7.5 p. c. of iron. Hence only 15 Cc. of $\frac{N}{10}$ hyposulphite. It is also best to require the solution to contain only about 31 p. c. of the anhydrous salt, as a little $Fe_2(OH)_6$ is always lost in washing. Oldberg (Circ. No. 160, p. 989).

Liquor Ferri et Ammonii Acetatis.

"Elixir" would probably be a better term than "Liquor." Beringer (A. J. Ph. 93, 518).

The original formula contained a little over 6 p. c. by volume of tincture of chloride of iron. Beringer (A. J. Ph. 93, 599).

Liquor Magnesii Citratis.

The water should be boiled, and used hot, the solution will then keep better. Beringer (A. J. Ph. 93, 599).——Hallberg proposes to heat the solution after it has been filtered into the bottles, cork, and add the potassium bicarbonate when wanted. (A. J. Ph. 95, 485.)

The proportions given by Stevens and Palmer (13 magnesium carbonate, 26.5 citric acid, 0.128 oil of lemon, 62 sugar, 2 potassium bicarbonate) are recommended. A. P. Comm. (A. J. Ph. 95, 485. Proc. 95, 241.)

Edel triturates 5.4 Gm. calcined magnesia with 28 Gm. citric acid and 90 Cc. of warm water, until dissolved, then adds 75 Cc. of syrup of citric acid, and water up to 295 Cc. Finally 2.6 Gm. potassium bicarbonate. (Merck, Report, 94, 192. Proc. 94, 582.)

Caspari recommends to increase the acid to 33.58 Gm., if the solution is to be kept in bottles for a week, or longer. (Pharmacy, p. 481.)

In the earlier issues the quantity of Syrup of Citric Acid was given as 120 Cc. This was altered to 60 Cc.

Liquor Plumbi Subacetatis.

Courtonne prepares it by adding 11 parts of ammonia (0.923) to a solution of 70 parts of neutral acetate of lead in 165 parts of water. (Ph. Centralh. 93, 87. Proc. 94, 582.)

Hirsch points out that the Pharmacopœia has directed only the molecular quantity of the lead oxide, and that it should therefore expressly insist upon the freedom from water and carbonic acid. The last Pharmacopœia directed an excess. (Ph. Rdsch. N. Y. 94, 11.)

Indicator. Curtman finds cochineal and congo-red better adapted than methyl-orange, and he finds residual titration more accurate in this case. This consists in precipitating the lead by an excess of normal sulphuric acid V. S., and then determining the excess of the latter. (Ph. Rdsch. N. Y., 94, 181.)

Chemical Formula. Oldberg states that the proportions of lead acetate and lead oxide are so employed that the solution is believed to contain no other subacetate of lead than $Pb(C_2H_3O_2)Pb(OH)_2$. (Circ. No. 160, p. 998.)——Rice thinks that the composition of the product more nearly agrees with the formula $Pb_2O(C_2H_3O_2)_2$.

$$\underset{378}{Pb(C_2H_3O_2)_2} + \underset{222.36}{3H_2O + PbO} = \underset{546.48}{Pb_2O(C_2H_3O_2)_2} + \underset{53.88}{3H_2O} \quad \text{and} \quad \frac{546.48}{4} = 136.62.$$

Hence, 1 Cc. of $\frac{N}{10}$ $H_2SO_4 = 0.13662$ Gm. of the compound. Theoretically the solution contains 27 p. c. of the latter. Practically we can require 25 p. c. (Ibid.)

Liquor Potassii Arsenitis.

Oldberg proposes to replace the potassium bicarbonate by solution of potassa 225 Gm. to every 10 Gm. of arsenious oxide. (Apoth. 92 . . . Proc. 93, 430.) See also Garraud (J. de Ph. d'Anvers, 94, 394. Proc. 95, 586), and Lonnes (Ph. Ztg. 94. Proc. 94, 585).——Campbell uses 10 Cc. of the solution of potassa for every 1 Gm. of arsenious acid. (A. J. Ph. 95, 402.)

The precipitate often found in this preparation is composed chiefly of silicic acid, due to the action of the alkali upon glass. Braeutigam (Ph. Centralh. 92, 741. W. Dr. 93, 327. Proc. 94, 585).

Liquor Potassii Citratis.

It is to be regretted that the Mistura Potassii Citratis (with lemon juice) has not been retained. Beringer (A. J. Ph. 93, 471).

Liquor Sodæ Chloratæ.

The Pharmacopœia should allow the use of more chlorinated lime than just sufficient, because even by successive triturations it is not possible to extract all the available chlorine. The process of 1880 gives a more satisfactory product. It is of no consequence if the liquor is still cloudy. The assertion of the U. S. Dispensatory, p. 825, that boiling and evaporating does not cause loss of chlorine, is certainly not in accordance with facts. La Wall (A. J. Ph. 95, 203. Proc. 95, 941).

The official process is essentially that recommended by Squibb in Ephemeris, 1892, p. 1328, being a much better agent for estimating urea than the proportions used in the Pharmacopœia of 1880.

Liquor Zinci Chloridi.

The turbidity, often observed in this liquid, is generally due to the formation of oxychloride of zinc. It is imperative to use distilled water. Carles (Ren. de Ph. 94, 97. Proc. 94, 588).

Besthorn proposes to replace the nitric acid with solution of hydrogen dioxide. (Proc. 94, 648.)

The quantity of zinc directed is in slight excess, so as to leave a little metal undissolved in order to get rid of foreign metals. The strength of the solution is gauged by the amount of hydrochloric acid employed. Oldberg (Circ. No. 170, p. 1022).

Lithii Benzoas.

Most of the lithium benzoate in the market contains not only sodium benzoate, but also hippurate, derived from urine-benzoic acid. This renders it much more soluble in water than the pure salt, and also more soluble in alcohol; it is less soluble if benzoate of sodium be present. The flame test for the absence of sodium is too rigorous, and would necessitate purification by ether-alcohol, making the product very expensive. The precipitated benzoic acid should melt at 121.4° C.; hippuric acid, if pure, melts at 187.5° C. Hence, a high melting point shows impure benzoic acid. The carbonaceous matter in the volumetric test does not interfere materially with observing the change of color in methyl-orange T. S. from yellow to red. Phenolphtalein would require repeated troublesome boiling. The addition of a drop of ammonia to the ferric chloride T. S. (fifth paragraph), is necessitated by the slightly acid reaction of the lithium salt. Curtman (Circ. No. 112, p. 673).

Lithii Carbonas.

Solubility. The solubility of the U. S. Ph. article is not that of the absolutely pure carbonate, which is much less soluble, but that of the commercial salt, and which comes otherwise up to the demands of the U. S. Ph. Conflicting statements led Curtman to make experiments to elucidate the solubility in water at 15° C. Curtman found that the main bulk readily dissolves in less than 80 parts of water, but that small granules continue to remain undissolved for a longer time, but finally dissolve in 80 parts. In boiling water the carbonate is less soluble than in cold. Some of the salt was purified by boiling a solution saturated in the cold, which deposited small crusts of carbonate, even though the water was replaced, as it evaporated, from time to time. Curtman believes that presence of bicarbonate in the pharmacopœial salt influences the solubility. Flueckiger gives the solubility as 1:80 at 15° C., and as considerably less soluble in boiling water. (Pharm. Chemie, I, p. 276.) Ph. Germ. III. gives 1:80 at 15° C. and 1:140 boiling water. The impurities appear to be a little sodium and some lithium bicarbonate, although this latter salt is not known independent of admixture with carbonate, and it is quite possible that this impurity greatly affects the solubility in cold water, which disappears when a higher temperature expels the carbonic acid. (Circ. No. 112, p. 676.)

Volumetric Estimation. 1 Gm. carbonate of lithium requires for neutralization 27.745 Cc. normal sulphuric acid; Ph. Germ. III. directs at least 26.8 Cc. acid for 1 Gm. of the salt, corresponding to 96.59 p. c. of the pure carbonate, which is exactly the strength Curtman has found in all of the specimens examined by him, all of which were imported. There is not a manufacturer in the U. S. who makes the lithium preparations from the crude material, hence it will be deemed best to adopt the same standard. (Ibid.)

Lithii Citras.

Solubility. Merck gives the solubility in water at 15° C. as 1:5½. (Index, p. 149.)

Flame Test. For the flame test all lithium salts can be used directly. There is no need of conversion into chloride, except when lithium is to be found as an admixture to a large amount of other salts. Curtman (Circ. No. 112, p. 677).

Volumetric Estimation. Although 1 Gm. of the calcined residue of the pure salt requires 14.315 Cc. of normal sulphuric acid for neutralization, it is deemed best to make the minimum 14.2 Cc., which corresponds to 99.2 p. c. This is about the limit of the salt usually manufactured now; sometimes it is slightly purer, but as all of the crude material imported (carbonate) has a little sodium as impurity, which cannot be removed without considerable expense, the above standard should not be exceeded. Curtman (Ibid).

Lithii Citras Effervescens.

Should be granulated. Beringer (A. J. Ph. 93, 600).

Macis.

Distinction between Bombay and Banda mace. The behavior of the ethereal extract, after previous extraction with benzin:—Bombay mace leaves 30 p. c., while Banda mace leaves only 3 p. c. Soltsien (Ph. Ztg. 93, 467. A. J. Ph. 93, 457. Proc. 94, 917).——Apply a solution of potassium chromate to a section of the mace, and warm slowly. Banda mace keeps its yellow color unchanged, Bombay mace turns a deep reddish-brown. Waage (Ph. Centralh. 93, 133. Proc. 94, 917).——Bussy especially recommends the baryta test. Dip strips of filtering paper for a half hour into the alcoholic tincture, and, after drying them, dip them into boiling baryta water. Let dry. Pure mace gives a brownish-yellow stain, while Bombay mace gives a brick-red one. (Ph. Ztg. 96, 328).

Ash. Should not be over 2 p. c., and not more than ½ p. c. should be insoluble in HCl. (Ph. Centralh. 93, 238.)

Magnesii Carbonas.

The basic character of this salt should be indicated in the title. A. P. A. Comm. (A. J. Ph. 95, 485. Proc. 95, 240).

Chemical Formula. It is marked "approximately," because it is not of constant composition, though it generally agrees quite closely with the formula given. "The residue should not weigh less than 0.4 Gm." (= 40 p. c.); the theoretical yield of MgO from a salt of the assigned composition is 41.5 p. c. Power (Circ. No. 112, p. 682).

Magnesii Citras Effervescens.

The former term "Granulatus" would imply that it consisted only of citrate of magnesia in a granulated form, which, of course, is incorrect. This remark applies as well to all the other effervescent salts, often mis-named "Granulatus." Power (Circ. No. 112, p. 683).

There is no necessity for directing "distilled" water.

Commercial. Examination. Scoville (Ph. Rec. 92, 267. Proc. 93, 782).

The fine particles, which invariably will be formed, should be separated by a No. 20 or 30 sieve. Caspari (Pharmacy, p. 367).

Magnesii Sulphas.

"Rhombic prisms" refers to the large crystals, which one seldom sees; "small, colorless prismatic needles" would be a more correct