# PHARMACEUTICAL FORMULAS

PROPOSED FOR "BOOK OF UNOFFICIAL FORMULAS, A. PH. A."

The formulas heretofore published will be found in Volume I, JOURNAL A. PH. A., pp. 169, 366, 505, 637, 760 and 1307; Volume V, pp. 309, 422, 529, 631, 748, 862, 991 (see also p. 1129), 1126, 1265 and 1397; Volume VI, pp. 79, 194, 298, 393, 486, 563, 643, 729 and 823. See also Volume X, pp. 292, 382, 468, 534, 628; Volume XI, pp. 551, 624.

For list of committee members and committees see April issue, 1921, p. 292; also refer to Roster on p. X of this issue. Suggestions for formulas, and comments on those published are invited. They may be sent to a member of the Committee or to Chairman J. Leon Lascoff, 1223 Lexington Ave., New York, N. Y.

Contributed by Chairman J. Leon Lascoff.		No. 720.	
No. 715.		"OIL OF ZINC OXIDE."	
CAMPHORATED EMULSION OF ALMOND.		Zinc Oxide Olive Oil	$25.0 \\ 25.0$
Emulsum Amygdalæ Camphoratum.			20.0
Camphor	4.0	No. 721.	
Acacia	20.0	CREDE'S COLLARGOL PASTE.	
Alcohol	6.0	Collargol	5.0
Sugar	100.0	Starch	20.0
Emulsion of Almond	1000.0	Zinc Oxide	25.0
NY- 710		Lanolin	25.0
No. 716.	•	Yellow Petrolatum	25.0
CAMPHORATED TOOTHACHE DROPS.		No. 722.	
Camphor	10.0	LEAD ACETATE OINTMENT.	
Oil of Cajuput	20.0	(Improved Formula for Unguentum	Plumbi
Chloroform	40.0	Acetatis.)	
Oil of Clove	1.0	Lead Acetate	1,5
No. 717.		Water	5.0
FRECKLE LOTION.		Ointment	100.0
Zinc Sulphocarbolate	1.0	No. 723.	
Glycerin	20.0	MUCILAGE OF ALTHASA.	
Rose Water	70.0	Althæa	6.0
Alcohol	8.0	Cold Water	120.0
Perfumed Spirit, N. F	1.0	Add the sliced althæa to the war	ter, let
Spirit of Camphor	1.0	stand a quarter of an hour, then strain	without
No. 718.		pressing.	
EMULSION OF SULPHUR.		No. 724.	
(Emulsum Sulphuris.)		LAVENDER WATER.	
Precipitated Sulphur	10.0	Oil of Lavender	120.0
Water	10.0	Oil of Bergamot	30.0
Alcohol, 90%	10.0	Oil of Orange,	7.5
Glycerin		Oil of Neroli	<b>2</b> .0
Glycenn	5.0	Coumarin	2.0
No. 719.		Tincture Benzoin	30.0
BENZYL BENZOATE MIXTURE.		Water	500.0
(Special.)		Alcohol	4000.0
Benzyl Benzoate, 20% solution	0.6	No. 725.	
Acacia	0.3	DRENCH FOR COLIC.	
Compound Tincture of Cardamom,		(Veterinary.)	
Arom. Syrup of Eriodictyon of each	15.0	Ether	60.0
Emulsify the benzyl benzoate with the acacia		Castor Oil	500.0
and incorporate the other ingredients.		Mix and give all at one time.	300.0

No. 726.		No. 731.	
AROMATIC WATER.		HEADACHE COLOGNE.	
(Aqua Aromatica Spirituosa.)		(Spiritus Cephalicus.)	
Oil of Clove,		I.	
Oil of Cassia,		Perfumed Spirit, N. F	60.0
Oil of Lemon, of each	2.0	Acetic Ether	7.5
Oil of Fennel,		Stronger Ammonia Water	1.0
Oil of Lavender,		Oil of Peppermint	0.6
Oil of Mace, Oil of Peppermint,			
Oil of Rosemary,		No. 732.	
Oil of Sage, of each	1.0	II.	
Alcohol	600.0	Perfumed Spirit, N. F	50.0
Water, enough to make	1000.0	Menthol	2.0
Allow to stand three days; then	filter.		
No. 727.		No. 733.	
BRILLIANTINE.		III.	
I—Solid.		Menthol	10.0
Suet	100.0	Camphor	5.0
Spermaceti	50.0	Oil of Eucalyptus	<b>2</b> . <b>0</b>
Castor Oil	50.0	Oil of Clove drops	10.0
Oil of Bitter Almond.	1.5	Chloroform	2.5
Oil of Cloves	3.0	Oleo-Balsamic Mixture, N. F	50.0
Oil of Bergamot	6.0	No. 734.	
N. 700		SPIRIT OF SCURVY GRASS.	
No. 728. II—Semi-solid.		(Spiritus Cochleariæ.)	
		•	0.0
Olive Oil	100.0	Oil of Cochlearia	S.0 1000.0
Spermaceti	30.0	Alcohol	1000.0
Oil of Bergamot	$\frac{2.5}{3.0}$	No. 735.	
-	1.0	TINCTURE OF BIRCH TAR.	
	1.0		
Oil of Rose Geranium	1.0	(Tinctura Rusci.)	
No. 729.	1.0	(Tinetura Rusei.)	20.0
	1.0	Oil of Birch, empyreumatic	20.0
No. 729.	800.0	Oil of Birch, empyreumatic	20.0
No. 729. III—Liquid.		Oil of Birch, empyreumatic	20.0 30.0
No. 729. III—Liquid. Liquid Petrolatum Almond Oil. Chlorophyll	800.0 200.0 0.5	Oil of Birch, empyreumaticAlcohol, Ether,	
No. 729. III—Liquid. Liquid Petrolatum Almond Oil. Chlorophyll. Ionone, beta	800.0 200.0 0.5 3.0	Oil of Birch, empyreumaticAlcohol, Ether, Oil of Lavender, of each	
No. 729. III—Liquid. Liquid Petrolatum Almond Oil. Chlorophyll. Ionone, beta. Oil Santal	800.0 200.0 0.5 3.0 1.0	Oil of Birch, empyreumatic	30.0
No. 729. III—Liquid.  Liquid Petrolatum. Almond Oil. Chlorophyll. Ionone, beta. Oil Santal. Methyl-Heptin Carbonate.	800.0 200.0 0.5 3.0 1.0 0.1	Oil of Birch, empyreumatic	30.0
No. 729. III—Liquid. Liquid Petrolatum Almond Oil. Chlorophyll Ionone, beta Oil Santal Methyl-Heptin Carbonate Iroue	800.0 200.0 0.5 3.0 1.0 0.1 1.0	Oil of Birch, empyreumatic	30.0
No. 729. III—Liquid. Liquid Petrolatum Almond Oil. Chlorophyll. Ionone, beta. Oil Santal Methyl-Heptin Carbonate. Iroue. Oil Cananga, terpeneless.	800.0 200.0 0.5 3.0 1.0 0.1 1.0 2.0	Oil of Birch, empyreumatic	30.0 1.0 eer.
No. 729. III—Liquid. Liquid Petrolatum Almond Oil. Chlorophyll Ionone, beta Oil Santal Methyl-Heptin Carbonate Iroue	800.0 200.0 0.5 3.0 1.0 0.1 1.0 2.0 warmed	Oil of Birch, empyreumatic Alcohol, Ether, Oil of Lavender, of cach Oil of Rosemary, Oil of Rue, of each Mix; let stand one week and filt No. 736. COMPOUND CALAMINE OINTMENT. (Unguentum Calaminæ Compositur	30.0 1.0 eer. m.)
No. 729. III—Liquid.  Liquid Petrolatum Almond Oil. Chlorophyll. Ionone, beta Oil Santal Methyl-Heptin Carbonate Iroue Oil Cananga, terpeneless Rub down the chlorophyll in a	800.0 200.0 0.5 3.0 1.0 0.1 1.0 2.0 warmed	Oil of Birch, empyreumatic Alcohol, Ether, Oil of Lavender, of cach Oil of Rosemary, Oil of Rue, of each Mix; let stand one week and filt No. 736. COMPOUND CALAMINE OINTMENT (Unguentum Calaminæ Compositur Olive Oil.	30.0 1.0 eer. m.)
No. 729. III—Liquid.  Liquid Petrolatum Almond Oil Chlorophyll Ionone, beta Oil Santal Methyl-Heptin Carbonate Iroue Oil Cananga, terpeneless Rub down the chlorophyll in a mortar, with the fixed oil. Allow to	800.0 200.0 0.5 3.0 1.0 0.1 1.0 2.0 warmed	Oil of Birch, empyreumatic Alcohol, Ether, Oil of Lavender, of cach Oil of Rosemary, Oil of Rue, of each Mix; let stand one week and filt No. 736. COMPOUND CALAMINE OINTMENT (Unguentum Calaminæ Compositur Olive Oil. Yellow Wax	30.0 1.0 eer. m.)
No. 729. III—Liquid.  Liquid Petrolatum Almond Oil Chlorophyll Ionone, beta Oil Santal Methyl-Heptin Carbonate Irone Oil Cananga, terpeneless Rub down the chlorophyll in a mortar, with the fixed oil. Allow to pour off bright and add to the petr Mix in the perfumes.	800.0 200.0 0.5 3.0 1.0 0.1 1.0 2.0 warmed	Oil of Birch, empyreumatic Alcohol, Ether, Oil of Lavender, of cach Oil of Rosemary, Oil of Rue, of each Mix; let stand one week and filt  No. 736.  COMPOUND CALAMINE OINTMENT (Unguentum Calaminæ Compositur Olive Oil. Yellow Wax. Powdered Bolus, white	30.0 1.0 eer. m.)
No. 729. III—Liquid.  Liquid Petrolatum Almond Oil Chlorophyll Ionone, beta Oil Santal Methyl-Heptin Carbonate Iroue Oil Cananga, terpeneless Rub down the chlorophyll in a mortar, with the fixed oil. Allow to pour off bright and add to the petr Mix in the perfumes.  No. 730.	800.0 200.0 0.5 3.0 1.0 0.1 1.0 2.0 warmed	Oil of Birch, empyreumatic Alcohol, Ether, Oil of Lavender, of cach Oil of Rosemary, Oil of Rue, of each Mix; let stand one week and filt  No. 736.  COMPOUND CALAMINE OINTMENT (Unguentum Calaminæ Compositum Olive Oil. Yellow Wax. Powdered Bolus, white Calamine,	30.0 1.0 eer. (m.) 100.0 25.0
No. 729. III—Liquid.  Liquid Petrolatum Almond Oil Chlorophyll Ionone, beta Oil Santal Methyl-Heptin Carbonate Iroue Oil Cananga, terpeneless Rub down the chlorophyll in a mortar, with the fixed oil. Allow to pour off bright and add to the petr Mix in the perfumes.  No. 730. IV—Liquid.	800.0 200.0 0.5 3.0 1.0 0.1 1.0 2.0 warmed o settle, rolatum.	Oil of Birch, empyreumatic Alcohol, Ether, Oil of Lavender, of cach Oil of Rosemary, Oil of Rue, of each Mix; let stand one week and filt  No. 736.  COMPOUND CALAMINE OINTMENT (Unguentum Calaminæ Compositum Olive Oil. Yellow Wax. Powdered Bolus, white Calamine, Lead Oxide, of each.	30.0 1.0 eer. m.)
No. 729. III—Liquid.  Liquid Petrolatum Almond Oil Chlorophyll Ionone, beta Oil Santal Methyl-Heptin Carbonate Iroue Oil Cananga, terpeneless Rub down the chlorophyll in a mortar, with the fixed oil. Allow to pour off bright and add to the petr Mix in the perfumes.  No. 730. IV—Liquid.  Liquid Petrolatum	800.0 200.0 0.5 3.0 1.0 0.1 1.0 2.0 warmed o settle, colatum.	Oil of Birch, empyreumatic Alcohol, Ether, Oil of Lavender, of each Oil of Rosemary, Oil of Rue, of each Mix; let stand one week and filt No. 736. COMPOUND CALAMINE OINTMENT. (Unguentum Calaminæ Compositum Olive Oil Yellow Wax Powdered Bolus, white Calamine, Lead Oxide, of each Camphor	30.0 1.0 eer. m.) 100.0 25.0
No. 729. III—Liquid.  Liquid Petrolatum Almond Oil Chlorophyll Ionone, beta Oil Santal Methyl-Heptin Carbonate Iroue Oil Cananga, terpeneless Rub down the chlorophyll in a mortar, with the fixed oil. Allow to pour off bright and add to the petr Mix in the perfumes.  No. 730. IV—Liquid.  Liquid Petrolatum Oil Rose, synthetic.	800.0 200.0 0.5 3.0 1.0 0.1 1.0 2.0 warmed o settle, colatum.	Oil of Birch, empyreumatic Alcohol, Ether, Oil of Lavender, of each Oil of Rosemary, Oil of Rue, of each Mix; let stand one week and filt No. 736. COMPOUND CALAMINE OINTMENT. (Unguentum Calaminæ Compositum Olive Oil Yellow Wax Powdered Bolus, white Calamine, Lead Oxide, of each Camphor Melt the wax and incorporate with t	30.0 1.0 (er. m.) 100.0 25.0 1.0 (he olive
No. 729. III—Liquid.  Liquid Petrolatum Almond Oil Chlorophyll Ionone, beta Oil Santal Methyl-Heptin Carbonate Iroue Oil Cananga, terpeneless Rub down the chlorophyll in a mortar, with the fixed oil. Allow to pour off bright and add to the petr Mix in the perfumes.  No. 730. IV—Liquid.  Liquid Petrolatum	800.0 200.0 0.5 3.0 1.0 0.1 1.0 2.0 warmed o settle, colatum.	Oil of Birch, empyreumatic Alcohol, Ether, Oil of Lavender, of each Oil of Rosemary, Oil of Rue, of each Mix; let stand one week and filt No. 736. COMPOUND CALAMINE OINTMENT. (Unguentum Calaminæ Compositum Olive Oil Yellow Wax Powdered Bolus, white Calamine, Lead Oxide, of each Camphor	30.0 1.0 ter.  1.0 100.0 25.0 10.0 he olive the and

No. 737.		No. 743.	
STRONGER ICHTHYOL OINTMENT.		CAMPHORATED VINEGAR (Hager).	
(Unguentum Ichthyoli Fortior "Unna.")		(Acetum Camphoratum.)	
Ichthyol,		Camphor	10.0
Water, of each	10.0	Alcohol	90.0
Lanolin	30.0	Vinegar, enough to make	1000.0
No. 738.		No. 744.	
UNNA'S COOLING OINTMENT.		VINEGAR OF CANTHARIDES (Hager).	
(Unguentum Refrigerans, "Unna."	')	(Acetum Cantharidis.)	,
Lanolin,	,	Powdered Cantharides	60.0
Lard.		Powdered Euphorbium	10.0
Rose Water, of eachequal	narts	Vinegar	500.0
tiose water, or each equal	parts	Macerate and filter.	000,0
No. 739.			
HICCUP MIXTURE.		No. 745.	
Sodium Bicarbonate	16.0	CARMINATIVE WATER (Hager).	
Tincture of Nux Vomica	4.0	(Aqua Carminativa.)	
Spirit of Chloroform	8.0	Oil of Orange Peel,	
Tineture of Capsicum	4.0	Oil of Caraway,	
Compound Tincture of Gentian	150.0	Oil of Fennel,	
Dose: One teaspoonful.		Oil of Coriander,	
N - 740		Oil of Lemon Peel,	
No. 740.		Oil of Spearmint, of each	1.0
EMULSION OF CREOSOTE CARBONATE	<b>5.</b>	Alcohol	100.0
Creosote Carbonate	8.0	Chamomile Water	900.0
Acacia	12.0	No. 746.	
Expressed Oil of Almond	15.0	HALLER'S ACID ELIXIR.	
Peppermint Water, enough to make	100.0	(Mistura Sulphurica Acida, N. F.	III.)
No. 741.		Alcohol	750.0
EMULSION OF PETROLATUM WITH PH	ENOL-	Sulphuric Acid	250.0
PHTHALEIN.		No. 747.	
(Emulsio Petrolei cum Phenolphtha	leino.)	ELIXIR OF SALICYLIC ACID.	
Liquid Petrolatum	30.0	(Elixir Acidi Salicylici, N. F.	III.)
Acacia	8.0	Salicylic Acid	35.0
Tragacanth	1.3	Potassium Citrate	125.0
Spirit of Chloroform	2.5	Glycerin	500.0
Tincture of Lemon Peel	2.0	Aromatic Elixir, enough to make	1000.0
Elixir Saccharin	0.3		
Phenolphthalein	1.5	No. 748.	
Water, enough to make	100.0	MATHIOLIN'S ELIXIR OF LIFE	. ,
The same emulsion can be prepared		(Elixir Vitae, Matthiolin.)	
Agar-Agar by reducing the amount of	Acacia	Aromatic Water,	
and Tragacanth.		Cinnamon Water, of each	100.0
No. 742.		Oil of Nutmeg,	
		Oil of Fennel,	
EYEBROW POMADE.	100.0	Oil of Anise,	
Petrolatum	100.0	Oil of Peppermint, of each, drops	
Tincture of Cantharides	6.0	Sugar	24.0
Oil of Lavender	2.0	Tincture of Cinnamon	20.0
Oil of Rosemary	2.0	Aromatic Thicture, N. F	30. <b>0</b>

### UNITED STATES PHARMACOPŒIA.

#### TENTH REVISION.

ABSTRACT OF PROPOSED CHANGES WITH NEW STANDARDS AND DESCRIPTIONS.\*

#### PART VI.

#### INORGANIC CHEMICALS AND BIOLOGICAL PRODUCTS.

The Pharmacopoial Convention of 1920 recommended that abstracts of changes proposed for the U. S. P. X. 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 of the text do not necessarily represent that to be finally adopted and doses have not been appended.

Additional inorganic chemicals were published in Part I of the Abstracts and will be mailed upon request.

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

E. FULLERTON Cook,

636 South Franklin Square, Philadelphia, Pa.

#### INORGANIC CHEMICALS.

Acidum Hydriodicum Dilutum.-No material change.

Acidum Hydrochloricum.—No material change.

Acidum Hydrochloricum Dilutum.—No material change.

Acidum Hypophosphorosum.—No material change.

Acidum Phosphoricum.—Nitric acid test changed: "Mix 5 cc. of the dilution with an equal volume of ferrous sulphate T. S. and superimpose the mixture upon 3 cc. of sulphuric acid contained in a test tube. The zone of contact does not assume a brown or brownish red color (nitrate)."

Acidum Phosphoricum Dilutum.—Nitric acid test changed as in "Acidum Phosphoricum." Acidum Sulphuricum Aromaticum.—Specific gravity changed to "about 0.94 at 25° C."

Assay changed to read—"Transfer about 5 cc. of Aromatic Sulphuric Acid, accurately weighed, to a tall beaker. Add exactly 30 cc. of normal sodium hydroxide and evaporate the mixture to complete dryness on a sand bath. Dissolve the residue in 30 cc. of distilled water and titrate the excess of alkali with normal sulphuric acid, using methyl orange T. S. as indicator. Each cc. of normal sodium hydroxide corresponds to 0.049045 Gm. of H<sub>2</sub>SO<sub>4</sub>."

Alumen.—Identity test for Potassium Alum made more definite: "The addition of 10 cc. of sodium bitartrate T. S. to 5 cc. of a saturated aqueous solution of Potassium Alum produces within thirty minutes, a white, crystalline precipitate."

Alumen Exsiccatum.—No material change.

Ammonii Benzoas.—No material change.

Ammonii Bromidum.—Iodide test changed to: "Add a few drops of ferric chloride T. S. and 1 cc. of chloroform to 10 cc. of an aqueous solution of the salt (1 in 20) and shake the mixture. The chloroform does not acquire a violet tint (iodide)."

Ammonii Carbonas.—No material change.

Ammonii Salicylas.—No material change.

Aqua Destillata.—Process of manufacture omitted—No material change in tests.

Arseni Iodidum.—No material change.

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Barii Sulphas.—Barium Sulphate (BaSO<sub>4</sub>) freed from soluble barium salts.

In prescribing Barium Sulphate, to avoid confusion with the poisonous barium sulphide or sulphite the title should never be abbreviated.

Barium Sulphate is a fine, white, odorless, tasteless and relatively light powder, free from grittiness.

It is insoluble in water and organic solvents and in aqueous solutions of acids and alkalies. Mix 0.5 Gm. of Barium Sulphate with 2 Gm. each of anhydrous sodium carbonate and anhydrous potassium carbonate, heat the mixture in a crucible until fusion is complete, treat the resulting fused mass with hot distilled water, and filter. Acidulate a portion of the filtrate with hydrochloric acid, and add 1 cc. of barium chloride solution. A white precipitate forms (sulphate). Dissolve a portion of the well-washed residue in acetic acid and add 1 cc. of potassium chromate solution. A yellow precipitate forms (barium). Dissolve another portion of the well-washed residue in a small amount of hydrochloric acid, place a drop of the solution on the loop of a clean platinum wire, and ignite in a non-luminous flame. A green color is imparted to the flame (barium).

Boil 10 Gm. of Barium Sulphate with 100 cc. of 1 per cent. hydrochloric acid for ten minutes and add sufficient distilled water to restore the original volume. During boiling there should be no evolution of hydrogen sulphide recognizable by the darkening of lead acetate paper (sulphides). Cool the mixture and filter through a paper which has been washed previously with a mixture of 10 cc. of diluted hydrochloric acid and 90 cc. of distilled water, returning the first portions, if necessary, until a clear filtrate is obtained. Evaporate 50 cc. of the filtrate to dryness on a waterbath, add two drops of hydrochloric acid, and 10 cc. of hot distilled water, filter through an acid-washed filter, wash with 10 cc. of hot distilled water and evaporate the filtrate to dryness in a tared dish on the water-bath. The residue when dried to constant weight, at from 100° to 110° C., does not exceed 0.3 per cent. (limit of water-soluble and dilute acid-soluble non-volatile material). Treat the residue with 10 cc. of distilled water, filter the solution through a filter previously washed with 1 per cent. of hydrochloric acid and add 0.5 cc. of diluted sulphuric acid. No turbidity develops within one-half hour (soluble barium salts).

Boil 1 Gm. of Barium Sulphate with a mixture of 3 cc. of nitric acid and 5 cc. of distilled water during five minutes. Filter and add to the warm filtrate an equal volume of ammonium molybdate T. S. No yellow precipitate is formed (phosphate).

Digest 1 Gm. of Barium Sulphate with 20 cc. of distilled water during five minutes. The latter remains neutral to litmus paper (free acid or alkali).

Boil 5 Gm. of Barium Sulphate with 50 cc. of diluted acetic acid and filter while hot. The filtrate does not respond to the test for heavy metals (see Part II, Test No. —).

Triturate 2 Gm. of Barium Sulphate with 5 cc. of concentrated hydrochloric acid, and add 10 cc. of a freshly made, saturated solution of stannous chloride. No dark coloration occurs within one-half hour (arsenic).

Bismuthi Subcarbonas.—Alkalies and alkali earth limit raised from 0.003 to 0.005.

Bismuthi Subnitras.—Test for alkalies altered to: "Boil 1 Gm. of Bismuth Subnitrate with 20 cc. of a mixture of equal parts of acetic acid and distilled water and cool the solution. A clear solution results. Add 2 cc. of diluted hydrochloric acid, remove the bismuth by the addition of hydrogen sulphide, boil the mixture and filter. The latter filtrate leaves not more than 0.003 Gm. of residue on evaporation and gentle ignition (zinc, iron, alkali earth and alkalies)."

Test for chloride added. "One Gm. of the salt shows no more chloride than corresponds to 0.5 cc. of fiftieth-normal hydrochloric acid. (See turbidimetric test, page —.)"

Bismuthi Subsalicylas.—No material change.

Calcii Bromidum.—No material change.

Calcii Carbonas Praecipitatus.—Test for magnesium added. "After precipitating with ammonium oxalate T.S., filter. The filtrate, on evaporation and ignition, leaves not more than 0.004 Gm. of fixed residue (magnesium or alkalies)."

Test for heavy metals is omitted.

Test for soluble impurities omitted.

Calcii Glycerophosphas.—Added test—"Dry about 3 Gm. of Calcium Glycerophosphate to constant weight, at about 130° C., weigh accurately, dissolve in 250 cc. of distilled water and titrate first with half-normal sodium hydroxide, using phenolphthalein T. S. as indicator to a

slight pink color (added acids) and then titrate with half-normal hydrochloric acid, using methylorange as indicator to a slight, yet distinct pink. Each cc. of half-normal hydrochloric acid corresponds to 0.10508 Gm. of CaC<sub>3</sub>H<sub>7</sub>PO<sub>6</sub>."

Calx.—Test for magnesium and alkalies added.

Chromii Trioxidum.—No material change.

Creta Præparata.—No material change.

Ferri Sulphas Granulatus.-No material change.

Hydrargyri Chloridum Mite.—No material change.

Hydrargyri Iodidum Flavum.-No material change.

Hydrargyri Oxidum Flavum.-No material change.

Hydrargyrum cum Creta.—No material change.

Iodum.—Test for chloride and bromide changed as follows:

"Triturate 0.5 Gm. of Iodine with 20 cc. of distilled water and filter the solution. To half of this filtrate add, drop by drop, sulphurous acid (free of chloride), previously diluted with several volumes of distilled water, until the iodine color just disappears. Add 5 cc. of ammonia water, and follow with 5 cc. of silver nitrate T. S., adding it in small portions at a time. Filter and acidulate the filtrate with nitric acid. The turbidity produced is not greater than that produced in a control test made with the same quantities of reagents, to which 0.1 cc. of fiftieth-normal hydrochloric acid has been added, but omitting the addition of sulphurous acid (chloride or bromide)."

Liquor Acidi Arsenosi.-No material change.

Liquor Calcis.—Manufacturing directions changed to the following:

Water, a sufficient quantity.

Slake the calcium oxide by the addition of about 50 cc. of warm water. Transfer the mixture to a bottle having a capacity of about 4000 cc., and add 950 cc. of water. Agitate the mixture occasionally during half an hour, then allow it to settle and decant, and reject the clear liquid. To the residue add sufficient water to fill the bottle, agitate it thoroughly, stopper it and set it aside, in a cool place.

Pour off the clear liquid when required for use.

Liquor Ferri Chloridi.—Formula and manufacturing directions omitted. Nitrate test and salts of fixed alkali test changed and a test added for zinc, lead or copper as follows:

"Precipitate the iron completely from a weighed portion of about 4 cc. of the Solution, previously diluted with 100 cc. of distilled water, by adding an excess of ammonia T. S. The filtrate is colorless and one-half of the filtrate does not yield a precipitate with hydrogen sulphide T. S. (zinc, lead or copper).

The fixed residue obtained upon evaporation and ignition of the other half of the filtrate from the preceding test does not weigh more than 0.1 per cent. of the amount of Solution originally taken (salts of the fixed alkalies).

Mix 1 cc. of the Solution with 10 cc. of ferrous sulphate T. S. and superimpose upon 5 cc. of sulphuric acid contained in a test tube. The line of contact does not assume a brown or reddish brown color (nitrate)."

Liquor Ferri et Ammonii Acetatis.—Rubric given—"It contains Ammonium Acetate corresponding to not less than 0.6 per cent. nor more than 0.8 per cent. of ammonia (NH<sub>3</sub>) and not less than 0.16 per cent. nor more than 0.20 per cent. of Iron (Fe)."

Assay for ammonia—"Weigh accurately about 25 cc. Solution of Iron and Ammonium Acetate, transfer completely with the aid of distilled water to a distilling flask and add sufficient distilled water to make about 200 cc. Add 20 cc. of 20 per cent. sodium hydroxide solution and distil over about 150 cc. receiving the distillate in 40 cc. of half-normal sulphuric acid. Titrate the excess of acid with half-normal sodium hydroxide, using methyl orange T. S. as indicator. Each cc. of half-normal acid corresponds to 0.008515 Gm. of NH<sub>3</sub>."

Assay for iron—"Weigh accurately about 25 cc. of Solution of Iron and Ammonium Acetate and transfer it completely to a dish with the aid of a little distilled water. Evaporate to dryness and gently ignite. Heat the residue with 10 cc. of hydrochloric acid and when all of the iron has dissolved, add 10 cc. of solution of hydrogen dioxide and evaporate to dryness on a waterbath. Add 5 cc. of hydrochloric acid, warm until a solution is obtained and transfer the solution with the aid of about 30 cc. of distilled water to a glass-stoppered flask. Add about 2 Gm. of

potassium iodide, allow to stand for thirty minutes at about 40° C., cool and titrate the liberated iodine with tenth-normal sodium thiosulphate, using starch T. S. as indicator. Each cc. of tenth-normal sodium thiosulphate corresponds to 0.005584 Gm. of Fe."

Liquor Hydrogenii Dioxide.—No material change.

Liquor Iodi Compositus.—No material change.

Liquor Magnesii Citratis.—Citric Acid in the formula increased from 33 to 35 Gm. The calcium test changed to read: "Dilute 2 cc. of the Solution with distilled water to 45 cc., add 5 cc. of ammonium oxalate T. S. and mix well. The resulting turbidity, if any, is not greater than the turbidity in a control test made with 1 cc. of a solution prepared as follows: Dissolve 1 Gm. of official calcium carbonate, which has been dried at 200° C. to constant weight before weighing, in 1 cc. of acetic acid and 5 cc. of distilled water. Boil for about one minute and dilute with distilled water to 100 cc. (calcium)."

Assay added for minimum limits of free and total citric acid:

"Dilute 5 cc. of the Solution with 10 cc. of distilled water and titrate the liquid with half-normal sodium hydroxide, using phenolphthalein as indicator. Not less than 4.5 cc. of the alkali should be required for neutralization. Evaporate the neutralized liquid, transfer it after concentration to a porcelain crucible, evaporate it to dryness and proceed as directed under the assay for alkali salts of organic acids (Part II, Test No. —). Not less than 13.5 cc. of half-normal sulphuric acid should be consumed (minimum limits for free and total citric acid)."

Liquor Potassii Arsenitis.—No material change.

Liquor Potassii Citratis.-No material change.

Liquor Sodæ Chlorinatæ.—Manufacturing directions changed so that the clear filtrate is tested with sodium carbonate T.S., and if necessary more monohydrated sodium carbonate is added to the preparation.

Liquor Sodæ Chlorinatae Dilutus.—Carrel-Dakin Solution.

Diluted Solution of Chlorinated Soda is an aqueous solution of chlorine compounds of sodium containing not less than 0.45 per cent. nor more than 0.50 per cent. of available chlorine. Preserve the solution in well-stoppered bottles, preferably for not more than 7 days, in a cool place protected from light.

Chlorinated Lime	20 Gm.
Exsiccated Sodium Phosphate	20 Gm.
	<del></del>
Water, a sufficient quantity, to make	1000 cc.

Triturate the chlorinated lime with 400 cc. of water gradually added, until a uniform mixture results. Dissolve the exsiccated sodium phosphate in 400 cc. of water, heated to 50° C. and add this solution to the mixture of chlorinated lime. Shake the mixture thoroughly and allow it to stand for 15 minutes. Transfer the mixture gradually to a filter, returning the first portions of filtrate until it runs through clear, and when no more liquid drains from the filter, wash the precipitate with sufficient water to make the product measure 1000 cc.

Diluted Solution of Chlorinated Soda is a colorless or faintly yellow liquid, possessing a slight odor and conforming to the following requirements.

Add about 0.02 Gm. of powdered phenolphthalein to 20 cc. of Diluted Solution of Chlorinated Soda. No red color develops on agitation (excessive alkalinity).

Forcefully add about 0.5 cc. of phenolphthalein T. S. to 5 cc. of the Solution contained in a test tube. A red color should form and soon disappear (if there is no red flash, the *alkalinity* is too low).

Assay.—Add 50 cc. of distilled water to 25 cc. of the solution, accurately measured, followed by 1 Gm. of potassium iodide, and 5 cc. of acetic acid and titrate with tenth-normal sodium thiosulphate using starch T.S. as indicator. Each cc. of tenth-normal sodium thiosulphate corresponds to—Gm. of NaOCl.

Liquor Zinci Chloridi.—The formula is omitted. Tests not materially changed.

Magma Magnesiæ.—Rubric changed to read "yields not less than 7.0 per cent. of Mg-(OH)2."

Directions and formula changed.

Magnesium Sulphate 500 Gm.
Sodium Hydroxide 165 Gm.

Distilled water, a sufficient quantity, to make...... 1000 cc.

Dissolve the magnesium sulphate in sufficient distilled water to make 650 cc., place this in a vessel of about 5000 cc. capacity and heat to boiling. Dissolve the sodium hydroxide in sufficient distilled water to make 1000 cc., add this slowly to the boiling solution of magnesium sulphate and continue the boiling for thirty minutes. Transfer the mixture to a cylindrical container of not less than 5000 cc. capacity and fill with hot distilled water. Allow it to stand until separation has occurred and remove the supernatant liquid. Continue washing with hot distilled water until the sulphates are practically eliminated, as shown by testing 20 cc. of the supernatant liquid, acidulated with hydrochloric acid, with barium chloride T. S. Concentrate the Magma by evaporation until it contains 7 per cent. of magnesium hydroxide.

Magnesii Carbonas.—Test for iron changed to the following:

"Dissolve 2.5 Gm. of Magnesium Carbonate in 50 cc. of diluted hydrochloric acid and 200 cc. of distilled water. The solution is colorless. Transfer 50 cc. of this solution to a 50 cc. graduated, glass-stoppered cylinder and add 0.2 cc. of potassium ferrocyanide T. S. After mixing well, the color produced in the solution, if any, when viewed downward against a white surface is not greater than the color of a control solution prepared as follows:

"Dilute 0.2 cc. of ferric chloride T. S. with sufficient distilled water to make 1000 cc. Transfer 25 cc. of this solution to another 50 cc. graduated glass-stoppered cylinder, add 10 cc. of diluted hydrochloric acid and sufficient distilled water to make 50 cc. Then add 0.2 cc. of potassium ferrocyanide T. S. (The two cylinders used must be matched, be of practically colorless glass and have the same internal diameter) (iron)."

Magnesii Oxidum.—No material change.

Magnesii Oxidum Ponderosum.—No material change.

Magnesii Sulphas.-No material change.

Nitrogenii Monoxidum.—No material change.

Oxygenium.—Rubric changed from "not less than 95 per cent." to "not less than 98 per cent. by volume of O."

Added test—"Pass 2000 cc. of oxygen through 100 cc. of a freshly prepared starch—potassium iodide T. S. The color of the liquid is not changed (oxidizing substances)."

Phosphorus.—Chloroform solubility statement changed from "1 Gm. in 17 cc." to "1 Gm. in 40."

Plumbi Acetas.—No material change.

Potassii Chloras .-- No material change.

Potassii Bromidum.-No material change.

Potassii Iodidum.—Test for nitrate or nitrite added as follows:

"Add 5 cc. of potassium hydroxide T. S. and about 0.2 Gm. of aluminum wire to a solution of 1 Gm. of Potassium Iodide, in 5 cc. of distilled water, contained in a test tube of about 40 cc. capacity. Insert a pledget of purified cotton in the upper portion of the test tube, and place a piece of moistened red litmus paper over its mouth. On heating the tube and contents upon a water-bath for fifteen minutes, no blue coloration of the paper is discernible (nitrate or nitrite)."

Pulvis Effervescens Compositus.—No material change.

Sodii Acetas.—Limit of alkalinity required as follows:

"Dissolve 2 Gm. of Sodium Acetate in 20 cc. of distilled water and add 2 drops of phenolphthalein T. S. The pink color produced is discharged by the addition of 0.1 cc. of tenth-normal sulphuric acid (limit of alkalinity)."

Sodii Benzoas.—The precipitate formed upon the addition of sulphuric or hydrochloric acid to a concentrated aqueous solution of Sodium Benzoate must, after being thoroughly washed, conform to the test for purity given under *Acidum Benzoicum*.

Sodii Biphosphas.—It contains not less than 82 per cent. of anhydrous sodium phosphate (mono-sodium ortho-phosphate) corresponding to not less than 94 per cent. of the crystalline salt [NaH<sub>2</sub>PO<sub>4</sub>.H<sub>2</sub>O].

Large, colorless, transparent crystals or a white granular crystalline powder. It is odorless and slightly deliquescent.

It is freely soluble in water and practically insoluble in alcohol, chloroform and ether.

At 100° C. Sodium Biphosphate loses its water of hydration (13.04 per cent.) and at 210° C. it is converted into disodium dihydrogen pyrophosphate (Na<sub>2</sub>H<sub>2</sub>P<sub>2</sub>O<sub>7</sub>). At still higher temperatures it is changed into a mixture of sodium metaphosphate (Na<sub>2</sub>O<sub>3</sub>) and modifications of sodium metaphosphate.

An aqueous solution of Sodium Biphosphate is acid to litmus paper and effervescence results upon the addition of sodium carbonate. To a non-luminous flame it imparts a yellow color. Ammonium molybdate or silver nitrate T. S. produces in an aqueous solution of the salt (1 in 20) yellow precipitates which are soluble in ammonia water.

Dissolve 2 Gm. of Sodium Biphosphate in 40 cc. of distilled water and add 1 drop of methyl orange T. S. If the solution is pink it requires not more than 0.3 cc. of normal sodium hydroxide to discharge the pink color (*free acid*). If the solution is yellow, it requires not more than 0.3 cc. of normal sulphuric acid to render it pink (*disodium phosphate*).

An aqueous solution of the salt (1 in 20) does not become turbid when rendered slightly akaline to litmus paper with ammonia water (aluminum, calcium, etc.).

Dissolve 1 Gm. of the salt in 100 cc. of 1 per cent. hydrochloric acid. Ten cc. of this solution should not respond to the test for heavy metals (see Part II, Test No. —).

Dissolve 0.1 Gm. of the salt in 10 cc. of 10 per cent. sulphuric acid. The solution should not respond to the Test for arsenic (see Part II, Test No. ---).

One Gm. of Sodium Biphosphate shows no more *chloride* than 0.2 cc. of fiftieth-normal hydrochloric acid, and 0.2 Gm. shows no more *sulphate* than corresponds to 0.5 cc. of fiftieth-normal sulphuric acid (see turbidimetric tests, page —).

Dry about 2 Gm. of the salt, accurately weighed, for one hour at  $60^{\circ}$  C. and then raise the temperature to  $100^{\circ}$  C. and maintain that temperature until it ceases to lose weight. The loss in weight should not exceed fifteen per cent. (*limit of water*).

Assay.—Dissolve about 2 Gm. of the salt, accurately weighed, in 10 cc. of distilled water, add 10 cc. of a cold saturated solution of sodium chloride and titrate the solution with normal sodium hydroxide, using phenolphthalein as indicator. Each cc. of normal sodium hydroxide corresponds to 0.12006 Gm. of NaH<sub>2</sub>PO<sub>4</sub>.

Dissolve about 0.15 Gm. of the salt, accurately weighed, in 10 cc. of distilled water and neutralize the solution with normal sodium hydroxide (free from chloride), using phenolphthalein T. S. as indicator. Then add 50 cc. of tenth-normal silver nitrate and agitate the mixture well. Gradually add zinc oxide (p. —), in small portions until the mixture is neutral to litmus paper and then dilute the mixture to 100 cc. with distilled water and filter through a filter which has not been previously moistened. Reject the first 20 cc. of filtrate, collect 50 cc. of the subsequent filtrate, add 2 cc. of nitric acid and 2 cc. of ferric ammonium sulphate T. S. and titrate with tenth-normal potassium thiocyanate to the production of a permanent red tint. Each cc. of normal sodium hydroxide corresponds to 0.1200 Gm. of Na<sub>2</sub>HPO<sub>4</sub>; each cc. of tenth-normal silver nitrate corresponds to 0.004 Gm. of Na<sub>2</sub>HPO<sub>4</sub>.

Sodii Bromidum.—No material change.

Sodii Carbonas Monohydratus.—Rubric changed to read—

"It contains, when rendered anhydrous by gentle ignition, not less than 99.5 per cent. of  $Na_2CO_3$ ."

Moisture limit added—"Weigh accurately about 2 Gm. of Sodium Carbonate and heat to constant weight in a crucible at a low temperature. The loss does not exceed 15 per cent. (moisture)."

Sodii Chloridum.—No material change.

Sodii Iodidum.—Rubric directs the salt to be dried at 120° C. instead of 100° C.

Sodii Salicylas.—No material change.

Sodii Thiosulphas.—No material change.

Spiritus Aetheris Nitrosi.—The formula is omitted.

Added caution—"it is volatile and inflammable, and rapidly decomposes on exposure to light and air."

Spiritus Camphoræ.—Specific gravity added—"from 0.824 to 0.826 at 25° C."

Optical rotation added—"not less than 7.25°, in a 200 mm. tube at 25° C."

Spiritus Glycerylis Nitratis.—No material change.

Strontii Salicylas.—No material change.

Sulphur Lotum.—No material change.

Sulphur Præcipitatum.-No material change.

Sulphur Sublimatum.-No material change.

Syrupus Acidi Hydriodici.—Formula changed to a volumetric basis but with no change in strength.

Syrupus Ferri Iodidi.-No material change.

Tinctura Ferri Chloridi.—The requirement for aging is omitted.

Nitric acid test changed—"Mix 3 cc. of the Tincture with 10 cc. of ferrous sulphate T.S. and carefully pour this mixture upon 3 cc. of sulphurous acid contained in a test tube. The zone of contact does not assume a brown or reddish brown color (nitrate)."

Unguentum Hydrargyri.—Formula to be reported later.

Assay changed. "Mix about 1 Gm. of Mercurial Ointment, accurately weighed, in a suitable flask with 20 cc. of distilled water and 20 cc. of nitric acid, and warm the mixture gently until red fumes cease to be evolved and the solution is colorless. After cooling, add 100 cc. of distilled water and 2 cc. ferric ammonium sulphate T. S. and titrate with tenth-normal potassium thiocyanate until a permanent yellowish red color is produced. Each cc. of tenth-normal potassium thiocyanate corresponds to 0.01003 Gm. of Hg."

### Unguentum Hydrargyri Dilutum.—Formula changed-

Mercurial Ointment	600 Gm.
Petrolatum	200 Gm.
Ointment	200 Gm.
To make	1000 Gm.

Mix the ingredients thoroughly.

Assay similar to that under "Unguentum Hydrargyri."

Zinci Chloridum.—No material changed.

Zinci Oxidum.—Test for heavy metals omitted but a special test for copper and lead added as follows: "Add 2 Gm. of Zinc Oxide to 5 cc. of distilled water, and then add 25 cc. of diluted sulphuric acid and heat on a water-bath with constant stirring for five minutes. The resulting solution should be colorless and free from opalescence or turbidity (copper or lead)."

Add 2 Gm. of Zinc Oxide to 20 cc. of distilled water, and after stirring well, add 5 cc. of glacial acetic acid and warm upon a water-bath until solution is effected. The addition of 5 drops of potassium chromate T. S. produces no turbidity nor precipitate (lead).

Zinci Stearas.—No material change.

# BIOLOGICAL PRODUCTS.

Virus Vaccinicum.—Temperature caution altered—Smallpox Vaccine loses potency rapidly, even at moderate temperatures. It must therefore be kept at the lowest possible temperature, preferably well below 0° C., and never above 12° C.

Added test for animals, "Animals used for propagating Smallpox Vaccine must have been previously subjected to a tuberculin test."

The bacterial content of Smallpox Vaccine is also determined.

Serum Antidiphthericum.—deleted.

Serum Antidiphthericum Purificatum.—Potency—Changed from 250 antitoxic units per cc. to 350 units.

Temperature—It must be kept "between 4.5° C, and 20° C," instead of "between 4.5° and 15° C."

Color-of a faint brownish, yellowish or greenish color.

Cresol as a preservative is not to exceed 0.4 per cent.

Time limit for use—"This date is one year from date of issue from the manufacturing establishment if an excess of 20 per cent. over the minimum potency has been placed in the container, two years for a 30 per cent. excess, three years for a 40 per cent. excess, or four years for a 50 per cent. excess."

The label on the glass bottle, vial or syringe containing the antitoxin shall bear the lot number of the product.

Dose: Curative, 10,000 units—to be given intramuscularly, subcutaneously, or intravenously. Protective, 1000 units, to be given subcutaneously.

Serum Antidiphthericum Siccum—(deleted).

Serum Antitetanicum.—Potency—Changed from 100 units to 150 units per cc.

Temperature—To be kept between 0° and 15° C. instead of 4.5° and 15° C.

Cresol as a preservative is not to exceed 0.4 per cent.

Time limit for use-Same as for Serum Antidiphthericum Purificatum.

Inner label-Same as for Serum Antidiphthericum Purificatum.

Dose—Average dose for man: Protective, 1500 units, to be given subcutaneously. The concentrated product. Tetanus Antitoxin, should be used for the treatment of tetanus in man.

Average dose for horses: For treatment, 10,000 units, to be given intravenously. Protective, 500 units, to be given subcutaneously.

Serum Antitetanicum Purificatum.—Potency changed from 100 units to 300 units per cc.

Temperature, cresol content, time limit for use, and inner label the same as for Antitoxinum Diphthericum.

Dose—Average dose for man: For treatment, 10,000 units, to be given intraspinally, and 20,000 units to be given intravenously.

Protective, 1500 units, to be given subcutaneously.

Average dose for horses: For treatment, 10,000 units to be given intravenously.

Protective, 500 units to be given subcutaneously.

Serum Antitetanicum Siccum (deleted).

Aqua Destillata Sterilisata.—General directions changed—Transfer the necessary quantity of freshly distilled water, neutral to litmus paper, to containers of non-soluble glass, having a capacity of not over 1000 cc. each. Stopper the containers with pledgets of purified cotton, wrapped in gauze. Fasten stout, non-absorbent paper or tinfoil over the top of the pledget and the lip of the flask and sterilize in an autoclave, under steam pressure giving a temperature of 115° C. for thirty minutes.

If an autoclave is not available, close the mouth of the flask containing the water with a pledget of purified cotton wrapped in gauze, boil the contents actively for one hour and allow the water to cool without removing the cotton plug. Protect the mouth of the flask and the cotton pledget from infection through dust by wrapping the top of the flask tightly with paper.

Sterilized distilled water should be used within twenty-four hours after its distillation if it is to be employed for intravenous injection.

For other uses, it is preferable that the Water be resterilized after each opening and that it be used within a month after its preparation.

Liquor Sodii Chloridi Physiologicus.—General directions changed—Dissolve the sodium chloride in sufficient freshly distilled water, neutral to litmus, to measure 1000 cc. and filter, returning the filtrate until free from foreign particles. Then transfer the solution to a container of non-soluble glass, having a capacity of not over 1000 cc. and stopper with a plug of absorbent cotton, wrapped in gauze. Fasten stout, non-absorbent paper or tinfoil over the top of the plug and the lip of the container and sterilize in an autoclave under steam pressure, giving a temperature of 115° C., for thirty minutes. This solution should be used within twenty-four hours if it is to be employed for intravenous injection. For other uses, it is preferable that the solution be resterilized after each opening, and that it be used within a month after its preparation.

Chapter on Sterilization.—The revised chapter is given below:

## STERILIZATION.

The term "Sterilization" as employed in the practice of medicine and pharmacy means the destruction or removal of bacteria or their spores and other living organisms. This may be accomplished in various ways, depending upon the nature of the material to be sterilized.

A sterile condition can be maintained only so long as the substance or material is kept from contact with air or other media which may carry microörganisms.

The important subject of sterilization cannot be treated exhaustively, nor can the details of scientific technique be fully described in this chapter.

Two of the chief reasons for failure in attempted sterilization are (a) lack of penetration of the maximum degree of heat to all parts of the substances to be sterilized, due to insufficient

time, too close packing, or a source of heat not sufficiently powerful to secure and maintain the desired temperature throughout the entire contents of the sterilizer, and (b) in the case of moist sterilization, incomplete saturation of the materials and surfaces to be sterilized—temperatures necessary for dry sterilization are much higher than those needed for moist sterilization, so that if the steam is superheated or mixed with dry air, the sterilization may be insufficient.

Suggested methods for the sterilization of different classes of material are as follows:

Glass and Metal Utensils.—These may be sterilized by heating them at a temperature of 170° C. maintained for two hours in a hot-air sterilizing oven, or in a closed vessel (autoclave) under steam pressure at a temperature of 115° C. maintained for thirty minutes. In steam sterilization, thorough saturation may be provided by arranging the utensils in the sterilizer with unstoppered openings down, so that there will be no dead horizontal air spaces, or by the use of a preliminary vacuum to allow the steam to displace the air in all parts, or by insuring that all utensils contain at least one-eighth of one per cent. of their volume of water when placed in the autoclave. As the presence of even a minute quantity of alkali is objectionable in glass containers in certain cases, the process of sterilization should in such instances be preceded by a thorough cleansing of the bottle, ampule, or other receptacle with dilute hydrochloric acid, 1 per cent., followed by a thorough rinsing with distilled water; relatively insoluble glass should be used and sterilization should be by dry heat rather than by steam.

Cork stoppers should not be used for containers to be sterilized. Cotton stoppers may be employed, and when used may be wrapped in a layer of gauze and covered with stout paper or tinfoil as described under Aqua Destillata Sterilisata. Rubber stoppers should be wrapped and should be sterilized separately or attached to the outside of the necks of the containers. These stoppers should be long enough so that they may be inserted and removed without touching the lip of the container with the fingers. The sterilized wrapper of the stopper may be used as a cap. Glass-stoppered containers are sterilized preferably by dry heat, capped and with the stopper separated from tight contact with the neck of the container by a strip of paper.

The flame from a Bunsen burner applied directly to the surface for two seconds may be used for sterilizing surfaces which are not adversely affected by such application.

Heating in a current of steam for thirty minutes, or boiling for five minutes in water, or in an aqueous 0.1 per cent. solution of sodium bicarbonate (to prevent rusting), will kill all non-spore-bearing organisms and some spore-bearing organisms.

Articles Made from Rubber.—Rubber tubing and rubber stoppers should not be sterilized by hot air, but by steam under pressure, with the precautions indicated above, or by boiling for thirty minutes in a 2 per cent. aqueous solution of cresol or phenol.

Medicinal Substances—Not Easily Decomposed by Heat.—If watery, or in aqueous solution, these substances should be sterilized by steam under pressure, as described under "Glass and Metal Utensils." In order that the exposure to heat may be the shortest which will effect thorough sterilization, the container should not be of thick glass and should be of as small a capacity as can conveniently be used. The preliminary heating before the temperature of 115° C. is reached may be shortened by admitting the steam to the autoclave under pressure from a separate generating plant delivering a pressure constantly above eighteen pounds. The stoppers should be of purified cotton, as above described, and a wrapped rubber stopper should be attached to each container unless the contents are for immediate use.

If dry or oily, these substances should be sterilized by dry heat, preferably in glass-stoppered containers, as described under "Glass and Metal Utensils." Cap the utensil or container with parchment paper before sterilization for protection against contamination and do not remove the paper until the substance is to be used.

Medicinal Substances Readily Decomposed or Damaged by Heat.—Substances or solutions which are decomposed when subjected to heat as directed in the preceding section (this includes solutions of many alkaloids) may be prepared in an approximately sterile condition as directed below:

Method 1.—Filter the liquid through a sterilized stone or porcelain filter (which has previously been tested to prove its efficiency in removing bacteria) into a sterile container protected by a sterile cover. Sterile rubber or glass tubing may be used to connect the filter with the container.

Method 2.—Sterilize all utensils which will come in contact with the substance, such as

scales, pans or paper, spatulas, funnels, etc., either by steam followed by drying, or by hot air, or by the Bunsen flame. After weighing out the required amount of substance, dissolve it in the required amount of sterile distilled water in a sterile, glass-stoppered container. Should the solution require filtration, use a sterilized funnel and filter paper and collect the filtrate in a sterilized container, closing it with a sterilized rubber stopper. The filtration must be conducted in such a manner that no contamination will result.

Emulsions in Glycerin or Oil.—Approximately sterile solutions or emulsions in glycerin or oil may be prepared in the following manner: Heat glycerin or oil in flasks of thin glass containing not over 50 cc. each, for two hours at 120 to 130° C. in a dry-air sterilizer, then introduce the sterile or approximately sterile medicinal substances after the liquid has cooled. The desired medicament may be incorporated by triturating it with a sterilized pestle and mortar containing the previously sterilized medium (glycerin or oil) and the solution or emulsion should then be quickly transferred to a sterilized glass container.

Surgical Dressings.—Cotton, gauze and ligatures (except catgut and other absorbable material) may be rendered sterile by steam under pressure or by hot air under the conditions and precautions previously indicated. It should be remembered that all surgical materials are not amenable to such thorough treatment without more or less deterioration taking place. Surgical dressings must be wrapped and packed in such a manner as to permit the penetration of steam or dry heat and at the same time so as to prevent all subsequent contamination with bacteria when removed from the sterilizer. The wrappers should be so folded that the packages may be unwrapped at time of use without touching the contents.

# REPORT OF DELEGATES TO THE NATIONAL ANTI-NARCOTIC CONFERENCE HELD IN WASHINGTON, D. C., MAY 2-4, 1923.\*

Mr. President and Members of the American Pharmaceutical Association:

Your representatives at the Anti-Narcotic Conference held in Washington, D. C., May 2 to 4, 1923, beg to report as follows:

The Conference opened on May 2nd instead of the 3rd as announced in the invitations sent out. In spite of this, all sessions were fairly well attended. There were present delegates from all sections of the country. There was one from Seattle, one from Oregon, one from Texas, one from Oklahoma, one from Nebraska, one from Minnesota, one from Illinois, several from Michigan and quite a number from the States in the East and South. Quite a number of these delegates were appointed by the Governors of the States or by the heads of educational or social welfare organizations. Representatives from the national and local organizations already at work in this field and from the medical societies were not so numerous. The American Medical Association, for instance, was not officially represented, there being present only an observer. Officers from the various departments of the Federal Government interested in the subject were likewise present only as observers.

A peculiar thing about this affair, which immediately struck your representatives, was that no one was able to give any information as to who was responsible for sending out the call for the conference or who had originated the movement. The invitations sent out were so worded that many were led to believe that the Federal Government was the instigator, but this was found not to be the case. In fact none of the Federal officials mentioned in the invitations sent out made addresses or were even present. The matter was never brought up in any of the sessions and was therefore not settled to the satisfaction of your representatives. As far as we were able to determine, the movement was instigated and managed by a self-appointed secretary, who had in no way been identified with anti-narcotic work in the past, who apparently knew but little about actual conditions in this field of endeavor, and who was, therefore, hardly the proper person to assume the responsibility of a call of this nature.

Because of the uncertainty as to who was actually backing this move, its ultimate aims and purposes, and because our esteemed sister association, the American Medical Association,

<sup>\*</sup> Report received at Asheville meeting, A. Ph. A., 1923. See address of President Julius A. Koch.

was not officially represented, your representatives decided not to register as delegates or to pay the fee, but merely to act as observers. Subsequent developments appear to indicate that this was the best course to pursue and it is hoped that it meets with your approval.

The activities of the Conference may be briefly stated as follows: About six sessions were held-morning, afternoon and evening meetings being held. The greater portion of the time of all but two sessions was devoted to speech-making. Most of the delegates present appeared to desire to make a speech and they were given the opportunity to do so. A number of the speakers were fairly conversant with the narcotic situation and their talks were interesting and instructive. Many, however, if not most of them, had no intimate knowledge of the narcotic problem and merely gave voice to a desire to fight the evil. On the second day, a Committee on resolutions consisting of some twenty odd delegates was appointed. The resolutions presented, however, were formulated by only five or six of the members, no efforts apparently having been made to secure a full attendance of the Committee. In fact, our representative on the Committee was not even notified of the time or place of the meeting. These resolutions when presented were discussed at considerable length, but there was little prospect for any delegate opposed to them to successfully present his case, since the meetings were conducted without much regard to parliamentary procedure. The fact that no roll-call of official delegates was taken, but that all present were permitted to vote, is ample evidence of this. The resolutions finally adopted follow:

"Whereas, from the papers and discussions of the National Anti-Narcotic Conference it has been demonstrated that drug addiction is a distinct menace, and that it is increasing in extent, and

WHEREAS, all efforts made by municipal, state and federal authorities to cope with this evil have not been entirely successful, and

Whereas, there has been a tremendous increase in the manufacture throughout the world, of morphine, cocaine and their derivatives, far beyond the needs of medicine and science, and

WHEREAS, our experience shows that the young men and the young women are those most susceptible to this insidious addiction; therefore be it

Resolved, That this conference calls upon the pulpit, the press, and all educational and welfare organizations to realize the impending danger to the youth of the world; that all such forces join hands in suppressing this evil addiction and the fiendish traffic in soul-destroying narcotics; and that the evil effects of narcotics be taught in our schools; and

Resolved, That it is the sense of this conference that municipal ordinances, state and federal statutes, be enacted and strengthened; and with a greatly increased field force effectively administered; and

Resolved, That the President of the United States be commended for sending abroad a commission pursuant to the Porter Resolution, for the purpose of securing unified, world-wide action in ascertaining the world requirements of narcotics for medicine and science, and the specific agreement of all the nations be secured to limit the growth of the poppy and coca plants, and the manufacture of morphine, cocaine and their derivatives to the medical and scientific needs, and that all chemical laboratories in the world engaged or which may engage in the synthetic manufacture of heroin and cocaine be under individual government control, and that such product be labeled synthetic, the amount to be limited to the needs to be determined by such international agreement: and

Resolved, That this conference indorses the conclusion that medical and scientific use should be the only legitimate use of opium, and that all non-medical use should be regarded as an abuse, and that the use of opium as a stimulant cannot be considered legitimate even in tropical countries; and

Resolved. That in the opinion of this conference, if the Opium Advisory Committee sitting in Geneva reaches the conclusion that the Opium Convention of 1912 is not sufficiently adapted to meeting effectively the problem of restricting cultivation at its source, that convention should forthwith be amended; and

Resolved, That a copy of these resolutions be personally presented by Chairman Kober to Honorable Warren G. Harding, President of the United States; and

Resolved, That this conference be continued as a delegate organization after the close of its present sessions; and that Dr. George M. Kober be made the chairman, and that

Rexford L. Holmes be made secretary of the conference, and that Chairman Kober be empowered to appoint one person from each state represented at the conference, and five at large who, together with the chairman and secretary, shall be an executive committee to manage the necessary affairs of the organization until the next delegate meeting, said meeting to be subject to the call of the chair, which shall appoint the chairman and vice-chairman of the executive committee, no indebtedness to be incurred except with the consent of the committee. The executive committee shall have authority to add members for states hereafter desiring representation: and

Resolved, That it is the sense of the National Anti-Narcotic Conference assembled in Washington, that the seriousness of the narcotic menace justifies and emphatically requires the immediate, material increase of the appropriations available for the enforcement of the various narcotic laws by the federal anti-narcotics division of the United States government, and that copies of these resolutions be sent to members of the appropriate committees of both houses of Congress; and

Resolved, That the federal authorities should be requested to use all the agencies of the government appropriate for the purpose, to suppress the smuggling of habit-forming narcotics into this country, since these constitute most of the drug peddlers' supply; and

Resolved, That the permanent presiding officer of the conference appoint a committee of five to examine the laws and legislative enactments of the various states relating to the suppression and regulation of the narcotic drug evil in all of its phases, and cure of the addicts thereto and to develop and draft from said examination and investigation, proposed legislation which, after approval by the executive committee, shall be offered as uniform legislation thereon to all legislative bodies, the passage of which is to be urgently supported by the National Anti-Narcotic Conference and its state sister bodies; and

Resolved, That inasmuch as many regulations relating to narcotics are unavoidably a burden to legitimate practitioners and dealers, we respectfully urge that only such regulations be maintained as are absolutely necessary to prevent the evil aimed at; and

Resolved, That the federal enforcement of the narcotics laws and regulations be completely separated from the federal enforcement of prohibition laws and regulations."

Aside from the adoption of the foregoing resolutions, the only other accomplishment worthy of note was the formation of a permanent organization by making the Conference a delegate body and electing a chairman and an executive secretary. An executive committee was in turn appointed by the chairman and likewise a committee on principles and policies. The medical and pharmaceutical professions were given representation on both of these committees. It is understood that one of the first duties of the executive committee would be to formulate and put into operation plans for building up the Conference and financing its activities. Nothing has been learned with respect to what this committee has done, but there is no doubt in the minds of your representatives but that membership in the Conference can be obtained by the Association if it so desires. All that is necessary is to make application and pay the fee of \$15. In this connection, however, your representatives would advise the exercise of caution. Only recently propaganda has been started for the formation of a world league for the control of the production of narcotic drugs and there are those active in this movement who would even go so far as to suppress the use of these drugs in the practice of medicine. There were some present at the Conference who indicated by their utterances that they would support measures of the most extreme type. We should, therefore, be sure of the intents and purposes of any organization before becoming affiliated with it.

> (Signed) A. G. DUMEZ, E. G. EBERLE, E. F. KELLY,

### VIRGINIA BOARD OF PHARMACY.

Secretary A. L. I. Winne announces that the offices of the Virginia Board of Pharmacy are now located on the seventh floor of the New

State Office Building, a handsome two million dollar structure located on the Capitol grounds. Most of the state offices are now housed in the new building. The address of the Board is Room 712.