

N. J.; Geo. W. Mather, Albany, N. Y.; H. C. Christensen, Chicago, Ill.; Rowland Jones, Jr., Washington, D. C.; M. W. Fulton, San Francisco, Calif.; P. H. Dirstine, Pullman, Wash. *Committee on Transportation*.—R. A. Kuever, Iowa City, Iowa, replaces H. C. Newton. *Councilors to American Association for the Advancement of Science*.—John C. Krantz, Jr., Baltimore, Md., and A. F. Schlichting, Ferguson, Mo. *Committee on Endowment Fund*.—Dr. J. H. Beal has requested to be relieved as a member and as Chairman of the Committee. Dr. Wm. B. Day is designated as *Chairman* and Dr. F. J. Wulling, Minneapolis, Minn., as a member of the Committee. *Committee to Study Constitution and By-Laws*.—R. L. Swain, *Chairman*, Baltimore, Md.; W. B. Day, Chicago, Ill.; J. H. Beal, Fort Walton, Fla.; R. P. Fischelis, Trenton, N. J.; E. F. Kelly, Washington, D. C. *Committee to Study Courses in the History of Pharmacy*.—C. O. Lee, *Chairman*, La Fayette, Ind.; E. J. Ireland, Madison, Wis.; Lloyd E. Harris, Norman, Okla. *National Committee on Professional Information Pertaining to Dental Pharmacy*.—George C. Schicks, *Chairman*, Newark, N. J.; A. O. Mickelsen, Portland, Oreg.; R. W. Clark, Madison, Wis.; A. R. Bliss, Birmingham, Ala.; R. E. Terry, Chicago, Ill. E. F. KELLY, *Secretary*.

## UNITED STATES PHARMACOPŒIA.

### ABSTRACT OF PROPOSED CHANGES WITH NEW STANDARDS AND DESCRIPTIONS.

#### ELEVENTH REVISION.

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#### PART V—BOTANY AND PHARMACOGNOSY.

The Pharmacopœial Convention of 1930 recommended that "abstracts of changes proposed for the U. S. P. XI and new standards and descriptions" be published before final adoption, that those who are not members of the Revision Committee may have an opportunity for comment and criticism.

In compliance with this recommendation, the following abstracts are submitted. The nomenclature and the exact wording does not necessarily represent that to be finally adopted.

Changes in assays and strengths will be found in Part II, on Proximate Assays.

Comments should be sent to the chairman of the Revision Committee.

E. FULLERTON COOK,  
43rd and Woodland Avenue,  
Philadelphia, Pa.

*Acacia*.—The standard for purity has been changed by the addition of an ash requirement—"not more than 4 per cent of total ash and not more than 0.5 per cent of acid-insoluble ash."

Under "*Powdered Acacia*" the sentence on solubility has been altered—"at room temperature" being inserted after "cold water" and "resulting" inserted before "solution."

In the "*Test for identity*," the nature of the precipitate has been changed from "gelatinous" to "flocculent or curdy, whitish." A polariscopic test has been added, *viz.*, "A 10 per cent aqueous solution of *Acacia*, when examined by the polariscope, shows but slight lævorotation."

Under the "*Tests for purity*" the starch and dextrin tests have been amplified by specifying the strength of the *acacia* solution and requiring it to be boiled and cooled before the addition of iodine T.S.

A test for the water-insoluble residue has been added.

*Aconitum*.—The description has been broadened so as to include subspecies and varieties of *Aconitum Napellus*.

*Agar*.—"(*Fam. Florideæ*)" has been added after "*Gelidium*" in the definition.

The moisture content in the purity rubric has been increased to 18 per cent.

The description has been altered to specify Japanese *Agar* as the kind containing frustules of *Arachnoidiscus Ehrenbergii*.

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*Tests for identity.* A solubility and jell test have been made a part of the "Tests for identity." "The color of the fragments treated with iodine T.S." has been amplified to read "with some areas reddish or violet."

A new picric acid test for gelatin has been added.

*Aloe.*—Cape Aloe has been dropped from this monograph.

*Althæa.*—There is an added requirement that *Althæa* contain "not more than 1 per cent of foreign matter." Under "Unground *Althæa*" the old statement "due to mucilage cells" has been changed to read "with mucilage cells."

*Amylum.*—Under "Description and physical properties," "lenticular" has been changed to read "circular."

*Aspidium.*—The phraseology under *structure* has been somewhat altered, including the change from "glandular hairs" to "oleoresin glands;" from "bundles bicollateral" to "bundles xylocentric;" from "tracheæ" to "tracheids."

*Belladonnæ Folium.*—The titles of the drug have been changed from the plural to the singular number throughout.

Changes under "structure" including the following: "usually with 3 neighboring cells" changed to read "with 3 or 4 neighboring cells;" "crystal cells large, filled with microcrystalline calcium oxalate" changed to read, "cells filled with microcrystals numerous;" "Stem with long, thin-walled, slightly lignified bast" changed to read "Stem, with long, thin-walled, slightly lignified poricyclic fibers, bicollateral fibrovascular bundles, parenchyma interspersed with crystal cells, etc."

*Powdered Belladonna Leaves.* Description slightly changed by introducing "ellipsoidal" before "bordered pores" and deleting the terms "bast" and "wood" before fibers."

Under the "*Tests for purity*" the test has been broadened to read "Rosette aggregates and raphides of calcium oxalate are absent in *Belladonna Leaf*; when present, adulteration is indicated."

*Belladonnæ Radix.*—Under "*Powdered Belladonna Root*" the "bast fibers" have been changed to "pericyclic fibers."

*Benzoinum.*—The definition has been changed to specify "*Styrax tonkinensis* (Pierre) Craib ex Hartwich" as one of the sources of Siam Benzoin.

The character of the odor of Unground Sumatra Benzoin is changed to read "the odor suggests cinnamates or storax."

In the potassium permanganate test, "strong odor of benzaldehyde" replaces "odor of benzaldehyde." The benzoic acid test has been altered in part to read "the residue is not less than 12.5 per cent."

*Cannabis.*—The description of the structure of the stem and of the powdered drug have been made clearer by elaboration. The term "cystolith" replaces "calcium carbonate" in the description of the non-glandular hairs.

*Cantharis.*—The description of the insect has been elaborated by changing "legs with 5 tarsal joints" to "the first and second pairs of legs with five tarsal joints, the hind pair with four tarsal joints, all with two distal claws." The description of the antennæ has been amplified also.

Under Powdered *Cantharides* the dimensions of the spicules is changed to read "0.020 mm. in width at the base."

*Cardamomi Semen.*—External color of unground drug changed from "reddish gray-brown" to "pale orange to dark brown." The words "and slightly bitter" were added to the description of the character of the taste.

The description of the structure of the seed is amplified to include the loosely attached membranous arillus and the more detailed description of the stone cells whose lumina contain silica.

The powdered drug description is slightly amplified by clarifying the last clause relating to few pericarp fragments as allowable admixture.

*Carum.*—Caraway Fruit has been added as an additional synonym. The description of the unground drug has been slightly altered by including a clause concerning the secondary ribs which occur between the primary ribs on the dorsal surface. The description of the powdered drug has been slightly amplified to include the presence of few fragments of slightly lignified fibers.

*Caryophyllus.*—*Unground Clove.* The description has been somewhat altered to conform

with the accepted modern interpretation relative to the stemlike portion of the clove bud which is now called the receptacle and which contains the inferior ovary.

*Cascara Sagrada*.—A requirement has been included that it contain not more than four per cent of foreign organic matter. *Unground Cascara Sagrada*. The color of the outer surface has been amplified to include "purplish brown."

*Structure*. The description of the cork has been changed to read "Cork yellowish brown, purple or reddish brown, up to 10 or more rows of small cells." "Bast fibers in small bundles surrounded by crystal fibers" has been changed to read, "bast fibers in small bundles, more or less surrounded by crystal fibers."

*Tests for identity*. The wording of both tests has been slightly altered, the colors resulting being respectively described as occurring in or of the mixture.

*Celaecium*.—*Definition*. "A fatty substance" has been changed to read "A waxy substance."

*Description*. The wording of the sentence dealing with solubility has been made more definite.

*Cinchona*.—The *definition* is changed to include both stem and root barks of Red and Yellow Cinchonas.

The *description* is changed so as to include diagnostic features of root bark as well as stem bark.

*Cinnamomum*.—The purity standard is extended to permit not more than 2 per cent of foreign organic matter.

*Structure*. The description has been slightly altered, particularly in reference to the region of the pericycle where the term pericyclic fibers has replaced "bast fibers."

*Powdered Cinnamon*. "Bast fibers" has been changed to "fibers" and the wavy character of these is indicated, "fragments of somewhat lignified cork" has been added.

*Digitalis*.—*Standards of potency*. This has been changed: The potency of *Digitalis* shall be such that 0.1 Gm. shall be equal to not less than 1 U. S. P. digitalis unit. It contains not more than 2 per cent of brown leaves, stems, flowers or foreign organic matter, not more than 8 per cent of moisture and yields not more than 5 per cent of acid-insoluble ash. Under all conditions of storage and transportation, the drug should be kept in water-proof and air-tight containers. A note has been introduced making it mandatory to dispense *Digitalis Pulverata*, when *Digitalis* is prescribed.

*Powdered Digitalis*. This subcaption has been changed to "Ground *Digitalis*." The description of the ground drug has been slightly changed. The terminal cell of the uniseriate, non-glandular hairs is indicated as being pointed or occasionally rounded.

*Digitalis Pulverata*. A new article has been introduced, *viz.*, a standardized powdered digitalis.

*Definition*. *Digitalis*, dried at a temperature not exceeding 60° C. and reduced to a fine powder. The strength of this article is to be such that 0.1 Gm. shall be equal to not less than 1 and not more than 1.1 U. S. P. digitalis units. Powdered *Digitalis* of a higher potency is to be reduced to the official standard by admixture with the exhausted marc remaining when preparations of *Digitalis* have been prepared, the marc being dried and finely powdered before mixing. It contains not more than 5 per cent of moisture.

*Description*. Same as for Ground *Digitalis*.

*Storage*. Preserve *Digitalis* in water-proof and air-tight containers.

*Ergota*.—*Purity standard*. The standard of assay has been changed to read, "Ergot, when assayed by the method directed below, possesses a potency, per gram, equivalent to not less than 0.5 mg. of ergotoxine ethanesulfonate." An 8 per cent moisture limit has been introduced.

*Description and physical properties*. Under "Unground Ergot" the thickness has been changed to read "up to 5 mm. thick." External features altered by addition of "occasionally transversely fissured" and color changed to "externally nearly black or purplish brown—internally white, sometimes tinged with pink or gray."

*Structure*. The description has been slightly amplified by adding "hyphal" before cells.

*Storage*. A paragraph has been introduced requiring Ergot to be kept in water-proof and air-tight containers under all conditions of storage and transportation.

*Powdered Ergot*. The word "hyphal" has been inserted before "cells."

*Eriodictyon*. *Definition*. The author citation has been changed by dropping "Bentham."

*Description.* Under "*Unground Eriodictyon*," the color of the upper surface has been amplified to read "yellowish to greenish brown." The character of the lower surface is changed to read "greenish to yellowish gray with greenish yellow or brown veins." The taste is changed to read "taste balsamic, bitter, becoming sweetish and slightly acid."

Under "*Structure*," "Loose mesophyll" has been changed to "spongy parenchyma." The character of the hairs occurring on the lower surface has been amplified.

*Galla.*—*Definition.* Changed to read "Nutmall is the excrescence obtained from the young twigs of *Quercus infectoria* Olivier and other allied species of *Quercus* (Fam. *Fagaceæ*)."

*Tests for identity* have been added.

*Gentiana.*—The purity requirements have been extended to include not more than 10 per cent of moisture, and not more than 2 per cent of foreign organic matter.

The description has been slightly altered to indicate the longitudinal wrinkling of the rhizomes and the twisted character of some segments of the rhizome and roots. The external color has been changed from yellowish brown to "generally dark brown, occasionally light brown." The internal color has been changed to yellowish to orange brown.

The description of the powdered drug has been amplified to include fragments of cork and hypodermal cells.

A microsublimation test has been added

*Glycyrrhiza.*—The description of the internal structure has been partially rewritten and made more complete. Under Powdered Glycyrrhiza the width of the tracheæ is cited as "up to 0.200 mm. in diameter." A new method has been introduced in the test for fatty matter.

*Hyoscyamus.*—Under "*Structure*," calcium oxalate has been deleted following "micro-crystals." Under powdered Hyoscyamus, the description of the heads of the glandular hairs is changed to "multicellular."

*Ipecacuanha.*—The Nicaraguan or reddish brown variety of Cartagena Ipecac has been added and changes made in the definition and description so as to include this commercial variety of the drug. The external color description of Cartagena Ipecac has been changed to grayish, grayish brown or reddish brown.

*Kino.*—The rubric paragraph has been changed to read "Kino yields not less than 60 per cent of alcohol-soluble extractive." The Bickford-Bennett method is used in assaying this drug.

*Limonis Cortex.*—The botanical variety name in the definition has been changed from *Limonum* (Risso) Hooker filius to "*Limon* Linné." The description has been amplified by adding "membrane crystals" as occurring in some of the parenchyma cells.

*Myrrha.*—The following tests for purity have been added: "Myrrh becomes purplish to violet when treated with nitric acid." "An ethereal solution becomes violet red when treated with bromine vapors."

The Bickford-Bennett method is indicated for alcohol-soluble extractive.

*Nux Vomica.*—Under description, the thickness has been changed to from 3 to 5 mm.

*Podophyllum.*—The purity requirement has been changed to specify not less than 3.5 per cent of the resin of podophyllum, and a limit of 3 per cent of foreign organic matter has been added.

The description of the unground drug has been partly rewritten and amplified, the internal characteristics being changed to read, "the bark yellowish to grayish, the wood showing a circle of small yellowish xylem bundles, the pith large and grayish."

Under the structure of the rhizome, the outer portion is found to consist of "one to four layers" of suberized cells.

Under Powdered Podophyllum tracheæ "mostly" has been inserted before "with simple pored, etc.," and "cork" has been changed to "suberized."

*Prunus Virginiana.*—In the description of the unground drug the outer surface of both young and older uncrossed bark is described, the grayish black color of older bark being added. The structure paragraph has been completely rewritten. Under Powdered Wild Cherry, the color is changed to "light brown to reddish brown." "Calcium oxalate prisms or rosette aggregates numerous" is changed to read "calcium oxalate chiefly in monoclinic prisms but also in rosette aggregates."

The drug is directed to be protected from moisture as well as from light.

*Pulvis Glycyrrhizæ Compositus*.—The description has been augmented by adding "washed sulfur fragments" to the other microscopical elements.

*Rheum*.—In the structure portion of the description "vascular bundles with internal sieve and cambium" is changed to "compound vascular bundles in the rhizome portions with internal sieve and cambium."

The test for the presence of rhapontic rhubarb has been deleted.

*Santalum Rubrum*.—The taste now reads "slightly astringent."

*Sarsaparilla*.—The rubric paragraph has been altered so as to make it mandatory to remove the rhizome and crown portion, if in excess of 4 per cent, before the root is ground or powdered.

The histological portion of the monograph has been slightly altered by inserting "fibro-" before vascular bundles adding "pericambium" as a part of the central cylinder and by changing "groups" to "strands."

*Scilla*.—The description of the powdered drug has been amplified by adding "fragments of red, pink or purple epidermal or parenchyma bulb scale tissue, absent (*Red Squill*)."

*Senna*.—The limit on Senna stems is reduced to eight per cent.

The paragraph on structure has been amplified to include the histology of the midrib region.

*Serpentaria*.—The description of the internal appearance of the unground drug has been changed to read "internally, bark brown, wood yellow and composed of broad, eccentric wedges, pith whitish."

*Sinapis Nigra*.—Under Powdered Black Mustard a portion of its seed coat is permitted to be removed to facilitate the powdering

*Stramonium*.—In the description of the powdered drug, "rod-like crystals" is changed to "prisms" and "sphenoidal microcrystals of calcium oxalate" is omitted.

*Tragacantha*.—The test for foreign gums has been deleted.

*Valeriana*.—Under the description of the structure of the root portion, the thickened radial walls of the endodermal cells and the radial fibro-vascular bundle have been introduced.

*Veratrum Viride*.—The description of the histology of the root has been amplified to include the large, irregular cavities in the outer region of the cortex.

*Zingiber*.—Jamaica Ginger is now the only variety recognized.

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#### PART VI—ORGANIC CHEMICALS.

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*Acidum Aceticum Dilutum*.—Contains, in each 100 cc., not less than 5.7 Gm. and not more than 6.3 Gm. of HC<sub>2</sub>H<sub>3</sub>O<sub>2</sub>. The acid is prepared by mixing 158 cc. of Acetic Acid with enough distilled water to make 1000 cc., a change from a gravimetric to a volumetric formula.

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