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.

UNITED STATES PHARMACOPŒIA.

ABSTRACT OF PROPOSED CHANGES WITH NEW STANDARDS AND DESCRIPTIONS.

ELEVENTH REVISION.

PART VI—ORGANIC CHEMICALS.

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 and doses have not been appended.

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

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

Acidum Aceticum Dilutum.—Contains, in each 100 cc., not less than 5.7 Gm. and not more than 6.3 Gm. of $HC_2H_3O_2$. 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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* Permission to reprint for purposes of comment can be had on application to the Chairman of the Board of Trustees, James H. Beal, Fort Walton, Fla.

Acidum Acetylsalicylicum.—The melting point is not below 135° C. when determined by placing the sample in a bath at 130° C. and heating at a rate of 3° per minute.

The test for carbonizable substances is standardized in terms of color. See JOUR. A. PH. A., 22, 956–961 (1933).

Acidum Citricum.—In the colorimetric test for lead, the volume of lead nitrate solution used for comparison is reduced to 2 cc., a reduction of 50 per cent in lead tolerance.

Acidum Oleicum.—Congealing temperature, not above 10° C. Acid value, 188 to 200. Iodine value 85 to 95. The cloud test has been omitted.

Acidum Salicylicum.—Dissolve 1 Gm. in 30 cc. of hot distilled water, cool in ice and filter. 15 cc. of filtrate shows no turbidity (*sulfate*) upon the addition of 2 drops of hydrochloric acid and 5 drops of barium chloride T.S.

The test for carbonizable substances is standardized as to color.

Acidum Stearicum.—Defined as a mixture of solid acids obtained from fats, consisting chiefly of palmitic and stearic acids.

Congealing temperature, not below 54° C. Iodine value, not more than 4. A powdered form of the acid is also recognized.

Acidum Tartaricum.—In the colorimetric test for lead, the volume of lead nitrate solution used for comparison is reduced to 2 cc., a reduction of 50 per cent in lead tolerance.

Acriflavina.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Acriflavinæ Hydrochloridum.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Adeps.—Solidification point of the fatty acids, 36° to 42° C.

Adeps Lanæ.—The free acids in 10 Gm. require not more than 1 cc. of tenth-normal sodium hydroxide for neutralization.

Iodine value, not less than 18 and not more than 36.

Æther.—This title is reserved for anesthetic ether.

A new test for aldehydes is introduced. Place 20 cc. of Ether in a colorless, glass-stoppered cylinder and add 7 cc. of a mixture of 1 cc. of alkaline mercuric potassium iodide T.S. with 17 cc. of a saturated aqueous solution of sodium chloride. Stopper the cylinder and shake it vigorously for ten seconds, then set it aside for one minute: the aqueous layer shows no turbidity (*aldehydes* and *ketones*).

A 1 in 10 solution of potassium iodide replaces cadmium and potassium iodide as the reagent for peroxides.

Æthylenum.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Æthylhydrocupreinæ Hydrochloridum.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Æthylis Oxidum.—This is the title for the newly introduced Solvent Ether. It is to be used for all purposes except anesthesia.

The test for peroxides is identical with that under *Æther*, with the exception that only one minute is allowed for the reaction.

The test for aldehydes is identical with that under *Æther* in U. S. P. X.

In all other respects Ethyl Oxide must satisfy the requirements under *Æther*.

Alcohol.—The litmus paper test has been replaced by a direct titration for acidity. 50 cc. of alcohol diluted with 50 cc. of recently boiled distilled water shall require not more than 0.9 cc. of fiftieth-normal sodium hydroxide for neutralization, using phenolphthalein as indicator.

A new test for *organic impurities, aldehydes, etc.*, replaces the silver nitrate test. Place 20 cc. of Alcohol in a glass-stoppered cylinder that has been thoroughly cleaned with hydrochloric acid, then rinsed with distilled water and finally with the Alcohol to be tested. Cool the contents to approximately 15° C. and add, by means of a carefully cleaned pipette, 0.1 cc. of tenth-normal potassium permanganate, noting the exact time of addition. Mix at once by inverting the stoppered cylinder, and allow it to stand at 15° C. for five minutes: the pink color must not entirely disappear.

The test for *acetone* is replaced by the following: To a mixture of 1 cc. each of Alcohol and distilled water add 3 cc. of distilled water and 10 cc. of mercuric sulfate T.S. and heat on a bath of

boiling water: no precipitate forms within three minutes (*acetone, ketones, isopropyl alcohol* and *tertiary butyl alcohol*).

The details of the test for *methanol* have been modified to some extent.

Aminopyrina (*Amidopyrina U. S. P. X*).—To 0.1 Gm. of Aminopyrine add 0.1 Gm. of vanillin, 5 cc. of distilled water and 2 cc. of sulfuric acid and heat the mixture to boiling: it develops no more color than is obtained by adding 5 cc. of distilled water and 2 cc. of sulfuric acid to 0.1 Gm. of vanillin and heating the mixture to boiling (*antipyrine*).

Amylis Nitris.—Assay. Place about 20 cc. of aldehyde-free alcohol in a 100-cc., glass-stoppered volumetric flask and weigh accurately. From a pipette add from 3 to 4 cc. of Amyl Nitrite, stopper the flask, again weigh accurately and calculate the weight of the Nitrite taken for assay. Add enough aldehyde-free alcohol to make a volume of 100 cc. at 25° C., stopper the flask and mix thoroughly. Proceed as directed for the *assay of nitrites*, using 10 cc. of the alcoholic solution. One cc. of tenth-normal sodium thiosulfate is equivalent to 0.01171 Gm. of $C_5H_{11}NO_2$.

Assay of nitrites.—The gasometric assay of organic nitrites has been deleted and replaced by an iodometric assay. An acidified solution of potassium iodide reacts with a nitrite as expressed by the following equation: $2KI + 2HCl + 2C_5H_{11}NO_2 - 2KCl + 2C_5H_{11}OH + 2NO + I_2$.

The liberation and titration of the iodine must be carried out in an oxygen-free atmosphere in order to prevent oxidation by atmospheric oxygen of NO to N_2O_3 with subsequent liberation of additional iodine. It is only necessary to bubble carbon dioxide through the mixture contained in a flask as described below to prevent this oxidation, and the carbon dioxide may be supplied from a cylinder of compressed gas or from any laboratory type of gas generator.

Apparatus. Fit a 300-cc. Erlenmeyer flask (or wide-mouth bottle) with a 2-hole rubber stopper. Through one hole pass an æration tube leading to the bottom of the flask and constricted to an internal diameter of about 1 mm. at the lower end. Through the other hole pass a glass tube, of at least 6 mm. internal diameter, which will extend about 1 cm. above and below the stopper. Connect the æration tube with a cylinder or generator of carbon dioxide.

Method. Place 10 Gm. of potassium iodide in the flask and add 40 cc. of boiling deærated distilled water. Insert the stopper in the flask and pass a stream of carbon dioxide through the flask at a rate of five bubbles per second until the solution has cooled to room temperature. Add 10 cc. of dilute hydrochloric acid (1 in 2) and continue the stream of carbon dioxide for at least three minutes. If any iodine is liberated, as shown by the appearance of a yellow color, cautiously add tenth-normal sodium thiosulfate from a burette, through the outlet tube, until the color is just discharged.

Decrease the flow of carbon dioxide to about 2 bubbles per second, and add the directed volume of the nitrite solution to be assayed with a transfer pipette, passing the pipette through the outlet tube until the tip is just above the surface of the potassium iodide solution. Touch the tip of the pipette to the outlet tube to remove adhering nitrite solution, then rinse the outlet tube with a fine jet of aldehyde-free alcohol from a wash bottle. At once titrate the liberated iodine with tenth-normal sodium thiosulfate, introducing the tip of the burette through the outlet tube.

One cc. of tenth-normal sodium thiosufate is equivalent to

Amyl nitrite, $C_5H_{11}NO_2$,	0.01171 Gm.
Ethyl nitrite, $C_2H_5NO_2$,	0.007505 Gm.
Glyceryl trinitrate, $C_3H_5(NO_3)_3$,	0.0113 Gm.

Caution. When assaying amyl nitrite, the alcoholic solution of the nitrite must not be used later than thirty minutes after its preparation. If more time has elapsed a fresh solution must be prepared.

Antipyrina.—A new test for identity is given: To 0.1 Gm. of Antipyrine add 0.1 Gm. of vanillin, 5 cc. of distilled water and 2 cc. of sulfuric acid and heat the mixture to boiling: it develops an orange-yellow precipitate.

Apomorphinæ Hydrochloridum.—The identity test with sodium bicarbonate has been replaced by the following: To 5 cc. of an aqueous solution of Apomorphine Hydrochloride (1 in 100) add a slight excess of a solution of sodium bicarbonate (1 in 20): a white or greenish white precipitate is formed. Add 3 drops of tincture of iodine and shake the mixture vigorously: an emerald-green solution is produced. Add 5 cc. of ether, and, after vigorous shaking, allow the

layers to separate: the ether solution is colored deep ruby-red, while the aqueous layer retains its green color.

Argentum-Proteinicum Forte (*Argento-Proteinum Forte U. S. P. X*).—The yeast test is replaced by the following: Dissolve 1 Gm. of Strong Protein Silver in 10 cc. of distilled water. Add, all at once, 7 Gm. of reagent ammonium sulfate and stir until coagulation takes place. Filter, and to the clear filtrate add 3 drops of hydrochloric acid: a white precipitate is formed (distinction from *mild protein silver*).

Argentum-Proteinicum Mite (*Argento-Proteinum Mite U. S. P. X*).—The yeast test is replaced by the following: Dissolve 1 Gm. of Mild Protein Silver in 10 cc. of distilled water. Add, all at once, 7 Gm. of reagent ammonium sulfate and stir until coagulation takes place. Filter, and to the filtrate add 3 drops of hydrochloric acid: no precipitate is formed (distinction from *strong protein silver*).

Arsphenamina.—The following tests for purity have been introduced. Dilute 10 cc. of Arsphenamine solution (1 in 100) in a small flask or beaker with 50 cc. of distilled water. Add 5 drops of phenolphthalein T.S. and titrate with tenth-normal sodium hydroxide, watching the supernatant liquid for the end-point: not less than 3.9 cc. and not more than 4.2 cc. of tenth-normal sodium hydroxide will be required.

Add 0.6 Gm. of Arsphenamine to 20 cc. of distilled water in a small flask or cylinder and agitate gently: a complete solution results within fifteen minutes.

Expose the ampuled product to a temperature of 56° C. for a period of forty-eight hours: it shows no marked change in color, consistency or solubility.

The following caution is appended: The solution must be alkalinized with 0.85 cc. of normal sodium hydroxide for each 0.1 Gm. of Arsphenamine prior to injection.

Atropina and Atropinæ Sulfas.—The carbonization test with sulfuric acid is standardized in terms of color.

Balsamum Tolutanum (*Tolu U. S. P. X*).—The test for rosin is modified: Shake about 2 Gm. of Tolu Balsam with 20 cc. of carbon disulfide, allow it to stand for thirty minutes, filter the liquid and evaporate the filtrate to dryness. Triturate the residue with 10 cc. of petroleum benzin and filter the solution into a dry test-tube. Add 5 cc. of a sulfuric acid solution (made by mixing equal volumes of sulfuric acid and distilled water and cooling the mixture), shake vigorously, allow the mixture to settle and add acetic anhydride drop by drop: no red, violet or purple band is formed (*rosin*, *rosin oil* or *copaiba*).

Barbitalum.—The identity test with mercuric nitrate T.S. is changed slightly, as follows: A saturated aqueous solution of Barbital yields with mercuric nitrate T.S. a white precipitate which is soluble in ammonia T.S.

The carbonization test with sulfuric acid is standardized in terms of color.

Barbitalum Solubile.—The carbonization test with sulfuric acid is standardized in terms of color.

Benzinum Purificatum.—It is directed to determine the residue upon evaporation at 40° C. in a glass or porcelain dish.

Betanaphthol.—The volume of ammonia T.S. used in the solubility test is increased from 25 cc. to 30 cc.

Caffeine.—The temperature for the drying of Caffeine is changed from 100° C. to 80° C.

The carbonization test with sulfuric acid is standardized in terms of color.

Caffeina Citrata.—The temperature for the drying of Citrated Caffeine, and the caffeinic residue therefrom, is changed from 100° C. to 80° C.

Slight changes are made in the assay for caffeine. The volume of sodium hydroxide T.S. is reduced to 8 cc., and the caffeine is extracted with three or more 20-cc. portions of chloroform.

Caffeina cum Sodii Benzoate (*Caffeinæ Sodio-Benzoas U. S. P. X*).—The temperature for the drying of Caffeine with Sodium Benzoate, and the caffeinic residue therefrom, is changed from 100° C. to 80° C

The carbonization test with sulfuric acid is standardized in terms of color.

Calcii Iodobehenas.—The tests for identity have been amended by deleting the test for iodine with sulfuric acid and chloroform, and by introducing a test for calcium in the ash.

Camphora.—Synthetic Camphor is recognized as well as the natural product.

The specific rotation $[\alpha]_D^{25}$ of synthetic camphor is between +5° and −5°.

Mix 0.1 Gm. of finely divided Camphor with 0.2 Gm. of sodium peroxide in a clean, dry, hard glass test-tube of about 25 mm. internal diameter and 20 cm. in length. Suspend the tube at an angle of about 45° by means of a clamp placed at the upper end, and gently heat the tube, starting at the upper end and gradually bringing the heat toward the lower part of the tube until incineration is complete. Dissolve the residue in 25 cc. of warm distilled water, acidify with nitric acid and filter the solution into a comparison tube. Wash the test-tube and filter with two portions of 10 cc. each of hot distilled water, adding the washings to the filtered solution. Add to the filtrate 0.5 cc. of tenth-normal silver nitrate, dilute with distilled water to 50 cc. and mix thoroughly. The turbidity is no greater than that produced in a control test with the same quantities of the same reagents and 0.05 cc. of fiftieth-normal hydrochloric acid (*halogens*).

Carbo Activatus.—(*Replacing Carbo Ligni U. S. P. X*).—A copy of the monograph may be obtained from the Chairman of the Committee of Revision. See also JOUR. A. PH. A., 24, 630 (1935).

Carbonei Tetrachloridum.—The carbonization test with sulfuric acid is standardized in terms of color. In the test for the presence of carbon disulfide, dehydrated alcohol is replaced by alcohol.

Carbromalum.—The carbonization test with sulfuric acid is standardized in terms of color.

Cera Alba and Cera Flava.—A test for carnauba wax has been added. Place 0.1 Gm. of Yellow (White) Wax in a test-tube and add 20 cc. of *n*-butanol. Immerse the test-tube in boiling water and shake the mixture gently until solution is complete. Immerse the test-tube in a beaker of water at 60° C. and allow it to cool to room temperature during a period of two hours. A loose mass of fine, needle-like crystals separates from a clear mother-liquor. Under the microscope the crystals are loose needles or stellate clusters, without the presence of amorphous masses (*carnauba wax*).

Chloralis Hydras.—The carbonization test with sulfuric acid is standardized in terms of color.

Chloramina-T (*Chloramina U. S. P. X*).—The carbonization test with sulfuric acid is standardized in terms of color.

Chlorobutanol.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Chloroformum.—The specific gravity, 1.474 to 1.478 at 25° C., is transferred to the "Tests for purity," since it is a very accurate indication of the alcohol content of the Chloroform.

The test for *substances decomposable by sulfuric acid* is standardized in terms of color.

Two new tests are added: Agitate 3 cc. of Chloroform with 10 cc. of ammonia-free distilled water in a glass-stoppered cylinder for five minutes. After the liquids separate, transfer 5 cc. of the water extract to another glass-stoppered cylinder containing 40 cc. of ammonia-free distilled water, and add 5 cc. of alkaline mercuric potassium iodide T.S. No turbidity or precipitate will develop within one minute (*aldehydes* and *ketones*).

Into each of two 50-cc. glass-stoppered cylinders of colorless glass, having an internal diameter of 20 mm., place 10 cc. of distilled water, two drops of phenolphthalein T.S. and enough hundredth-normal sodium hydroxide to produce, after vigorous shaking, pink tints of equal intensity. Into one of the cylinders measure exactly 20 cc. of chloroform and again shake the mixture well. Add hundredth-normal sodium hydroxide, drop by drop, from a burette, shaking the mixture well after each addition, until the pink color is reproduced in an intensity equal to that in the cylinder without the Chloroform. Not more than 0.20 cc. of hundredth-normal sodium hydroxide is required to produce a pink color, which is permanent for fifteen minutes (*acids* and *phosgene*).

Cocaina and Cocainæ Hydrochloridum.—The carbonization test with sulfuric acid is standardized in terms of color.

Codeina.—The carbonization test with sulfuric acid is standardized in terms of color.

Codeinæ Phosphas.—Codeine Phosphate must now contain not less than 70 per cent of anhydrous codeine, an increase of 3 per cent, and the water of hydration shown in the chemical formula is reduced to $1^1/_2$ molecules.

Copaiba.—The lower limit of non-volatile resin is reduced to 27 per cent.

Creosotum.—Creosote begins to distil at about 203° C., and not less than 90 per cent of it, by volume, distils between 203° and 220° C. when determined by Method II under *Boiling and Distilling Points*. This is an increase of 3° in the minimum boiling point.

Dextrosum.—Dextrose loses not less than 8 per cent and not more than 10 per cent of its weight when dried to constant weight at 105° C. This fixes a minimum as well as a maximum moisture content.

Dichloramina-T (Dichloramina U. S. P. X).—The carbonization test with sulfuric acid has been deleted.

Emetinæ Hydrochloridum.—The water content has been changed from a maximum of 19 per cent to not less than 8 per cent and not more than 16 per cent.

The carbonization test with sulfuric acid is standardized in terms of color.

Ephedrina.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Ephedrinæ Hydrochloridum.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Ephedrinæ Sulfas.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Epinephrina.—A new test for purity is added. Dissolve 1 Gm. of Epinephrine, dried to constant weight over sulfuric acid, in 15 cc. of half-normal hydrochloric acid: the solution is clear. Add to this solution sufficient half-normal hydrochloric acid to make a volume of 20 cc. at 25° C. The specific rotation $[\alpha]_D$ of this solution at 25° C., and using a 200-mm. tube, with sodium light, is not less than $-50°$ and not more than $-53.5°$.

Erythritylis Tetranitras Dilutus.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Fluoresceinum Solubile.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Gelatinum.—In the place of the statement that a solution of Gelatin forms a firm, transparent or translucent jelly on standing for several hours at 6° C., there is introduced a new test for jell strength. Place 0.1 Gm. of Gelatin, accurately weighed, in a test-tube about 150 mm. in length and having an internal diameter of 15 mm., and add enough distilled water to make the mixture measure exactly 10 cc. at 25° C. Place a stirring rod in the tube and allow it to stand, with occasional stirring, for six hours. Place the tube in a bath of boiling water and stir until the Gelatin is completely dissolved and the solution thoroughly mixed. At once remove the stirring rod, stopper the tube tightly and allow it to stand in a refrigerator over night. Place the tube in a bath of ice water for thirty minutes, then allow the temperature of the bath to rise slowly. When the temperature of the bath reaches 10° C. the jelly does not flow when the test-tube is laid on its side.

The test for arsenic has been modified. Heat 15 Gm. of Gelatin with 60 cc. of dilute, arsenic-free hydrochloric acid (1 in 4) in a covered flask until all insoluble matter is flocculated and the Gelatin dissolved. Add an excess of bromine T.S. (about 15 cc.), neutralize with ammonia T.S, add 1.5 Gm. of sodium phosphate and allow to cool. Add a slight excess (about 30 cc.) of magnesia mixture T.S., allow to stand for one hour, filter and wash with 5 10-cc. portions of ammonia T.S., diluted with 3 volumes of water. Drain the precipitate well and dissolve it in dilute arsenic-free hydrochloric acid (1 in 4) to a volume of exactly 50 cc. Subject 5 cc. of this solution to the test for *arsenic*. The stain, if any, is not more intense than that produced in a test made with similar quantities of the same reagents and 1.5 cc. of the standard arsenic test solution.

Glycerinum.—The carbonization test with sulfuric acid is standardized in terms of color.

Gossypium Purificatum.—The test for fatty matter has been amended by prescribing extraction in a Soxhlet apparatus. The limit of fatty matter is unchanged, but it is directed that the ethereal solution may have no blue, green or brownish color.

Histaminæ Phosphas.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Hydrargyri Succinimidum.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Iodophthaleinum.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Lactosum.—No changes have been made over those announced for the interim revision official January 1, 1934, except that it is directed to add 0.2 cc. of ammonia T.S. to the solution used for determination of the specific rotation.

Linimentum Camphoræ.—The assay for camphor is conducted by volatilizing the camphor in a current of carbon dioxide.

Linimentum Chloroformi.—An assay has been introduced for this liniment and for Spiritus Chloroformi. For details see JOUR. A. PH. A., 22, 540–544 (1933). 100 cc. of the Liniment contains, in each 100 cc., not less than 40 Gm. and not more than 45 Gm. of $CHCl_3$.

Liquor Cresolis Saponatus (*Liquor Cresolis Compositus U. S. P. X*).—The assay has been amended by substituting a saturated solution of calcium chloride for the solution of sodium chloride previously used for washing the recovered cresol. The cresol is then dried over anhydrous calcium chloride (No. 4 mesh) instead of ignited potassium carbonate.

Liquor Epinephrini Hydrochloridi.—The use of an approved preservative is authorized.

Liquor Ergosterolis Irradiati.—A new admission. A copy of the monograph may be ob tained from the Chairman of the Committee of Revision.

Liquor Formaldehydi.—Bromthymol blue T.S. is introduced as the indicator for the determination of acidity and in the assay.

Liquor Histaminæ Phosphatis.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Liquor Parathyroidei.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Liquor Pituitarii Posterioris (*Liquor Pituitarii U. S. P. X*).—An approved preservative may be added.

Mel.—The method for the determination of ash has been modified. Weigh accurately about 10 Gm. of Honey into a platinum dish, add a few drops of olive oil to prevent spattering, heat carefully until swelling ceases and ignite not above dull redness until a white ash is obtained: not more than 0.3 per cent of ash remains.

Merbaphenum.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Methylthioninæ Chloridum.—Methylthionine Chloride contains, when dried to constant weight at 110° C., not less than 98.5 per cent of $C_{16}H_{18}N_3ClS$.

The test for zinc is modified to detect copper as well. Heat 0.5 Gm. of Methylthionine Chloride at a temperature below a red heat until it is completely carbonized, boil the powdered residue with 10 cc. of diluted nitric acid for five minutes, filter and wash the residue with 10 cc. of distilled water. Boil the combined filtrate and washings with 1 cc. of nitric acid, add an excess of ammonia T.S. and filter if necessary: the liquid remains clear upon the addition of an equal volume of hydrogen sulfide T.S. (*copper* or *zinc*).

Assay. Place about 0.2 Gm. of Methylthionine Chloride, dried to constant weight at 110° C. and accurately weighed, in a 500-cc. volumetric flask and dissolve it in 100 cc. of distilled water. Add 50 cc. of sodium acetate solution (1 in 10) and mix thoroughly, then add from a burette 50 cc. of tenth-normal iodine, keeping the mixture in constant rotation. Stopper the flask and allow the mixture to stand for fifty minutes, shaking it vigorously at intervals of ten minutes. Add distilled water to make the mixture measure 500 cc., mix thoroughly, allow to stand for ten minutes and filter through a filter that has not been previously moistened. Reject the first 30 cc. of filtrate. Determine the excess of iodine by titration of 100 cc. of the subsequent filtrate with tenth-normal sodium thiosulfate. Each cc. of tenth-normal iodine is equivalent to 0.005328 Gm. of $C_{16}H_{18}N_3ClS$.

Neoarsphenamina.—The rubric is amended by requiring not less than 19 per cent and not more than 22 per cent of As.

Some modifications of the tests for identity are introduced.

A new test for purity is added. Expose the ampuled product to a temperature of 56° C. for forty-eight hours: it should show no marked change in color, consistency or solubility.

Neocinchophenum.—A new admission, replacing Cinchophenum. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Oleum Amygdalæ Expressum.—In the test for *various foreign oils*, it is now directed to cool the liberated fatty acids to 15° C. and allow to stand for thirty minutes without stirring.

The solidification point of the fatty acids is fixed at not less than 9° and not more than 12° C.

Oleum Chaulmoogræ.—The definition is changed to read: The fixed oil expressed from the ripe seeds of *Taraktogenos Kurzii* King, *Hydnocarpus Wightiana* Blume or *Hydnocarpus an-*

thelmintica Pierre (Fam. *Flacourtiaceæ*). The fixed oil expressed from the ripe seeds of other species of *Hydnocarpus* (Fam. *Flacourtiaceæ*) when designated as such and when conforming with the description, physical properties and tests for identity and purity prescribed below, may be used.

The minimum free acidity has been deleted, and the maximum reduced to 40 cc. of tenth-normal alkali for 10 Gm. of oil.

A new test for purity has been added. Place 25 cc. of Chaulmoogra Oil in a measuring tube consisting of a glass-stoppered, pear-shaped bulb of not less than 100 cc. capacity, joined at its lower, tapering end to a tube about 30 cm. long, graduated to 25 cc. in divisions of 0.1 cc. Add 100 cc. of neutralized alcohol and shake the mixture thoroughly for not less than ten minutes. Allow the tube to stand for twenty-four hours and observe the volume of the lower layer. Its volume is not less than 23.5 cc. (*free fatty acids* or *castor oil*).

The lower limit of iodine value has been reduced from 98 to 93.

Oleum Gossypii Seminis.—The solidification point of the fatty acids has been fixed as not less than 28° and not more than 35° C.

Oleum Iodatum. (*Iodized Oil*).—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Oleum Lini.—The color test for rosin or rosin oil has been corrected. Warm 10 cc. of Linseed Oil with an equal volume of acetic anhydride in a test-tube until solution is effected: allow the mixture to cool, then separate the lower anhydride layer and filter it through a small filter moistened with acetic anhydride. Place 2 or 3 drops of the filtrate on a white porcelain surface and add 1 drop of sulfuric acid: a violet color is not produced in the mixture.

Oleum Maydis. (*Corn Oil*).—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Oleum Morrhuæ and Oleum Morrhuæ Non-Destearinatum.—The corrected monographs for these have already appeared as interim revisions of U. S. P. X.

Oleum Olivæ.—The free fatty acids in 10 Gm. of oil require for neutralization not more than 5 cc. of tenth-normal alkali.

In the test for peanut oil the volume of 90 per cent alcohol used to dissolve the dry fatty acids is increased from 50 cc. to 60 cc.

The range of iodine value is changed from 79 to 88.

The solidification point of the fatty acids is from 17° to 26° C.

Oleum Theobromatis.—The specific gravity is changed to from 0.858 to 0.864 at $\frac{100°}{25°}$ C.

The range of iodine value becomes 35 to 40.

The solidification point of the fatty acids is from 45° to 50° C.

Pancreatinum.—The assay for starch digestive power has been modified. Determine the percentage of moisture in potato starch by drying about 0.5 Gm., accurately weighed, at 120° C. for four hours. Thoroughly mix a quantity of the starch equivalent to 3.75 Gm. of dry starch, with 10 cc. of cold distilled water. Add the mixture with constant stirring to 75 cc. of distilled water, previously heated to from 50° to 60° C., contained in a tared 250-cc. beaker. Rinse the remaining starch into the beaker with 10 cc. of distilled water, heat the mixture to boiling and boil it gently with constant stirring, for five minutes, or until a translucent, uniform paste is obtained. Add enough distilled water to make the mixture weigh 100 Gm., cool the paste to 40° C. and place the beaker in a water-bath maintained at 40° C. Suspend 0.15 Gm. of Pancreatin in 5 cc. of distilled water and add the suspension to the starch paste, mixing it well by pouring the mixture from beaker to beaker for thirty seconds, noting the time when the Pancreatin suspension was added to the starch. Maintain the mixture at a temperature of 40° C. for exactly five minutes. At once add 0.1 cc. of this mixture to a previously made mixture of 0.2 cc. of tenth-normal iodine and 60 cc. of distilled water at a temperature of from 23° to 25° C.; no blue, red or violet color is produced.

Paraffinum.—In place of the test with cold sulfuric or nitric acid, a carbonization test with sulfuric acid is introduced. Pour 5 cc. of Paraffin, at a temperature just above its melting point, and 5 cc. of sulfuric acid, into a glass-stoppered cylinder, which has been previously rinsed with sulfuric acid and heat in a water-bath at 60° C. for ten minutes, shaking the mixture at intervals of one minute: the paraffin remains unchanged in color, and the acid does not become darker than pale amber.

Paraldehydum.—The congealing point has been raised to not less than 11° C.

In place of the potassium hydroxide test for aldehyde there has been substituted the following: Place 100 cc. of distilled water in a 300-cc. Erlenmeyer flask, add 5 cc. of Paraldehyde and shake the mixture gently until solution is complete. Add 5 cc. of a solution of hydroxylamine hydrochloride (made by dissolving exactly 3.5 Gm. of hydroxylamine hydrochloride in enough distilled water to make 100 cc. of solution). Shake the mixture gently for thirty seconds, add 2 drops of methyl orange T.S. and titrate immediately with half-normal sodium hydroxide. Perform a blank determination with 5 cc. of the hydroxylamine hydrochloride solution added to 100 cc. of distilled water; the difference between the two titrations does not exceed 1 cc. of half-normal sodium hydroxide (*acetaldehyde*).

Pepsinum.—Pepsin digests not less than 3000 and not more than 3500 times its weight of egg albumen.

Assay. Mix 35 cc. of normal hydrochloric acid with 385 cc. of distilled water. Dissolve 0.1 Gm. of Pepsin in 150 cc. of this acid. Likewise dissolve 0.1 Gm. of Reference Pepsin in another portion of 150 cc. of this dilute acid. Immerse one or more hen's eggs in boiling water during fifteen minutes. Cool them rapidly to room temperature by immersion in cold water, remove the shell and pellicle and all of the yolk and at once rub the albumen through a clean, dry, No. 40 sieve, rejecting the first portion that passes through the sieve. Place 10 Gm. of the succeeding well-mixed portion in each of three wide-mouth bottles of about 100 cc. capacity. Immediately add 35 cc. of the dilute acid at one time or in portions and, by suitable means, disintegrate thoroughly the particles of albumen. Place the bottles in a water-bath at 52° C After the contents of the bottles have reached that temperature, add exactly 5 cc. of the acidulated solution of Pepsin to one bottle, 4.30 cc. of the same solution and 0.70 cc. of the dilute acid to another bottle, and exactly 5 cc. of the acidulated solution of Reference Pepsin to the third bottle. At once stopper the bottles securely, invert them three times and maintain them at a temperature of 52° C. for two and one-half hours, agitating the contents equally every ten minutes by inverting the bottles once. Remove the bottles from the bath, pour the contents into 100-cc. conically shaped measuring vessels, having diameters not exceeding 1 cm. at the bottom, and graduated from the tip to the 1.0-cc. mark in 0.05-cc. divisions and from the 1.0-cc. to the 5.0-cc. mark in 0.1-cc. divisions, and having the internal taper as nearly identical as possible. Transfer the undigested egg albumen which adheres to the sides of the bottles to the respective measuring vessels with the aid of small portions of distilled water until 50 cc. has been used for each. Mix the contents of each measuring vessel and allow them to stand for thirty minutes. The volume of the undissolved albumen in the measuring vessel corresponding to the 5.0 cc. of the solution of Pepsin being assayed shall not be more than the volume of the undissolved albumen in the measuring vessel corresponding to the 5.0 cc. of the Reference Pepsin solution, and the volume of the undissolved albumen in the measuring vessel corresponding to 4.30 cc. of the solution of Pepsin being assayed shall not be less than the volume of the undissolved albumen in the measuring vessel corresponding to the 5.0 cc. of the Reference Pepsin solution.

Reference Pepsin may be obtained from the Chairman of the Committee of Revision.

Petrolatum.—The carbonization test with sulfuric acid has been standardized. The concentration of acid used must be between 94.5 and 95.5 per cent of H_2SO_4, determined by titration. See JOUR. A. PH. A., 22, 956–961 (1933).

Phenacaine.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Phenobarbitalum.—The tests for identity have been modified.

The carbonization test with sulfuric acid has been standardized in terms of color.

Phenobarbitalum Solubile.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Phenolphthaleinum.—The melting point is fixed at not below 258° C., an increase of 2°.

Physostigminæ Salicylas.—The carbonization test with sulfuric acid is standardized in terms of color.

Pilocarpinæ Nitras.—The carbonization test with sulfuric acid is standardized in terms of color.

Procainæ Hydrochloridum.—The carbonization test with sulfuric acid is standardized in terms of color.

Pulvis Chiniofoni.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Quinidinae Sulfas.—The carbonization test with sulfuric acid has been standardized in terms of color.

Quinina.—The carbonization test with sulfuric acid has been standardized.

Quininae Bisulfas.—The carbonization test with sulfuric acid has been standardized.

Quininae Dihydrochloridum.—The carbonization test with sulfuric acid has been standardized.

Quininae et Ureae Hydrochloridum.—The carbonization test with sulfuric acid has been standardized.

Quininæ Sulfas.—The dihydrate replaces the heptahydrate as the official form. The official solubility figures are changed as a result.

The loss in weight on drying at 100° C. must not exceed 5 per cent.

The carbonization test with sulfuric acid is standardized.

Resina.—The definition has been changed to read: Rosin is a solid resin obtained from *Pinus palustris Miller*, and from other species of *Pinus* (Fam. *Pinaceæ*). This will admit rosin produced by the so-called steam-solvent process, if it complies in other respects with the monograph.

Saccharinum (*Glusidum U. S. P. X*).—The carbonization test with sulfuric acid has been standardized.

Santoninum.—The carbonization test with sulfuric acid has been standardized.

Sapo Durus (*Sapo U. S. P. X*).—The definition has been altered to read simply "Soda Soap." The monograph has been so amended as to apply only to soaps that have the chemical and physical characteristics of a soap produced by the saponification of olive oil with sodium hydroxide. It is well known that soaps having these characteristics may be produced from other than olive oil, and that there are no chemical tests that will satisfactorily distinguish such soaps from an olive oil soap. It has therefore seemed the part of wisdom for the Pharmacopœia to recognize such a condition and provide a workable rather than a useless definition.

The caustic alkalinity or free acidity in 2.5 Gm. of the soap, determined in the alcoholic extract, requires for neutralization not more than 0.2 cc. of tenth-normal acid or alkali, using phenolphthalein T.S. as the indicator. The carbonate alkalinity, determined in the alcohol-insoluble residue, requires not more than 2 cc. of tenth-normal acid for neutralization, using methyl orange T.S. as the indicator.

When the fatty acids are separated from the soap solution by acidifying, washing and drying, their solidifying point is not less than 18° and not more than 23° C., their acid value is not less than 185 and not more than 205, and their iodine value is not less than 83 and not more than 92.

Sapo Mollis.—The soap may be made with potassium hydroxide exclusively, if desired.

Soft soap must contain not more than 0.25 per cent of caustic alkali calculated as potassium hydroxide, when determined by titration of the alcoholic extract from 5 Gm. of Soap with tenth-normal sulfuric acid, using phenolphthalein T.S. as the indicator.

The alcohol insoluble residue from the same sample will require, for neutralization, when dissolved in water, not more than 2.5 cc. of tenth-normal sulfuric acid, using methyl orange T.S. as the indicator (*carbonate alkalinity*).

The acid value of the liberated fatty acids is not less than 190 and not more than 205, and the iodine value is not less than 170.

Sodii Cacodylas.—The permissible free acidity in 2 Gm. has been reduced to an equivalent of 0.5 cc. of tenth-normal sodium hydroxide.

Spiritus Æthylis Nitritis.—This is assayed iodometrically, as already described. The assay is performed upon 10 cc. of the Spirit, which is not previously shaken with powdered potassium bicarbonate, and the weight of sample taken is calculated from its specific gravity at 25° C. Each cc. of tenth-normal sodium thiosulfate is equivalent to 0.007505 Gm. of $C_2H_5NO_2$.

Spiritus Camphoræ.—Because of the admission of synthetic camphor, which is optically inactive, it has been necessary to introduce a chemical assay. Accurately measure 25 cc. of Spirit of Camphor into a 300-cc. Erlenmeyer flask, and add slowly, with constant shaking, 75 cc. of dinitrophenylhydrazine T.S. (a solution of 1.5 Gm. of dinitrophenylhydrazine in 100 cc. of 1 in 10

sulfuric acid). Connect the flask with a reflux condenser and heat on a water-bath for four hours. Allow the mixture to cool, add 200 cc. of dilute sulfuric acid (1 in 50), and set the mixture aside for twenty-four hours. Transfer the precipitate to a previously dried and weighed Gooch crucible and wash with 10-cc. portions of cold distilled water until the last washing is not acid to litmus paper. Continue the suction until the excess water is removed, and dry the crucible and precipitate to constant weight at 80° C. The weight of the precipitate, multiplied by 0.458, equals the weight of camphor in 25 cc. of the Spirit of Camphor taken for the assay.

Spiritus Chloroformi.—An assay has been introduced. For details see JOUR. A. PH. A., 22, 540–544 (1933).

Spiritus Frumenti.—The limit of acidity has been changed. A 25-cc. portion should require not less than 2 cc. and not more than 6 cc. of tenth-normal sodium hydroxide for neutralization.

The limit for esters, using the method of U. S. P. X, is now not less than 2 cc. nor more than 8 cc. of tenth-normal sodium hydroxide.

Mercuric sulfate T.S. is now used as the reagent for acetone, replacing sodium nitroprusside, as described under Alcohol.

Slight modifications have been made in the details of the other tests for impurities.

Spiritus Glycerylis Nitratis.—A new assay is given. Transfer 25 cc. of Spirit of Glyceryl Trinitrate to a previously weighed, 50-cc. volumetric flask, stopper the flask and weigh accurately. Add 3 cc. of an aqueous solution of sodium hydroxide (1 in 5), re-stopper the flask and allow it to stand at room temperature for one hour. Then add sufficient aldehyde-free alcohol to make the total volume measure 50 cc., stopper and mix thoroughly. Assay 20 cc. of this solution according to the method for the assay of nitrites. One cc. of tenth-normal sodium thiosulfate is equivalent to 0.0113 Gm. of glyceryl trinitrate.

Spiritus Vini Vitis.—Tests for purity are based upon those found under Spiritus Frumenti.

Strychninæ Nitras.—The carbonization test with sulfuric acid has been standardized.

Strychninæ Sulfas.—Strychnine Sulfate loses not more than 11.5 per cent of its weight upon drying at 100° C.

The carbonization test with sulfuric acid has been standardized.

Styrax.—A test for rosin and rosin oil is introduced. Triturate about 2 Gm. of Storax with 25 cc. of petroleum benzin in a small beaker for five minutes. Filter the mixture, and place 10 cc. of the filtrate in a dry test-tube. Add 5 cc. of dilute sulfuric acid (made by mixing equal volumes of sulfuric acid and distilled water and cooling the mixture), shake it vigorously, and allow the mixture to settle. Add acetic anhydride, drop by drop: the mixture exhibits no violet or purple band.

Tabellæ Glycerylis Trinitratis.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Theophyllina.—The carbonization test with sulfuric acid has been standardized.

Theophyllina cum Æthylenediamina.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Theophyllina cum Sodii Acetate.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

Thyroideum.—A detailed description of the appearance of the powder under the microscope has been added.

Thyroid contains not more than 6 per cent of moisture, determined by the toluene distillation method.

The limit of ash has been removed, to permit the use of sodium chloride as a preservative.

The assay directions have been elaborated, see JOUR. A. PH. A., 24, 742–748 (1935).

Tryparsamidum.—A new admission. A copy of the monograph may be obtained from the Chairman of the Committee of Revision.

If trade be a calling in which material goods are sold and a profession, one in which knowledge is sold—and this seems to be one essential difference between them—then I am sure that the professional side of pharmacy is fated greatly to increase in this country (Great Britain). —SIR FREDERICK GOWLAND HOPKINS.