

Reports of A. Ph. A. Committees

REPORT OF COMMITTEE ON UNOFFICIAL STANDARDS.

The following portion of the report of the Committee on Unofficial Standards relates to certain crude drugs and chemicals suggested for inclusion in the next revision of the National Formulary, and by order of the Council is published in the JOURNAL in order to afford opportunity for discussion before the standards proposed are finally adopted.

Manufacturers, importers, analysts, and others interested in any of the proposed standards, are requested to send their criticisms and comments to the chairman of the committee, Geo. M. Beringer, 501 Federal St., Camden, N. J.

APPROVED MONOGRAPHS SUBMITTED AS STANDARDS FOR UNOFFICIAL DRUGS AND CHEMICAL PRODUCTS.

(Continued from page 375)

QUEBRACHO.

1. The dried bark of *Aspidosperma Quebracho-blanco* Schlechtendal (*Fam. Apocynaceae*).

2. Occurring in nearly flat pieces often reaching 3 cm. in thickness, the outer surface deeply fissured and yellowish-gray or brownish-gray, the inner distinctly striated and yellowish-white; fracture showing two sharply defined strata of about equal thickness, with numerous whitish dots and tangential striations occurring in both; outer stratum reddish-brown and with a rather coarsely granular fracture, the inner yellowish-white and of a short splintery fracture; odor none, taste very bitter and slightly aromatic.

3. Upon incineration, it should yield not more than 10 percent of ash.

4. If .2 gm. of the inner part of the bark be moistened with 1 cc. of alcohol then boiled with 15 cc. distilled water and filtered, the liquid should become greenish yellow on the addition of 3 drops of ferric chloride T. S., but not dark brown (*Quebracho Colorado*).

QUINIDINAE-

Quinidine.

1. An alkaloid obtained from the bark of various species of *Cinchona* (*Fam.*

Rubiaceae) and isomeric with quinine [$C_{20}H_{26}O_2N_2=324.21$]. Quinidine should be kept in well stoppered amber colored bottles.

2. Bitter, white crystals or amorphous powder according to the method of manufacture. When crystallized from alcohol it forms monoclinic prisms containing one molecule of alcohol which is partly lost on exposure to air and entirely at 100° C. When precipitated by ammonia water from an aqueous solution of a salt, an amorphous precipitate is obtained which when washed and dried forms an anhydrous powder.

3. Quinidine melts at about 168° C. and on ignition leaves no residue.

4. Quinidine crystallized from alcoholic solution is soluble at 25° C. in 26 parts of alcohol, 46 parts of ether, 2.5 parts of chloroform, very slightly in petroleum benzine and almost insoluble in water.

6. Its alcoholic solution is dextrogyrate and its aqueous solution is alkaline to litmus paper.

7. A solution of quinidine in water (1:1000) acidulated with sulphuric acid shows a strong blue fluorescence.

8. If to 10 cc. of a solution of quinidine in water (1:1000) containing sufficient sulphuric acid to produce complete solution,

a few drops of bromine T. S. be added and then ammonia water in slight excess the liquid acquires an emerald-green color.

9. A solution of about 0.1 gm. of quinine in 5 cc. of cold sulphuric acid should not be darker than pale yellow.

10. If 0.5 gm. of quinidine be dissolved in 10 cc. of water at 60° C. with just enough sulphuric acid to form a solution neutral to litmus paper and a neutral solution of 0.5 gm. of potassium iodide in 5 cc. of water at 60° C. be added, the mixture slightly agitated, cooled to 15° C. and set aside for one hour with occasional stirring a white precipitate is formed (difference from quinine). If then the precipitate be filtered off, the addition of 2 drops of ammonia water to the filtrate should cause not more than a slight turbidity, but no precipitate (absence of other cinchona bases). Care must be taken to have the liquid after the addition of the potassium iodide solution perfectly neutral; if slightly acid, very dilute ammonia water is to be added drop by drop with constant stirring until neutral to litmus paper.

QUININE GLYCEROPHOSPHATE.

(Quinine Glycerinophosphate.)

1. A glycerophosphate of the alkaloid quinine $[(C_{20}H_{24}O_2N_2)_2, PO_4, H_2, (C_3H_7O_2) + 4H_2O=892.56]$. It should be kept in well-stoppered amber colored bottles.

2. Fine white crystalline needles or powder, odorless and having a very bitter taste.

3. Soluble in 850 parts of water, 60 parts of alcohol, very soluble in boiling alcohol, very slightly soluble in chloroform or ether, soluble in 20 parts of a mixture of alcohol 1 volume, chloroform 2 volumes.

4. Quinine glycerophosphate slowly loses part of its water of crystallization at room temperature and becomes anhydrous at 100° C. and melts at 146-147° C. Upon incinerating 0.2 gm. of the salt it should leave no weighable residue.

5. This salt yields a clear solution with diluted sulphuric acid. The aqueous solution is not fluorescent, but becomes so upon the addition of a few drops of diluted sulphuric acid.

6. If to 10 cc. of a saturated aqueous solution of the salt there be added a few drops of bromine T. S., and then 1 cc. of ammonia water, the liquid should acquire

an emerald-green color (Thalleioquin reaction).

7. It must comply with the test given under Quinine Sulphate in the U. S. P. VIII for the absence of excessive amounts of other cinchona alkaloids.

8. A saturated aqueous solution of the salt, acidulated with acetic acid, should not produce a precipitate on the addition of ammonium oxalate T. S. (calcium salts).

9. A saturated aqueous solution should not become more than faintly turbid upon the addition of a few drops of barium chloride T. S. (limit of sulphates).

10. A saturated aqueous solution, acidulated with nitric acid, should not be rendered more than faintly turbid on the addition of silver nitrate T. S. (limit of chlorides).

11. If to a saturated aqueous solution, a slight excess of ammonia water be added, and the precipitate be filtered off, the clear filtrate should not show more than a slight turbidity with magnesia mixture T. S. (limit of phosphates).

QUININAE HYPOPHOSPHIS.

Quinine Hypophosphite.

1. The hypophosphite of the alkaloid quinine $[C_{20}H_{24}O_2N_2, H, PH_2O_2 + 2H_2O = 426.27]$. It should be kept in well-stoppered amber colored bottles.

2. Fine, white silky glistening needles or prisms, odorless and having a very bitter taste.

3. Soluble in 35 parts of water, in 10 parts of alcohol, in 40 parts of chloroform and almost insoluble in ether.

4. Heated to 100° C. it becomes anhydrous. It melts at about 181° C. and upon incinerating 0.2 gm. it should leave no weighable residue.

5. If to an aqueous solution, acidulated with a few drops of nitric acid, there be added silver nitrate T. S. a brown precipitate is formed which by standing becomes black.

6. It must comply with the test given under Quinine Sulphate in the U. S. P. VIII for the absence of excessive amounts of other cinchona alkaloids.

7. A saturated neutral aqueous solution should not be rendered more than faintly turbid on the addition of silver nitrate T. S. (limit of chlorides and phosphates).

8. A saturated aqueous solution should

not be rendered more than faintly turbid on the addition of barium chloride T. S. (limit of sulphates).

QUININAE TANNAS.

Quinine Tannate.

1. Quinine Tannate is the tannate of the alkaloid quinine, containing from 30 to 35 percent of quinine.

2. Quinine Tannate may be prepared as follows: Ten gm. of quinine sulphate are dissolved in a mixture of 15 cc. of diluted sulphuric acid and 150 cc. of water. Twelve gm. of tannic acid are dissolved in 75 cc. water and the filtered solution poured slowly and with constant stirring into the solution of quinine sulphate. Three gm. of tannic acid are then dissolved in 50 cc. of water and 3 gm. of sodium bicarbonate dissolved in 50 cc. of water. These solutions are filtered, the filtrate mixed, and the mixture poured slowly and with constant stirring into the quinine-tannin mixture prepared as above described. The precipitated quinine tannate is allowed to stand for 24 hours. It is then poured onto a muslin filter, washed with 100 cc. of water and expressed with moderate pressure. The expressed mass is then transferred to a porcelain dish, 50 cc. of water added and the mixture heated on the water bath until the quinine tannate melts to a resin-like mass. The supernatant liquid is poured off, the mass cooled, dried in the air and pulverized.

3. Quinine tannate is an amorphous, pale lemon-yellow to yellowish-white, odorless powder, very slightly soluble in water, ether and chloroform, but somewhat soluble in alcohol. Its aqueous and alcoholic solutions are colored bluish-black by ferric chloride test solution. On heating it is decomposed and melts to a purplish resin-like substance.

4. If 1 gm. of quinine tannate be shaken with a mixture of 50 cc. of water and 1 cc. of nitric acid and the mixture filtered a portion of the filtrate should not become more than slightly opalescent after the addition of 1 cc. of silver nitrate T. S., nor should there be any darkening after the addition of 1 cc. of hydrogen sulphide T. S., nor should a portion be rendered turbid immediately by barium chloride T. S.

5. If from 0.5 gm. to 1 gm. of quinine tannate be mixed with 25 cc. of water and an excess of ammonia water, the mixture

extracted with 3 successive portions of 20 cc. each of chloroform, the total solvent washed with water and then evaporated, the weight of residue obtained after drying at 100° C. (212° F.) should correspond to from 30 to 35 percent of anhydrous quinine. If this residue be dissolved in 30 cc. of water by the aid of a few drops of diluted hydrochloric acid and 1 cc. of the solution be mixed with 20 cc. of water and 2 or 3 drops of bromine T. S., the mixture should assume a green coloration on the addition of ammonia water.

6. If 0.2 gm. of quinine tannate be ignited no weighable residue should be obtained.

7. If quinine tannate be dried at 100° C. (212° F.) to constant weight the loss should not correspond to more than 10 percent of the weight of substance taken.

8. If 2 gm. of quinine tannate be shaken with 3 successive portions of 25 cc. each of anhydrous ether, the solvent poured through a filter, the filter washed with 10 cc. of the solvent, the several filtrates united, evaporated and the residue dried to constant weight at 100° C. (212° F.) the weight of the residue should not exceed 0.005 gm. (limit of *uncombined alkaloid*).

.. SODII GLYCEROPHOSPHAS.

Sodium Glycerophosphate (Sodium Glycerinophosphate).

1. A semi-solid, colorless or faintly yellowish, transparent mass, having a saline taste, odorless, containing 75 to 80 percent of sodium glycerophosphate ($C_3H_7O_5PO_3Na_2 + 3H_2O = 270.24$) as determined by the method given below.

2. Very soluble in water. Nearly insoluble in alcohol.

3. When strongly heated, the salt yields inflammable vapors and at a red heat is converted into sodium pyrophosphate, which imparts an intense yellow color to a non-luminous flame.

4. The aqueous solution (1 in 20) is slightly alkaline to litmus paper, but should not be reddened by phenolphthalein.

5. On heating about 0.1 gm. of the salt with about 0.5 gm. of potassium bisulphate, pungent vapors of acrolein will be evolved.

6. A mixture of an aqueous solution of the salt (1 in 20) with an equal volume of ammonium molybdate T. S., kept at 20° to 25° C. should remain clear for 5 minutes

(limit of phosphates); if the mixture be heated on a water bath, a yellow precipitate will be formed.

7. If about 1 gm. of the salt be thoroughly triturated in a mortar with 20 cc. of alcohol, the liquid filtered, and mortar and filter washed with 10 cc. of alcohol, the alcoholic solution spontaneously evaporated should yield a residue which after drying in a desiccator, should weigh not more than 1 percent of the weight of the salt taken (limit of glycerin and other organic impurities).

8. The aqueous solution (1 in 20) should not respond to the U. S. P. VIII Time Limit Test for heavy metals.

9. Portions of 10 cc. each of an aqueous solution of the salt (1 in 100), acidulated with acetic acid, should not at once become turbid on addition of ammonium oxalate T. S. (Calcium) nor, when acidulated with nitric acid, at once on the addition of barium chloride T. S. (Sulphates), nor more than slightly opalescent on addition of silver nitrate T. S. (Chlorides).

10. If a solution of 2 to 3 gm. of the salt, accurately weighed, in 50 cc. of distilled water be titrated with normal hydrochloric acid V. S., with methyl orange as indicator, each cc. of the V. S. required corresponds to 0.2702 gm. of sodium glycerophosphate ($C_2H_3O_2PO_2Na_2 + 3H_2O$).

STRYCHNIAE GLYCEROPHOSPHAS.

Strychnine Glycerophosphate. (Strychnine Glycerinophosphate.)

1. The glycerophosphate of the alkaloid strychnine ($C_{21}H_{22}O_2N_2$)₂P O₂H₂(C₃H₇O₂) + 6H₂O=948.56. It should be kept in well-stoppered bottles.

2. White rhombic crystals or powder, odorless and having at first a faint sweet taste afterward intensely bitter.

3. Soluble in 350 parts of water, the solution being neutral or slightly alkaline to litmus paper, in 250 parts of alcohol, slightly soluble in chloroform and very slightly in ether.

4. Upon incinerating 0.2 gm. it should yield no weighable residue.

5. The addition of sulphuric acid to the salt produces no color, but on adding a fragment of potassium dichromate, a deep blue color is obtained, changing to deep violet, then to purplish-red, cherry-red and finally to orange or yellow.

6. If to an aqueous solution, ammonia water be added to slight excess, a white precipitate is formed which is readily soluble in chloroform.

7. A saturated aqueous solution, acidulated with nitric acid, should not be rendered more than faintly turbid on the addition of silver nitrate T. S. (limit of chlorides).

8. A saturated aqueous solution of the salt, acidulated with hydrochloric acid, should not show more than a slight turbidity on the addition of barium chloride T. S. (limit of sulphates.)

9. If to an aqueous solution, a slight excess of ammonia water be added and the mixture filtered, the filtrate should not show more than a slight turbidity with magnesia mixture T. S. (phosphates).

TEREBINTHINA LARICIS.

Larch Turpentine. Venice Turpentine.

1. A viscid oleoresin obtained from *Larix Europea* De. C. (*Fam. Pinaceae*).

2. A nearly transparent, yellowish or yellowish green, thick liquid, heavier than water, having a terebinthinate odor and a bitter characteristic taste. Completely soluble in alcohol, glacial acetic acid, acetone and chloroform. Almost entirely soluble in petroleum benzin with separation of a light flocculent deposit.

3. The oleoresin may have a slight greenish fluorescence when viewed by reflected light but should exhibit no violet or purple fluorescence (absence of rosin oil).

4. One part by weight of Larch Turpentine should dissolve completely, forming a clear solution, in three parts by weight of 80 percent. alcohol (absence of turpentine or other adulterants).

5. If 5 grams of Larch turpentine be dissolved in 25 cc. of alcohol, a few drops of Phenolphthalein T. S. added and the solution be rendered slightly alkaline by addition of a 10 percent solution of potassium hydroxide, the resulting solution should be clear and transparent and no separation of oily drops should occur (absence of rosin oil). The acid number should not be over 80.

TERRA SILICEA PURIFICATA.

Purified Siliceous Earth. Purified Kieselguhr. Purified Infusorial Earth.

1. A form of Silica (SiO₂) consisting of the frustules and fragments of diatoms, purified by boiling with diluted hydrochloric

acid, washing and calcining. It should be kept in tightly closed containers in a dry place.

2. Purified Siliceous Earth is an odorless, white, or not more than a light gray or light buff colored, very light and very fine powder passing through a number 120 sieve. It readily absorbs moisture and will retain four times its weight of water without the mixture becoming fluid.

3. It is insoluble in water, acids or dilute alkaline solutions.

4. Upon heating it should not lose more than 10 percent of its weight (absence of excessive moisture).

5. If boiled with distilled water and filtered the filtrate should be colorless and neutral to litmus paper.

6. If 1 gm. of purified siliceous earth be added to 25 cc. of diluted hydrochloric acid no effervescence should occur (absence of carbonates), and after boiling and filtering the filtrate should be colorless and portions tested should give no precipitate with barium chloride T. S. (absence of sulphates), and not more than a faint blue reaction with potassium ferrocyanide T. S. (limit of iron). Upon evaporating 10 cc. of this acid filtrate to dryness on a water-bath not more than 0.001 gm. of residue should remain (limit of soluble impurities).

THEA.

Tea.

1. The dried leaves and leaf buds of *Thea sinensis* Linne and other species of *Thea* (*Fam. Ternstroemiaceae*) prepared by the usual trade processes of fermenting, drying and firing. Sometimes slightly flavored by addition of the leaves of the sweet olive, rose, jasmin or orange flowers.

2. In small cylindrical rolls or balls of a greenish or blackish color. When softened in water and unfolded the leaves are from 20 to 75 mm. long, elliptical, oblong or lanceolate, acute or emarginate at the apex and sharply but irregularly serrated. The midrib is prominent; the upper surface of the leaf glabrous and the under surface sometimes hairy.

3. Tea has an agreeable aromatic odor, varying according to variety and a pleasant bitter and astringent taste. On ignition tea should leave not less than 4 percent nor more than 7 percent of ash, of which one-half should be soluble in distilled water.

4. If one gramme of tea be shaken with 20 cc. of distilled water and the liquid separated by filtration, the filtrate should give not more than the faintest turbidity when treated with silver nitrate T. S. (limit of chloride).

5. If a small portion of the tea be treated with warm distilled water and the leaves removed by straining, no colored nor heavy sediment should be observed in the strained liquid on standing, (absence of colored and mineral facings.)

6. If one gramme of tea be dried at 100° C. until it ceases to lose weight, the dried residue should weigh not less than 0.9 gm. (limit of moisture).

7. If one gramme of tea be boiled with 100 cc. distilled water, the solution strained and the strained liquid be treated with excess of lead oxide and filtered, the filtrate should show no greenish color or precipitate on addition of Ferric Chloride T. S. (absence of added tannin).

8. For pharmaceutical purposes a good grade of "black" tea, assaying, when tested according to the following process, not less than 2.5 percent of caffeine should be employed.

Assay of Tea.

- Tea 6 gm.
- Lead Acetate,
- Sodium Phosphate,
- Chloroform,
- Ether,
- Distilled Water, each a sufficient quantity.

Introduce the tea into a flask provided with a reflux condenser and pour upon it 600 cc. of distilled water. Attach the condenser and boil for eight hours continuously. At the expiration of this time add to the hot liquid 4 grammes lead acetate and continue the boiling for ten minutes longer. Remove from the source of heat and allow to settle. Filter off 500 cc. of the liquid (equivalent to 5 grammes of tea) and evaporate to 50 cc. Transfer to a flask or beaker and remove the lead acetate by adding a slight excess of sodium phosphate. Filter the liquid, washing the precipitate thoroughly, and again evaporate the filtrate to 50 cc. Transfer to a separating funnel and wash out the caffeine with four successive portions of 20, 15, 10 and 10 cc. of chloroform. Draw off the chloroform solution into a tared flask and distill off the chloroform from the combined liquids. When the residue is dry add

2 cc. ether and evaporate on a water-bath carefully to avoid decrepitation. Continue the heating until the weight remains constant after cooling. The weight of the residue multiplied by 20 will give the percentage of caffeine contained in the tea.

TONKA.

Tonka Beans.

1. The prepared ripe seeds of various species of Coumarouna (Dipteryx). (*Fam. Leguminosae*).

2. Black, or grayish from an efflorescence of coumarin, the testa oily and wrinkled; from 25 to 50 mm. long, 10 to 25 mm. broad, and 7 to 15 mm. thick; oblong, with one edge thin and one end slightly pointed; ex-albuminous, the embryo of two brownish, fleshy cotyledons and a pinnatifid plumule; cotyledons usually enclosing a thin cavity which frequently contains crystals of coumarin. Odor strong, vanilla like. Taste aromatic and strong of coumarin.

Upon incineration tonka leaves not more than 4 percent of ash.

VINUM PORTENSE.

Port Wine.

1. An alcoholic liquid made by fermenting the juice of fresh grapes, the fruit of *Vitis vinifera* Linné (*Fam. Vitaceae*), in the presence of their skins, and fortifying with alcohol or brandy.

2. The term "Port Wine" was originally limited to that variety produced in Portugul. Now, however, the term "Port Wine" means any natural wine having the color and peculiar flavor generally associated with this wine. For medicinal and pharmaceutical purposes, native wines* may be used as Port Wine, provided that they correspond to the description and tests given below.

3. Port wine should be preserved in well-closed casks, filled as full as possible, or in well-stoppered bottles, in a cool place.

4. A reddish liquid having a pleasant odor

free from yeastiness, and a fruity, moderately astringent, pleasant, and slightly acidulous taste, containing not less than 18, nor more than 22 percent of absolute alcohol by volume.

5. The specific gravity at 25° C. should be not less than 1.000 nor more than 1.025.

6. If 100 cc. of Port Wine be evaporated, the residues, when dried during 12 hours on the water-bath, should amount to not less than 8 nor more than 13 gm.; this residue, ignited at a low temperature and burned gradually to whiteness, moistened with a small portion of ammonium carbonate T. S., and again carefully ignited, should weigh not less than 0.2 nor more than 0.4 gm.

7. To neutralize 50 cc. of Port Wine should require not less than 2.5 cc. nor more than 4 cc. of Normal Potassium Hydroxide V. S. (limit of *free acid*), litmus T. S. being used as indicator.

8. If 10 cc. of Port Wine be diluted with an equal volume of water, and treated with 5 drops of ferric chloride T. S., the liquid should acquire a brownish green color (presence of *tannic acid*).

9. If 75 cc. of Port Wine be acidified with 5 cc. of diluted sulphuric acid (1 to 3), and thoroughly shaken in a separator with a mixture of equal parts of petroleum benzin and ether, and if the solvent, after separation, be transferred to a porcelain dish, allowed to evaporate spontaneously and the residue dissolved in 3 cc. of water, the solution should not have a sweet taste (absence of saccharin), nor should it give a violet color upon the addition of a diluted solution of ferric chloride (1 to 200) (absence of salicylic acid).

10. If 50 cc. of Port Wine be treated with a slight excess of ammonia water, the liquid should acquire a green or brownish-green color, if it be then well shaken with 25 cc. of ether, the greater portion of the ethereal layer removed, and evaporated in a porcelain dish with an excess of acetic acid and a few fibres of uncolored silk, the latter should not acquire a crimson or violet color (absence of red aniline colors).

* Food Inspection Decision No. 122 requires that such wines be labeled with the name of the state in which they are produced.