Contributed and Selected

UNITED STATES PHARMACOPŒIA.

NINTH REVISION.

ABSTRACT OF PROPOSED CHANGES WITH NEW STANDARDS AND DESCRIPTIONS.

PART III—FIRST PROOF.

A third installment of the Abstract of proposed new descriptions and standards and of changes in descriptions and standards is herewith submitted.

This Abstract embraces most of the Waters, Solutions, Spirits, Extracts, Fluidextracts, Resins, Tinctures and Miscellaneous Galenicals. Where no reference is made to rubrics, formulas, directions, tests or chemical assays, it is understood that the material facts remain the same as in the United States Pharmacopœia, Eighth Revision. In galenical preparations the requirements for alkaloidal content and the proximate assay methods are not included; these will be published later.

Other Abstracts will be submitted later. Comments should be sent to the Chairman of the Revision Committee, Joseph P. Remington, 1832 Pine Street, Philadelphia, before June 1, 1914.

WATERS.

Aquæ Aromaticæ.—General process added calling for 2 Cc. of Volatile Oil in 1000 Cc. of Aromatic Water and 15 Gm. of Purified Talc. Purified Siliceous Earth (Kieselguhr) is added to the alternative distributing and filtering media. Recently boiled distilled water is directed. Aromatic Water should not be allowed to freeze.

Aqua.—"Without odor or taste" changed to "practically tasteless and odorless." Odorless when heated nearly to boiling and agitated. Solids limited to 0.03 Gm. in 100 Cc., changed from "0.05 Gm. in 100 Cc." Tests replacing "heavy metal test": Add 1 Cc. of hydrochloric acid to 100 Cc. of Water and then introduce 50 Cc. of hydrogen sulphide T. S. It should show no darkening after standing fifteen minutes (metals). Add 1 Cc. of hydrochloric acid to 100 Cc. of Water and then introduce 1 Cc. of potassium ferrocyanide T. S.; no blue coloration should be produced immediately (iron). New test for limit of chloride: Add 0.5 Cc. of tenth-normal silver nitrate V. S. to 200 Cc. of Water. Filter and add to the filtrate 3 drops of potassium chromate T. S.; a permanent red precipitate should be produced. Modified test for nitrites: Add 1 drop of

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hydrochloric acid, 1 Cc. of sulphanilic acid T. S. and 1 Cc. of naphthylamine acetate T. S. to 100 Cc. of Water in a Nessler jar, stirring with a glass rod after each addition. Closely cover the jar with a glass plate and place it upon a white surface and view it from above; no pink coloration should appear within five minutes. Modified test for nitrates: Add 1 Cc. of sodium carbonate T. S. to 100 Cc. of Water and evaporate the liquid in a small porcelain dish just to dryness. Moisten the residue thoroughly with 2 Cc. of phenol-sulphonic acid T. S., gently warm the dish, then add 20 Cc. of ammonia water and sufficient distilled water to measure 100 Cc. Any yellow color produced should not be greater than that obtained by evaporating 0.0021 Gm. of potassium nitrate, dissolved in 3 Cc. of distilled water and 1 Cc. of sodium carbonate T. S. to dryness and treating the residue in the same manner as the residue from the Water; the comparison of colors must be made in Nessler jars of the same diameter and size. In tests for ammonium compounds add 2 Cc. of reagent to 50 Cc. of Water and observe through a Nessler jar.

Aqua Ammoniæ.—Rubric changed from "10 percent." to "not less than 9.5 percent. nor more than 10.5 percent., by weight, of ammonia." Specific gravity changed from "0.958" to "about 0.958" at 25° C. "Completely volatilized at 100° C." changed to "not more than 0.005 Gm. of residue from 25 Cc. of Ammonia Water when evaporated in a platinum dish at 120° C."

Aqua Ammoniæ Fortior.—Rubric changed from "28 percent." to "not less than 27 percent. nor more than 29 percent. by weight, of ammonia." Specific gravity changed from "0.897" to "about 0.897" at 25° C.

Aqua Amygdalæ Amaræ.—Recently boiled distilled water directed.

Aqua Anisi.—Recently boiled distilled water directed.

Aqua Aurantii Florum.—Must comply with description and tests under Aqua Aurantii Florum Fortior. Dilute with recently boiled distilled water.

Aqua Aurantii Florum Fortior.—Added requirement: It should be free from empyreuma, mustiness and mucilaginous growths. Added test: It should be neutral or show only a slightly acid reaction with litmus and should leave no residue on evaporation.

Aqua Camphoræ.—Recently boiled distilled water directed.

Aqua Chloroformi.—Recently boiled distilled water directed.

Aqua Cinnamomi.—Recently boiled distilled water directed.

Aqua Creosoti.—Recently boiled distilled water directed.

Aqua Destillata.—Amount of distillate collected changed from 800 volumes to 750 volumes. Any other kind of distillatory apparatus may be used if the water complies with the tests given. "Neutral to litmus" changed to "neutral to indicators" (see page —). Heavy metal test replaced by the requirement that 100 Cc. portions should show no alteration on the addition of hydrogen sulphide T. S. or ammonium sulphide T. S. New ammonia test: "Distilled water should show no marked brown coloration when 1 Cc. of Nessler's reagent is added to 100 Cc. of the water. Residue when evaporated to dryness on a water-bath changed from "0.005 Gm. from 100 Cc." to "0.001 Gm. from 100 Cc." In test for

oxidizable substances the requirement that the color should not wholly disappear after ten hours is omitted.

Aqua Destillata Sterilisata.—Freshly Distilled Water, a sufficient quantity. Transfer the necessary quantity of freshly Distilled Water to a flask of hard-glass, of sufficient size, which has previously been cleansed and sterilized as described in paragraph No. 1 under Sterilization. Close the mouth of the flask with a pledget of sterilized purified cotton, boil the contents vigorously for 30 minutes and allow it to cool without removing the cotton plug. Finally protect the mouth of the flask and the cotton pledget from infection with dust by wrapping it in sterilized paper. Sterilized Distilled Water should be used within 48 hours after its preparation wherever practicable.

Aqua Fœniculi.—Recently boiled distilled water directed.

Aqua Menthæ Piperitæ.—Recently boiled distilled water directed.

Aqua Menthæ Viridis.—Recently boiled distilled water directed.

Aqua Rosæ.—Must comply with description and tests given under Aqua Rosæ Fortior. Dilute with recently boiled distilled water.

Aqua Rosæ Fortior.—Added requirement: It should be free from mustiness and mucilaginous growths. Added test: It should be neutral or show only a slightly acid reaction with litmus and should leave no residue on evaporation.

SPIRITS.

Spiritus Aetheris.—No change.

Spiritus Aetheris Nitrosi.—Rubric changed from "not less than 4 percent." to "not less than 3.5 percent. nor more than 4 percent. of ethyl nitrite."

Spiritus Ammoniæ Aromaticus.—No change.

Spiritus Amygdalæ Amaræ.—No change.

Spiritus Anisi.—No change.

Spiritus Aurantii Compositus.—No change.

Spiritus Camphoræ.—No change in formula and directions. Assay will be reported later.

Spiritus Chloroformi.—No change.

Spiritus Cinnamomi.—No change.

Spiritus Gaultheriæ.—No change.

Spiritus Glycerylis Nitratis.—Rubric changed from "1 percent. by weight" to "not less than 1 percent. nor more than 1.1 percent. by weight of Glyceryl Trinitrate. Added test: On heating about 10 Cc. of Spirit of Nitroglycerin on a water-bath with 1 Cc. of potassium hydroxide T. S. until the alcohol is evaporated, and then heating a portion of the residue with about 0.5 Gm. of potassium bisulphate, the pungent odor of acrolein will be evolved. On dissolving the remainder of the residue in 2 Cc. of distilled water acidulated with diluted sulphuric acid, then adding a few drops of diphenylamine T. S. and pouring the solution upon 2 Cc. of sulphuric acid in a test-tube so as to form a separate layer, a dark blue color will be produced at the zone of contact. Modified test: On

mixing 10 Cc. of the Spirit with 11 Cc. of distilled water, both previously cooled to 15° C., the mixture should be slightly opalescent. On adding 1 Cc. more of distilled water, a distinct turbidity should be produced. Assay: Weigh accurately not more than about 5 Cc. of the Spirit, allow it to evaporate spontaneously in a tared dish protected from dust, and dry the residue to a constant weight in a desiccator. The weight obtained should correspond to not less than 1 percent. nor more than 1.1 percent. of glyceryl trinitrate. Statement requiring rejection if specific gravity be above 0.830 or if 10 Cc. be rendered turbid by less than 10 Cc. of water is omitted.

Spiritus Juniperi.—No change.

Spiritus Juniperi Compositus.—No change.

Spiritus Lavandulæ.—No change.

Spiritus Menthæ Piperitæ and Spiritus Menthæ Viridis.—Modified directions: Macerate the Peppermint leaves (and respectively the Spearmint leaves), freed as much as possible from stems, during one hour, in 500 Cc. of water and then strongly express them. Add the macerated leaves to the alcoholic solution of the oil, macerate the mixture during six hours, with frequent agitation, and then immediately filter it. Store the product in amber-colored bottles.

SOLUTIONS.

Liquor Acidi Arsenosi.—Rubric changed from "Arsenous Acid corresponding to 1 percent. of arsenic trioxide" to "Arsenous Acid corresponding to not less than 0.975 percent. nor more than 1.025 percent. of arsenic trioxide." Specific gravity added: "About 1.025 at 25° C."

Liquor Ammonii Acetatis.—Specific gravity added: "About 1.018 at 25° C." "Wholly volatile" changed to "volatile; not more than 0.01 percent. of ash remaining on ignition." Assay added: Weigh accurately about 25 Gm. of Solution of Ammonium Acetate, dilute it with 100 Cc. of distilled water and transfer it to a distilling flask fitted with a safety tube. Render it alkaline with potassium hydroxide T. S. and subject the liquid to distillation until no more ammonia is evolved. The distillate should be received under the surface of 50 Cc. of normal sulphuric acid V. S. contained in a flask. The residual titration with normal potassium hydroxide V. S., using methyl-orange T. S. as indicator, should show not less than 7 percent. of ammonium acetate.

Liquor Arseni et Hydrargyri Iodidi.—Rubric changed from "not less than 1 percent. of Arsenous Iodide and 1 percent. of Mercuric Iodide" to "not less than 0.95 percent. nor more than 1.05 percent. of Arsenous Iodide and not less than 0.95 percent. nor more than 1.05 percent. of Red Mercuric Iodide." Added tests: One Cc. of Solution of Arsenous and Mercuric Iodides, mixed with 10 Cc. of distilled water and to which a few drops of lead acetate T. S. is added, should produce a bright yellow precipitate. Add a few drops of Solution of Arsenous and Mercuric Iodides to a mixture of 0.1 Gm. of zinc and 5 Cc. of diluted hydrochloric acid in a test-tube, and cover the mouth of the test-tube with a filter paper which has been moistened with mercuric chloride T. S. and dried. A yellow colored stain should appear within one minute upon the inner surface of the filter paper. Assays: Weigh accurately about 25 Gm. of Solution of

Arsenous and Mercuric Iodides, mix it with 2 Gm. of sodium bicarbonate and titrate the solution with tenth-normal iodine V. S., using starch T. S. as indicator. It should show not less than 0.95 percent. nor more than 1.05 percent. of Arsenous Iodide. Weigh accurately about 25 Gm. of Solution of Arsenous and Mercuric Iodides, mix it with 5 Cc. of potassium hydroxide T. S. and 5 Cc. of solution of formaldehyde in a flask, and place the mixture upon a water-bath until the mercuric salt has been completely reduced to metallic mercury. Carefully decant the clear, supernatant liquid from the residue of metallic mercury and wash the mercury carefully by decantation, with two successive portions of 25 Cc. each of distilled water. Convert the residue of metallic mercury into mercuric nitrate by the action of 5 Cc. of nitric acid and dilute the solution with 50 Cc. of distilled water. The subsequent titration with tenth-normal potassium sulphocyanate V. S. to the formation of a permanent pink color, should show not less than 0.95 percent. nor more than 1.05 percent. of Red Mercuric Iodide.

Liquor Calcis.—In the process the magma is to be washed with boiling distilled water until the washings show not more than a faint cloudiness with $AgNO_3$ T. S. Lime Water should be frequently prepared from fresh magma of Calcium Hydroxide and not made by shaking up the sediment with a fresh portion of Distilled Water, unless the product be assayed and found to be of full strength. Requirement that it should conform to the tests under Calx omitted.

Liquor Chlori Compositus.—Rubric changed from "about 0.4 percent. of Chlorine with some oxides of chlorine" to "a mixture of chlorine and chlorine oxides equivalent to at least 0.35 Gm. of chlorine in each 100 Cc. of the solution." Added tests: Compound Solution of Chlorine when evaporated to dryness on a water-bath leaves a white residue of potassium chloride. Add 1 Gm. of potassium iodide to 25 Cc. of Compound Solution of Chlorine in a flask. The subsequent titration with tenth-normal sodium thiosulphate V. S., starch T. S. being used as indicator, should show not less than 0.35 Gm. of available chlorine in each 100 Cc.

Liquor Cresolis Compositus.—Cresol, 500 Gm.; Linseed Oil, 300 Gm.; Potassium Hydroxide, 80 Gm.; Alcohol, 30 Cc.; Water, a sufficient quantity to make 1000 Gm. Add the Potassium Hydroxide dissolved in 50 Cc. of water to the Linseed Oil, both at 70° C. Incorporate the Alcohol and heat the mixture without stirring until soluble in boiling water; while yet warm add the Cresol, heat at 70° C. until clear and add water to make 1000 Gm.

Liquor Ferri Chloridi.—Test for "absence of salts of the fixed alkalies" changed to "residue on evaporation not more than 0.10 percent." Assay: Weigh accurately about 2 Gm. of Solution of Ferric Chloride, dilute it with distilled water to a volume of about 25 Cc. and mix it with 5 Cc. of hydrochloric acid and about 3 Gm. of potassium iodide. Allow the mixture to stand for 30 minutes at a temperature of 40° C., cool, and then dilute with 100 Cc. of distilled water. The titration of this solution with tenth-normal sodium thiosulphate V. S., starch T. S. being used as indicator, should show not less than 10 percent. of iron.

Liquor Ferri et Ammonii Acetatis.—Added tests: Acid reaction with litmus. Specific gravity about 1.0385. The solution yields a blue precipitate with potassium ferrocyanide T. S.; ammonia water produces no precipitate. When

Solution of Iron and Ammonium Acetate is heated with potassium hydroxide T. S., ammonia is evolved. On adding 1 Cc. each of sulphuric acid and alcohol to 5 Cc. of the Solution and boiling the mixture, ethyl acetate will be formed, recognizable by its odor.

Liquor Ferri Subsulphatis.—Rubric changed from 13.57 percent. to 13.50 percent. of metallic iron. The test showing "difference from tersulphate" omitted.

Liquor Ferri Tersulphatis.—The test showing "difference from subsulphate" is omitted.

Liquor Formaldehydi.—From 7 to 14 percent. of methyl alcohol added to prevent polymerization. Specific gravity changed from "1.075 to 1.078" to "from 1.070 to 1.095 at 25° C." On evaporating 20 Cc. of Solution of Formaldehyde to dryness on a water-bath, a white, amorphous mass (paraformaldehyde) should remain, and upon igniting this residue the yield of ash should not exceed 0.05 percent. (fixed impurities). Changed from "no residue on evaporation and ignition" to "ash not exceeding 0.05 percent." Test for formic and other acids changed from "absence of not more than 0.1 percent." to "not more than 0.2 percent." Tests for chloride, sulphate, iron, lead, copper and calcium replaced by "ten Cc. of an aqueous dilution of the solution (1 in 20) slightly acidulated with hydrochloric acid should not respond to the test for heavy metals." In assay allow the mixture to stand for thirty minutes instead of ten minutes before titrating back with normal H_2SO_4 V. S.

Liquor Hydrogenii Dioxidi.—(Aqua Hydrogenii Dioxidi, U. S. P. VIII.) Add to rubric: Acetanilide may be used to prevent deterioration and pressure in this solution in an amount not exceeding 0.4 Gm. to each 1000 Cc. Solution of Hydrogen Dioxide in which acetanilide has been used as a preservative sometimes acquires a yellow color or an odor of nitrobenzol. If either of these conditions is noticed the solution should not be dispensed for medicinal purposes. Free acid test replaced by the following: On titrating 25 Cc. of Solution of Hydrogen Dioxide with tenth-normal potassium hydroxide V. S., not more than 2.0 Cc. of volumetric solution should be required to effect neutralization, phenolphthalein T. S. being used as indicator (free acid). Modified tests: Evaporate 50 Cc. of the Solution, previously rendered alkaline by the addition of sodium hydroxide T. S., to dryness on a water-bath and transfer the dry residue to a platinum crucible. Moisten the residue with sulphuric acid, cover the crucible with a watch-glass, the converse side of which is coated with a thin layer of yellow wax and afterwards scratched so as to expose the glass and then cooled by placing water in the concave side and standing in this a small beaker which must be kept filled with cold water. Now heat the crucible and contents in a water-bath for one hour; the surface of the watch-glass after being cleaned should exhibit no sign of corrosion (hydrofluoric acid). On evaporating 1 Cc. of the solution to dryness on a water-bath and dissolving the residue in 10 Cc. of distilled water containing 1 Cc. of diluted hydrochloric acid, the liquid should not respond to the test for heavy metals. Added tests: Add 4 drops of sodium acetate T. S. to 10 Cc. of the solution and follow with 4 drops of calcium chloride T. S. No turbidity or precipitate should be produced within 10 minutes (oxalic acid). Subject 100 Cc. of Solution of Hydogen Dioxide to the shaking-out process with

two portions of 25 Cc. each of chloroform and evaporate the chloroformic solution to dryness at room temperature in a tared glass dish. A crystalline residue may be obtained which should not weigh more than 0.040 Gm. and which, upon heating with 1 Cc. of sodium hydroxide T. S. and 2 drops of chloroform, will evolve the disagreeable odor of phenyl-isocyanide (presence and limit of acetanilide).

Liquor Iodi Compositus.—Rubric changed from "not less than 5 percent. of iodine and 10 percent. of potassium iodide" to "not less than 4.75 percent. nor more than 5.25 percent. of iodine, and not less than 9.5 percent. nor more than 10.5 percent. of potassium iodide." Added tests: A drop of Compound Solution of Iodine when added to 1 Cc. of starch T. S., diluted with 10 Cc. of water, produces a deep blue color. Assays: Weigh accurately about 10 Gm. of Compound Solution of Iodine, evaporate it in a tared, porcelain dish on a water-bath, and gently heat the residue over a Bunsen burner. It should leave a residue of not less than 9.5 percent. nor more than 10.5 percent. of a salt corresponding to the identity tests for potassium iodide given under Potassii Iodidum. Weigh accurately about 10 Gm. of Compound Solution of Iodine, dilute it with 25 Cc. of distilled water and titrate with tenth-normal sodium thiosulphate V. S., starch T. S. being used as indicator. It should show not less than 4.75 percent. nor more than 5.25 percent. of Iodine.

Liquor Magnesii Citratis.—Magnesium Carbonate, 15.0 Gm.; Citric Acid, 33.0 Gm.; Syrup, 60.0 Cc.; Purified Talc, 5.0 Gm.; Oil of Lemon, 0.1 Cc.; Potassium Bicarbonate, 2.5 Gm.; Water, a sufficient quantity. Dissolve the Citric Acid in 150 Cc. of hot water in a porcelain dish, and, having added the Magnesium Carbonate previously mixed with 100 Cc. of water, stir until it is dissolved. Then add the Syrup, heat the mixed liquids to the boiling point, immediately introduce the Oil of Lemon, previously triturated with the Purified Talc, and filter the mixture, while hot, into a strong bottle (previously rinsed with boiling water) of the capacity of about 300 Cc. Introduce enough boiled water to nearly fill the bottle, stopper it with purified cotton until cold, then drop in the Potassium Bicarbonate, and immediately stopper the bottle securely. Lastly, shake the solution occasionally, until the Potassium Bicarbonate is dissolved. Keep the bottle on its side in a cool place, preferably in an ice chest.

Liquor Plumbi Subacetatis.—Change in assay: Warm the clear acidified liquid to 80° C. before titrating with normal potassium permanganate V. S. Reference to tests under Plumbi Acetas omitted. Added tests: Solution of Lead Subacetate, diluted with 10 parts of recently boiled distilled water, yields a black precipitate with hydrogen sulphide T. S., a yellow precipitate with potassium iodide T. S., and a white precipitate with diluted sulphuric acid. Solution of Lead Subacetate should yield with potassium ferrocyanide T. S. a precipitate which should not be perceptibly blue and red (limit of iron and copper).

Liquor Plumbi Subacetatis Dilutus.—No change.

Liquor Potassii Arsenitis.—Rubric changed from "Potassium Arsenite corresponding in amount to 1 percent." to "Potassium Arsenite corresponding in amount to not less than 0.975 percent. and not more than 1.025 percent. of arsenic trioxide." Added tests: It shows an alkaline reaction with litmus. On acidulating 4 Cc. of Solution of Potassium Arsenite with nitric acid and adding 1 Cc.

of silver nitrate T. S., a yellow precipitate should be produced free from red or reddish-brown color (arsenate).

Liquor Potassii Citratis.—An aqueous solution containing not less than 8 percent. of anhydrous Potassium Citrate ($K_3C_6H_5O_7$=306.34) (corresponding to about 8.5 percent. of the hydrated salt), with small amounts of citric and carbonic acids. Potassium Bicarbonate, 8 Gm.; Citric Acid, 6 Gm.; Distilled Water, a sufficient quantity to make one hundred cubic centimeters. Dissolve the Potassium Bicarbonate and the Citric Acid, each, in forty cubic centimeters of Distilled Water. Filter the solutions separately, and wash the filters with enough Distilled Water to obtain in each case fifty cubic centimeters. Finally, mix the two solutions, and, when effervescence has nearly ceased, transfer the liquid to a bottle. This preparation should be freshly made when wanted. Modified assay: Weigh accurately about 15 Gm. of Solution of Potassium Citrate, evaporate it to dryness in a platinum vessel, then thoroughly carbonize the residue at a temperature not exceeding red heat, transfer the vessel and its contents to a beaker, and boil them for thirty minutes with a mixture of 50 Cc. of half-normal sulphuric acid V. S. and 50 Cc. of distilled water. Then filter the mixture, wash the residue with hot distilled water until the washings cease to affect litmus, cool the filtrate and subject the washings to residual titration with half-normal potassium hydroxide T. S. It should show not less than 8 percent. of anhydrous Potassium Citrate, methyl-orange T. S. being used as indicator..

Liquor Potassii Hydroxidi.—Rubric changed from "containing about 5 percent.," to "containing not less than 4.5 percent. of Potassium Hydroxide." Instructions for using Potassium Hydroxide of other than official strength omitted. Specific gravity, about 1.046 at 25° C. Added test: Weigh accurately about 20 Gm. of Solution of Potassium Hydroxide and titrate it directly with normal hydrochloric acid V. S., using methyl-orange T. S. as indicator. It should show not more than 5.5 percent. of alkalinity, calculated as potassium hydroxide (limit of carbonate). Modified assay: Weigh accurately about 50 Gm. of Solution of Potassium Hydroxide, transfer it to a 250 Cc. graduated flask, add 20 Cc. of barium chloride T. S. and fill the flask to the mark with distilled water, which has previously been boiled and cooled. Then thoroughly agitate the liquid, pass it through a filter which has not been previously moistened (rejecting the first 20 Cc.) and titrate 100 Cc. of the filtrate with normal hydrochloric acid V. S., using phenolphthalein T. S. as indicator. It should show not less than 4.5 percent. of Potassium Hydroxide, when calculated to the amount of Solution originally taken.

Liquor Sodæ Chlorinatæ.—Rubric changed from "containing at least 2.4 percent." to "containing at least 2.5 percent. by weight of available chlorine." Modified formula: Monohydrated Sodium Carbonate, 70 Gm.; Chlorinated Lime, 100 Gm.; Water, a sufficient quantity to make 1000 Gm. Triturate the Chlorinated Lime with five hundred cubic centimeters of water gradually added until a uniform mixture results. Dissolve the Monohydrated Sodium Carbonate in five hundred cubic centimeters of hot water, and add this solution to the previously obtained magma in a suitable vessel. Stir or shake the mixture thoroughly, and if it becomes gelatinous warm the vessel very gently until it again liquefies. Then

transfer the mixture to a wetted muslin strainer returning the first portion until the liquid passes through clear and when no more liquid drains from it, wash the precipitate with enough water to make the product weigh one thousand grammes. Specific gravity omitted. Modified assay: Weigh accurately about 7 Gm. of Solution of Chlorinated Soda in a flask, mix it with 50 Cc. of distilled water and add 1 Gm. of potassium iodide and 5 Cc. of acetic acid. The subsequent titration with tenth-normal sodium thiosulphate V. S., starch T. S. being used as indicator, should show not less than 2.5 percent. of available chlorine.

Liquor Sodii Arsenatis.—Rubric changed from "not less than 1 percent." to "not less than 0.975 nor more than 1.025 percent. of anhydrous Sodium Arsenate." The Exsiccated Sodium Arsenate must be dried to constant weight at 150° C. before weighing. Add to assay: Weigh accurately about 30 Cc. of Solution of Sodium Arsenate, heat the solution to 80° C. and add 10 Cc. of hydrochloric acid and 3 Gm. of potassium iodide. Allow the mixture to stand for 15 minutes at 80° C., cool the mixture and then titrate it with tenth-normal sodium thiosulphate V. S., starch T. S. being used as indicator. It should show not less than 0.95 percent. nor more than 1.00 percent. of anhydrous Sodium Arsenate.

Liquor Sodii Chloridi Physiologicus.—Sodium Chloride, 8.5 Gm.; Distilled Water, a sufficient quantity to make 1000 Cc. Dissolve the Sodium Chloride in sufficient freshly Distilled Water to measure 1000 Cc. and filter. Then sterilize the filtered solution of Sodium Chloride, preferably in an autoclave, under steam pressure, at a temperature of from 115° to 120° C. for 15 minutes, or by boiling it during at least one hour. The solution should be freshly prepared before it is dispensed.

Liquor Sodii Hydroxidi.—Rubric changed from "about 5 percent." to "not less than 4.5 percent. of Sodium Hydroxide." Instructions for using Sodium Hydroxide of other than official strength omitted. Added test: Weigh accurately about 20 Gm. of Solution of Sodium Hydroxide and titrate it directly with normal hydrochloric acid V. S., uring methyl-orange T. S. as indicator. It should show not more than 5.5 percent. of alkalinity, calculated as sodium hydroxide (limit of carbonate). Modified assays: Weigh accurately about 50 Gm. of Solution of Sodium Hydroxide, transfer it to a 250 Cc. graduated flask, add 20 Cc. of barium chloride T. S. and fill the flask to the mark with distilled water, which has been previously boiled and cooled. Then thoroughly agitate the liquid and pass it through a filter which has not been previously moistened (rejecting the first 20 Cc.) and titrate 100 Cc. of the clear filtrate with normal hydrochloric acid V. S., using phenolphthalein T. S. as indicator. It should show not less than 4.5 percent. of Sodium Hydroxide when calculated to the amount of solution originally taken. Each cubic centimeter of normal hydrochloric acid V. S. used corresponds to 0.04001 Gm of Sodium Hydroxide (NaOH).

Liquor Zinci Chloridi.—Added assay: Weigh accurately about 0.6 Gm. of Solution of Zinc Chloride, in a tared flask, add 20 Cc. of distilled water and 50 Cc. of tenth-normal silver nitrate V. S., shake the mixture well and then add 2 Cc. of nitric acid and 2 Cc. of ferric ammonium sulphate T. S. The residual

titration of this liquid with tenth-normal potassium sulphocyanate V. S. should show not less than 49 percent. of Ziinc Chloride.

EXTRACTS.

Powdered Extracts.—In the preparation of Powdered Extracts, it has been necessary to use solvents that will extract the active principles of the drugs, and only the minimum amount of the inert constituents. Where the drug contains an oily constituent that is extracted by the menstruum directed, it becomes necessary to adopt a method for the separation of this oil so that the product will retain a satisfactory pulverulent form. The concentration of the liquids should be started without delay and undue exposure to heat must be avoided. The limit of temperature as stated in the formulas, should not be exceeded and the use of apparatus for carrying on the concentration under reduced pressure is recommended. The final drying of the soft extract can be greatly facilitated by spreading it upon plates of glass or tinned metal and exposing it to currents of warm air. For the convenience of the prescriber, the standards of strength for the powdered extracts have been so adjusted that each bears a definite relation to that of its respective drug of the average strength and a statement of the standard precedes the formula. For these powdered extracts that can be reliably assayed, alkaloidal standards have been adopted and assay methods are directed for the determination of their strength and to provide for standarization. In standardizing powdered extracts, suitable inert powders must be selected as diluents. In the official formulas, dried starch and magnesium oxide are directed, but it is permissible for the manufacturer to select as inert diluents, sugar, sugar of milk, powdered glycyrrhiza, magnesium carbonate or the finely powdered drug or marc from which the respective extract is made. In completing powdered extracts they must be thoroughly dried, powdered, mixed with the diluent and passed through a fine sieve and should be preserved in tightly-stoppered, small, wide-mouthed, amber-colored bottles, and stored in a cool and dry place. Pilular extracts should be protected from exposure to sunlight and air by keeping them in tightly-covered glass or earthenware jars.

Extractum Aconiti Pulveratum.—One Gm. of the Powdered Extract to represent 4 Gm. of average strength Aconite. Practically exhaust 1000 Gm. of Aconite, in No. 60 powder, by percolation, reserving the first 1000 Cc. of percolate. Use the following menstruum: Menstruum I: Tartaric acid 5 Gm. and alcohol 500 Cc.; Menstruum II: Alcohol. Distil the alcohol first from the second percolate, afterwards adding the reserve and reducing the residue to about 100 Cc. Treat this residue with two successive portions of 250 Cc. each of purified petroleum benzin, discarding the benzin, then add 50 Gm. of dried starch and concentrate the mixture on a water-bath, with frequent stirring. Spread the thick extract on glass plates, dry it in an air-bath at a temperature not exceeding 80° C.; powder the product, assay it and add enough dried starch to make the finished Powdered Extract conform to the required alkaloidal standard. Mix it thoroughly.

Extractum Belladonnæ Foliorum.—One Gm. of the Extract to represent 4 Gm. of average strength Belladonna Leaves. Powder changed from No. 40 to No. 60. Menstruum: Alcohol, 3 volumes, and water, 1 volume. Former menstruum:

Alcohol 2 volumes, water 1 volume. Evaporate percolate at a temperature not exceeding 70° C.; changed from 50° C. Add sufficient glucose, after assay, to make the finished Extract conform to the required alkaloidal standard. Sugar of Milk formerly used as a diluent.

Extractum Belladonnæ Foliorum Pulveratum.—One Gm. of the Powdered Extract to represent 4 Gm. of average strength Belladonna Leaves. Practically exhaust 1000 Gm. of Belladonna Leaves in No. 40 powder, by percolation, reserving the first 1000 Cc. of percolate and using alcohol as the menstruum. Distil the alcohol first from the second percolate, afterwards adding the reserve and reducing the residue to a syrupy consistence. Evaporate this thick extract to a pilular consistence, at a temperature not exceeding 80° C., add 50 Gm. of dried starch and again heat at the same temperature, frequently stirring, until nearly dry. Then incorporate 20 Gm. of magnesium oxide and thoroughly dry the mixture in warm air. Powder the product, assay it, and add enough dried starch to make the finished Powdered Extract conform to the required alkaloidal standard. Mix it thoroughly.

Extractum Cannabis Indicæ.—Temperature for evaporation of percolate limited to 70° C.

Extractum Cascaræ Sagradæ Pulveratum.—One Gm. of Powdered Extract of Cascara Sagrada to represent 3 Gm. of the drug. Practically exhaust 1000 Gm. of Cascara Sagrada in No. 20 powder, by percolation, using boiling water as the menstruum. Evaporate the percolate to dryness on a water-bath or steam-bath. Reduce the extract to a fine powder, weigh it, add 25 Gm. of magnesium oxide and enough dried starch to make the product weigh 300 Gm. Mix it thoroughly. Former menstruum: Alcohol, 125 volumes, and water, 875 volumes. Powdered glycyrrhiza formerly used as a diluent in making up the final weight.

Extractum Cimcifugæ Pulveratum.—One Gm. of Powdered Extract of Cimcifuga to represent 4 Gm. of the drug. Practically exhaust 1000 Gm. of Cimcifuga in No. 40 powder, by percolation, using alcohol as the menstruum. Distil the alcohol from the percolate and evaporate the residue to dryness, with frequent stirring, on a water-bath, at a temperature not exceeding 80° C. Powder the extract, weigh it, add sufficient dried starch to make the product weigh 250 Gm. and mix thoroughly. Former extract prepared by evaporating the fluidextract to complete dryness, powdering the product and using powdered glycyrrhiza as a diluent in making up the final weight.

Extractum Colchici Cormi Pulveratum.—One Gm. of the Powdered Extract to represent 4 Gm. of average strength Colchicum Corm. Practically exhaust 1000 Gm. of Colchicum Corm, in No. 60 powder, by percolation, using alcohol as the menstruum. Distil the alcohol from the percolate, at as low a temperature as possible, until the residue measures about 150 Cc. Treat this residue with two successive portions of purified petroleum benzin, discarding the benzin. Evaporate this syrupy residue to a thick extract, in a dish, incorporate 50 Gm. of dried starch, spread the mixture on glass plates and dry it thoroughly in an air bath at a temperature not exceeding 80° C. Powder the product, assay it, and add enough dried starch to make the finished Powdered Extract conform to the required alkaloidal standard. Mix it thoroughly. Former Extract of pilular

consistence. Menstrua formerly used. Menstruum I: Acetic acid 350 Cc., and water 1500 Cc. Menstruum II: Water.

Extractum Colocynthidis Pulveratum.—One Gm. of Powdered Extract of Colocynth to represent 4 Gm. of the drug. Practically exhaust Colocynth in No. 20 powder, by percolation, using diluted alcohol as the menstruum. Distil the alcohol from the percolate, evaporate the residue to dryness on a water-bath or steam-bath, powder the extract, weigh it, and add sufficient dried starch to make the product weigh 250 Gm. Mix it thoroughly. Former process called for combined maceration and percolation, and the end-product was not required to be of a definite weight.

Extractum Colocynthidis Compositum Pulveratum.—Purified Aloes changed to Curaçao Aloes, 60 Gm. of whole Cardamom changed to 50 Gm. of Cardamom Seed and enough soap used to make 1000 Gm. The other ingredients remain the same, all being mixed by trituration and then reduced to a No. 60 powder.

Extractum Ergotæ.—Exhaust the Ergot with purified petroleum bezin and dry the drug; then practically exhaust this drug by percolation with the following. Menstruum I: Alcohol, 850 Cc., water, 150 Cc., and hydrochloric acid, 10 Cc. Menstruum II: Alcohol, 85 volumes, and water 15 volumes. Evaporate the percolate so obtained, at a temperature not exceeding 70° C., to pilular consistence. The acid is not neutralized as formerly and glycerin is not added to the evaporated extract.

Extractum Euonymi Pulveratum.—One Gm. of Powdered Extract of Euonymus to represent 4 Gm. of the drug. Practically exhaust 1000 Gm. of Euonymus in No. 40 powder, by percolation, using alcohol 4 volumes and water 1 volume as the menstruum. Distil the alcohol from the percolate and evaporate the residue to dryness, with frequent stirring, at a temperature not exceeding 70° C. Powder the extract, weigh it, add sufficient dried starch to make the product weigh 250 Gm. and mix thoroughly. Former Extract prepared by evaporating the fluidextract to complete dryness, powdering the product and using powdered glycyrrhiza as a diluent in making up the final weight.

Extractum Fellis Bovis Pulveratum.—To replace Purified Oxgall. One Gm. of Powdered Extract of Oxgall to represent 8 Gm. of Oxgall. Add 1000 Cc. of alcohol slowly and with agitation to 800 Gm. of Oxgall contained in a bottle, macerate for two days and then decant the liquid portion. Wash the residue in the bottle with an additional 500 Cc. of alcohol, decant the liquid portion, mix it with the liquid first separated and filter the mixture. Distil the alcohol from the filtrate and evaporate the residue to a thick extract at a temperature between 75° and 80° C. Spread this extract on glass plates and thoroughly dry in warm air, at a temperature not exceediing 80° C. Powder the extract, weigh it, and add sufficient dried starch to make 100 Gm. Mix it thoroughly.

Extractum Gelsemii Pulveratum.—One Gm. of Powdered Extract of Gelsemium to represent 4 Gm. of the drug. Practically exhaust 1000 Gm. of Gelsemium in No. 40 powder, by percolation, using alcohol as the menstruum. Distil the alcohol from the percolate until the residue measures about 500 Cc., transfer this to a dish and evaporate it to a soft extract with frequent stirring, at a temperature not exceeding 70° C. Add 50 Gm. of a mixture of 1 part of magnesium

oxide and 3 parts of dried starch, mix well, spread the mass in a thin layer on glass or tinned-metal plates or in a porcelain dish and continue the drying in an air-bath until thoroughly dry, at a temperature not exceeding 70° C. Powder the extract, weigh it, add sufficient of the mixture of magnesium oxide and dried starch to make 250 Gm., and mix thoroughly.

Extractum Gentianæ.—No change.

Extractum Glycyrrhizæ.—Added requirement: Ash not exceeding 6 percent.

Extractum Glycyrrhizæ Purum.—The menstruum is to be chloroform water instead of water after the ammonia has been used.

Extractum Hydrastis Pulveratum.—One Gm. of the Powdered Extract to represent 4 Gm. of average strength Hydrastis. Practically exhaust 1000 Gm. of Hydrastis in No. 40 powder, by percolation, using the following menstrua: Menstruum I: Tartaric acid 5 Gm. and alcohol 1000 Cc.; Menstruum II: Alcohol. Distil the alcohol from the percolate, and evaporate the residue to a soft extract, with frequent stirring, at a temperature not exceeding 70° C. Add 50 Gm. of a mixture of 1 part of magnesium oxide and 3 parts of dried starch, spread the mass in a thin layer on glass or tinned-metal plates or in a porcelain dish and continue the drying over an air-bath until thoroughly dry, at a temperature not exceeding 70° C. Powder the Extract, assay it and add enough of the mixture of magnesium oxide and dried starch to make the finished Powdered Extract conform to the required alkaloidal standard. Mix it thoroughly.

Extractum Hyoscyami.—One Gm. of the Extract to represent 4 Gm. of average strength Hyoscyamus. Practically exhaust Hyoscyamus in No. 40 powder, by percolation, with the following menstruum: Alcohol 3 volumes, and water 1 volume. Evaporate the percolate to a pilular consistence at a temperature not exceeding 70° C., and, after assay, add sufficient glucose to make the finished Extract conform to the required alkaloidal standard. Former Extract prepared by evaporating the fluidextract to pilular consistence, and adjusting the weight by assay, sugar of milk being used as the diluent.

Extractum Malti.—The temperature for maceration and evaporation not to exceed 60° C., changed from 55° C. Evaporate until of a specific gravity of not less than 1.350, nor more than 1.400 at 25° C.; formerly "to the consistence of thick honey."

Extractum Nucis Vomicæ Pulveratum.—One Gm. of the Powdered Extract to represent 4 Gm. of average strength Nux Vomica. Practically exhaust 1000 Gm. of Nux Vomica, in No. 20 powder, by percolation, using alcohol 3 volumes, and water 1 volume as the menstruum. Distil the alcohol from the percolate and reduce the residue to about 200 Cc. Treat this residue with a mixture of 150 Cc. of water and 200 Cc. of purified petroleum benzin, separate the benzin layer, again treat the residue with 100 Cc. of purified petroleum benzin and decant as before. Wash the separated benzin with three successive 100 Cc. portions of a mixture made by adding 10 parts of sulphuric acid to 100 parts of water. Collect these acid washings, make alkaline with ammonia water and shake out with three portions of chloroform, 20 Cc., 10 Cc., and 10 Cc. Add the combined chloroform solution to the Extract residue and evaporate the mixture to dryness on a water-bath. Powder the product, assay it, and add enough

of a mixture of magnesium oxide 1 part and dried starch 3 parts to make the finished Powdered Extract conform to the required alkaloidal standard. Mix it thoroughly. Former menstrua: Menstruum I: Acetic acid 500 Cc., and water 1300 Cc.; Menstruum II: Water. Sugar of milk was used as a diluent in making up the final weight.

Extractum Opii Pulveratum.—One Gm. of the Powdered Extract to represent 2 Gm. of average strength Opium. Beat 100 Gm. of Opium in a mortar with 300 Cc. of hot water until a smooth paste is produced, add to this 100 Gm. of clean, white sand, mix it thoroughly and transfer the mixture to a percolator. Practically exhaust the Opium by percolation, using water as the menstruum and evaporate the percolate to dryness in a dish, on a water-bath. Powder the product, assay it and add enough dried starch to make the finished Powdered Extract conform to the required alkaloidal standard. Mix it thoroughly. Former process called for combined maceration and percolation. Sugar of milk was formerly used as a diluent in making up the final weight.

Extractum Rhei Pulveratum.—One Gm. of the Powdered Extract to represent 2 Gm. of average strength Rhubarb. Practically exhaust 1000 Gm. of Rhubarb in No. 40 powder, by percolation, using alcohol 4 volumes, and water 1 volume as the menstruum. Distil the alcohol from the percolate and continue distillation until a residue of syrupy consistence remains; transfer this to a dish and evaporate the mixture to dryness, with frequent stirring, at a temperature not exceeding 80° C. Powder the extract and add 50 Gm. of magnesium oxide and sufficient dried starch to make 500 Gm. Mix it thoroughly. Former Extract prepared by evaporating the fluidextract to pilular consistence.

Extractum Stramonii.—One Gm. of the Extract to represent 4 Gm. of average strength Stramonium. Practically exhaust Stramonium in No. 30 powder by percolating with the following menstruum: Alcohol 3 volumes and water 1 volume. Evaporate the percolate to a pilular consistence at a temperature not exceeding 70° C. and, after assay, add sufficient glucose to make the finished Extract conform to the required alkaloidal standard. Former Extract prepared by evaporating the fluidextract to pilular consistence and adjusting the weight by assay, sugar of milk being used as the diluent.

Extractum Stramonii Pulveratum.—One Gm. of the Powdered Extract to represent 4 Gm. of average strength Stramonium. Practically exhaust 1000 Gm. of Stramonium in No. 40 powder, by percolation, reserving the first 1000 Cc. of percolate. Use alcohol as the menstruum. Distil the alcohol first from the second percolate and reduce it to about 100 Cc., afterwards adding the reserve and reducing the residue to a syrupy consistence. Evaporate this residue in a dish to a soft extract, with frequent stirring, at a temperature not exceeding 70° C., add 50 Gm. of dried starch and continue the heating at the same temperature, with frequent stirring, until the mass is nearly dry. Now incorporate 20 Gm. of magnesium oxide and thoroughly dry it in a current of warm air. Powder the product, assay it, and add enough dried starch to make the finished Powdered Extract conform to the required alkaloidal standard. Mix it thoroughly.

Extractum Sumbul.—Practically exhaust Sumbul in No. 30 powder, by percolation, with the following menstruum: Alcohol 4 volumes and water 1 volume,

and evaporate the percolate to a pilular consistence at a temperature not exceeding 70° C. Former Extract prepared by evaporating the fluidextract to a pilular consistence.

Extractum Taraxaci.—No change.

FLUIDEXTRACTS.

Introductory Statements.—Fluidextracts are concentrated liquid preparations of vegetable drugs, containing alcohol either as a solvent or as a preservative, and bearing a uniform relation to the drug used so that 1 Cc. of the fluidextract approximately represents the activity of 1 Gm. of the air-dried powdered drug. The fluidextracts of this Pharmacopœia, with few exceptions, may be classified according to the menstruum used in the extraction of the drug and the process of manufacture employed. Several drugs require special manipulation to obtain satisfactory fluidextracts, and for these appropriate formulas have been devised and are printed in full in the text. The following type processes are described, and in each formula the process to be used is designated by reference to the type process: Type Process A: In this class are included those fluidextracts that are made with a menstruum of alcohol or a mixture of alcohol and water by the usual process of percolation. Type Process B: In this class are included those fluidextracts in which glycerin or an acid is used in the extraction and two menstrua are successively used. Menstruum I contains the glycerin or acid in definite proportion to the amount of the drug, and Menstruum II, a mixture of alcohol and water intended for completing the exhaustion of the drug. Type Process C: The process of Fractional or Divided Percolation. This is especially recommended for drugs containing volatile ingredients of constituents injured by exposure to heat. This process may likewise be used as an alternative process in the formulas in which Type Process A is directed. Type Process D: In this class are included those fluidextracts in which extraction is effected by infusion and percolation with boiling water, alcohol being added to the concentrated extract as a preservative.

PROCESSES.

Type Process A.—Moisten 1000 Gm. of the powdered drug which is directed with a sufficient quantity of the prescribed menstruum to render it evenly and distinctly damp and to maintain it so after macerating for 6 hours in a tightly covered container. Then pack it in a cylindrical percolator and add enough of the menstruum to saturate the powder and leave a stratum above it. When the liquid begins to drop from the percolator, close the lower orifice, and, having closely covered the percolator, macerate for forty-eight hours. Then allow the percolation to proceed slowly, gradually adding more menstruum until the drug is practically exhausted. Reserve the first 850 Cc. of the percolate (unless otherwise specified in the formula); recover the alcohol from the remainder and concentrate to a soft extract at a temperature not exceeding 60° C.; dissolve this in the reserved portion, mix thoroughly and finally add a sufficient quantity of the menstruum to obtain 1000 Cc. or the proper volume determined by the assay standard.

Type Process B.—Moisten 1000 Gm. of the powdered drug, which is directed,

with a sufficient quantity of the prescribed Menstruum I, to render it evenly and distinctly damp and to maintain it so after macerating for 6 hours in a tightly covered container; pack it in a cylindrical percolator, add the remainder of Menstruum I, and when this has just disappeared from the surface, gradually add Menstruum II, constantly maintaining a stratum of liquid above the drug. When the liquid begins to drop from the percolator, close the lower orifice, and, having closely covered the percolator, macerate for 48 hours, and then allow the percolation to proceed slowly, gradually adding Menstruum II, until the drug is practically exhausted. Reserve the first 850 Cc. of the percolate (unless otherwise specified in the formula); recover the alcohol from the remainder and concentrate to a soft extract at a temperature not exceeding 60° C.; dissolve this in the reserved portion, mix thoroughly and finally add a sufficient quantity of Menstruum II to obtain 1000 Cc. or the proper volume determined by the assay standard.

Type Process C.—Divide 1000 Gm. of the drug, which is directed, into three portions of 500 Gm., 300 Gm., and 200 Gm., respectively. Moisten the first portion of the drug (500 Gm.) with a sufficient quantity of the prescribed menstruum to render it evenly and distinctly damp and to maintain it so after macerating for 6 hours in a tightly covered container. Then pack it in a cylindrical percolator and add enough of the menstruum to saturate the powder and leave a stratum above it. When the liquid begins to drop from the percolator, close the lower orifice, and, having closely covered the percolator, macerate for 48 hours and then allow the percolation to proceed slowly, gradually adding more menstruum. Reserve the first 200 Cc. of percolate and continue the percolation until 1500 Cc. of additional percolate have been collected in successive portions of 300 Cc. each. Moisten the second portion of the drug (300 Gm.) with a sufficient quantity of the percolate collected in the preceding operation immediately after the reserved portion, to render it evenly and distinctly damp and to maintain it so after macerating for 6 hours in a tightly covered container. Then pack it in a cylindrical percolator and macerate and percolate in the same manner, using as menstruum the several portions of percolate from the preceding operation in the order in which they have been collected and, if this be insufficient, follow with some of the original menstruum. Reserve the first 300 Cc., continue the percolation and collect the weaker percolate in successive portions of 200 Cc. each. Moisten the third portion of the drug (200 Gm.) with a sufficient quantity of the percolate collected in the preceding operation immediately after the reserved portion, to render it evenly and distinctly damp and to maintain it so after macerating 6 hours in a tightly covered container. Then pack it in a cylindrical percolator and macerate and percolate in the same manner, using as menstruum the several portions of percolate from the preceding operation in the order in which they have been collected and, if this be insufficient, follow with more of the original menstruum. Collect 500 Cc. of percolate and mix this with the two portions previously reserved so as to make 1000 Cc. of finished fluidextract. When Type Process C is directed for fluidextracts which are adjusted by assay to a definite alkaloidal standard, collect only 420 Cc. of percolate from the third portion of drug instead of the 500 Cc. directed in the Process.

Mix this percolate with the two portions previously reserved, assay a sample of the mixture and then adjust its volume, by the addition of the menstruum directed, so that each 100 Cc. of finished fluidextract will contain the prescribed amount of alkaloid.

Type Process D.—To 1000 Gm. of the ground drug add 5000 Cc. of boiling water, mix thoroughly and allow to macerate in a covered container for 2 hours in a warm place. Then transfer the moist drug to a tinned or enameled metallic percolator and allow percolation to proceed, gradually adding boiling water until the drug is practically exhausted. Evaporate the percolate on a water-bath or steam-bath to the volume specified and when cold add the alcohol directed and mix thoroughly. In the preparation of fluidextracts by either Process A, B, or C, the rate of percolation must be carefully controlled and for the quantities directed in the formulas of the Pharmacopœia, the flow should not exceed ten drops per minute until the reserved percolate is collected and 20 drops per minute thereafter. With careful percolation, most drugs will be practically extracted when 3000 Cc. of percolate have been obtained from each 1000 Gm. of the drug. Fluidextracts should be kept in tightly-stoppered containers for one month and then, if perfectly clear, stored in amber-colored bottles protected from sunlight and extremes of temperature. If sedimentation has occurred, the clear portion should be decanted, the remainder filtered and both liquids thoroughly mixed before storing. The quantity of alcohol in finished fluidextracts is less than the amount of alcohol in the menstrua employed, this is due to loss by evaporation during manufacture, variations in the amount of water in air-dried drugs and the absorption of moisture from the air, hence if the percentage of alcohol in the finished product is desired, it may be determined by the process for Alcohol Determination.

Fluidextractum Aconiti.—Powder changed from No. 60 to No. 40. Prepare by Type Process C, modified as directed for alkaloidal drugs. Menstruum: Alcohol 3 volumes and water 1 volume.

Fluidextractum Apocyni.—Powder changed from No. 60 to No. 30. Prepare by Type Process B. Menstruum I: Glycerin 100 Cc., alcohol 600 Cc., and water 300 Cc. Menstruum II: Alcohol 3 volumes, and water 2 volumes.

Fluidextractum Aromaticum.—Aromatic Powder 1000 Gm. Prepare by Type Process C. Menstruum: Alcohol.

Fluidextractum Aurantii Amari.—Powder changed from No. 40 to No. 20. Prepare by Type Process C. Menstruum: Alcohol 3 volumes and water 1 volume. Former menstruum: Alcohol 2 volumes and water 1 volume.

Fluidextractum Belladonnæ Radicis.—Powder changed from No. 60 to No. 40. Prepare by Type Process A, modified for alkaloidal drugs. Reserve the first 800 Cc. of percolate instead of 850 Cc., as there directed. Menstruum: Alcohol 5 volumes and water 1 volume. Former menstruum: Alcohol 4 volumes and water 1 volume.

Fluidextractum Buchu.—Powder changed from No. 60 to No. 40. Prepare by Type Process A. Menstruum: alcohol. Former menstruum: alcohol 3 volumes and water 1 volume.

Fluidextractum Cannabis Indicæ.—Prepare by Type Process A. Menstruum, alcohol.

Fluidextractum Cascaræ Sagradæ.—Prepare by Type Process D; evaporate to 750 Cc. and add 250 Cc. of alcohol. Former menstruum: alcohol 2 volumes and water 4 volumes.

Fluidextractum Cimicifugæ.—Powder changed from No. 60 to No. 40. Prepare by Type Process A. Menstruum: alcohol.

Fluidextractum Cinchonæ.—Powder changed from No. 60 to No. 40. Prepare by Type Process B, modified for alkaloidal drugs. Menstruum I: glycerin 100 Cc., diluted hydrochloric acid 100 Cc., and alcohol 800 Cc. Menstruum II: alcohol 4 volumes and water 1 volume. Former menstruum I: glycerin 100 Cc., alcohol 800 Cc. and water 100 Cc.

Fluidextractum Colchici Seminis.—Powder changed from No. 50 to No. 40. Remove the fat by percolation with purified petroleum benzin and then proceed by Type Process A, modified for alkaloidal drugs. Menstruum: alcohol 2 volumes and water 1 volume.

Fluidextractum Digitalis.—Powder changed from No. 60 to No. 30. Prepare by Type Process A. Menstruum: alcohol 5 volumes and water 1 volume. Former menstruum: diluted alcohol.

Fluidextractum Ergotæ.—Powder changed from No. 60 to No. 40. Prepare by Type Process B. Menstruum I: hydrochloric acid 20 Cc. and diluted alcohol 980 Cc. Menstruum II: diluted alcohol. Former menstruum I: acetic acid 20 Cc. and diluted alcohol 980 Cc.

Fluidextractum Eriodictyi.—Powder changed from No. 60 to No. 30. Prepare by Type Process A, reserving the first 800 Cc. of percolate instead of 850 Cc. as there directed. Menstruum: alcohol 4 volumes and water 1 volume.

Fluidextractum Eucalypti.—Powder changed from No. 40 to No. 30. Prepare by Type Process A, reserving the first 800 Cc. of percolate instead of 850 Cc. as there directed. Menstruum: alcohol 3 volumes and water 1 volume.

Fluidextractum Gelsemii.—Powder changed from No. 60 to No. 40. Prepare by Type Process A. Menstruum: alcohol 4 volumes and water 1 volume. Former menstruum: alcohol.

Fluidextractum Gentianæ.—Prepare by Type Process A. Menstruum: diluted alcohol.

Fluidextractum Glycyrrhizæ.—New process: Practically exhaust the Glycyrrhiza with a menstruum made in the proportion of ammonia water, 1 volume and chloroform water, 9 volumes, after moistening and macerating 48 hours. Reserve the first 500 Cc. of percolate, evaporate the remainder on a water-bath to a soft extract, dissolve it in the reserved portion, add water to make 750 Cc. and a few drops of ammonia water, if necessary, for solution. Then gradually add 250 Cc. of alcohol, allow it to stand for 7 days, decant the clear liquid, filter the remainder and wash the filter with a mixture of alcohol, 1 volume, and water, 3 volumes, to make 1000 Cc.

Fluidextractum Granati.—Prepare by Type Process B. Menstruum I:

glycerin 100 Cc., alcohol 500 Cc. and water 400 Cc. Menstruum II: diluted alcohol. Former menstruum I: glycerin 100 Cc. and diluted alcohol 900 Cc.

Fluidextractum Grindeliæ.—Prepare by Type Process A. Menstruum: alcohol 3 volumes and water I volume.

Fluidextractum Guaranæ.—Prepare by Type Process A, modified for alkaloidal drugs. Reserve the first 800 Cc. of percolate instead 850 Cc. as there directed. Menstruum: alcohol 3 volumes and water I volume. Former menstruum: diluted alcohol.

Fluidextractum Hydrastis.—Powder changed from No. 60 to No. 40. Prepare by Type Process B, modified for alkaloidal assay. Reserve the first 750 Cc. of percolate instead of 850 Cc. as there directed. Menstruum I: glycerin 100 Cc., alcohol 600 Cc. and water 200 Cc. Menstruum II: alcohol 2 volumes and water 1 volume. Former menstruum I: glycerin 100 Cc., alcohol 600 Cc. and water 300 Cc.

Fluidextractum Hyoscyami.—Powder changed from No. 60 to No. 40. Prepare by Type Process A, modified for alkaloidal drugs. Menstruum: alcohol 3 volumes and water 1 volume. Former menstruum: alcohol 2 volumes and water 1 volume.

Fluidextractum Ipecacuanhæ.—Powder changed from No. 80 to No. 60. Prepare by Type Process B, modified for alkaloidal drugs. Reserve the first 800 Cc. of percolate instead of 850 Cc. as there directed. Menstruum I: diluted hydrochloric acid 100 Cc., alcohol 200 Cc., and water 200 Cc. Menstruum II: alcohol 2 volumes and water 3 volumes. Former menstruum: alcohol 3 volumes and water I volume.

Fluidextractum Lobeliæ.—Powder changed from No. 50 to No. 30. Prepare by Type Process B. Menstruum I: acetic acid 50 Cc., alcohol 500 Cc., and water 450 Cc. Menstruum II: diluted alcohol. Former menstruum: acetic acid 275 volumes and water 725 volumes.

Fluidextractum Nucis Vomicæ.—Prepare by Type Process A, modified for alkaloidal drugs. Reserve the first 800 Cc. of percolate instead of 850 Cc. as there directed. Menstruum: alcohol 3 volumes and water 1 volume. Former menstruum I: acetic acid 50 Cc., alcohol 750 Cc. and water 250 Cc. Former menstruum II: alcohol 3 volumes and water 1 volume.

Fluidextractum Pareiræ.—Powder changed from No. 40 to No. 30. Prepare by Type Process A. Menstruum I: diluted alcohol. Former menstruum I: glycerin 100 Cc., alcohol 600 Cc. and water 300 Cc. Former menstruum II: alcohol 3 volumes and water 2 volumes.

Fluidextractum Pilocarpi.—Powder changed from No. 40 to No. 30. Prepare by Type Process A, modified for alkaloidal drugs. Reserve the first 800 Cc. of percolate instead of 850 Cc. as there directed. Menstruum: alcohol 2 volumes and water 1 volume. Former menstruum: diluted alcohol.

Fluidextractum Podophyli.—Prepare by Type Process A. Menstruum: alcohol. Former menstruum: alcohol 4 volumes and water 1 volume.

Fluidextractum Rhei.—Prepare by Type Process A. Menstruum: alcohol 4 volumes and water 1 volume.

Fluidextractum Sabal.—Sabal, in No. 20 powder. Prepare by Type Process A. Menstruum: alcohol 4 volumes and water 1 volume.

Fluidextractum Sarsaparillæ.—Powder changed from No. 30 to No. 20. Prepare by Type Process A. Menstruum: diluted alcohol. Former menstruum: alcohol 1 volume and water 2 volumes.

Fluidextractum Sarsaparillæ Compositum.—Sarsaparilla powder changed from No. 30 to No. 20. Glycyrrhiza powder changed from No. 30 to No. 20. Mix the powders and prepare by Type Process B. Menstruum I: glycerin 100 Cc., alcohol 500 Cc. and water 400 Cc. Menstruum II: diluted alcohol. Former menstruum I: glycerin 100 Cc. and diluted alcohol 900 Cc.

Fluidextractum Senegæ.—Powder changed from No. 40 to No. 30. Practically exhaust the Senega with a menstruum made in the proportion of alcohol, 2 volumes, and water, 1 volume, after moistening and macerating the drug for 48 hours. Reserve the first 800 Cc. of percolate, evaporate the remainder to a soft extract, and dissolve this in the reserve. Add ammonia water until the liquid is faintly alkaline and then enough of the menstruum to make 1000 Cc. Former menstruum I: solution of potassium hydroxide 30 Cc., alcohol 600 Cc. and water 300 Cc. Former menstruum II: alcohol 2 volumes and water 1 volume.

Fluidextractum Sennæ.—Prepare by Type Process A, reserving the first 800 Cc. of percolate instead of 850 Cc. as there directed. Menstruum: alcohol 1 volume and water 2 volumes. Former process: The drug was exhausted with alcohol, the percolate being discarded. The fluidextract was then prepared with a menstruum of diluted alcohol.

Fluidextractum Spigeliæ.—Prepare by Type Process A. Menstruum: diluted alcohol.

Fluidextractum Staphisagriæ.—Powder changed from No. 40 to No. 20. Prepare by Type Process A. Menstruum: alcohol. Former menstruum: alcohol 4 volumes and water 1 volume. Remove the oil from the freshly prepared fluidextract by addiing 20 Gm. of purified talc and filtering the mixture.

Fluidextractum Stillingiæ.—Powder changed from No. 40 to No. 30. Prepare by Type Process A. Menstruum: diluted alcohol.

Fluidextractum Sumbul.—Prepare by Type Process A. Menstruum: alcohol 4 volumes and water 1 volume. Former menstruum: alcohol 3 volumes and water 1 volume.

Fluidextractum Taraxaci.—Prepare by Type Process B. Menstruum I: glycerin 100 Cc., alcohol 500 Cc. and water 400 Cc. Menstruum II: diluted alcohol. Former process: Menstruum: diluted alcohol; 5 percent. of solution of sodium hydroxide was added to complete the fluidextract.

Fluidextractum Tritici.—Prepare by Type Process D. Evaporate to 800 Cc. and add 200 Cc. of alcohol.

Fluidextractum Uvæ Ursi.—Prepare by Type Process B, reserving the first 800 Cc. of percolate instead of 850 Cc. as there directed. Menstruum I: glycerin 100 Cc., alcohol 300 Cc. and water 500 Cc. Menstruum II: alcohol 1 volume and water 2 volumes. Former menstruum I: glycerin 300 Cc., alcohol

200 Cc., water 500 Cc. Former menstruum II: alcohol 2 volumes and water 5 volumes.

Fluidextractum Veratri.—Powder changed from No. 60 to No. 40. Prepare by Type Process A. Menstruum: alcohol.

Fluidextractum Viburni Prunifolii.—Powder changed from No. 40 to No. 30. Prepare by Type Process A. Menstruum: alcohol 2 volumes, water 1 volume.

Fluidextractum Xanthoxyli.—Powder changed from No. 40 to No. 30. Prepare by Type Process A. Menstruum: alcohol 3 volumes and water 1 volume.

Fluidextractum Zingiberis.—Powder changed from No. 50 to No. 40. Prepare by Type A. Menstruum: alcohol.

RESINS.

Resina Podophylli.—Added test: On adding 0.4 Gm. of Resin of Podophyllum to 3 Cc. of 60 percent. alcohol, introducing 0.5 Cc. of potassium hydroxide T. S., and gently shaking the mixture, it should not gelatinize (difference from Resin of Podophyllum obtained from P. Emodi). Ash not exceeding 1.5 percent. changed from "1 percent."

Resina Jalapæ.—Modified tests: "Not more than 12 percent. of Resin of Jalap should be soluble in ether," changed from "15 percent." Added test: The requirement that the ammonia water solution should not become gelatinous on standing has been added to the test for rosin, guaiac and other resins. Melting point omitted. Added tests: Water triturated with the Resin should not have a bitter taste (aloin). Dissolve 0.02 Gm. of Jalap in 2 Cc. of glacial acetic acid and add a few drops of sulphuric acid; the mixture should not acquire a pink color (resin). Modified test: Shake 0.02 Gm. of Resin of Jalap with 5 Cc. of ether, filter and evaporate the ethereal solution on a piece of filter paper. No greenish-blue color should be produced by the addition of a drop of ferric chloride T. S. to the filter paper (guaiac). Test for limit of saponifiable substances omitted.

Resina Scammonii.—Modified tests: "Not less than 95 percent. should be soluble in ether (distinction from resin of jalap and resin of false scammony)," changed from "almost completely soluble in ether and chloroform." When triturated with water, it does not alone form an emulsion. Percolate Scammony Root, in No. 30 powder, until the percolate produces only a slight turbidity when dropped into water. Distil the alcohol from the percolate, reducing it to the consistence of thin syrup, and pour it slowly with constant stirring into 1000 Cc. of hot water. Decant the supernatant liquid, wash the precipitated Resin twice, by decantation, with fresh portions of 1000 Cc. each of hot water and dry the Resin on a water-bath. Added tests: Its solution in alcohol does not give a blue color with ferric chloride T. S. or with solution of hydrogen dioxide (guaiac). Sulphuric acid should not gradually turn red when stirred in a porcelain dish with an equal weight of Resin of Scammony (rosin).

TINCTURES.

Tinctura Aconiti.—Powder changed from No. 60 to No. 40. Continue the operation until the percolate measures 950 Cc., assay it, and add enough men-

struum to make the finished Tincture conform to the required alkaloidal standard. The former Tincture was percolated to 1000 Cc. without the adjustment of the final volume by assay.

Tinctura Aloes.—"Purified Aloes" changed to "Socotrine Aloes."

Tinctura Arnicæ.—Moisten 200 Gm. of Arnica with 500 Cc. of diluted alcohol, and, without pressing the powder, allow it to stand in a well covered percolator for 24 hours, then pack it with moderate pressure and allow the percolation to proceed slowly, adding diluted alcohol until the percolate measures 250 Cc. Now stop the flow, macerate the drug for an additional twenty-four hours, and then continue the percolation until the total percolate measures 500 Cc. Again interrupt percolation, macerate the drug for another twelve hours and afterwards collect an additional 250 Cc. of percolate. Again macerate the drug for twelve hours and then percolate slowly, pouring on sufficient diluted alcohol to make 1000 Cc. of Tincture. The former process required maceration, expression and filtration.

Tinctura Asafœtidæ.—No change.

Tinctura Aurantii Amari.—No change

Tinctura Aurantii Dulcis.—The Sweet Orange Peel is to be "grated from the fresh fruit" instead of "in thin shavings and cut into narrow shreds from the fresh fruit."

Tinctura Balladonnæ Foliorum.—Continue the operation until the percolate measures 950 Cc., assay it, and add enough diluted alcohol to make the finished Tincture conform to the required alkaloidal standard. The former Tincture was percolated to 1000 Cc. without the adjustment of the final volume by assay.

..*Tinctura Benzoini.*—No change.

Tinctura Benzoini Composita.—"Purified Aloes" changed to "Socotrine Aloes."

..*Tinctura Calumbæ.*—No change.

Tinctura Cannabis Indicæ.—No change.

Tinctura Capsici.—No change.

Tinctura Cardamomi.—150 Gm. of Cardamom Seed replaces 200 Gm. of Cardamon (U. S. P. VIII, fruits and seeds).

Tinctura Cardamomi Composita.—20 Gm. of Cardamon Seed replaces 250 Gm. of Cardamom (U. S. P. VIII, fruits and seeds).

Tinctura Cinnamomi.—Use the proportion of glycerin, alcohol and water as a menstruum throughout, which was used in the former process for the first 1000 Cc. There the percolation was completed with a menstruum of alcohol 675 volumes, and water 250 volumes.

Tinctura Colchici Seminis.—Continue the operation until the percolate measures 950 Cc., assay it, and add enough menstruum to make the finished Tincture conform to the required alkaloidal standard. The former Tincture was percolated to 1000 Cc. without the adjustment of the final volume by assay.

Tinctura Ferri Chloridi.—Rubric changed from "not less than 13.28 percent. of the anhydrous salt, corresponding to 4.6 (4.58) percent. of metallic iron" to

"not less than 13 percent. of anhydrous Ferric Chloride corresponding to 4.48 percent. of iron." Specific gravity changed from "about 1.005" to "about 1.000" at 25° C. Modified assay: Weigh accurately about 5 Gm. of Tincture of Ferric Chloride in a tared weighing-bottle, and evaporate it to dryness in a porcelain dish on a water-bath, add 2 Cc. of hydrochloric acid and 5 Cc. of solution of hydrogen dioxide to the residue and again evaporate the mixture to dryness. Dissolve this residue in 25 Cc. of distilled water, mix it with 3 Cc. of hydrochloric acid and about 1 Gm. of potassium iodide in a 250 Cc. glass-stoppered flask, and allow the mixture to stand for 45 minutes at a temperature of 40° C. The resulting solution, when cooled, diluted with 100 Cc. of distilled water and titrated with tenth-normal sodium thiosulphate V. S., starch T. S. being used as indicator, should show not less than 4.48 percent. of iron.

Tinctura Gambir Composita.—No change.

Tinctura Gelsemii.—No change.

Tinctura Gentianæ Composita.—Cardamom Seed replaces Cardamom (U. S. P. VIII, fruits and seeds). Menstruum I: glycerin 100 Cc., alcohol 500 Cc. and water 400 Cc. Menstruum II: diluted alcohol. Former menstruum alcohol 3 volumes and water 2 volumes.

Tinctura Guaiaci.—No change.

Tinctura Guaiaci Ammoniata.—No change.

Tinctura Hydrastis.—Menstruum changed from alcohol 65 volumes and water 35 volumes to alcohol 2 volumes and water 1 volume. Continue the operation until the percolate measures 950 Cc., assay it, and add enough menstruum to make the finished Tincture conform to the required alkaloidal standard. The former Tincture was percolated to 1000 Cc. without the adjustment of the final volume by assay.

Tinctura Hyoscyami.—Continue the operation until the percolate measures 950 Cc., assay it, and add enough diluted alcohol to make the finished Tincture conform to the required alkaloidal standard. The former Tincture was percolated to 1000 Cc. without the adjustment of the final volume by assay.

Tinctura Iodi.—Modified assay: Evaporate 10 Cc. of Tincture of Iodine in a tared, porcelain dish on a water-bath and gently heat the residue over a Bunsen flame to volatilize the Iodine; it should leave a residue weighing not less than 0.45 Gm., which should correspond to the indentity tests given under Potassii Iodidum. Mix 5 Cc. of Tincture of Iodine with 25 Cc. of distilled water and titrate it with tenth-normal sodium thiosulphate V. S., starch T. S. being used as indicator; it should show not less than 6.75 Gm. nor more than 7.25 Gm. of Iodine in each 100 Cc. of Tincture.

Tinctura Kino.—Pour 500 Cc. of boiling water on 100 Gm. of Kino in a capacious flask, agitate the mixture thoroughly and then heat it on a water-bath, containing boiling water, for one hour, shaking it frequently. Cool, add enough recently boiled water to make 500 Cc. and then add 500 Cc. of alcohol. Stopper the flask, set it aside in a cool place for 24 hours and decant the mixture through cheese cloth. Preserve it in a cool and dark place, in small bottles, tightly

corked. Former Tincture contained 5 Gm. of Kino for 100 Cc. Former menstruum contained 15 percent. of glycerin and 65 percent. of alcohol by volume.

Tinctura Lactucarii.—No change.

Tinctura Lavandulæ Composita.—No change.

Tinctura Limonis Corticis.—The Lemon Peel is to be "grated from the fresh fruit" instead of "in thin shavings and cut into narrow shreds from the fresh fruit."

Tinctura Lobeliæ.—No change

Tinctura Moschi.—No change.

Tinctura Myrrhæ.—No change.

Tinctura Nucis Vomicæ.—Percolate Nux Vomica in No. 40 powder, with a menstruum of alcohol 3 volumes and water 1 volume until the percolate measures 950 Cc., assay it, and add enough menstruum to make the finished Tincture conform to the required alkaloidal standard. The former Tincture was prepared by dissolving 20 Gm. of the Extract in enough of a mixture of alcohol 3 volumes and water 1 volume to make 1000 Cc. without the adjustment of the final volume by assay.

Tinctura Opii.—Continue the operation until the percolate measures 950 Cc., assay it, and add enough menstruum to make the finished Tincture conform to the required alkaloidal standard. The former Tincture was percolated to 1000 Cc. without the adjustment of the final volume by assay.

Tinctura Opii Camphorata.—No change.

Tinctura Opii Deodorati.—Wash the residue on the filter with enough water to make the filtrate measure 950 Cc., assay it, and add enough water to make the finished Tincture conform to the required alkaloidal standard. The residue on the filter was washed with enough water to make 1000 Cc. without the adjustment of the final volume by assay.

Tinctura Physostigmatis.—Continue the operation until the percolate measures 950 Cc., assay it, and add enough alcohol to make the finished Tincture conform to the required alkaloidal standard. The former Tincture was percolated to 1000 Cc. without the adjustment of the final volume by assay.

Tinctura Pyrethri.—No change.

Tinctura Quassiæ.—Menstruum: alcohol 1 volume and water 2 volumes. Former menstruum: alcohol 35 volumes and water 65 volumes.

Tinctura Rhei.—30 Gm. of Cardamom Seed replaces 40 Gm. of Cardamom (U. S. P. VIII, fruits and seeds). Menstruum I: glycerin 100 Cc., alcohol 500 Cc., and water 400 Cc. Menstruum II: diluted alcohol. Former Menstruum I: no change. Former Menstruum II: alcohol 5 volumes and water 4 volumes.

Tinctura Rhei Aromatica.—Menstruum I: glycerin 100 Cc., alcohol 500 Cc., and water 400 Cc. Menstruum II: diluted alcohol. Former Menstruum I: no change. Former Menstruum II: alcohol 5 volumes and water 4 volumes.

Tinctura Scillæ.—Prepared by percolation, changed from maceration.

Tinctura Stramonii.—Continue the operation until the percolate measures 950 Cc., assay it, and add enough diluted alcohol to make the finished Tincture conform to the required alkaloidal standard. The former Tincture was percolated to 1000 Cc. without the adjustment of the final volume by assay.

Tinctura Strophanthi.—Powder changed from No. 60 to No. 40. Percolate the 100 Gm. of Strophanthus with purified petroleum benzin until the percolate no longer leaves a greasy stain when evaporated from filter paper. Then dry the drug so treated and afterwards percolate it with a menstruum of alcohol to obtain 1000 Cc. of Tincture. The former Tincture was prepared by percolating with a menstruum of alcohol 65 volumes and water 35 volumes to make 1000 Cc. of Tincture.

Tinctura Tolutana.—No change.

Tinctura Valerianæ.—Powder changed from No. 60 to No. 40.

Tinctura Valerianæ Ammoniata.—Powder changed from No. 60 to No. 40.

Tinctura Vanillæ.—Macerate 100 Gm. of Vanilla, cut into small pieces, with 500 Cc. of alcohol in a stoppered container, in a moderately warm place, for 2 days, with frequent agitation; then transfer it to a plain filter and reserve the filtered liquid. Dry the drug on the filter by exposure to air until all of the alcohol has evaporated, then grind the Vanilla and 200 Gm. of coarse sugar to a uniform powder, pack this in a percolator and slowly percolate it first with a mixture of the reserved filtrate and an equal volume of water and then with sufficient diluted alcohol to make 1000 Cc. of Tincture. Former Menstruum: alcohol 65 volumes and water 35 volumes. Formerly prepared by macerating 100 Gm. of Vanilla in 500 Cc. of the menstruum during 12 hours, draining off the liquid, reserving it and beating the Vanilla and 200 Gm. of sugar in a mortar to a uniform powder. Then percolate the mixture with the reserved liquid and enough of the menstruum to make 1000 Cc.

Tinctura Veratri.—"Veratrum" (U. S. P. VIII, Veratrum Viride or Veratrum album) changed to Veratrum Viride.

Tinctura Zingiberis.—Powder changed from No. 50 to No. 30. Added tests: Tincture of Ginger should yield not less than 90 percent. of absolute alcohol by volume when tested as described under Alcohol Determination. Evaporate 10 Gm. of Tincture of Ginger to dryness, in a tared dish on a water-bath; the yield of residue should not exceed 2 percent. When treated with 20 Cc. of cold distilled water, not more than 15 percent. of this residue should dissolve. Evaporate 10 Cc. of Tincture of Ginger to dryness in a small flask. Add 5 Cc. of half-normal alcoholic potassium hydroxide V. S. and boil the mixture gently for 30 minutes under a reflux condenser. Remove the condenser and evaporate the alcohol on a water-bath. Then add 50 Cc. of distilled water to dissolve the residue, transfer this aqueous solution to a separatory funnel and shake it out with 25 Cc. of ether. Evaporate the separated ether solution spontaneously by adding it, a few drops at a time, to the center of a watch glass and cautiously apply the tip of the tongue to the dry residue. The taste should be slightly camphor-

aceous but not sharp or biting-pungent (capsicum or similar pungent substitute for ginger).

MISCELLANEOUS GALENICALS.

No material change to be made in the Eighth Revision text for the following articles:

Acetum Scillæ
Emulsum Amygdalæ
Emulsum Asafœtidæ
Gelatinum Glycerinatum
Glyceritum Amyli
Glyceritum Boroglycerini
Glyceritum Phenolis
Infusum Sennæ Compositum
Linimentum Belladonnæ
Linimentum Calcis
Linimentum Chloroformi
Massa Ferri Carbonatis
Mistura Cretæ
Mucilago Tragacanthæ
Oleoresina Cubebæ
Pilulæ Aloes
Pilulæ Asafœtidæ
Pilulæ Catharticæ Compositæ
Pilulæ Ferri Carbonatis
Pilulæ Ferri Iodidi
Pilulæ Phosphori
Pilulæ Rhei Compositæ
Potassii Citras Effervescens
Pulvis Cretæ Compositus
Pulvis Effervescens Compositus
Sodii Phosphas Effervescens
Triturationes
Trituratio Elaterini

Caffeina Citrata Effervescens.—No change in formula and process. Rubric added: It should contain not less than 1.9 percent. of anhydrous Caffeine, as determined by the method given below. Assay: Dissolve about 5 Gm. of Effervescent Citrated Caffeine, accurately weighed, in 10 Cc. of hot distilled water. When effervescence has ceased, add an excess of sodium hydroxide T. S., cool the mixture and shake it in a separator with three successive portions of 20 Cc., 10 Cc. and 5 Cc., respectively, of chloroform, or more if necessary to complete the extraction. Evaporate the combined chloroform extracts on a water-bath and dry the residue to a constant weight at 80° C. The weight obtained is that of the anhydrous Caffeine in the weight of Effervescent Citrated Caffeine taken. The Caffeine so obtained should respond to the identity tests and have the melting point given under Caffeina.

Collodium.—No change in formula. Modified directions: Add the alcohol to the pyroxylin in a suitable bottle, shake the mixture thoroughly, then introduce the ether, and again shake the mixture until the pyroxlin is dissolved. Formerly the ether was added to the pyroxylin, the mixture allowed to stand 15 minutes, the alcohol added and the bottle shaken until solution resulted. Added description and tests: A clear, or slightly opalescent, syrupy liquid; colorless, or slightly yellowish; having the odor of ether and highly inflammable. Exposed to the air in a thin layer it leaves a transparent, tenacious film. Specific gravity 0.765 to 0.775 at 25° C. When mixed with an equal volume of distilled water, a viscid, stringy mass separates; the mixture should not show an acid reaction with litmus. Assay: Weigh accurately about 10 Cc. of Collodion is a well-stoppered flask, warm it on a water-bath and add 10 Cc. of distilled water, drop by drop, with constant stirring. Evaporate the mixture on a water-bath and dry the residue to constant weight at 110° C. The pyroxylin so obtained should correspond to

not less than 5.1 percent. of the Collodion taken, equal to about 4 Gm. of pyroxylin in 100 Cc. of Collodion at the standard temperature. The pyroxylin obtained should burn rapidly, with a yellow flame.

Collodium Cantharidatum.—No change in formula. No material change in directions.

Decocta.—Added directions: "Decoctions shall be freshly prepared from the drug, etc."

Emulsum Olei Morrhuæ.—No change in formula. No material change in directions.

Emulsum Olei Terebinthinæ.—New formula. Rectified Oil of Turpentine 15 Cc.; Expressed Oil of Almond; 5 Cc.; Syrup, 25 Cc.; Acacia, in fine powder, 10 Gm.; Water, a sufficient quantity to make 100 Cc. Mix the Rectified Oil of Turpentine with the Expressed Oil of Almond; rub the Acacia, contained in a dry mortar, with the oils until uniformly mixed; then add at once 15 Cc. of water and triturate lightly and rapidly until a thick homogeneous emulsion is produced; to this add the Syrup, with enough water to make the product measure 100 Cc. and mix thoroughly.

Glyceritum Acidi Tannici.—No change in formula. Modified directions: Weigh the glycerin into a suitable tared, wide-mouthed bottle, place it in a water-bath of cold water and apply heat until the water boils for a few minutes. Discontinue the heat, add the Tannic Acid to the hot glycerin in small, successive portions, and agitate the mixture until the Tannic Acid is dissolved. Former directions required trituration of the Tannic Acid with glycerin, followed by heating in a dish on a water-bath until dissolved.

Infusa.—Added directions: "Infusions shall be freshly prepared from the drug, etc."

Iufusum Digitalis.—Added requirement: "Infusion of Digitalis should be freshly prepared."

Linimentum Ammoniæ.—Ammonia Water, 250 Cc., Oil of Sesamum, 750 Cc.; to make 1000 Cc. Agitate the Ammonia Water with an equal volume of the Oil until a uniform mixture is obtained, then gradually add the remainder of the Oil and mix well. Ammonia Water changed from 350 Cc. to 250 Cc. Oil of Sesamum replaces the alcohol, cotton seed oil and oleic acid.

Linimentum Camphoræ.—No change in formula. The directions require to heat the Oil in a suitable flask or bottle on a water-bath, add the Camphor, stopper the container and dissolve the Camphor by agitation without further heat. The Camphor was formerly dissolved in the Oil in a loosely-stoppered flask, on a water-bath with occasional agitation.

Linimentum Saponis Mollis.—No change in formula. No material change in directions.

Linimentum Terebinthinæ.—Added directions: "If thickened by cold, the Liniment should be warmed sufficiently to render it fluid before dispensing, otherwise no change in formula or directions.

Massa Hydrargyri.—The Mercury is added to 1 Gm. of Oleate of Mercury in a warm mortar, a small amount of Honey of Rose added and the Mercury extin-

guished in the mixture. The other ingredients are subsequently incorporated to make a uniform product. The Oleate of Mercury was not in the formula of the Eighth Revision.

Mistura Glycyrrhizæ Composita.—No change in formula. The Extract and Acacia are directed to be dissolved in warm water; the former text did not specify that it should be warm.

Mucilago Acaciæ.—The amount of Acacia is changed from 340 Gm. to 350 Gm., the lime water omitted and distilled water directed to make 1000 Gm. No material change in the directions.

The former solvent acetone is changed to ether in the following:

Oleoresina Aspidii	Oleoresina Zingiberis
Oleoresina Capsici	Oleoresina Piperis

Pulvis Aromaticus.—No change in formula or directions. Added microscopic descriptions: Light reddish-brown; with a strong, distinct, aromatic odor; consisting chiefly of the characteristic starch grains of Ginger, being ellipsoidal or ovoid, slightly beaked and from 0.005 to 0.060 mm. in diameter; numerous yellowish-brown, brownish-red and occasional blackish fragments, the cellular structure of which is not distinct; occasional stone cells, the lumen being filled usually with a reddish-brown amorphous substance or containing air; occasional fragments with sclerenchymatous fibers; calcium oxalate crystals; short raphides few.

Pulvis Glycyrrhizæ Compositus.—No change in formula or directions. Added microscopic description. Greenish-yellow to greenish-brown with an odor suggesting that of fennel; when mounted in water or hydrated chloral T. S. and examined under the microscope Compound Powder of Glychrrhiza shows fragments of Glycyrrhiza with their characteristic yellow fibers associated with crystal-fibers, large tracheæ with elliptical, bordered pores and cells containing numerous, spherical starch grains varying from 0.002 to 0.020 mm. in diameter; also fragments of Senna as shown by their characteristic, more or less bent, unicellular, non-glandular hairs from 0.100 to 0.350 mm. in length; fragments of epidermis with elliptical stomata and their 2 neighboring cells and fragments with crystal-fibers; upon the addition of potassium hydroxide T. S. to aqueous mounts of the powder, some of the fragments are immediately colored a yellowish-red, changing to a reddish-brown. Add 0.100 Gm. of Compound Powder of Glycyrrhiza to a test-tube, moisten it with 2 Cc. of alcohol and then add 10 Cc. of water and boil, allow it to cool and then filter, the filtrate should be of a pale yellowish-brown color, which changes immediately to a yellowish-red on the addition of a drop of potassium hydroxide T. S. Compound Powder of Glycyrrhiza should be free from an odor of hydrogen sulphide.

Pulvis Ipecacuanhæ et Opii.—No change in formula or directions. Added microscopic description: Grayish-white or very light brown; consisting mostly of coarse, angular, frequently more or less cone-shaped, colorless fragments from 0.030 to 0.400 mm. in length; very slowly soluble in water and hydrated chloral T. S., and which strongly polarize light with a strong display of colors (fragments of sugar of milk); numerous starch grains of Ipecac, their presence con-

firmed by the addition of iodine T. S., and varying from 0.003 to 0.017 mm. in diameter; occasional fragments of tracheids of Ipecac; and occasional fragments with the more or less tabular, characteristic stone cells of the capsules of the Opium Poppy, with their light brown, porous and strongly lignified walls.

Pulvis Jalapæ Compositus.—No change in formula or directions. Added microscopic description: Very light brown; consisting of numerous, sharp-angular, colorless fragments mostly somewhat rectangular and with straight edges varying from 0.030 to 0.300 mm. in length, slowly soluble in water or hydrated chloral T. S. and which strongly polarize light with a strong display of colors, (fragments of crystals of potassium bitartrate); numerous starch grains of Jalap, readily distinguished without the use of iodine T. S., usually single, occasionally 2- to 3-compound, and varying from 0.003 to 0.035 mm. in diameter; occasional fragments of laticiferous vessels and parenchyma with yellowish-brown walls, or tracheæ with bordered pores, and rosette aggregates of calcium oxalate from 0.010 to 0.035 mm. in diameter, that occur in Jalap.

Pulvis Rhei Compositus.—No change in formula or directions. Added microscopic descriptions: A pinkish-white, mobile powder, becoming darker on exposure to air; consisting of fine particles of magnesium oxide, numerous starch grains and characteristic fragments of vegetable tissues; starch grains of Ginger, more or less elliptical or ovoid, frequently with a prominent beak, from 0.005 to 0.060 mm. in diameter; starch grains of rhubarb, single or compound either spherical or polygonal, often with a central cleft, from 0.002 to 0.020 mm. in diameter; mounts made with hydrated chloral T. S. show a strong effervescence and more clearly, the fragments of reticulate trachea, the reddish-brown parenchyma of rhubarb with numerous small starch grains or rosette-aggregates of calcium oxalate, varying from 0.050 to 0.100 mm. in diameter; with solutions of the alkalies many of the fragments become of a deep red color.

Suppositoria.—Added general directions: If the process of cold compression is preferred, mix the medicinal substance in a suitable mortar with about an equal weight of grated Oil of Theobroma, as above directed, then thoroughly incorporate it with the remainder of the Oil of Theobroma, previously finely grated, chilling the mortar, if necessary, to preserve the pulverulent form of the mixture. Insert the powdered mass into the cylinder of an appropriate suppository compresser and by the use of this apparatus prepare the desired number of compressed suppositories.

Suppositoria Glycerini.—No change in formula. Add to the directions that the dish in which the reaction occurs be thoroughly immersed in the boiling water of the bath with the contents protected as much as possible from the steam.