Proceedings of the Council

Fourth, Fifth and Sixth Sessions, 1914-15. First and Second Sessions, 1915-16

FOURTH SESSION, 1914-15.

The fourth session of the Council of the American Pharmaceutical Association for 1914-15 was held at the Hotel Bellevue, San Francisco, on Wednesday evening, August 11, 1915, at 7:30 p. m., Chairman Eberle presiding.

Present: Messrs. Mayo, Claus, Eberle, Day, Godding, Gietner, Osseward, Alpers, Snow, Koch, Freericks, Thiesing, England, Charles E. Caspari and Whelpley.

The minutes of the previous session were read and approved.

The following applications were received and the applicants elected:

No. 302. Thomas S. Newby, Ventura, Cal., rec. by C. M. McKellips and E. L. Newcomb.

No. 303. William Joseph Nolan, 8 Allston St., Boston, Mass., rec. by Theodore J. Bradley and C. H. Packard.

No. 304. Henry Lees Smith, 604 Mission St., San Francisco, Cal., rec. by F. W. Nitardy and Albert Schneider.

The question of insuring the property of the Association now stored with the Lloyd Library of Cincinnati, was discussed, having been referred to the Council by the general session with power to act.

On motion of W. C. Alpers, seconded by Dr. H. M. Whelpley, the matter was referred to a special committee of three to report to the Council. The committee named was: F. H. Freericks, Chairman, E. H. Thiesing and T. D. Wetterstroem.

The subject of the work of the Year Book and National Formulary was brought up by Dr. H. M. Whelpley and discussed at length.

On motion of C. A. Mayo, seconded by J. W. England, a committee of five was directed to be appointed to consider the question and to report at the session of the Council to be held on Thursday evening, August 12, 1915.

The committee named was: J. W. England, Chairman; C. A. Mayo, Dr. H. M. Whelpley, C. M. Snow and J. A. Koch.

The Report of the Committee on Recipe Book, or rather a recommendation of the same, that the Committee on Recipe Book be composed of fourteen members (instead of seven members as at present), with terms of office of five years each, and that the terms of three members shall expire each year, was presented, having been referred to the Council by the Section on Practical Pharmacy and Dispensing.

On motion of C. M. Snow, seconded by C. Osseward, it was directed that such a committee be appointed to take the place of the present Committee on Recipe Book, but that it should consist of fifteen members, including the Chairman, and that it be so selected that three shall serve for one year, three for two years, three for three years, three for four years, and three (including the Chairman) for five years, and thereafter, as terms expire, each member shall serve for a five-year term.

On motion of W. B. Day, seconded by F. H. Freericks, the appropriation in the Budget for Miscellaneous Expenses for 1915 was increased $100.

On motion of J. A. Koch seconded by Charles E. Caspari, the appropriation on the Budget for Salaries for 1915 was increased $1125.

Adjourned to meet Thursday, August 12, 1915, at 7:30 p. m.

J. W. ENGLAND, Secretary.

FIFTH SESSION, 1914-15.

The fifth session of the Council of the American Pharmaceutical Association for 1914-15 was held at the Hotel Bellevue, on Thursday evening, August 12, 1915, at 7:30 p. m., Chairman Eberle presiding.

Present: Messrs. Claus, Day, Eberle, Engelhardt, England, Gietner, Godding, Snow, Mayo, Osseward and Whelpley.

The Report of the Special Committee on Year Book and National Formulary was presented, as follows:

SAN FRANCISCO, CAL., August 12, 1915.

To the Members of the Council:

GENTLEMEN—Your Special Committee on Year Book and National Formulary, appointed at your last session, would report as follows:

Professor C. Lewis Diehl's long years of valuable service as Reporter on the Progress of Pharmacy demands recognition, and in accordance with the precedent hitherto followed at the completion of the previous editions of the National Formulary (when as Chairman of the Committee on National Formulary he was voted an honorarium for his services), and the further fact that the work of the forthcoming edition is practically completed, we recommend that he be now voted an honorarium for his services for this edition.

Professor Diehl writes that he is no longer young, and, like younger men, able to apply himself to his tasks without frequent intermissions for rest, and it is felt, as expressed by the members of the Council last evening, that in justice to the interests of the American Pharmaceutical Association, as well as to Professor Diehl, he should not be expected to continue his arduous and responsible labor as Reporter on the Progress of Pharmacy and Chairman of the Committee on National Formulary, but that successors should be chosen to take over his work; the salary of the Reporter on the Progress of Pharmacy to be reduced to $600 a year for the present.

We recommend, also, that Professor C. Lewis Diehl be retained as titular Chairman of the Committee on National Formulary, but that there be created, by resolution, the position of Vice Chairman of the Committee on National Formulary, and that the Vice Chairman be given full authority to act as the Chairman, or as an Acting Chairman, until further change, and that the Vice Chairman or Acting Chairman, be chosen from the membership of the Committee on National Formulary by the Council.

J. W. ENGLAND, Chairman,
H. M. WHELPLEY,
C. M. SNOW,
J. A. KOCH,
C. A. MAYO.

The report was received and the recommendations adopted.

The following Committee on Nominations of the Council was named: Messrs. England, Day and Claus.

A recommendation was presented from the Section on Education and Legislation that the annual appropriation to this Section for 1916 be increased $100. It was referred to the Committee on Finance.

A recommendation was presented from the Historical Section asking that steps be taken to secure autobiographical data and photographs of newly elected members.

C. A. Mayo moved, seconded by J. W. England, that

WHEREAS, It is desirable to obtain as complete data as possible concerning the members of the American Pharmaceutical Association; therefore, be it

Resolved, That every member of the Association be requested by the Treasurer to furnish to the Historian of the Association a recent photograph and a brief autobiography.

Carried.

Adjourned until Friday, August 13, 1915, at 9 a. m.

J. W. ENGLAND, Secretary.

SIXTH SESSION, 1914-15.

The sixth session of the Council of the American Pharmaceutical Association for 1914-15 was held at the Hotel Bellevue, San Francisco, on Friday morning, August 13, 1915, at 9 a. m., Chairman Eberle presiding.

Present: Messrs. Eberle, Godding, Whelpley, Day, Koch, Claus, Mayo, Dawson, Snow and England.

The minutes of the previous meeting were read and approved.

J. A. Koch, Chairman of the Committee on Finance, proposed the adoption of the following "Rule of Finance," which was adopted:

Rule 14. *Disposal of Receipts from National Formulary*: The Treasurer shall keep a separate and accurate account of all receipts and disbursements for the National Formulary. Any balance of receipts in excess of disbursements remaining to the credit of this account at the end of any fiscal year shall be credited to the Endowment Fund and become a part thereof.

On motion of C. A. Mayo, seconded by J. A. Koch, the rule was adopted.

On motion of W. C. Alpers, seconded by J. W. England, the amendment of Chapter VIII, Article V, proposed by the Committee on Constitution and By-Laws at the Council meeting of August 9, 1915, was approved.

Adjourned *sine die*.

J. W. ENGLAND, Secretary.

FIRST SESSION, 1915-16.

The first session of the Council for 1915-16, or reorganization meeting, was held at the Hotel Bellevue, San Francisco, on Friday morning, August 13, 1915, at 9:30 a. m., Dr. H. M. Whelpley acting as Chairman pro tem.

Present: Messrs. Eberle, Arny, Day, Whelpley, Alpers, Koch, Freericks, Scoville, Godding, Weinstein, Claus, Snow.

The following officials were duly elected. Chairman, Eugene G. Eberle; Vice Chairman, John G. Godding; Secretary, Joseph W. England; General Secretary, William B. Day; Treasurer, Henry M. Whelpley; Editor of the Journal, Eugene G. Eberle.

C. A. Mayo moved, seconded by H. M. Whelpley, that the Council elect the Reporter on the Progress of Pharmacy for 1915-16 at a salary of $600 a year. Several nominations were made, and Julius A. Koch was elected.

The nominations for the Committees of the Council for 1915-16, as recommended by the Committee on Nominations, were accepted and the nominees elected. The committees were:

Committee on Finance—J. A. Koch, Chairman; Otto F. Claus, E. H. LaPierre.

Committee on Publication—J. W. England, Chairman; George M. Beringer, E. Fullerton Cook, F. J. Wulling, Harry B. Mason. *Ex-Officio Members*—The Editor, Reporter on the Progress of Pharmacy, General Secretary and Treasurer.

Committee on Invested and Trust Funds—Wm. B. Day, Chairman; Charles Holzhauer, E. G. Eberle; H. M. Whelpley, ex-officio.

Committee on Centennial Fund—John G. Godding, Chairman; Wm. B. Day, J. A. Koch.

Auditing Committee—Otto F. Claus, F. W. Sultan, E. O. Pauley.

Committee on Transportation—Thos. F. Main, Chairman; Wm. B. Day, Lewis C. Hopp, H. M. Whelpley, Charles G Merrell, Charles Caspari, Jr., Fred I. Lackenbach, E. Floyd Allen, F. C. Godbold, W. S. Elkins, Jr., C. Herbert Packard and F. W. Nitardy. The General Secretary and Local Secretary, ex-officio.

Committee on Unofficial Standards—Elmer E. Wyckoff, J. A. Koch, L. D. Havenhill and E. L. Newcomb; George M. Beringer, Chairman.

W. L. Scoville suggested the desirability of having a standard local badge at the annual meetings.

W. B. Day moved, seconded by C. A. Mayo, that the General Secretary instruct the Local Secretaries that all local badges adopted must have the approval of the General Secretary. Carried.

On motion of H. M. Whelpley, seconded by C. A. Mayo, Fabius C. Godbold, of New Orleans, was elected Honorary President.

Adjourned to meet at the call of the chair.

J. W. ENGLAND, Secretary.

SECOND SESSION, 1915-16.

The second session of the Council for 1915-16 was held at the Hotel Bellevue, San Francisco, on Friday afternoon, August 13, 1915, at 1 p. m., Chairman Eberle presiding.

Present: Messrs. England, Whelpley, Mayo, Freericks, Day, Koch, Scoville, Godding, Claus and LaPierre.

The reading of the minutes of the previous meeting was dispensed with.

H. M. Whelpley moved, seconded by E. H. LaPierre that an honorarium of $1000 be voted to Professor C. Lewis Diehl for his work on the National Formulary, Fourth Edition, to be paid in two installments, one installment of $500 now, and the other during the year 1916. Carried.

C. A. Mayo moved, seconded by H. M. Whelpley, that the term of office of the Reporter on the Progress of Pharmacy cease on September 1, 1915, and that the term of office of the newly-elected Reporter on the Progress of Pharmacy take effect as of the same date. Carried.

On motion of H. V. Arny, seconded by J. W. England, Wilbur L. Scoville was elected Vice Chairman of the Committee on National Formulary, with authority to act as chairman.

On motion of J. W. England, seconded by H. M. Whelpley, all reference in the minutes to the filling of the position of Reporter on the Progress of Pharmacy was directed to be expunged from the minutes, except the final action.

F. H. Freericks moved, seconded by H. V. Arny, that C. Mahlon Kline, of Philadelphia, be elected Local Secretary for 1916. Carried.

Adjourned.

J. W. ENGLAND, Secretary.

OFFICERS-ELECT OF AMERICAN PHARMACEUTICAL ASSOCIATION, 1916-1917

The Board of Canvassers met November 4th and have reported the following as the result of the election of officers for the year 1916-17:

President—Frederick J. Wulling, Minneapolis, Minn.

First Vice-President—Leonard A. Seltzer, Detroit, Mich.

Second Vice-President—Lucius E. Sayre, Lawrence, Kansas.

Third Vice-President—Philip Asher, New Orleans, La.

Members of the Council—James H. Beal, Urbana, Ill.; William C. Alpers, Cleveland, Ohio; Harry B. Mason, Detroit, Mich.

The Board of Canvassers is composed of the following members: A. H. Clark, Chairman; Wm. Bodemann, S. K. Sass, C. W. Patterson, B. L. Eicher.

The Board of Canvassers has made a recommendation that on future ballots a square be placed before each name for the guidance of the voter and to facilitate the counting of the ballots.

REPORT OF THE 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, George M. Beringer, 501 Federal St., Camden, N. J.

PAREIRA

Pareira. Pareira brava.

The dried root of *Chondrodendron tomentosum* Ruiz et Pavon (*Fam. Menispermaceae*), without admixture of more than 5 percent of stems and other foreign matter.

Nearly cylindrical, more or less tortuous, of variable length and 1 to 6 cm. in diameter; externally brownish-black or blackish-brown with transverse ridges on knot-like projections, occasionally fissured and longitudinally wrinkled or even furrowed; hard, heavy and tough; when freshly cut having a waxy lustre; the transverse surfaces exhibiting several, successive eccentric and distinctly radiate, concentric zones of projecting, secondary, fibrovascular bundles, each 2 to 4 mm. in width and separated by distinct, concentric zones of parenchyma and stone cells; odor slight; taste very bitter.

Stems deeply furrowed, grayish in color, usually covered with foliaceous patches of lichens bearing their blackish apothecia; internally grayish-yellow, with a prominent development of wood and without a waxy lustre.

Powder—Dark brown; containing numerous starch grains and a few woody fragments; starch grains mostly single, occasionally unequally 2- to 4-compound, the individual grains ellipsoidal, or oblong, 0.005 to 0.020 mm. in diameter, and occasionally with central clefts or irregular markings; fragments with large, wide tracheæ the walls with numerous slit-like pores and associated with long, thick-walled, strongly lignified, porous wood-fibres; stone cells in small groups, with thick porous walls and in form resembling those of fruits and seeds; fragments of starch-bearing parenchyma; cells of the root, thick-walled, strongly lignified and with large longitudinal, elliptical pores; occasional fragments of blackish-brown cork.

The yield of ash should not exceed 5 percent.

PHYTOLACCA

Phytolacca. Poke Root.

The dried root of *Phytolacca decandra* Linné (Fam. *Phytolaccaceae*), collected in autumn.

Cylindrical, somewhat tapering, sparingly branched, 3 to 7 cm. thick, mostly in transverse of longitudinal slices; externally yellowish-brown, finely longitudinally or spirally wrinkled and thickly annulate with lighter colored, low ridges; fracture fibrous, characterized by alternating layers of fibrovascular tissue and parenchyma, the layers of the latter being much retracted; odor slight; taste sweetish, afterwards highly acrid.

The yield of ash does not exceed 12 per cent.

Average dose.—Emetic, 1 Gm. (15 grains). Alterative, 0.125 Gm.=125 milligrammes (2 grains).

PIMENTA

Pimenta. Allspice.

The dried, nearly ripe fruits of *Pimenta officinalis* Lindley (Fam. *Myrtaceae*), without admixture of more than 5 percent of stems and foreign matter.

Subglobular, 4 to 7 mm. in diameter, summits with 4 calyx-teeth forming a minute ring; externally dark brown, somewhat rough and glandular-punctate; pericarp brittle, about 1 mm. in thickness; 2-locular and 2-seeded; dissepiments thin; seeds planoconvex, slightly reniform, externally reddish-brown, smooth, somewhat wrinkled and shiny; odor and taste, particularly of the pericarp, aromatic and distinct.

Powder—Reddish-brown or dark brown; consisting chiefly of irregular fragments and numerous starch grains, the latter being either single or compound, the individual grains spherical, plano-convex or polygonal, and frequently with a central circular marking or cleft, from 0.003 to 0.015 mm. in diameter; stone cells numerous of tabular, pyriform or variable shape and with thick porous and strongly lignified walls, the lumina frequently filled with a yellowish- or reddish-brown amorphous substance; fragments with oil secretion reservoirs containing globules of a yellowish-brown oil; and parenchyma cells with reddish-brown tannin masses. Stem fragments very few, and characterized by more or less curved, thick-walled, non-glandular hairs, rosette aggregates of calcium oxalate, from 0.006 to 0.017 mm. in diameter, tracheid-like tissues of the wood and long, narrow bast-fibers.

The yield of crude fiber should not exceed 25 percent.

The yield of ash should not exceed 6 percent. The amount of the ash insoluble in diluted hydrochloric acid should not exceed 0.5 percent.

PLUMBI IODIDUM

Lead Iodide.

It should contain not less than 98 percent of pure Lead Iodide (PbI_2=460.94). It should be kept in well-stoppered bottles, protected from light.

A heavy, bright yellow powder, without odor or taste; permanent in the air.

Soluble in about 1300 parts of water at 25° C., and in about 200 parts of boiling water, separating from the latter solution on cooling in brilliant, golden-yellow, crystalline laminæ; very slightly soluble in alcohol, but soluble, without color, in solutions of the fixed alkalies, in concentrated solutions of the alkali acetates, of potassium iodide, and of sodium thiosulphate, and in a hot solution of ammonium chloride.

When moderately heated, the salt fuses to a thick, reddish-brown liquid, which congeals, on cooling, to a yellow, crystalline mass. At a higher temperature it is decomposed, with the evolution of violet vapors of iodine, leaving a lemon-yellow residue of lead oxyiodide.

If 1 Gm. of the salt be triturated with 2 Gm. of ammonium chloride and 2 mils of water, a nearly white mixture will result. If this be transferred to a test-tube, and heated in a water-bath for a few minutes, a clear and almost colorless solution should be formed (absence of *chromate* and *other insoluble foreign salts*). On cooling this solution, a solid mass of nearly colorless, fine, silky crystals will be produced, and on adding water or diluted sulphuric acid to this mass, lead iodide will separate.

Add 0.1 Gm. of the salt to 5 mils of water, and heat the mixture until it boils; cool the liquid and filter it into a test-tube of about 40 mils capacity, then add 5 mils of potassium hydroxide T. S. and about 0.2 Gm. of aluminum wire; insert in the upper portion of the test-tube a pledget of purified cotton, and over the mouth, place a piece of moistened, red litmus paper; then if the tube be heated on a water-bath for fifteen minutes, no blue coloration of the paper should be discernible (*limit of nitrate*).

Boil 1.5 Gms. of Lead Iodide with 15 mils of water, cool and filter. 5 mils of this filtrate, from which the lead has been removed by hydrogen sulphide, when filtered, evaporated and gently ignited should leave not more than 0.002 Gm. of residue (*soluble foreign salts*).

To another portion of 5 mils of the filtrate, add a slight excess of silver nitrate T. S., filter and add to the filtrate a slight excess of diluted hydrochloric acid and refilter. On neutralizing this filtrate with ammonia water and then adding a drop of ferric chloride T. S., no red color should be produced (*acetate*).

Assay—Weigh accurately about 0.8 Gm. of Lead Iodide and dissolve it in a measured volume of potassium hydroxide T. S., (the chloride content of which has been determined), add 50 mils of tenth-normal silver nitrate V. S., acidulate with diluted nitric acid. Then add 2 mils of ferric-ammonium sulphate T. S. and titrate with tenth-normal potassium sulphocyanate V. S. It shows not less than 98 percent PbI_2 after making allowance for the chloride content of the potassium hydroxide used in effecting solution.

Each mil of tenth-normal silver nitrate V. S.. consumed corresponds to 0.023047 Gm. of PbI_2.

Each Gm. of Lead Iodide is equivalent to 42.52 mils of tenth-normal silver nitrate V. S.

POTASSII CHLORIDUM

Potassium Chloride.

It should contain, when dried to constant weight at 100° C., not less than 99 percent of Potassium Chloride (KCl=74.56). It should be kept in well-stoppered bottles.

Colorless, elongated prismatic or cubical crystals, or a white, granular powder, permanent in dry air; odorless; taste saline.

Soluble in 2.8 parts of water at 25° C.; slightly more soluble in boiling water; insoluble in alcohol.

When heated the dry salt decrepitates. To a non-luminous flame it imparts a violet color unmasked by yellow.

An aqueous solution of the salt yields with silver nitrate T. S. a white curdy percipitate insoluble in nitric acid but soluble in an excess of ammonia water.

An aqueous solution (1 in 10) must be clear and neutral to litmus paper.

5 mils of an aqueous solution (1 in 10) after boiling, must not be rendered cloudy within 15 minutes after the addition of an equal volume of barium hydroxide T. S.

10 mils of an aqueous solution (1 in 25) must not respond to the U. S. P. Modified Gutzeit Test for *Arsenic.*

10 mils of an aqueous solution (1 in 50) must not respond to the U. S. P. Time Limit Test for *Heavy Metals.*

Dissolve 2 Gm. of the salt in 6 mils of water, add 1 mil of chloroform followed by the addition, drop by drop, of 5 mils of half strength chlorine water with constant agitation, the chloroform must not acquire a violet or an orange color (*iodides* or *bromides*).

Assay—Weigh accurately about 0.25 Gm. of Potassium Chloride, previously dried to contant weight, dissolve it in 25 mils of distilled water in a flask graduated at 200 mils. Add 50 mils of tenth-normal silver nitrate V. S. to the solution, and, after adding 5 mils of nitric acid add sufficient distilled water to make the volume up to 200 mils and thoroughly mix the liquid. Filter the mixture through a dry filter and reject the first 20 mils of filtrate, then collect 100 mils of the filtrate, add to this 2 mils of ferric-ammonium sulphate T. S. and titrate with tenth-normal potassium sulphocyanate V. S. It indicates not less than 99 percent of Potassium Chloride.

Each mil of tenth-normal silver nitrate V. S. corresponds to 0.007456 Gm. Potassium Chloride. Each gramme of Potassium Chloride, dried to constant weight, corresponds to at least 132.8 mils of tenth-normal silver nitrate V. S.

POTASSII GLYCEROPHOSPHAS

Potassium Glycerophosphate.

It contains not less than 65 percent of anhydrous potassium glycerophosphate ($K_2C_3H_5(OH)_2PO_4$=248.31). Preserve it in well-stoppered bottles.

Potassium Glycerophosphate is a colorless or yellowish, syrupy liquid or semi-solid mass, odorless and having a saline taste.

It is very soluble in water, almost insoluble in alcohol.

Its aqueous solution is alkaline to litmus and slightly alkaline to phenolphthalein.

When strongly heated it is decomposed, evolving inflammable vapors and at a red heat it is converted into potassium pyrophosphate.

An aqueous solution of the salt (1 in 5) mixed with a few mils of acetic acid yields with sodium bitartrate T. S. a white crystalline precipitate, soluble in alkali hydroxides or carbonates.

To 10 mils of an aqueous solution of the Salt (1 in 10) add 10 mils of ammonium molybdate T. S. and warm the mixture in a water bath to 40° C., no precipitate should form within 15 minutes (*Phosphate*). On prolonged heating, or more quickly at a higher temperature, a yellow precipitate will be formed.

The red color produced by the addition of 3 drops of phenolphthalein T. S. to a solution of 1 Gm. of the salt in 10 mils of distilled water is discharged by the additon of 1.5 mils of tenth-normal sulphuric acid (*limit free alkali*).

10 mils of the aqueous solution (1 in 50) does not respond to the U. S. P. Test for *heavy metals.*

Triturate 1 Gm. of Potassium Glycerophosphate for 5 minutes with 20 mils of dehydrated alcohol and filter the mixture, and evaporate the filtrate to dryness at a temperature not exceeding 70° C., the weight of the residue does not amount to more than 1 percent, (*Glycerin and other soluble substances*).

Assay—Weigh accurately about 3 Gm. of potassium Glycerophosphate, dissolve it in 30 mils of distilled water and titrate the solution with half-normal hydrochloric acid V. S.,

using methyl orange as indicator. It indicates not less than 65 percent of anhydrous potassium glycerophosphate. Each mil of half-normal hydrochloric acid V. S. consumed corresponds to 0.124155 Gm. of ($K_2C_3H_5(OH)_2PO_4$). Each Gm. of Potassium Glycerophosphate is equivalent to 5.24 mils of half-normal hydrochloric acid V. S.

PRUNUM

Prune.

The partly dried ripe fruit of *Prunus domestica* Linné (Fam. *Rosaceae*).

Oblong, ellipsoidal, more or less compressed, 3 to 4 cm. long; externally brownish-black, shrivelled; the sarcocarp sweet and acidulous; putamen hard, smooth or irregularly ridged; the seed, shaped like that of the almond but smaller, and of a bitter-almond taste.

PULSATILLA

Pulsatilla.

Pasque Flower. Meadow Anemone.

The dried herb of *Anemone Pulsatilla* Linné, *Anemone pratensis* Linné or of *Anemone patens* Linné (Fam. *Ranunculaceae*), with not more than 5 percent of foreign substances.

Leaves and flowering scapes matted, silky-villous; basal leaves with petioles up to 30 cm. in length, the latter hollow often purplish in color, the blades twice or thrice deeply three or four parted or pinnately cleft, the lobes linear and acute, the base of the petiole more hairy than above and frequently attached to the short root stock; flowering scapes up to 30 cm. in length, solid in the lower portion and hollow in the upper part, with sessile, involucral dissected leaves near the flower, occasionally with remains of the dull purple, hairy sepals and the dense woolly, plumose-tailed akenes; nearly odorless; taste very acrid.

The powder when viewed with the microscope, shows numerous simple thick walled hairs up to 2.5 mm. long and up to 0.020 mm. thick; tracheæ up to 0.030 mm. broad with spiral markings or with simple or bordered pores; fragments of epidermal tissue with stoma, the latter being broadly elliptical and up to 0.050 mm. in length; some epidermal cells with wavy vertical walls. Calcium oxalate crystals and starch grains are few or wanting.

An infusion of the drug is of a light yellow color which is intensified upon the addition of an alkali.

The yield of ash should not exceed 10 percent.

QUERCUS

White Oak Bark.

The dried bark of the trunk and branches of *Quercus alba* Linné (Fam. *Cupuliferae*), deprived of the periderm.

In nearly flat pieces, 2 to 10 mm. thick; externally light brown, becoming darker with age, rough-fibrous; fracture uneven, coarsely fibrous; odor distinct; taste strongly astringent; not tingeing the saliva yellow when chewed.

QUILLAJA

Quillaja. Soap Bark.

The dried bark of *Quillaja Saponaria* Molina (Fam. *Rosaceae*), deprived of the periderm.

In flat pieces of variable length, 3 to 8 mm. thick, or in small chips, outer surface brownish-white, often with small patches of cork attached, otherwise nearly smooth; inner surface yellowish-white, nearly smooth, with occasional circular depressions, conical projections or transverse channels; fracture uneven and strongly fibrous, the laminæ oblique to each other; odor slight; taste acrid.

The powder is strongly sternutatory, and contains calcium oxalate in monoclinic pyramids and prisms from 0.035 to 0.200 mm. long.

The yield of ash should not exceed 15 percent.

RENNINUM

Rennin.

The partially purified milk curdling enzyme, obtained from the glandular layer of the stomach of the calf *Bos taurus* Linné (Fam. *Bovidae*) and capable, when assayed by the process given below, of coagulating not less than 12,500 times its weight of normal, fresh cow's milk. As rennin deteriorates rapidly it should be kept in well-stoppered, amber-colored bottles and stored in a cool place, and not exposed to sunlight.

If it is desired to use a diluent for reducing Rennin of a higher coagulating power to the standard, sodium chloride and sugar of milk may be employed for this purpose.

A grayish-white or yellowish-white powder or pale yellow grains or scales having a characteristic and slightly saline taste and a

peculiar, not unpleasant odor. It should not be more than slightly hygroscopic.

It is slowly soluble in water and in diluted alcohol, the solutions being more or less opalescent.

When mounted in water or alcohol and examined microscopically, it shows no cellular structure and no blue coloration is produced on the addition of iodine T. S.

Assay—Mix 0.1 Gm. of Rennin with 50 mils of distilled water by stirring (vigorous shaking or violent agitation of this liquid must be avoided), and allow the liquid to stand for exactly 15 minutes. Place 50 mils of normal fresh cow's milk in a beaker about 12 cm. high and 5 cm. wide and warm rapidly on a water-bath to 43° C., add 2 mils of the rennin solution and stir the mixture slowly for 10 seconds. Maintain the temperature of the bath at 43° C. and at the expiration of 7½ minutes after the addition of the rennin solution, remove the beaker from the bath and tip it to an angle of 45 degrees. The milk must have lost its fluidity to the extent of exhibiting a decidedly convex surface. An additional 30 seconds on the water-bath should produce a firm curd.

RHUS GLABRA

Rhus Glabra. Sumach Berries.

The dried ripe fruits of *Rhus glabra* Linné (Fam. *Anacardiaceae*), without admixture of more than 5 percent of stems and other foreign matter.

Nearly globular, ovoid, more or les reniform, somewhat compressed, 5 mm. in length, 2 mm. in diameter; externally dark red, velvety with short hairs, summit with remains of the short style, base occasionally with the 5-cleft calyx and a short peduncle; endocarp, smooth, shiny, light red; 1-locular, 1-seeded; seeds dark brown, smooth, inodorous, taste acidulous and slightly astringent.

Powder—Brownish-red, under the microscope exhibits irregular fragments; nonglandular hairs, more or less elliptical or ovoid or spatulate; 0.150 mm. in length, 0.045 to 0.080 mm. in width, filled with a pink or red colored cell sap in which occasionally occur rod-shaped crystals; glandular hairs with a short 1-celled stalk and multicellular head, from 0.045 to 0.075 mm. in length; numerous fragments of endosperm; fragments of endocarp showing very small stone cells with irregularly thickened walls, readily determined by the use of aniline sulphate T. S. and sulphuric acid; fragments of embryo with rather small cells containing a fixed oil; occasional reddish colored fragments of epidermis and underlying spiral tracheæ of the mesocarp.

Mix 1 Gm. of powdered Rhus Glabra with 10 mils of hot water, shake the mixture occasionally until cold, then filter and evaporate the filtrate spontaneously in a watch crystal; numerous feather-shaped crystals which polarize light strongly with a distinct play of colors, should separate.

The yield of ash does not exceed 4 percent.

RUBUS

Rubus. Blackberry Bark.

The dried bark of the rhizome of *Rubus villosus* Aiton, *Rubus nigrobaccus* Bailey, or of *Rubus cuneifolius* Pursh (Fam. *Rosaceae*).

In elongated, tough, flexible quills or bands, from 3 to 6 mm. in diameter, the bark 1 to 2 mm. thick; outer surface deep red-brown or dark gray-brown, occasionally blackish-brown, smoothish or somewhat scaly; inner surface yellow or pale brownish, strongly and coarsely long straight-striate; fracture tough-fibrous, readily splitting; inodorous; taste strongly astringent and bitter.

RUMEX

Rumex.

Yellow Dock. Broad-leaved Dock. Curled Dock.

The root of *Rumex crispus* Linné or of *Rumex obtusifolius* Linné (Fam. *Polygonaceae*), without admixture of more than 5 percent of stem bases and other foreign matters.

Usually split longitudinally or cut into transverse pieces about 2 cm. long. The entire root, nearly simple, slightly tapering, with few if any rootlets, somewhat twisted, up to 30 cm. long and 7 cm. in diameter, externally reddish-brown or grayish from adhering soil, finely annulate above, deeply wrinkled longitudinally, marked with small indented root scars which are often transversely elongated and with occasional stem scars or remains of stem, the latter being hollow and finely striated, leaf buds few obconical; fracture short and dusty, somewhat fibrous.

The transverse section exhibits a yellowish or brownish cortex and a whitish or yel-

lowish wood which is finely radiate in the outer portion. When viewed with the microscope, it exhibits a thick cortex with several layers of cork, beneath which is an interrupted row of stone cells, a distinct cambium, vascular bundles with few fibers.

The powder when examined with the microscope, shows calcium oxalate crystals in rosette aggregates from 0.025 mm. to 0.060 mm. in diameter; numerous starch grains ellipsoidal or narrowly elongated, sometimes truncate, up to 0.025 mm. in length; stone cells 0.040 mm. to 0.200 mm. in diameter, with walls that are somewhat lamellated 0.008 mm. to 0.025 mm. thick and with few simple pores; sclerenchymatic fibers few, thin-walled with simple pores; tracheæ up to 0.100 mm. wide with scalariform or reticulate thickenings of the wall; cork cells light brown.

On mixing the powder with water and adding a solution of one of the alkalies a red color develops.

The yield of ash should not excee[4] 10 per cent.

SALVIA

Salvia. Sage.

The dried leaves of *Salvia officinalis* Linné (Fam. *Labiatae*), without admixture of more than 10 percent of stems and other foreign matter.

Leaves more or less broken; the lamina when entire, varying from lanceolate or elliptical to ovate, 1.5 to 10 cm. in length, summits acute or obtuse, margin finely crenulate, bases rounded or somewhat heart-shaped and with petioles from 1 to 4 cm. in length; upper surfaces grayish-green, densely pubescent in young leaves, the older being nearly smooth; under surfaces light grayish-brown, minutely reticulate and densely pubescent; more or less pliable, velvety; odor balsamic; taste aromatic and bitter. Stems distinctly quadrangular, attaining a length of 14 cm. and a diameter of 3 mm., reddish-brown and more or less pubescent.

Powder—Yellowish-gray; examined with the microscope, it shows numerous non-glandular hairs, very long, consisting of from 1 to 6 cells, more or less curved and irregularly bent; fragments of epidermis showing yellow, globular, glandular hairs in which the structure is usually not readily discernible and varying from 0.015 to 0.075 mm. in diameter; glandular hairs of two kinds, either with a unicellular head-cell or with an 8-celled head. Fragments of the stems are distinguished by the presence of tracheæ with bordered pores associated with narrow, thick-walled, strongly lignified bast-fibers, a few starch-bearing cells of more or less rectangular shape, and large parenchyma cells of the pith having thin, lignified and porous walls.

The yield of ash does not exceed 12 percent.

SANTALUM ALBUM

White Sandal Wood.

The heart wood of Santalum Album Linné (Fam. *Santalaceae*).

In billets, pieces or chips of varying shapes and sizes, heavy, hard but splitting easily, color light yellow; transverse sections yellow to light reddish-brown, with alternating light and dark concentric zones nearly equal in diameter, with numerous pores and traversed by many very narrow medullary rays.

Under the microscope, sections show the *medullary rays* 2 to 4 rows wide, the cells thick walled and radially marked; the wood wedges consisting largely of wood fibers with pointed ends, large parenchyma and thick walled secretion vessels and cells containing single crystals of calcium oxalate; the oil in globules adhering to the walls of the ducts and parenchyma cells and especially rich in the medullary cells.

Odor characteristic, aromatic, persistent; taste peculiar, strongly aromatic.

The yield of ash does not exceed 6 percent.

SASSAFRAS MEDULLA

Sassafras Pith.

The dried pith of *Sassafras variifolium* (Salisbury) Kuntze (Fam. *Lauraceae*).

In sub-cylindrical, often curved or coiled pieces, 2 to 10 cm. in length, 2 to 5 mm. in diameter; very light in weight, externally whitish, occasionally with small fragments of adhering wood; fracture short; a slight odor of sassafras; taste mucilaginous.

Under the microscope, transverse sections of Sassafras Pith, mounted in phloroglucinol T. S. and hydrochloric acid, show that it consists of nearly isodiametric cells with large intercellular spaces, the walls being more or less lignified and provided with numerous, simple pores; mounts made in water show the separation of a thin layer of mucilage from the inner walls of the cells, this being characterized by the gradual disappearance of the pores.

Macerate 0.5 Gm. of Sassafras Pith with

25 mils of cold distilled water for several hours and filter it through cotton; a mucilaginous solution should be obtained which should not show a precipitate upon the addition of an equal volume of alcohol.

SCUTELLARIA

Scutellaria. Skullcap.

The dried plant of *Scutellaria lateriflora* Linné (Fam. *Labiatae*).

About 50 cm. long, smooth; stem quadrangular, branched; leaves opposite, petiolate, about 5 cm. long, ovate-lanceolate or ovate-oblong, serrate; flowers about 6 mm. long, in axillary one-sided racemes, with a pale blue corolla and bilabiate calyx, closed in fruit, the upper lip helmet-shaped; odor slight; taste slightly bitter.

The yield of ash does not exceed 12 percent.

SODII NITRAS

Sodium Nitrate.

It should contain, when dried to constant weight at 100° C., not less than 99 percent of pure Sodium Nitrate ($NaNO_3$=85.01) and should be kept in well-stoppered bottles.

Colorless, transparent, rhombohedral crystals, odorless, and having a cooling saline, and slightly bitter taste. Hygroscopic in moist air.

Soluble in about 1.1 parts of water, and in about 100 parts of alcohol at 25° C., in 0.6 part of boiling water, and in 40 parts of boiling alcohol.

When heated to 312° C., the salt melts without decomposition. At a higher temperature it evolves oxygen, and is reduced to nitrite. When Sodium Nitrate is heated with charcoal, the mixture deflagrates. To a non-luminous flame it imparts an intense yellow color.

Its aqueous solution is neutral to litmus paper.

If the aqueous solution be mixed in a test-tube with a drop of diphenylamine T. S., and sulphuric acid be carefully poured in, so as to form a separate layer, a deep blue color will appear at the line of contact.

The aqueous solution of the salt (1 in 20), slightly acidulated with hydrochloric acid, should not respond to the U. S. P. Time-Limit Test for *heavy metals*.

If to 10 mils of the aqueous solution of the salt (1 in 20) 1 mil of chloroform be added, and then chlorine water which has been diluted with an equal volume of water be introduced, drop by drop, with agitation, the chloroform should remain free from any violet tint (absence of *iodide*).

Assay—Weigh accurately about 0.4 Gm. of Sodium Nitrate, previously dried to constant weight at 100° C., dissolve it in 10 mils of hydrochloric acid in a small dish and evaporate the solution to dryness on a water-bath. Dissolve the residue in 10 mils of hydrochloric acid and again evaporate it to dryness on the water-bath, continuing the heat until the residue when dissolved in distilled water is neutral to litmus. Dissolve the residue in 25 mils of distilled water, add 50 mils of tenth-normal silver nitrate V. S. agitate well, then add 2 mils of nitric acid and 2 mils of ferric-ammonium sulphate T. S. and titrate the excess of silver nitrate V. S. with tenth-normal potassium sulphocyanate V. S. After deducting from the silver nitrate V. S. consumed the amount which would be consumed by the chlorides present in an equivalent weight of the sample, previously determined as directed by the U. S. Pharmacopœia, the result shows not less than 99 percent of $NaNO_3$.

Each milliliter of tenth-normal silver nitrate V. S. used corresponds to 0.008501 Gm. $NaNO_3$.

Each gramme of Sodium Nitrate, previously dried to constant weight at 100° C., corresponds to not less than 116.457 mils of tenth-normal silver nitrate V. S.

TAMARINDUS

Tamarind.

The preserved pulp of the fruit of *Tamarindus indica* Linné (Fam. *Leguminosae*).

A pulpy mass of a light reddish-brown color, darkening with age so as to become dark brown, containing some branching fibres and numerous reddish-brown, smooth, oblong or quadrangular, compressed seeds, each enclosed in a tough membrane; odor distinct; taste sweet and agreeably acid.

TEREBINTHINA

Turpentine.

A concrete oleoresin obtained from *Pinus palustris* Miller and from other species of *Pinus* (Fam. *Pinaceae*).

Turpentine occurs in yellowish, opaque masses, lighter internally, sticky and more or less glossy, brittle in the cold; odor and taste terbinthinate.

It is freely soluble in alcohol, ether, chloroform, and glacial acetic acid.

Its alcoholic solution shows an acid reaction with litmus.

Dissolve about 1 Gm. of Turpentine, accurately weighed, in 25 mils of alcohol, collect the insoluble residue, if any, on a filter which has been dried at 100° C. and weighed. Wash the residue, and filter with about 25 mils of alcohol and dry at 100° C. The weight of the residue should not exceed 2 percent (*mechanical impurities*).

VIBURNUM OPULUS

Viburnum Opulus.

Cramp Bark. High Cranberry Bark.

The dried bark of *Viburnum Opulus* Linné (Fam. *Caprifoliaceae*), without admixture of more than 5 percent of wood and other foreign matter.

In strips, or occasionally in quills or chip-like fragments, the bark attaining a thickness of 3 mm.; outer surface of the thinner pieces of a light gray color with crooked, longitudinal, purplish-brown strips and very small brown lenticels, the thicker pieces purplish-red or occasionally blackish, except when very young, and more or less finely fissured or thinly scaly; inner surface varying in color from yellowish to rusty-brown, with very short oblique striæ, except where the outer wood layer adheres; fracture short and weak, the fractured surface mostly whitish, varying to pale brown in the inner layer, rusty brown in the outer layer covering green, tangential, phelloderm plates; odor strong and characteristic; taste mildly astringent and decidedly bitter.

Under the microscope, sections of Viburnum Opulus show an outer corky layer, of 5 to 25 rows of cells the walls nearly colorless, frequently thickened on the inner surface, individual cork cells from 0.015 to 0.045 mm. in radial diameter and from 0.030 to 0.075 mm. in tangential diameter; outer bark of about 10 rows of cells containing a brownish-yellow, amorphous substance, small starch grains or chloro-plastids; medullary rays 1 to 2 cells in width, usually not more than 1-cell wide; inner bark with occasional groups of bast fibers composed of 1 to 10 cells, the walls being very thick, non-lignified, lamellated and finely porous; adhering wood with large tracheæ having scalariform or reticulate thickenings, and being surrounded by wood-fibers with thick lignified walls; starch grains, mostly in cells of parenchyma and medullary rays, either single or compound, the individual grains not exceeding 0.006 mm. in diameter; calcium oxalate in rosette aggregates, 0.015 to 0.040 mm. in diameter; numerous fragments of parenchyma cells, the lumina filled with a reddish-brown amorphous substance.

Powder—The powder of Viburnum Opulus is light grayish-brown, consisting of irregular fragments; cork cells polygonal, with thin, colorless walls; parenchyma with rosette aggregates of calcium oxalate, from 0.015 to 0.040 mm. in diameter; starch grains very small and mostly in parenchyma cells; fragments of parenchyma containing a brownish-yellow amorphous substance; occasional tracheal fragments associated with lignified wood-fibers.

XANTHOXYLUM FRUCTUS

Prickly Ash Berries.

The dried fruit of *Xanthoxylum Americanum* Miller (Northern Prickly Ash) or of Xanthoxylum *Clava-Herculis* Linné (Southern Prickly Ash) (Fam. *Rutaceae*).

Capsules with short stalks (X. Americanum) or without stalk (X. Clava-Herculis) when fresh ellipsoidal, fleshy, gray-brown, when dry dehiscent; carpels 2, keeled, apex short pointed, seeds 1 or 2 oblong, black, shining and wrinkled from drying. The carpels have a pungent, warm, aromatic taste and on chewing leave a tingling sensation on the tongue; when breathed upon emits a fraintly aromatic odor resembling that of citral.

ZEA

Zea. Corn Silk.

The fresh styles and stigmas of *Zea Mays* Linné (Fam. *Gramineae*).

In slender filaments from 10 to 20 cm. in length, and about 0.400 mm. in diameter; of a light green, purplish-red, yellow or light brown color; stigmas bifid, the segments very slender, frequently unequal and 0.400 to 3.000 mm. in length.

Under the microscope, the styles are seen to consist for the most part of parenchyma and two parallel, vascular bundles with narrow, spiral or annular tracheæ; the epidermal cells are rectangular, many of which are extended into multi-cellular hairs, the latter being from 0.200 to 0.800 mm. in length, the basal portion consisting of 2 to 5 united cells,

the upper portion being usually unicellular, the cells of the hairs are rich in cytoplasm and usually contain a small, spherical nucleus; the purplish-red styles contain a purplish-red cell cap.

Digest a small portion of the fresh styles and stigmas in diluted alcohol and filter; a pale purplish-red solution should be obtained, portions of which upon the addition of acids, should become either of a distinct purplish or yellowish-red color, and upon the addition of alkalies of a green color, and with ferric chloride T. S. an olive-green color changing to greenish-brown, and upon the addition of an aqueous solution of alum a bluish or purplish color which is quite permanent.

ZEDOARIA

Zedoary.

The dried rhizome of *Curcuma Zedoaria* Roscoe (Fam. *Zingiberaceae*).

Usually cut into transverse rounded sections, twisted and wrinkled, 1 to 4 cm. in diameter, 5 to 10 mm. thick; externally grayish-brown, hairy, rough, with a few root scars; transverse surface pale reddish to gray-brown; a distinct dark circular endoderm separates the cortex which is 2 - 5 mm. wide; the stele contains numerous orange-colored resin cells and irregularly distributed lighter colored wood bundles which are fewer in the cortex. Fracture short, somewhat mealy and waxy; odor aromatic, camphor like; taste aromatic, warm, slightly bitter.

Under the microscope, sections show a thick cork, a thin epidermis with numerous characteristic hairs, thick walled 1- to 6-celled up to 1 mm. long and often thicker in the middle than at the base; the parenchyma of the cortex and of the central cylinder rich in starch; secretion cells isodiametric with suberized walls, contents colorless or yellowish; the endodermis of small, thin walled quadratic cells; the fibrovascular bundles, collateral, more numerous in the central cylinder and nearer the endodermis; few bast fibres in the cortex and no crystal cells.

Powder—Rich in starch, egg-shaped, 0.020 to 0.070 mm. long and 0.007 to 0.012 mm. thick, eccentric, the nucleus in the smaller end; numerous characteristic, thick walled hairs; rich in parenchyma; very few bast fibres and no oxalate crystals or stone cells.

The yield of ash should not exceed 7 per cent.

NEW TEST FOR REDUCING SUGARS IN URINE.

According to W. Cramer (*Journ. Soc. Chem. Ind.*, 1915, p. 579), the test depends on the reduction of mercuric oxide in slightly alkaline solution to metallic mercury. The reagent is prepared by dissolving 0.4 Gm. of mercuric oxide and 6 gm. of potassium iodide in 100 cc. of water, and adjusting the alkalinity of the mixture, by the addition of $N/10$ acid or alkali solution, so that 10 cc. requires exactly 2.5 cc. of $N/10$ acid for neutralization, using phenolphthalein as indicator. To apply the test, 3 cc. of the reagent are heated to boiling, 0.3 cc. of the urine is added, the solution again boiled, and, after the lapse of 30 seconds, acidified with acetic acid. Normal urine containing the usual quantity (0.1 to 0.2 per cent of dextrose) yields a very slight turbidity; when the sugar-content increases to 0.5 per cent a distinct turbidity is produced. The reagent may be made more sensitive by increasing its alkalinity, but the normal quantity of sugar in urine then interferes by producing a turbidity; other substances, such as creatinine, also reduce strongly alkaline mercuric oxide solutions. The acetic acid is added to dissolve precipitated phosphates.—*Merck's Report.*