This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world’s books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that’s often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book’s long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ Make non-commercial use of the files We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ Refrain from automated querying Do not send automated queries of any sort to Google’s system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ Maintain attribution The Google “watermark” you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ Keep it legal Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can’t offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book’s appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google’s mission is to organize the world’s information and to make it universally accessible and useful. Google Book Search helps readers discover the world’s books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at [http://books.google.com/](http://books.google.com/)
GIFT OF
MISS HOGUE.
BOOKS

by

GEORGE P. PAUL, M. D.

Nursing in Acute Infectious Fevers
12mo of 275 pages, illustrated.
Cloth, $1.00 net. Third Edition

Materia Medica for Nurses
12mo of 295 pages. Cloth, $1.50 net. Third Edition
A TEXT-BOOK
OF
MATERIA MEDICA
FOR NURSES
INCLUDING THERAPEUTICS AND TOXICOLOGY

BY
GEORGE P. PAUL, M.D., C.P.H. (Harvard)
STATE DIRECTOR, INTERNATIONAL HEALTH BOARD, ROCKEFELLER FOUNDATION;
FORMERLY TOWN HEALTH OFFICER, ROUND LAKE, NEW YORK; SOMETIME
VISITING PHYSICIAN TO THE SAMARITAN HOSPITAL, TROY, NEW YORK

THIRD EDITION, THOROUGHLY REVISED

LANE LIBRARY
PHILADELPHIA AND LONDON
W. B. SAUNDERS COMPANY
1917
TO THE LATE

EVERARD D. JERGUSON, M.D.

Surgeon-in-Chief, Samaritan Hospital, Troy, N. Y.  Founder of the New York State Medical Association and, later, its President, Secretary, and Treasurer; Sometime Vice-President of the American Medical Association

IN ADMIRATION OF HIS GREAT TALENTS AND IN REMEMBRANCE OF MANY ACTS OF KINDNESS SHOWN TO THE AUTHOR THIS VOLUME IS GRATEFULLY INSCRIBED
PREFACE TO THE THIRD EDITION

The author undertakes the revision for the third edition of this volume with great pleasure. He feels that the necessity of a new edition signals the success of the former editions. If the present may prove as helpful to the nursing profession as the past printings, the author will reflect that his labor has not been in vain.

The whole text has been reviewed and alterations made as required. Considerable new material has been added. The drug strengths have been corrected to conform with the changes in the last United States Pharmacopoeia.

G. P. P.

Round Lake, New York,
July, 1917.
PREFACE

In the preparation and compilation of a book on this subject for the nurse many difficulties are encountered as to the knowledge to be incorporated in the text and that which should be omitted.

The author has essayed to use only such material as will be of aid to the reader, and has arranged the text in such a manner as he thinks will best meet the demands of the nurse.

The subject matter is arranged in six parts. Part I. consists of General Considerations, which will be found of great importance before beginning the study of the individual drugs. To Part II. special attention is directed. The drugs of this section are those of a recognized value. They are arranged alphabetically for convenience and, as the author believes, the proper way, as it is impossible to properly classify drugs according to their action, as the majority of drugs have several equally important actions. The physiologic action of the drug is arranged according to the action of the drug and not the organ acted upon, thus, with a glance, the full action of the drug may be seen. Another characteristic of the text is the section on Pre-toxic Signs or the warnings of the full action or the beginning toxic effects of the drug, which, if heeded, may prevent many cases of drug poisoning. It is
necessary that the nurse should know these signs. Under Administration, many useful points as to when and how drugs should be exhibited are given. Part III. includes drugs of minor importance, which, although not used as frequently as those discussed in Part II., are nevertheless worthy of consideration. Part IV. contains the newer preparations much employed by some physicians. Simple mixtures and combinations are not given place, only those of definite chemic union are considered. Part V. relates to practical therapeutic procedures, which will readily be seen to be of prime importance to the nurse. Part VI. includes tables of the percentage strengths of the official drug preparations; of common synonyms; of relative weights and measures.

In conclusion, the author wishes to state that he has been very painstaking in order that he might present this book to the nurse as a concise, accurate, and practical work, and that it might form a valuable and essential part of her equipment.

G. P. P.
 CONTENTS

PART I.—GENERAL CONSIDERATIONS............................. 11
Definitions, 11—Drug Constituents, 11—Drug Preparations,
12—Drug Actions, 14—Drug Administration, 21—Drug
Classification, 26.

PART II.—GENERAL MATERIA MEDICA, THERAPEUTICS, AND
TOXICOLOGY.................................................. 40

PART III.—DRUGS OF MINOR IMPORTANCE.................... 167

PART IV.—NEWER MEDICINAL AGENTS.......................... 180

PART V.—PRACTICAL THERAPEUTICS............................ 187
Hydrotherapy, 187—Hypodermic Medication, 194—Anti-
septics and Disinfectants, 196—Disinfection, 201—Topical
Medication, 205—Application of Ileat, 212—Rectal Alimentation and Medication, 215—Antitoxins, Serums, and
Bacterial Vaccines, 217—Small-pox Vaccine Virus, 226—
Therapeutics in Childhood and Infancy, 228—Diet Lists,
236—Pasteurized Milk, 241—The Rest Treatment, 242—
Massage, 246—Electrotherapeutics, 249—Disinfection of
Water, 252—Insecticides and Insect Repellents, 254.

PART VI.—ADDENDA............................................. 257
Strength of Drug Preparations, 257—Synonyms, 262—
Weights and Measures, 266—Solution Table, 267—
Thermometric Equivalents and Conversions, 267—Drug
Dosage Table, 268—Formulary, 274.

INDEX.............................................................. 277
PART I

GENERAL CONSIDERATIONS

DEFINITIONS

Materia Medica.—The science that treats of the source, preparation, and properties of agents used as medicines.

Therapeutics.—The science which treats of the application of remedial agents in the treatment of diseased conditions.

Toxicology.—The science which treats of poisons: their nature, detection, effects, and the prevention of their ill effects.

Pharmacopeia.—An authority on the strength, purity, selection, and preparation of medicinal agents.

DRUG CONSTITUENTS

Alkaloid.—A nitrogenous vegetable base, as a rule representing the active principle of a drug. They are generally insoluble in water, but soluble to varying extents in alcohol, ether, chloroform, and benzin. They form salts with acids which are generally soluble in water. The Latin termination of the name is ina and the English in; e. g., Morphina—Morphin.
Amaroid.—A bitter vegetable principle.

Glucosid.—A vegetable principle composed of glucose and some other substance. The Latin termination is inun and the English in; e.g., Digitalinum—Digitalin.

Stearopten.—A crystallized hydrocarbon deposited from volatile oils; e.g., Camphor and Menthol.

**DRUG PREPARATIONS**

The names of the various preparations are arranged as follows, first is the English name, then the Latin name, and then the Latin genitive form, which is the one most used in prescription writing:

Cerate. Ceratum. Cerati.—A preparation for external use whose base is wax, as Ceratum Camphorae or Camphor Cerate.

Decoction. Decoctum. Decocti.—A liquid preparation of a drug obtained by boiling the drug in water and then straining it, as Decoctum Taraxaci or Decoction of Dandelion.

Elixir. Elixir. Elixir.—A liquid preparation which is really a syrup containing much alcohol, as Elixir Phosphori or Elixir of Phosphorus.

Emulsion. Emulsum. Emulsi.—A liquid preparation in which an oily substance is held suspended in water by gum acacia, yolk of egg, or other agent, as Emulsum Olei Morrhuae or Emulsion of Cod-liver Oil.

Extract. Extractum. Extracti.—A solid preparation of a drug obtained by evaporating a solution of the drug, as Extractum Opii or Extract of Opium.

Fluidextract. Fluidextractum. Fluidextracti.—A liquid preparation of a drug, one minim of which is
equivalent to one grain of the drug, as Fluidextractum Aconiti or Fluidextract of Aconite.

Glyzerite. Glyceritum. Glyceriti.—A solution of a drug in glycerin, as Glyceritum Amyli or Glycerite of Starch.

Infusion. Infusum. Infusi.—An aqueous solution of a drug obtained by pouring boiling water on the drug and then allowing it to cool and strain, as Infusum Digitalis or Infusion of Digitalis.

Liniment. Linimentum. Linimenti.—A preparation for external use, consisting of strong drugs in an oily base, as Linimentum Belladonnae or Belladonna Liniment.

Mixture. Mistura. Misture.—A preparation in which a drug is held suspended in water by some viscid substance, as Mistura Cretæ or Chalk Mixture.

Mucilage. Mucilago. Mucilaginis.—A watery solution of a gum, as Mucilago Acaciae or Mucilage of Acacia.

Ointment. Unguentum. Unguenti.—A preparation of a drug incorporated with a fatty base and having a semi-solid consistence, as Unguentum Iodi or Iodin Ointment.

Oleate. Oleatum. Oleati.—A solution of a drug in oleic acid, as Oleatum Hydrargyri or Mercury Oleate.

Plaster. Emplastrum. Emplastri.—A preparation in which the drug is incorporated with some adhesive substance as resin, as Emplastrum Belladonnae or Belladonna Plaster.

Powder. Pulvis. Pulveris.—A finely powdered drug, as Pulvis Opii or Powder of Opium.

Solution. Liquor. Liquoris.—A watery solution
of non-volatile substances, as Liquor Ferri Chloridi or Solution of Iron Chlorid.

Spirit. Spiritus. Spiritus.—A solution of a volatile substance in alcohol, as Spiritus Ammoniæ or Spirit of Ammonia.

Suppositories. Suppositoria. Suppositorium.—Preparations whose base is cocoa butter, as Suppositoria Glycerini or Glycerin Suppositories.

Syrup. Syrups. Syrupi.—A preparation of a drug in a concentrated solution of sugar, as Syrups Rhei or Syrup of Rhubarb.

Tincture. Tinctura. Tincturæ.—An alcoholic solution of a non-volatile substance, as Tinctura Nucis Vomicae or Tincture of Nux Vomica.

Vinegar. Acetum. Aceti.—A solution of a drug in dilute acetic acid, as Acetum Scillæ or Vinegar of Squill.

Water. Aqua. Aquæ.—A solution of a volatile substance in water, as Aqua Chloroformi or Chloroform-water.

Wine. Vinum. Vini.—A solution of a drug in white wine, as Vinum Opii or Wine of Opium.

DRUG ACTIONS

Alterative.—A drug which modifies metabolism and overcomes morbid processes.

Analgesic.—A drug which when given internally relieves pain. Also known as a general anodyne.

Acetanilid Antipyrin Atropin
Bromids Caffein Camphor Monobromate
Codein Croton Choral Morphin
Opium Phenacetin Salicylates

Preparations
**Anaphrodisiac.—** A drug which depresses the sexual function.

Belladonna  Bromids  Camphor  
Camphor Monobromate  Chloral  Digitalis  
Hyoscin  Hyoscyamus  Lupulin  
Opium  Valerian  

**Anaesthetic.—** A drug producing local or general insensitivity.

**Local:**

Carbolic Acid  Cocain  Ether  
Ethyl Chlorid  Eucain  Holocain  
Menthol  

**General:**

Chloroform  Ether  Ethyl Bromid  
Nitrous Oxid  

**Anodyne, Local.—** A drug which when applied locally will relieve pain.

Aconite  Belladonna  Carbolic Acid  
Camphor  Chloroform  Guaiacol  
Ichthyol  Menthol  Opium  
Turpentine  Volatile Oils  

**Antacid.—** A drug rendering acid solutions alkaline or neutral.

Ammonia-water  Chalk  Lime-water  
Magnesia  Potassium Salts  Sodium Salts  

**Antihelmintic.—** A drug that expels intestinal worms.

Aspidium  Chenopodium  Kousso  
Male Fern  Pomegranate  Pumpkin Seeds  
Quassia  Santonin  Spigelia  
Turpentine
Anti-emetic.—A drug which arrests vomiting.
Bismuth Salts Bromids Cerium Oxalate
Cocain Creosote Menthol
Opium Prussic Acid

Antigalactagogue.—A drug which decreases or stops the flow of milk.
Belladonna Camphor Opium
Saline Purgatives

Antihydrotic.—A drug which diminishes the excretion of sweat.
Agaricin Atropin Belladonna
Camphoric Acid Gallic Acid Picrotoxin
Sulphuric Acid Tannic Acid

Antiperiodic.—A drug which prevents the periodic return of symptoms.
Arsenous Acid Picric Acid Quinin

Antipyretic.—A drug which reduces fever.
Acetanilid Aconite Antipyrin
Benzoic Acid Carbolic Acid Cinchona
Phenacetin Quinin Resorcin
Salicylates Veratum Viride

Antiseptic.—A drug which prevents the growth and development of bacteria.
Boric Acid Carbolic Acid Creolin
Creosote Formaldehyde Hydrogen Peroxid
Ichthylol Lysol Mercury Bichlorid
Potassium Silver Nitrate Thymol

Permanganate

Antisialagogue.—A drug which decreases the flow of saliva.
Atropin Belladonna Myrrh
Opium Potassium Chlorate
**DRUG ACTIONS**

**Antispasmodic.**—A drug which tends to overcome muscular spasm.

Amyl Nitrite  Atropin  Belladonna
Bromids  Camphor Monobromate  Chloral
Hyoscin  Hyoscyamus  Nitroglycerin
Opium  Valerian

**Aperient.**—A mild cathartic.

**Aphrodisiac.**—A drug which stimulates the sexual function.

Cantharides  Damiana  Nux Vomica
Phosphorus  Saw Palmetto  Strychnin

**Astringent.**—A drug which lessens secretions and discharges by contracting the tissues.

Acetic Acid  Bismuth Salts  Copper Salts
Gallic Acid  Hydrastis  Iron Salts
Lead Salts  Silver Nitrate  Tannic Acid
  Zinc Salts

**Cardiac Sedative.**—A drug which lessens the heart’s power and energy.

Aconite  Bromids  Gelsemium
Prussic Acid  Veratrum Viride

**Cardiac Stimulant.**—A drug which increases the action and power of the heart.

Adonis Vernalis  Ammonia  Atropin
Barium Chlorid  Belladonna  Cactus
Caffein  Convallaria  Digitalis
Ether  Nitroglycerin  Spartein
Strophanthus  Strychnin

**Carminative.**—A drug which aids in the expulsion of gas or flatus.

Calamus  Calumba  Cinchona
Gentian  Nux Vomica  Volatile Oils

2
Cathartic.—A drug which produces a positive evacuation of the bowels.

Chalybeate.—A drug which has iron as its principal constituent.

Cholagogue.—A drug which stimulates the flow of bile.

Aloes Ammonium Chlorid Benzoic Acid
Calomel Ox-gall Podophyllum
Sodium Choleate Sodium Salicylate

Counter-irritant.—A drug which stimulates the peripheral circulation in order to impress or effect distant tissues.

Acetic Acid Alcohol Ammonia
Cantharides Capsicum Croton Oil
Iodin Mustard Turpentine

Depilatory.—An agent for removing hair.

Diaphoretic.—A drug which increases the excretion of sweat.

Aconite Dover’s Powder Pilocarpin

Digestant.—A drug which has the power of digesting one or more forms of foodstuffs.

Amylopsin Diastase Hydrochloric Acid
Pancreatin Papain Pepsin

Disinfectant.—An agent which destroys germ life.

Carbolic Acid Chlorin Creolin
Formaldehyde Mercury Potassium
Bichlorid Permanganate

Diuretic.—A drug which increases urinary excretion.

Adonis Apocynum Arbutin
Caffein Convallaria Digitalis
Diuretin Juniper Nitroglycerin
Scoparius Squill Spirit of Nitrous Ether
**Eobolic.**—A drug which produces uterine contraction.

Ergot
Hydrastis
Parsley
Quinin
Savine

**Emetic.**—A drug which provokes vomiting.

Alum
Apomorphin
Copper Sulphate
Ipecac
Mustard
Tartar Emetic
Turpeth Mineral
Zinc Sulphate

**Emmenagogue.**—A drug which augments the menstrual flow.

Aloin
Apiol
Ergot
Guaiac
Iron Salts
Manganese Compounds
Pennyroyal
Savin
Tansy

**Epispastic.**—A drug which when applied to the external surface produces a blister.

Ammonia-water
Cantharides
Kerosene Oil

**Expectorant.**—A drug which increases the bronchial secretions.

Ammonium Salts
Antimony
Apomorphin
Ipecac
Licorice
Senega
Squill
Terpin Hydrate

**Galactagogue.**—A drug which increases the flow of milk.

Extract of Malt
Fluidextract of Castor Oil Leaves

**Hematinic.**—A drug which increases the hemoglobin of the blood.

Arsenic
Cod-liver Oil
Iron Compounds
Manganese Salts

**Hemostatic.**—A drug which arrests hemorrhage.

Adrenalin
Cotarnin
Ergot
Hydrastis
Witch Hazel
Hypnotic.—A drug which produces sleep which is more or less natural.

Bromids          Chloral          Chloralamid
Hyoscin          Opium           Paraldehyd
Sulfonal         Trional

Laxative.—A mild cathartic.
Cascara Sagrada  Glycerin        Manna
Senna            Sulphur         Sweet Oil

Mydriatic.—A drug which causes a dilatation of the pupil.
Atropin          Belladonna      Daturin
Homatropin       Hyoscin         Stramonium

Myotic.—A drug which causes a contraction of the pupil.
Eserin           Pilocarpin

Narotic.—A drug which is capable of producing depression and stupor.
Conium           Hyoscin         Stramonium

Oxytocic.—Same as Ecbolic.

Ptyalagogue.—A drug which increases the flow of saliva.

Acids            Alkalies         Mercury Compounds
Pilocarpin       Volatile Oils

Purgative.—A drug which produces a free evacuation of the bowels.
Colocynth        Elaterium       Gamboge
Jalap            Salines         Scammony

Rubefacient.—A drug which causes reddening of the skin when applied locally. (See Counter-irritants.)

Sedative, Nerve.—A drug producing quietness of nerve-centers.
DRUG ADMINISTRATION

Bromids  Camphor  Cimicifuga
Hyoscyamus  Lactucarium  Lupulin
Sumbul  Valerian

Sialagogue.—Same as Ptyalagogue.
Somnifacient.—Same as Hypnotic.
Soporific.—Same as Hypnotic.
Stomaehic.—A drug which stimulates the secretory
and motor power of the stomach.
Acids  Alkalies  Calumba
Cinchona  Gentian  Hydrastis
Nux Vomica  Quassia

Styptic.—A drug which locally checks hemorrhage.
Alum  Antipyrin  Copper Sulphate
Gallic Acid  Hydrogen Peroxid  Iron Salts
Tannic Acid

Sudorific.—Same as Diaphoretic.
Teniaicide.—A drug which destroys intestinal
worms. (See Anthelmintic.)

Vasoconstrictor.—A drug which causes a narrowing
of the blood-vessels.
Cotarnin  Digitalis  Ergot
Hydrastis  Suprarenal Substance

Vasodilator.—A drug producing vascular relaxation.
Amyl Nitrite  Nitrites  Nitroglycerin

Vesicant.—Same as Epispastic.

DRUG ADMINISTRATION

When to Administer Drugs.

Bitters and drugs to stimulate the appetite should
always be given before meals.

Alkalies given to increase the flow of gastric juice
should be administered before the meal. If given to neutralize the acidity of the gastric juice the proper time is after the meal.

*Acids* given to reinforce the natural hydrochloric acid should be administered one-half to one hour after the meal.

Such drugs as *mercury, arsenic, iron, iodids*, and *bromids* should not be given when the stomach is empty, but one-half to one hour after meals.

*Silver nitrate*, when used in the treatment of gastric ulcer, should only be given when the stomach is empty.

*Laxatives* that are slow in action are to be administered at night, and the more rapid-acting cathartics are best given the first thing in the morning.

*Hypnotics* are given in the evening before the hour of sleep. When they are given depends on the activity of the drug. Some hypnotics act in half an hour, others not for two or three hours.

Slowly acting drugs, as *digitalis*, should be administered at long intervals, and rapidly acting drugs, as *nitroglycerin* and *ammonia*, at very short intervals.

**How to Administer Drugs.**

It might be said as a general rule that all liquid preparations should be diluted with water before administering.

*Iodids* and *bromids* should never be given in dry form, powder or tablet, but should be dissolved in water and well diluted.

The *mineral acids* and the tincture of iron chlorid should be taken through a glass tube and well diluted.
The acids corrode the enamel of the teeth and the iron discolors them.

_Saline cathartics_ if given simply to unload the bowels may be diluted, but when given to aid in the removal of fluid accumulations they should be administered in a concentrated form and very little water given to the patient until the salts have acted well.

In giving _bromids_ to epileptic patients, the use of common salt in the diet should be reduced to a minimum in order to facilitate the maximum action of the bromids.

_Arsenic_ given to patients taking bromids will prevent to a great extent the development of the eruption which so often follows the continuous use of the bromids.

_Ergot_ or the bromids may prevent the occurrence of the ear and head symptoms of cinchonism if they are given in conjunction with the quinin.

_Ill-tasting drugs_ should be given in capsules or konseals.

**Methods of Administering Drugs.**

_By Mouth._—This is the most common of all the methods, and is the best except when very rapid results are desired.

_Subcutaneously._—This method is very frequently used when rapid action is wished or when the stomach destroys the virtue of drugs given by mouth. (See Part V.)

_By Rectum._—This method is employed when it is impossible to administer drugs by mouth, as in persistent vomiting, semi-consciousness, delirium, certain
diseases of the stomach, and when drugs by the mouth cause vomiting. Ill-tasting drugs may often be given to advantage by this method. Drugs used for local action on the rectum, bladder, and prostate gland must be applied this way.

By Inunction.—This consists of applying preparations, generally ointments or oily combinations, to the skin and rubbing them in. It is used much as a means of applying mercury (blue mass) in syphilis.

Endermically.—This method is used but little, if at all, at present. It is the application of drugs to the broken skin. A blister is raised and under the elevated epidermis the drug is placed.

Intravascularly.—This is another of the less-used methods. The drug in a soluble form is introduced into a vein. It is employed to a limited extent in administering certain mercury preparations in the treatment of syphilis.

Inhalation.—A much-used method of administering certain remedies in diseases of the respiratory tract.

Fumigation.—This consists of applying easily volatilized drugs by allowing the vapors of the same to come in contact with the skin of the patient. The body of the patient, excepting the head, is enclosed by a tent prepared by wrapping a sheet loosely about the patient. Underneath the tent a lamp and vessel containing the medicament is placed and the vapors allowed to collect under the tent in contact with the patient’s body. There is danger of burning the patient, and in order to obviate this the vapor may be conducted to the tent by a tube from the vaporizer, which is placed some distance from the patient.
Cataphoresis.—This method consists of applying drugs to the skin, as in inunction, and then driving the medicament in by the application of an electric current.

How Much to Administer.

The size and frequency of a dose of medicine administered depends on many conditions.

Age.—The amount of drug given to elderly people and children differs from that for adults. Children bear certain drugs well and these may be given in very moderate doses, as belladonna; whereas other drugs, as opium, are borne very poorly by the young. To determine the dosage employed in administering drugs to children several methods have been advocated. Young says: “Add 12 to the age of the child and divide the age by this sum. For example: If the child be 3 years old; 3 plus 12 equals 15, and the age 3, divided by 15, is \( \frac{1}{5} \) of the adult dose.” Cowling advises: “Divide the next birthday by 24.” This would make the dose for a child of 3 years \( \frac{3}{4} \), or \( \frac{1}{5} \) of the adult dose. The dose of a drug for a person over sixty years of age should be less than the adult dose.

Habituation.—The system gradually becomes accustomed to any drug taken for a protracted time, therefore it is often necessary to give a larger dose than usual to affect the system with that drug, as in giving whisky to alcoholics and opium to morphin fiends.

Administration.—Larger doses of the drug are to be given by mouth or rectum than by hypodermic.

Disease.—The character of the disease affects the dosage of the drug. Patients suffering from peritonitis
can stand larger doses of morphin than otherwise. Digitalis does not affect the heart-rate as readily when the fever is high.

Absorption and Excretion.—Drugs which are absorbed and eliminated rapidly may be given more frequently, as the nitrites, preparations of ammonia, ether, and alcohol. Drugs which accumulate in the system should be given at longer intervals, as digitalis and arsenic.

Condition of the Patient. — Neurotic individuals respond to small doses of drugs, especially if some suggestion has been given. On the other hand, persons with great mental excitement, as maniacs and insane patients, require enormous doses of sedative drugs, as opium and hyoscin, to quiet them.

DRUG CLASSIFICATION

The classification of drugs is arbitrary. There is no hard and fast rule by which medicinal agents may be classed or grouped. In the following classification the author has followed no prescribed course, but has arranged the drugs as seems to him simple and concise. The drugs are grouped first according to the major anatomic system upon which they act; and then subdivided according to the organ or function which they principally affect.

Drugs Acting on the Respiratory System

Under this system we will consider only two classes of drugs: Those acting on the bronchial secretions, known as expectorants, and those acting on the respiratory function and called respiratory stimulants.

Expectorants.—An expectorant, as has been pre-
viously noted, is a drug which increases or modifies the bronchial mucous secretion.

The pathology of bronchitis, laryngitis, etc., teaches us that in the first stage the mucous membrane is greatly reddened by vascular congestion and that the secretion is greatly decreased and tenacious, giving the lining of the larynx and bronchi a dry appearance, and, as the disease progresses, the excretion of mucus is increased.

From the description of the pathology of bronchitis it is easily seen that the treatment of the two stages differs. The drugs used as expectorants are divided into two classes: the sedative and the stimulating. The former are used in the early stage of bronchitis and the latter in the last stage.

The sedative expectorants are:

Ammonium Chlorid     Antimony and
Apomorphin           Potassium Tartrate
Ipecac                Licorice       Senega

The stimulating expectorants are:

Benzoin              Creosote       Cubebs
Eucalyptus           Squill         Terpin Hydrate

Respiratory Stimulants.—As the name indicates, these drugs increase the action of the respiratory process. These drugs, as a rule, are stimulants in general, and do not act specifically on the respiratory apparatus. As is commonly known, the respiratory system is seldom depressed without corresponding depression of other vital functions, as the circulatory. It will be appreciated that drugs which stimulate the one function, as a rule, stimulate the other.

Alcohol              Ammonia        Ammonium Carbonate
Atropin              Ether          Strychnin
Drugs Acting on the Circulatory System

The drugs of this class will be considered in four divisions: Heart stimulants, heart sedatives, vasoconstrictors, and vasodilators.

Heart Stimulants.—These drugs increase the power of the heart by augmenting the rate or increasing the force of the heart. If, for instance, the heart does a certain amount of work by contracting 72 times per minute, it will do more work by contracting 90 times per minute, provided the contraction was equal in force or even five-sixths as forcible; or if the contractions number only 60 per minute and the force is increased sufficiently, the power of the heart will be greater.

Some drugs, as digitalis and strophanthus, increase the power of the heart by increasing its force but lessening its rate. Other drugs, as ammonia, alcohol, ether, and strychnin, increase both the rate and force of the heart.

The principal heart stimulants are:

<table>
<thead>
<tr>
<th>Adonis Vernalis</th>
<th>Alcohol</th>
<th>Ammonia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barium Chlorid</td>
<td>Belladonna</td>
<td>Cactus</td>
</tr>
<tr>
<td>Caffein</td>
<td>Camphor</td>
<td>Convallaria</td>
</tr>
<tr>
<td>Digitalis</td>
<td>Ether</td>
<td>Nux Vomica</td>
</tr>
<tr>
<td>Spartein</td>
<td>Squill</td>
<td>Strophanthus</td>
</tr>
</tbody>
</table>

Heart Sedatives.—These drugs decrease the power, force, and rate of the heart, and in excessive doses are heart depressants, increasing the rate but decreasing the power of the heart. The principal heart sedatives are:

<table>
<thead>
<tr>
<th>Aconite</th>
<th>Bromids</th>
<th>Tartar Emetic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Veratum Viride</td>
<td></td>
</tr>
</tbody>
</table>
**Vasoconstrictors.**—These drugs cause the blood-vessels to become smaller in caliber. By contracting the vessels they place a greater strain on the heart and raise the blood-pressure in the vessels. They act by affecting the centers in the brain or by influencing the nerve filaments in the vessel walls.

Acetanilid Belladonna Cotarnin
Digitalis Ergot Suprarenal Extract

**Vasodilators.**—These drugs produce a relaxation of the vessel walls and lower the blood-pressure, relieving the heart of considerable work.

Amyl Nitrite Nitrites Nitroglycerin

**Drugs Acting on the Alimentary System**

The alimentary system is very extensive and is composed of many organs, hence it is natural to suppose that drugs acting on this system should be divided into many groups.

The classes to be considered are: Stomachics, digestives, emetics, anti-emetics, cathartics, antiseptics, astringents, and anthelmintics.

**Stomachics.**—These drugs increase the motor power of the stomach, stimulate the flow of the juices, sharpen the appetite, and bring about a general tonic effect. The drugs, as a rule, are bitters or of the volatile-oil type. Those of the latter class act as carminatives and assist in expelling gas or flatus from the stomach.

Absinth Alcohol Calamus
Calumba Capsicum Cinchona
Gentian Ginger Hydrastis
Nux Vomica Quassia Rhubarb
Digestives.—These drugs are divided into two classes, according to their origin, animal and vegetable.

The animal are:

Ingluvin Pancreatin Pepsin

The vegetable are:

Bromelin Diastase Papain

Emetics.—These drugs produce vomiting. Their uses are several: To empty the stomach when it is overloaded or contains irritating or poisonous material; to aid in expelling mucus or other substances from the upper respiratory tract; to relax muscular spasm of the respiratory tract, as in asthma and croup. Emetics act either locally on the stomach or centrally in the brain.

Apomorphin Ipecac Mustard
Tartar Emetic Zinc Sulphate

Anti-emetics.—These drugs oppose the emetics and act as gastric sedatives.

Cerium Oxalate Bismuth Preparations Magnesia
Prussic Acid

Cathartics.—In this class are many drugs, and they should be subdivided into several groups, depending on their action.

Cathartics are used to cure constipation, to unload the bowels, to remove water from the system, and to affect distant tissues.

As a cure for constipation, those drugs whose action is followed by constipation should not be employed, for the result we wish to attain is thus defeated. Such drugs as cascara and sodium phosphate, which have a tonic action on the bowels, are of service.

In diseases accompanied by the collection of fluids
in the tissues, cathartics which produce copious watery movements are of great value. These cathartics are known as the hydragogue purgatives, and are represented by salines, jalap, and mercury.

In diseases of the acute inflammatory type, it is often useful to administer drugs which irritate the intestinal tract, thus drawing blood from the affected parts. Such drugs as croton oil and scammony are typical.

Cathartics may be classed as follows:

Simple laxatives, or those drugs which produce a slight movement of the bowels.
Cassia Fistula Cascara Sagrada Glycerin
Licorice Manna Prune
Senna

Purgatives, or those which produce more copious bowel movements.
Aloes Calomel Castor Oil
Podophyllum Rhubarb

Drastic purgatives are very vigorous-acting drugs. They produce marked irritation and excessive bowel movements.
Colocynth Croton Oil Elaterium
Gamboge Jalap Scammony

Saline cathartics are:
Magnesium Sulphate Potassium Bitartrate (Cream of (Epsom salt) Tartar)
Sodium Phosphate Sodium Sulphate (Glauber salt)
Sodium and Potassium Tartrate (Rochelle salt)

Cholagogue purgatives increase the secretion of bile.
Calomel Ox-gall Podophyllum

Intestinal Antiseptics.—These drugs tend to over-
come fermentation and bacterial processes in the intestinal canal.

**Creosote**  **Guaiacol**  **Naphtol**
**Ox-gall**  **Sulphocarbolates**  **Thymol**

**Intestinal Astringents.**—These drugs check the flow of intestinal juices, decrease the motor power to some extent, and are useful in overcoming diarrheal conditions.

**Alum**  **Chalk**  **Catechu**
**Gallic Acid**  **Kino**  **Sulphuric Acid**
**Tannic Acid**  **Zinc Sulphate**

**Anthelmintics.**—These agents are divided into three classes, depending on the parasite on which they especially act.

**On the Tapeworm:**
**Aspidium**  **Cusso**  **Pomegranate**
**Pumpkin Seed**  **Thymol**

**On the Round-worm:**
**Aloes**  **Santonin**  **Spigelia**
**Turpentine**

**On the Pin- or Seat-worm:**
**Quassia**  **Salicylic Acid**  **Salt**

**Drugs Acting on the Nervous System**

This class includes drugs acting on the nervous tissues, whether brain, cord, or peripheral nerves.

**Anesthetics.**—These drugs produce insensibility, either by their action on the brain center; or locally. These agents are principally used by the surgeon, but are also employed by the physician in overcoming spasms, convulsions, epileptic and eclamptic seizures, and for the relief of intense pain.
DRUG CLASSIFICATION

The principal general anesthetics are:
Chloroform  Ether  Nitrous Oxid

The local anesthetics are:
Cocain  Ethyl Chlorid  Eucain

Hypnotics.—
Bromids  Chlortal Hydrate  Chloraclid
Hyoscin  Opium  Sulfonal
              Trional

Nerve Sedatives.—Under this heading are included drugs which are commonly known as antispasmodics, and such as are generally called motor depressants.
Asafetida  Bromids  Bromoform
Camphor  Camphor  Cannabis Indica
              Monobromate
Gelsemium  Hops  Hyoscyamus
Musk  Physostigma  Stramonium
              Valerian

Analgesics.—These drugs are given internally for the relief of pain. It is well to note that nearly all members of this class are more or less depressing to the cardiac function and should be used with caution, especially those of the coal-tar series, and should be reinforced by stimulants.
Acetanilid  Aconite  Ammonium
              Chlorid
Antipyrin  Belladonna  Camphor
              Monobromate
Cannabis Indica  Cimicifuga  Colchicum
Gelsemium  Oil of Gaultheria  Opium
Phenacetin  Salicylates
Drugs Acting on the Nervous Mechanism of the Eye.—

_Mydriatics:_
Belladonna  Cocain  Homatropin

_Myotics:_
Physostigmin or Eserin  Pilocarpin

Drugs Acting on the Urinary Tract

The drugs of this class are divided into three groups: The _diuretics_, or those increasing the flow of urine; the _antiseptics_, or those which render the urine more or less antiseptic; the _stimulants_, which form an indeterminate group and comprise those drugs which act especially on the mucous membrane of the bladder and lower urinary tract, which is stimulated slightly by these drugs during their excretion.

_Diuretics._—These are best studied in three groups, depending on their mode of action. Some of the drugs act directly on the kidney tissue and are known as the _stimulating diuretics_:

Juniper  Cantharides  Turpentine  Uva Ursi

The second class of diuretics produces an increase of urine by altering the blood supply of the kidney. They may be cardiac stimulants, thus increasing the amount of blood to the kidney; they may act on the general vascular system, increasing the tension and thereby increase the blood in the kidneys; or they may simply dilate the renal vessels. These drugs, for want of better nomenclature, will be designated as _systemic diuretics_:

Adonis Vernalis  Caffein  Calomel  Convallaria  
Digitalis  Scoparius  Squill  Strophanthus
DRUG CLASSIFICATION

The third group consists of drugs derived principally from the saline division. These render the urine bland, and thus tend to increase the flow of this excretion.

Lithium       Lithium Citrate       Potassium Acetate
Carbonate     Potassium Nitrate      Sodium Acetate
Potassium Citrate
Sodium Citrate Strontium Salts

Diuretics are used for several purposes: To increase the urinary flow in diseases in which it is partially suppressed, to remove abnormal collections of fluid, as in effusive pleurisy, pericarditis or peritonitis, etc., and to increase the excretion of poisons and toxins in uremia, eclampsia, and toxemia.

**Urinary Antiseptics.**—The drugs of this class are excreted in the urine and thus tend to render this fluid feebly antiseptic, either by their own virtue or by products formed from these drugs while in the system.

Benzoates       Benzoic Acid       Boric Acid
Methylene-blue  Sandalwood        Urotropin

**Urinary Stimulants.**—This is an arbitrary class, but comprises those drugs which, when excreted in the urine, lessen its irritation, act as stimulants to the mucous membrane of the bladder and urethra, and may act as sedatives.

These drugs are not used for the purpose of stimulating the flow of urine, but for their local action on the lower urinary tract.

Boric Acid       Buchu              Copaiba
Cubebs           Hyoscyamus        Sandalwood
Triticum         Turpentine        Uva Ursi
                  Zea Mays
Drugs Acting on the Genital Tract

The drugs of this class will be considered in two groups: Those acting on the menstrual function and those affecting the uterine musculature.

Emmenagogues cause the menstrual flow to become normal in amount, when for any reason it is pathologically absent or decreased in quantity. These drugs are of uncertain action. They act on the genital organs primarily or produce results by influencing the general system.

The former type is represented by:

- Apoil
- Manganese
- Pennyroyal
- Rue
- Savin
- Tansy

The latter type by:

- Aloes
- Cathartics
- Cod-liver Oil
- Iron Preparations
- Strychnin

Uterine Stimulants.—Included in this group are those drugs acting on the uterine muscles, causing their contraction. They are used after labor to aid the uterus in becoming firm and small.

- Cotton-root Bark
- Ergot
- Hydrastis

Drugs Affecting Metabolism

This class is more or less ill defined and includes those drugs which aid in building up tissues and fluids of the body or help the system to overcome morbid processes. These drugs are called alteratives.

- Arsenic Compounds
- Colchicum
- Iodids
- Manganese Compounds
- Phosphorus Compounds

- Cod-liver Oil
- Ichthyol
- Iron Preparations
- Mercurials
- Thyroid Extract
**DRUG CLASSIFICATION**

**Drugs Acting on the Heat Mechanism**

The drugs considered in this section are those which reduce the temperature, and are called *antipyretics*. Their action is accomplished by increasing the dissipation of heat or decreasing heat production.

- Acetanilid
- Aconite
- Alcohol
- Antipyrin
- Benzoates
- Cinchona
- Guaiacol
- Phenacetin
- Picric Acid
- Resorcin
- Salicylates

**Drugs Acting on the Excretory Apparatus**

Among the principal channels of secretion and excretion are the bowels, kidneys, skin, salivary glands, and breasts. Drugs acting on the bowels and kidneys have been considered.

**Drugs Affecting the Sweat Glands**

**Antihidrotics** are drugs which decrease the excretion of sweat.

- Agaricin
- Belladonna
- Camphoric Acid
- Formaldehyd
- Gallic Acid
- Tannic Acid

**Diaphoretics**, or drugs increasing perspiration.

- Aconite
- Camphor
- Dover’s Powder
- Pilocarpin
- Spirit of Nitrous Ether

**Drugs Affecting the Salivary Glands**

<table>
<thead>
<tr>
<th>Sialagogues</th>
<th>Antisialagogues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acids</td>
<td>Belladonna</td>
</tr>
<tr>
<td>Alkalies</td>
<td>Borax</td>
</tr>
<tr>
<td>Iodids</td>
<td>Myrrh</td>
</tr>
<tr>
<td>Mercurials</td>
<td>Opium</td>
</tr>
</tbody>
</table>
Drugs Affecting the Mammary Glands

At times it is necessary either to increase or diminish the mammary secretion.

**Galactagogues.**
- Ammonium Chlorid
- Castor Oil (Fluidextract)
- Malt Extract
- Pilocarpin

**Antigalactagogues.**
- Belladonna
- Camphor
- Ergot
- Saline Purgatives

**Drugs Acting Externally**

The members of this division will be considered in four classes: Counter-irritants, antiseptics, vulneraries, and astringents.

Counter-irritants are those agents which when applied locally will stimulate the peripheral circulation, produce a localized increase of blood or serum in the part, and thus relieve more distant tissues. They relieve pain by reducing the tension and congestion of the affected area; they aid in the absorption of fluid accumulations; they are antiphlogistic, *i.e.*, relieve inflammation.

The counter-irritants are classified according to the degree of action exerted. If only reddening of the skin is produced the drug is called a rubefacient. If blisters or vesicals are formed, a vesicant or epispastic. If tissues are destroyed, a caustic or escharotic.

**Rubefacients:**
- Ammonia
- Ginger

**Vesicants:**
- Capsicum
- Iodin
- Turpentine
- Cantharides
- Croton Oil
- Kerosene Oil
DRUG CLASSIFICATION

**Caustics:**
Acetic Acid    Arsenous Acid    Chromic Acid
Nitric Acid    Potassium Bichromate
Silver Nitrate Sulphuric Acid    Zinc Chlorid

**Antiseptics.**—These agents are used principally in surgery to retard or check bacterial growth and life. The most-employed strength is noted after the name of the drug.

Antipyrin    Benzoic Acid    Boric Acid
Carbolic Acid    Creolin    Formaldehyde
(1–20)    (1–50)    (1–100)
Hydrogen Peroxid Iodoform    Mercury Bichlorid
(3 per cent.)    (1–1000)
Potassium Permanganate    Resorcin
(1–1000)

**Vulneraries** are those drugs which aid in the healing of wounds by stimulating the formation of granulation tissue and encouraging cicatrization.

Balsam of Peru    Chrysarobin    Ichthyol
Silver Nitrate

**Astringents** when applied locally contract the tissues and diminish any discharge from wounds or the cutaneous surface.

Alum    Hydrastis    Iron Salts
Lead Salts    Mineral Acids    Tannic Acid
Zinc Salts
PART II

GENERAL MATERIA MEDICA, THERAPEUTICS,
AND TOXICOLOGY

(Note.—Drugs marked (*) are found in Part III.)

ABSINTH (*)

ACACIA (*)

ACETANILID

Derivation.—A coal-tar product produced by the action of glacial acetic acid on anilin.

Synonyms.—Antifebrin, Phenylacetamid.

Solubility.—Acetanilid is soluble in water (200 parts), alcohol (5 parts), ether (18 parts), chloroform (freely).

Properties.—It is a white, crystalline, odorless powder with a burning taste.

Incompatibilities.—Sweet spirit of niter, chloral hydrate, bromids, and iodids.

Dosage.—2–10 grains.

Physiologic Action.

Antipyretic.—Acetanilid is a powerful antipyretic. On the normal temperature its action is slight, but
when given in febrile conditions it rapidly lowers the temperature, which may become subnormal.

**Analgesic.**—Acetanilid is principally used to relieve pain. The drug acts as a powerful sedative to the sensory nerve tissues, bringing about an anesthetic and analgesic action.

**Antiseptic.**—This drug also possesses antiseptic properties to some degree, and is much used for this purpose in the treatment of wounds.

**Cardio Deprcssant.**—Acetanilid depresses the heart action very perceptibly in large doses, and on this account should be used with caution in susceptible persons.

**Hemostatic.**—When taken internally or applied locally, this drug causes contraction of the blood-vessels.

**Comparative Action.**—Compared to antipyrin, acetanilid produces a stronger pulse, has a more marked action on the blood, and cyanosis is frequent, but it is less powerful as an analgesic and in its local action on the blood-vessels.

Compared to phenacetin, acetanilid is less safe, but more analgesic.

**Therapeutic Indications.**

As an antipyretic in fevers, influenza, and tuberculosis.

As an analgesic in headaches, migraine, neuralgias, sciatica, rheumatism, influenza, dysmenorrhea, and locomotor ataxia.

As an antiseptic in dressing wounds, ulcers, chancreoids, and chancrecs.

As a hemostatic it is used locally in nosebleed and oozing of blood from wounds.
Administration.—Acetanilid is best given in the form of tablets or in capsules. Owing to its depressing action on the heart, acetanilid should be reinforced by strychnin, caffeine, or camphor. It should be given in small doses to susceptible persons. The author has known 2 grains of this drug to cause cyanosis and cold blue finger-tips in an adult.

Pretoxic Signs.—Slight cyanosis of the lips and face, sweating, and slowness of the pulse.

Toxicology.—After large doses signs of poisoning may rapidly appear, as cyanosis, slow respirations, feeble and irregular pulse, vomiting, cold, moist skin, and collapse.

Management.—Empty the stomach by means of a stomach-pump or tube or with emetics, as tepid water, salt-water, or mustard-water. Stimulate with aromatic spirit of ammonia, strychnin, atropin, or brandy. Apply heat externally by means of hot-water bags, hot bricks, or hot flat-irons.

ACETIC ACID

Derivation.—A clear, colorless liquid with an acid taste and a vinegar-like odor, obtained by the distillation of wood.

Incompatibilities.—Alkalies and bicarbonates.

Preparations.

\textit{Glacial Acetic Acid} (99 per cent. strength).

\textit{Acetic Acid} (36 per cent. strength).—Dose, 10–30 minims.

\textit{Dilute Acetic Acid} (6 per cent. strength).—Dose, 1–3 drams.

\textit{Vinegar} (Acetum) is a form of dilute acetic acid.
ACONITE

Physiologic Action.

Caustic.—Glacial acetic acid when applied locally reddens the skin and causes formation of blisters. If the action continues it will destroy the tissues.

Astringent.—Given internally or applied locally acetic acid constricts the blood-vessels, astringes the tissues, and thus causes a decrease in the secretion of intestinal juices and sweat.

Stimulant.—When inhaled the drug reflexly stimulates cardiac and respiratory action.

Therapeutic Indications.

As a caustic for removing warts, corns, vegetations, and small growths.

As an astringent in night-sweats of tuberculosis, nosebleed, postpartum hemorrhage, and in diarrhea.

As a stimulant, by inhalation, in asphyxia and syncope.

The inhalation of the vapor of acetic acid or vinegar will at times stop vomiting which has resisted all other treatment.

Toxicology.—Acetic acid in poisonous doses produces vomiting, griping, collapse, convulsions, and paralysis.

Management.—Dilute the poison by giving water. Neutralize it with soap-water, chalk, milk, oils, or white of egg. Stimulate if necessary.

ACONITE

Derivation.—The root of Aconitum Napellus.

Synonyms.—Monkshood, Wolfsbane.

Constituent.—An alkaloid (Aconitin), which occurs in crystalline and amorphous forms.
Dosage.—$\frac{1}{2}$–2 grains.

Preparations.

Extract.—Dose, $\frac{1}{8}$–$\frac{1}{2}$ grain.

Fluidextract.—Dose, $\frac{1}{4}$–1 minim.

Tincture.—Dose, 1–3 minims.

Aconitin (crystalline).—Dose, $\frac{1}{8}$–$\frac{1}{2}$ grain.

Aconitin (amorphous).—Dose, $\frac{1}{4}$–$\frac{1}{5}$ grain.

Physiologic Action.

Analgesic.—Aconite depresses the ends of the sensory nerve-fibers, causing a tingling sensation and numbness of the parts.

Cardiac Sedative.—In medicinal doses this drug acts as a sedative to the heart, producing a slower and less forcible cardiac action.

Vasodilator.—Aconite lowers the blood-pressure by dilating the blood-vessels and by its action on the heart and vasomotor centers in the brain.

Respiratory Sedative.—The respirations become slower under the action of aconite.

Antipyretic.—From its action on the heart and blood-vessels this drug reduces the temperature in febrile conditions.

Diuretic.—Aconite, being largely eliminated by the kidneys, stimulates these organs and causes an increase in the amount of urine.

Therapeutic Indications.

As an analgesic it is used locally in neuralgias as a liniment. Aconite is given internally for the same action in rheumatism, neuralgias, sciatica, dysmenorrhea, and migraine. As a gastric analgesic it is useful in the vomiting of pregnancy.

As a cardiac and vasomotor sedative it is used in
hypertrophy of the heart, and cardiac palpitation. In the beginning of acute fevers, as pneumonia, scarlet fever, and erysipelas. In pleurisy, pericarditis, bronchitis, and epistaxis.

Administration.—Aconite is very rapidly absorbed and eliminated, therefore it may be given, frequently repeated, in small doses.

Pretoxic Signs.—Slowness of the pulse, tingling of the skin, and numbness.

Toxicology.—In large doses aconite produces muscular weakness, a slow, weak pulse, which becomes rapid and irregular, collapse, and convulsions.

Management.—Evacuate the stomach by means of a stomach-tube, but do not use emetics, as these cause additional heart depression. Give tannic acid as an antidote. Stimulate with ether, alcohol, strychnin, digitalis, or atropin.

**ADONIS VERNALIS (*)**

**AGAR-AGAR**

Agar-agar, sometimes known as vegetable gelatin, is derived from a seaweed common in the vicinity of Japan and the islands of the East. This substance is now widely employed in the treatment of chronic constipation. Its action is purely mechanical. When agar-agar reaches the intestines it absorbs moisture and swells to a considerable degree, and then by means of its bulk it stimulates peristalsis. Agar-agar jelly is not acted upon by the digestive juices. From 1 to 4 drams may be considered as the dose. It is usually mixed with some food, preferably a dry cereal. Added to bran biscuits it is very helpful.
AGARICIN (*)

ALCOHOL

Derivation.—A liquid obtained by the fermentation and distillation of saccharine substances, and contains 91 per cent. of ethyl hydrate.

Synonyms.—Ethyl Alcohol, Spirit of Wine, Common Alcohol.

Incompatibilities.—Acacia, albumin, and permanganates.

Properties.—It is a colorless, transparent, volatile liquid, with a pleasant odor and a burning taste.

Preparations.

Absolute Alcohol contains 1 per cent. of water.
Deodorized Alcohol contains 7.5 per cent. of water.
Common Alcohol contains 9 per cent. of water.
Dilute Alcohol contains 58.5 per cent. of water.
Brandy (Spiritus Vini Gallici) contains about 45 per cent. of alcohol, and is obtained by the distillation of grape wine.

Whisky (Spiritus Frumenti) contains about 47 per cent. of alcohol, and is obtained by the distillation of certain grains, as rye, corn, and wheat.
Rum is obtained by the distillation of molasses, and contains about 42 per cent. of alcohol.
Gin (Spiritus Juniperis Comp.) is common grain spirits distilled with juniper berries, and contains about 45 per cent. of alcohol.

Red Wine (Vinum Rubrum) is obtained by the fermentation of the entire grape, and contains from 7 to 12 per cent. of alcohol. Red wines contain tannic acid and are constipating. The
principal red wines are Claret, Bordeaux, and Port.

*White Wine* (Vinum Album) is obtained by the fermentation of the juice of grapes, and contains from 7 to 12 per cent. of alcohol. The common white wines are Sherry, Madeira, and Catawba.

*Champagne* is a charged or carbonated wine, containing from 5 to 15 per cent. of alcohol.

*Beer* is obtained by the slow fermentation of malted barley and hops, and contains from 2 to 5 per cent. of alcohol.

*Ale* is prepared by the rapid fermentation of malted barley and hops, and contains from 4 to 7 per cent. of alcohol.

**Physiologic Action.**

*Cerebrospinal Excitant.*—Alcohol acts upon the brain and spinal cord, stimulating the centers to a marked degree. Over-doses cause depression.

*Cardiac Stimulant.*—Alcohol acts as a powerful cardiac stimulant, producing a more rapid and forcible heart action. The pulse becomes full and the arterial pressure is somewhat elevated. Large doses paralyze the heart.

*Antipyretic.*—Alcohol in moderate doses causes a fall of body temperature.

*Gastric Stimulant.*—This drug in minute doses increases the flow of gastric juice, but in large doses retards the action of the digestive ferments.

Large doses of alcohol may depress any of the vital functions and act as a poison.
Therapeutic Indications.

As a cardiac stimulant in acute heart depression, as syncope, collapse, and shock. In cardiac failure or weakness of acute fevers, as pneumonia, typhoid fever, and in poisoning due to aconite, veratum viride, anesthetics, and snake venom.

Alcohol is also indicated in wasting diseases, in persistent vomiting, as an external application in sweating, and to prevent the bed-sores of typhoid fever.

Administration.—As a stimulant in cardiac depression use either whisky or brandy. In persistent vomiting, brandy or champagne on cracked ice are to be used.

Toxicology.—Acute poisoning is characterized by flushing of the face, rapid pulse, mental excitement, incoherent speech, vomiting, stupor, and coma.

Management.—Empty the stomach at once by means of a stomach-tube or a strong emetic, as apomorphin (1/4 grain, by hypodermic). Stimulate with aromatic spirit of ammonia, strychnin, digitalis, or strong coffee (per rectum). Apply heat externally.

Chronic poisoning presents the following picture: Tremor, mental impairment, insomnia, nausea or vomiting, dyspepsia, redness of the eyes. In advanced cases, delirium tremens occurs with cerebral excitement, inability to sleep, incoherency of speech, tremor and hallucinations, followed by mania and coma.

Management.—Withdraw the cause (alcohol) and supply the necessary stimulation by giving strychnin nitrate. Encourage the appetite with capsicum and bitters. Aid sleep with hypnotics, quiet delirium and mental excitement with bromids and chloral (use caution). Provide abundant and nourishing diet.
ALOES

Derivation.—The dried juice of the leaves of Aloe barbadensis and Aloe Socotrana.

Constituent.—A crystalline substance called Aloin.

Preparations.

Purified Aloes.—Dose, 1–10 grains.
Extract.—Dose, 1–5 grains.
Tincture.—Dose, 15–60 minims.
Tincture of Aloes and Myrrh.—Dose, 1–2 drams.
Aloin.—Dose, 1/8–2 grains.
Also several pills.

Physiologic Action.

Cathartic.—Aloes stimulates the flow of bile and intestinal juices. This drug acts especially on the lower end of the bowels. Its action is slow and usually takes from twelve to eighteen hours.

Emmenagogue.—Aloes acts as a stimulating emmenagogue, causing an increased menstrual flow when it is scanty.

Vermifuge.—The drug is a useful anthelmintic for the round-worm and seat-worms.

Therapeutic Indications.—As a cathartic in chronic constipation. It is too slow in action for acute constipation.

As an emmenagogue in atonic amenorrhea accompanied by constipation and anemia.

As an anthelmintic for round- and pin-worms.

Administration.—Aloes or aloin is very seldom given alone, but usually combined with belladonna or strychnin. It should not be employed in constipation accompanied by inflamed piles. As an emmenagogue
it is best given with an iron preparation. For seat-worms it is used in the form of an enema.

ALUM

Derivation.—A double salt formed by the action of heat on alum stone and then purified.

Synonyms.—Potassio-aluminum Sulphate, Potash Alum.

Properties.—Alum occurs in large, colorless crystals, and is soluble in water (10 parts), glycerin (freely), but insoluble in alcohol. Heated to redness it becomes Burnt Alum (Alumen Exsiccatum).

Incompatibilities.—Alkalis, lime-water, lead acetate, tannic acid, and iron salts.

Dosage.—5–30 grains.

Physiologic Action.

Astringent.—Alum applied externally or given internally coagulates albumin and constricts the tissues, thus hardening the skin and decreasing the cutaneous and alimentary secretions.

Emetic.—This drug, by its irritation on the lining of the stomach, provokes vomiting.

Therapeutic Indications.

As an astringent in epistaxis, sore throat, tonsillitis, leukorrhea, hemorrhages, night-sweats, diarrhea, etc.

As an emetic in acute poisonings and membranous croup.

Administration.—As an emetic alum should be given in doses of 1 to 2 drams.

Toxicology.—Very large doses produce vomiting and purging.

AMMONIAC (*)
AMMONIUM COMPOUNDS

AMMONIUM COMPOUNDS

AMMONIA-WATER

Derivation.—A watery solution of ammonia gas of 10 per cent. strength.

Properties.—A volatile, colorless liquid, with a very irritating, pungent odor.

Incompatibilities.—Acids, alkaloids, metallic salts, iodin, and chlorin-water.

Dosage.—10–30 minims.

Preparations.

Liniment contains 35 per cent. of ammonia-water.

Spirit.—Dose, 10–60 minims.

Aromatic Spirit contains ammonia-water, ammonium carbonate, and essential oils. Dose, ½–2 drams.

Stronger Ammonia-water, containing 28 per cent. of ammonia gas. Dose, 4–8 minims, well diluted.

Physiologic Action.

Rubefacient.—Ammonia-water when applied to the skin acts as an irritant and causes redness of the surface.

Cardiac and Respiratory Stimulant.—When inhaled or given internally this drug quickly produces a rapid and forcible heart, and causes an increase of the respiratory rate.

Spinal Stimulant.—Spinal activity is augmented and convulsions may be brought about.

Therapeutic Indications.

As a stimulant in fainting, syncope, sudden cardiac failure of pneumonia, typhoid fever, shock, anesthetization, and in snake-bites.
As a reflexion it is used in the form of a liniment in neuralgias, rheumatism, and sprains.

Administration.—For rapid stimulation it may be used as an inhalant. Care must be used when this strongly irritating drug is employed by inhalation for patients in an unconscious condition, as burns and serious inflammations of the upper respiratory tract may result. Ammonia preparations should always be well diluted before administering.

Toxicology.—In poisonous doses ammonia produces abdominal colic, vomiting, purging which may become bloody, convulsions, and collapse.

Management.—Neutralize the poison with acid solutions, as vinegar, lemon-juice, or dilute hydrochloric acid. Give mucilaginous drinks, as albumin-water, olive oil, flaxseed-tea, milk, or chalk-water. Do not use a stomach-tube, as a perforation of the stomach wall may result.

AMMONIUM BENZOATE

This drug has the same action as Benzoic Acid (to which you are referred).

Dosage.—10–30 grains.

It is soluble in water (6 parts), alcohol (28 parts), glycerin (8 parts).

Incompatibilities.—Iron salts and acids.

AMMONIUM BROMID

This salt has the same action as Potassium Bromid (to which you are referred), excepting that the ammonium salt is less depressing.

Dosage.—15–30 grains.

It is soluble in water (2 parts), alcohol (30 parts).
AMMONIUM COMPOUNDS

Incompatibilities.—Mercury and silver salts, acids, and alkaloids.

AMMONIUM CARBONATE

Synonyms.—Volatile Salt, Sesquicarbonate of Ammonia.

Properties.—A white, transparent substance with an irritating, ammoniac odor. It is soluble in water (5 parts), alcohol (200 parts).

Incompatibilities.—Iron, lead and silver salts, acids, alkaloids, and calomel.

Dosage.—5–30 grains.

Preparations.

Aromatic Spirit of Ammonia.—(See under Ammonia-water.)

Solution of Ammonium Acetate.—This is commonly known as the spirit of Mindererus, and is prepared by the action of acetic acid on ammonium carbonate. Dose, 1–4 drams.

Physiological Action.

The action of this salt is the same as that of ammonia-water, and in addition the carbonate is an excellent expectorant and gastric antacid.

Therapeutic Indications.

As a cardiac stimulant and rubefacient it is used the same as ammonia-water. As an expectorant it is useful in acute and chronic bronchitis, pneumonia, and pulmonary tuberculosis. As an antacid in acid dyspepsia.

Administration.—This drug should always be given in solution and well diluted.
AMMONIUM CHLORID

Synonyms.—Sal Ammoniac, Muriate of Ammonia.
Properties.—It is a white powder with an intensely salty taste. Is soluble in water (3 parts), glycerin (5 parts), and nearly insoluble in alcohol.
Dosage.—5–30 grains.
Preparation.
   Lozenge (1 1/2 grains).
Physiologic Action.
Expectorant.—This salt increases the bronchial secretions and makes them thin and watery.
Cholagogue.—Sal ammoniac is said to increase and liquefy the bile.
Analgesic.—This drug lessens, to a great degree, pain of neuralgic character.
Therapeutic Indications.
As an expectorant in acute and chronic bronchitis, catarrhal pneumonia, and laryngitis.
As a cholagogue in torpor of the liver, catarrhal jaundice, and hepatic congestion.
As an analgesic in neuralgias, hemicrania, dysmenorrhea, rheumatism, and sciatica.

AMMONIUM IODID

This salt has the same action as Potassium Iodid (to which you are referred). The ammonium salt is less depressing.
Dosage.—5–30 grains.

AMMONIUM VALERIANATE

The action of this drug is about the same as that of Valerian (which see).
Dosage.—2–8 grains.
AMYL NITRITE

Definition.—A clear, lemon-colored, very volatile liquid, having an odor resembling that of banana.

Dosage.—1-5 minims.

Physiologic Action.

Vasodilator.—Amyl nitrite, when taken by inhalation or by mouth, very rapidly produces great vasodilatation, causing cutaneous flushing, roaring in the ears, fulness of the head, and a rapid, full pulse.

Antispasmodic.—This drug produces great muscular relaxation.

Comparative Action.—Compared to nitroglycerin, amyl nitrite is much more rapid in action, but the results are of much shorter duration.

Therapeutic Indications.

As a vasodilator in shock, chloroform- and cocaine-poisoning, in angina pectoris, syncope, and dyspnea.

As an antispasmodic in angina pectoris, asthma, tetanus, convulsions, epileptic paroxysms, spasmodic dysmenorrhea, hysterical seizures, strychnin-poisoning, and whooping-cough.

Administration.—This drug is most frequently given by inhalation, 3 to 5 drops are placed on a handkerchief and applied to the nostrils. Many drug houses place this preparation on the market in thin glass “pearls,” which can be easily broken when needed.

ANTIMONY AND POTASSIUM TARTRATE

Derivation.—A double salt, formed by the action of antimony oxid on cream of tartar.

Synonyms.—Tartar Emetic, Tartrated Antimony.

Properties.—A white, crystalline powder, without odor, and having a sweetish taste. It is soluble in
water (17 parts), glycerin (21 parts), but insoluble in alcohol.

**Incompatibilities.**—Tannin, lead salts, and carbonates.

**Dosage.**—$\frac{1}{3}-\frac{1}{5}$ grain. As an emetic, $\frac{1}{4}$ grain.

**Preparations.**

*Wine.*—Dose, 5–60 minims.

*Compound Syrup of Squill* contains 0.2 per cent. of tartar emetic and 8 per cent. each of fluid extracts of squill and senega. Dose, 5–30 minims.

**Physiologic Action.**

*Emetic.*—Tartar emetic acts upon the stomach walls as an irritant, and causes vomiting with great nausea.

*Heart Depressor.*—This drug is a powerful cardiac depressant. In small doses it decreases both the force and rate of the heart.

*Spinal Depressant.*—Antimony depresses the sensory part of the cord, causing cutaneous anesthesia and loss of reflexes. It also produces muscular relaxation by depressing the motor segment of the cord.

*Expectorant.*—The drug, being partially eliminated by the bronchial mucous membrane, increases the expectoration.

*Diaphoretic.*—By virtue of its depressing action, tartar emetic increases the excretion of sweat.

*Caustic.*—Locally, the drug acts as a destroyer of tissue and produces pustules.

**Therapeutic Indications.**

As an *emetic* it is but little used on account of its depressing action.

As a *heart sedative* in the beginning of sthenic diseases, as pneumonia, bronchitis, laryngitis, and acute “colds.”
ANTIPYRIN

Administration.—This drug should always be used with great caution and its action carefully watched.

Toxicology.—The pulse at first is slow, but soon becomes rapid, weak, and irregular. The skin is cold and moist. Nausea, vomiting, and violent purging are prominent. Collapse soon follows.

Management.—Wash out the stomach and give tannic acid freely. Apply heat externally and stimulate with alcohol, strychnin, and digitalis.

ANTIPYRIN

Properties.—Antipyrin is a coal-tar derivative, occurring as a white, crystalline powder, having a bitter taste but no odor. It is soluble in water (2 parts), ether (52 parts).

Incompatibilities.—Benzoates, calomel, chloral, iodids, saleratus, sweet spirit of niter, and tincture of iron chlorid.

Dosage.—5–15 grains.

Physiologic Action.

Analgesic.—Antipyrin, when given internally or applied locally, depresses the sensory nerve filaments, producing an analgesic effect.

Antipyretic.—This drug reduces the body temperature to a marked degree.

Styptic.—If given internally or applied locally, antipyrin produces a contraction of the smaller blood-vessels.

Antiseptic.—This drug, in small amounts, will stop fermentation. A 4 per cent. solution will destroy the Bacillus communis and prevent spore formation.

Comparative Action.—Antipyrin is more analgesic
and has less destructive action on the blood than acetanilid. Antipyrin is more powerful but less safe than phenacetin.

**Therapeutic Indications.**

As an *analgesic* in headaches, neuralgias, rheumatism, sciatica, influenza, and dysmenorrhea.

As an *antipyretic* in influenza and simple febrile disorders.

As an *antispasmodic* in whooping-cough, chorea, and epilepsy.

As a *styptic* in nosebleed, coryza, hay-fever, hemorrhoids, and oozing from wounds.

**Administration.**—In acute febrile diseases if antipyrin be given after a cold bath the temperature will remain low for a considerable time. The action of antipyrin in susceptible persons should be guarded by a heart stimulant.

**Pretoxic Signs.**—Lethargy, tendency to sleep, and slow pulse-rate.

**Toxicology.**—In toxic doses antipyrin produces cyanosis, slow respirations, feeble pulse, vomiting, profuse sweating, and collapse.

**Management.**—Empty the stomach. Apply heat externally. Give oxygen and stimulate with alcohol, ammonia, digitalis, and strychnin.

**APOMORPHIN HYDROCHLORATE**

**Derivation.**—This salt is formed by heating morphin and hydrochloric acid in a sealed tube.

**Properties.**—It occurs in small gray crystals, without odor, and having a bitter taste. This salt turns
green on exposure to air and light. It is soluble in water (45 parts), alcohol (45 parts).

**Dosage.** — \( \frac{1}{4} - \frac{1}{2} \) grain.

**Physiologic Action.**

**Emetic.** — This drug acts as an emetic by stimulating the vomiting center in the medulla.

**Expectorant.** — Apomorphin to some extent increases the bronchial secretion.

**Therapeutic Indications.**

As an *emetic* apomorphin hydrochlorate is useful in cases of acute poisoning, especially in acute alcoholism.

As an *expectorant* it is used in acute bronchitis, laryngitis, and other catarrhal disorders of the bronchi and larynx. The author has found this drug of great value as an hypnotic in insomnia of chronic alcoholism.

**Administration.** — As an emetic, this drug is mostly given as a hypodermic injection in doses of \( \frac{1}{4} - \frac{1}{2} \) grain. As an expectorant, in doses varying from \( \frac{1}{10} - \frac{1}{2} \) grain. Children do not bear this drug well.

**ARNICA (*)**

**ARSENIC COMPOUNDS**

**ARSENIC IODID**

The action of this drug is about the same as that of arsenious acid.

**Dosage.** — \( \frac{1}{4} - \frac{1}{2} \) grain.

**Preparation.**

*Solution of Arsenic and Mercury Iodids* (Liquor Arseni et Hydrargyri Iodidi, or Donovan's Solution).—Dose, 1–10 minims.
ARSENIC TRIOXID

Synonyms.—Arsenous Acid, White Arsenic.
Properties.—It is a white, amorphous or crystalline salt, occurring as a powder or in lumps. It is soluble in water (80 parts), hydrochloric acid (6 parts), and nearly insoluble in alcohol.
Incompatibilities.—Tannic acid, iron salts, and magnesia.

Dosage.—$\frac{1}{80}$ to $\frac{1}{40}$ grain.

Preparations.

Solution of Arsenous Acid.—Dose, 1–10 minims.
Solution of Potassium Arsenite (Liquor Potassii Arsenitis, or Fowler’s Solution).—Dose, 1–10 minims.

Physiologic Action.

Caustic.—Arsenic oxide applied externally produces a dissolution of tissue.
Gastro-intestinal Irritant.—This drug produces gastric irritation followed by nausea. In very small doses it acts as a gastric sedative.

Hematinic.—Arsenic has a beneficial action on the blood, increasing the number of red blood cells.

Nerve Sedative.—In small doses arsenic depresses nerve action, and in large doses causes paralysis.

Alterative.—Given internally, arsenic acts on the metabolic processes, causing a check of tissue changes, resulting in an increase in weight of the person. It also causes scaly conditions of the skin to disappear.

Therapeutic Indications.

As a caustic in treating warts, epitheliomata, lupus vulgaris, and corns.
As a gastric sedative in vomiting of pregnancy, and
ARSENIC COMPOUNDS

especially for vomiting which occurs after a debauch. In gastrodynia and indigestion of the menopause it is useful.

As a hematinic in anemias, leukemia, and pseudo-leukemia.

As a nerve sedative in chorea, asthma, and neuralgia.

As an alterative in diabetes, leukemia, tuberculosis, malarial cachexia, chronic rheumatism, and dry, scaly diseases of the skin.

Administration.—Children bear arsenic preparations well. Always give this drug in well-diluted forms. Arsenic applied externally may give rise to toxic symptoms.

Pretoxic Signs.—Morning puffiness below the lower eyelids, slight looseness of the bowels, and vague abdominal pain or colic.

Toxicology.—Acute poisoning is characterized by nausea, vomiting, purging, abdominal pain, cold skin, small, feeble pulse, and collapse.

Management.—Wash out the stomach immediately. Give the antidote, hydrated iron with magnesia, or use magnesia, milk, white of egg. A good antidote is prepared by adding ammonia-water to the tincture of iron chlorid and strain, using the mass which remains in the strainer. Stimulate with alcohol, ammonia, and strychnin. Apply heat externally.

Chronic Poisoning.—The chief signs are anemia, loss of flesh, dyspepsia, cutaneous eruptions, and various paralyses due to neuritis.

Management.—Stop the drug. Aid elimination of the poison from the system by giving the iodids. Tone the muscles by means of electricity.
MATERIA MEDICA FOR NURSES

SODIUM ARSENATE

Action same as arsenous acid.

Dosage.—$\frac{1}{6}$ to $\frac{1}{10}$ grain.

Preparation.

Solution of Sodium Arsenate (Liquor Sodii Arseniatis, or Pearson's Solution).—Dose, 1–10 minims.

SODIUM CACODYLATE

This chemical is technically known as sodium dimethylarsenate. It is an arsenical derivative possessing less toxicity than the usual preparations of arsenic. Its uses are similar to those of arsenous acid. It is usually given hypodermically or even intravenously. It is indicated in anemias, psoriasis, leukemia, tuberculosis, syphilis, and chronic malarial cachexia.

Dosage.—$\frac{1}{3}$ to 2 grains.

ASAFETIDA (*)

ASPIDIUM (*)

BALSAM OF PERU (*)

BARIUM CHLORID (*)

BELLADONNA

Derivation.—The leaves and roots of *Atropa Belladonna*.

Synonym.—Deadly Nightshade.

Constituent.—Atropin, an alkaloid.

Dosage.—1–5 grains.
Preparations.

*Extract.*—Dose, $\frac{1}{4}-\frac{1}{2}$ grain.

*Fluidextract.*—Dose, $\frac{1}{2}-2$ minims.

*Liniment.*—Apply locally.

*Ointment* contains 10 per cent. of the extract.

*Plaster* contains 0.4 per cent. of alkaloid.

*Atropin.*—Dose, $\frac{1}{100}-\frac{1}{80}$ grain.

*Atropin Sulphate.*—Same dose as atropin.

Physiologic Action.

*Analgesic.*—Belladonna, applied locally or given internally, depresses the sensory nerve filaments, producing an anodyne effect.

*Antispasmodic.*—The motor nerves are slightly affected by this drug, causing a subsidence of muscular spasm.

*Secretory Depressor.*—Belladonna depresses the ends of the secretory nerves, decreasing the secretion of saliva, sweat, bronchial secretion, and the milk.

*Cerebral Excitant.*—This drug in moderate doses produces cerebral activity.

*Cardiac Stimulant.*—The heart’s action is increased in rate and force by this drug.

*Respiratory Stimulant.*—Belladonna is a powerful respiratory stimulant.

*Vasoconstrictor.*—This drug primarily contracts the blood-vessels, but in larger doses causes them to dilate, producing a cutaneous flushing.

*Mydriatic.*—Belladonna, applied locally or given internally, produces dilatation of the pupils.

Therapeutic Indications.

As an *analgesic* in neuralgias, lumbago, pleurisy, and intercostal neuralgia.
As an *antispasmodic* in asthma, whooping-cough, laryngismus stridulus, dysmenorrhea, intestinal, hepatic, and renal colics, spasm of the bladder, and nocturnal incontinence of urine.

As a *secretory depressor* in night-sweats, diarrhea, galactorrhea, leukorrhea, and ptyalism.

As a *stimulant* in shock, collapse, pneumonia, and cardiac failure.

As a *mydriatic* in iritis and keratitis, but not in glaucoma.

**Administration.**—As a stimulant use atropin. For anodyne and antispasmodic effect on the bladder, it is best given in the form of a rectal suppository. To check the secretion of milk apply the ointment to the breasts. For asthma the inhalation of smoke from the burning leaves is best. Children bear belladonna well.

As an *antidote* atropin is much employed in poisoning by opium, physostigma, pilocarpin, chloral, chloroform, and prussic acid.

**Pretoxic Signs.**—Dryness of the mouth and throat, dilatation of the pupils, and a scarlet cutaneous eruption.

**Toxicology.**—Dry throat, dilated pupils, flushed face, rapid pulse, giddiness, delirium, blindness, and coma.

**Management.**—Empty and wash out the stomach. Give a solution of tannic acid. Stimulate with strong coffee enemata, strychnin, and ammonia. The physiological antidotes of belladonna are morphin, eserin, and pilocarpin.

**BENZOIN COMPOUNDS**

**Derivation.**—A balsamic resin from *Styrax Benzoin*.

**Constituents.**—Benzoic and cinnamic acids.
Preparations.

Benzoinated Lard.

Tincture.—Dose, 15–60 minims.

Compound Tincture (Friar's Balsam).—Dose, 15–60 minims.

Benzoic Acid.—Dose, 5–15 grains.

Ammonium Benzoate.—Dose, 5–15 grains.

Sodium Benzoate.—Dose, 5–60 grains.

Lithium Benzoate.—Dose, 5–20 grains.

Physiologic Action.

Antiseptic.—Benzoic acid is a strong antiseptic, a 1:1000 solution will inhibit the growth of bacteria. This drug is excreted by the urine as hippuric acid, and renders this fluid acid and slightly antiseptic.

Expectorant.—The drug is also partially excreted by the bronchial mucous membrane, and thus stimulates the secretion.

Antipyretic.—The benzoates will cause the fall of pyretic temperature.

Therapeutic Indications.

As an antiseptic in various forms of cystitis, gonorrhea, phosphaturia, and urinary incontinence.

As an expectorant in chronic bronchitis.

Administration.—The taste of the benzoates may be covered with the spirit of chloroform. Benzoin is much used as an inhalant in respiratory diseases by placing some of the tincture on boiling water, when the arising vapor will be charged with the drug.

BISMUTH COMPOUNDS

BISMUTH SALICYLATE

Is a white, soft powder, insoluble in water and alcohol.
Other bismuth compounds are: Bismuth Benzoate, 5–15 grains; Bismuth Betanaphtolate, 5–15 grains; Bismuth Nitrate, 1–5 grains; Bismuth and Ammonium Citrate, 2–5 grains.

Physiological Action.

Astringent.—Bismuth preparations have a slight astringent action externally and in the gastro-intestinal tract.

Antiseptic.—They are also slightly antiseptic in the intestines.

Therapeutic Indications.

As an astringent and antiseptic in skin diseases, wounds, and ulcers. In diarrhea, typhoid fever, gastric ulcer, vomiting, and gastric fermentation.

Toxicology.—Stomatitis, nausea, vomiting, diarrhea, and tendency to formation of ulcers in the mouth may follow toxic doses of bismuth preparations.

Management.—Give tannin or gallic acid.

BISMUTH SUBCARBONATE

This is a white, insoluble powder, without odor or taste.

Dosage.—5–30 grains.

BISMUTH SUBGALLATE

This preparation is also known as dermatol, and is a yellow, insoluble powder, without odor or taste.

Dosage.—4–8 grains.

BISMUTH SUBNITRATE

A white, insoluble, odorless and tasteless powder.

Dosage.—5–40 grains.
BORIC ACID

Properties.—A white, odorless crystal or scale, soluble in water (25 parts), glycerin (10 parts), alcohol (15 parts).

Synonym.—Boracic Acid.

Dosage.—5–15 grains.

Preparations.

Glycerite of Boroglycerin.—Also called Boroglycerid.

Sodium Borate (Borax or Biborate of Sodium) is soluble in water (16 parts), glycerin (1 part).

Dose 5–30 grains.

Physiologic Action.

Antiseptic.—Boric acid is a mild antiseptic, both externally and internally. Large doses retard digestion. Boric acid renders alkaline urine acid.

Therapeutic Indications.

Boric acid is used very extensively as a mild antiseptic in diseases of the eye, ear, nose, throat, and for washing out the bladder. It is also employed to a limited extent in dressing wounds and ulcers.

Internally it is used in fermentative dyspepsia and in cystitis of the ammoniacal type.

Borax is used the same as boric acid, and also in epilepsy.

BUCHU (*)

CACTUS (*)

CAFFEIN

Derivation.—An alkaloid derived from the common coffee berry, Caffea Arabica.

Synonyms.—Thein, Guaranin.
Properties.—A white, slender crystal, soluble in
water (80 parts), alcohol (35 parts), ether (550 parts).
Dosage.—$\frac{1}{4}$–5 grains.
Preparations.
Citrated Caffein.—Dose, 2–10 grains.
Caffein Hydrobromate.—Dose, $\frac{1}{4}$–2 grains.
Caffein and Sodium Benzoate.—Dose, 2–10 grains.
Caffein and Sodium Salicylate.—Dose, 2–10
grains.
Physiologic Action.
Cardio Stimulant.—Caffein produces a rapid and
forcible heart action.
Cerebral Excitant.—Caffein causes an increase of
intellection and rapidity of thought. The memory is
cleared. Nervousness often follows the excessive use
of coffee and tea.
Diuretic.—This drug increases the blood supply to
the kidneys and stimulates the renal cells, thus causing
an increase in the flow of urine.
Therapeutic Indications.
As a cardiac stimulant in organic heart disease,
palpitation due to the excessive use of tobacco, and in
the cardiac depression of pneumonia, shock, and acute
diseases.
As a diuretic in renal and cardiac dropsy.
As a cerebral excitant in temporary mental or intel-
lectual depression.
Administration.—A strong, black infusion of coffee
is most excellent as a stimulant when given as an enema.
Pretoxic Signs.—Headache, restlessness, insomnia,
and tremor.
Toxicology.—Caffein in toxic doses produces in-
CALCITIUM COMPOUNDS

somnia, giddiness, trembling, profuse urination, colic, rapid, feeble pulse, and collapse.

Management.—Empty the stomach, give tannic acid, and stimulate.

CALAMUS (*)

CALCITIUM COMPOUNDS

CALCITIUM BROMID

This salt has the same action and uses as potassium bromid, except that the calcium salt is not depressing to the heart.

Dosage.—5–20 grains.

CALCITIUM CARBONATE

Synonym.—Chalk.

Preparations.

Prepared Chalk.—Dose, 10–60 grains.

Compound Chalk Powder.—Dose, 5–30 grains.

Chalk Mixture.—Dose, 1–4 drams.

Mercury and Chalk (Gray Powder).—Dose, 1–8 grains.

Physiologic Action.

Antacid.—Chalk preparations, when given internally, partially overcome the acidity of the gastric contents.

Astringent.—Both externally and internally chalk tends to dry up and lessen secretions.

Therapeutic Indications.

As an antacid in acid dyspepsia and gastric fermentation.

As an astringent it is used externally in moist eczema. Internally it is employed in diarrhea.
CALCIUM CHLORID

This salt, when applied externally or given internally, will relieve itching (antipruritic).

It is also useful in preventing hemorrhage in bleeders, and is much employed before operations on persons who are jaundiced and very liable to bleed profusely when cut.

Dosage.—5–20 grains.

CALCIUM GLYCERINOPHOSPHATE

(See Phosphorus)

CALCIUM HYPOPHOSPHITE

(See Phosphorus)

CALCIUM LACTATE

The lactate of lime has the general action of the lime salts, but, in addition, seems to have the added power of greatly increasing the coagulation of the blood. This particular action renders it useful in the control of bleeding. Given for a period before operations for hepatic diseases it seems to make hemorrhage less liable. In the treatment of urticaria the author has found it very valuable. The dose ranges from 3 to 8 grains.

CALCIUM OXID OR CALX

Synonyms.—Calx, Lime, Quicklime.

Preparations.

Lime-water (Liquor Calcis).—Dose, 1–4 ounces.

The action and use of lime-water is the same as that of chalk, as an antacid and astringent.
CAMPHOR

Syrup of Lime.—Dose, 20 minims.

Liniment (Carron Oil) consists of equal parts of lime-water and linseed oil. It is much used in the treatment of burns.

Chlorinated Lime (Calcium or Lime Hypochlorite, bleaching powder, but not Calcium Chlorid).—This preparation is a powerful oxidizing agent, and is much used as a disinfectant.

CALCIUM SULPHID

Synonyms.—Sulphurated Lime, Calx Sulphurata.
This preparation is much employed in avertine pustular collections, as boils, carbuncles, and small abscesses.

Dosage.—\(\frac{1}{10}\)–\(\frac{1}{2}\) grain.

CALOMEL

(See Mercury Compounds)

CALUMBA (*)

CAMPHOR

Derivation.—A stearopten obtained from Camphora Cinnamomum.

Synonyms.—Camphora, Gum Camphor.

Properties.—It is soluble in water (1000 parts), alcohol (1 part), olive oil (4 parts), turpentine (3 parts).

Incompatibilities.—Chloral, menthol, carbolic acid, salol, and salicylic acid.

Dosage.—2–5 grains.

Preparations.

Water.—Dose, \(\frac{1}{4}\)–1 ounce.

Spirit.—Dose, 15–60 minims.
Liniment (Camphorated Oil).—20 per cent. strength.
Cerate.—2 per cent. strength.
Camphor Monobromate.—Dose, 2–5 grains.
Camphoric Acid.—Dose, 10–20 grains.

Physiological Action.
Antipruritio.—Applied externally camphor relieves itching.

Carminative.—Internally the drug stimulates the gastro-intestinal walls, causing the expulsion of flatus.
Cardiac Stimulant.—Reflexly from the stomach, and by its action directly upon the heart, camphor increases the heart's power.

Nerve Sedative.—In small doses this drug quiets the cerebrospinal centers.

Diaphoretic.—Camphor, being partially eliminated by the skin, increases the excretion of sweat.

Therapeutic Indications.
As an antipruritic in skin diseases and diabetic pruritis.

As a carminative in intestinal flatulence, spasmodic colic, and diarrhea.

As a nerve sedative and antispasmodic in hysteria, nervousness, dysmenorrhea, hiccough, headache, and asthma.

As a cardiac stimulant in the transient heart depression of the acute fevers and in shock.

As a diaphoretic in "breaking up colds."

Camphoric acid is employed in checking the night-sweats of tuberculosis.

Administration.—As a rapid heart stimulant camphor may be given hypodermically in a solution with
sterile olive oil, using 10 drops of a 10 per cent. solution.

Toxicology.—Large doses of camphor cause giddiness, fatigue, rapid, weak pulse, headache, vertigo, delirium, and convulsions.

Management.—Empty the stomach and stimulate with alcohol, ether, or strychnin.

CANNABIS INDICA

Derivation.—The flowering tops of the female plant.
Synonym.—Indian Hemp.
Incompatibilities.—Water precipitates the resin of the liquid preparations.
Dosage.—2–5 grains.
Preparations.

Extract.—Dose, 1/8–1 grain.
Fluidextract.—Dose, 2–5 minims.
Tincture.—Dose, 5–20 minims.
Cannabin Tannate.—Dose, 1–10 grains.

Physiologic Action.

Narcotic.—This drug causes great exhilaration, intoxication, and delirium, followed by prolonged and deep sleep.

Sedative.—In small doses it produces quietude and composure and relieves pain.

Therapeutic Indications.

As a sedative in chorea, hysteria, insanity, and delirium tremens.

As an analgesic in headache, neuralgia, gout, gastralgia, gonorrhea, and dysmenorrhea.

Toxicology.—Although this drug may cause pronounced symptoms, yet it very seldom proves fatal.
CANTHARIDES (*)

CAPSICUM

Derivation.—The fruit of *Fastigiatum Capsicum*.

Synonyms.—Cayenne Pepper, Red Pepper.

Dosage.—1-5 grains.

Preparations.

*Fluidextract.*—Dose, 1-5 minims.

*Tincture.*—Dose, 15-30 minims.

*Plaster.*

*Oleoresin.*—Dose, \( \frac{1}{4} \)-1 grain.

Physiologic Action.

Rubefacient.—Applied externally the drug causes a burning sensation, with reddening of the surface.

Carminative.—In the stomach, capsicum produces a sensation of heat and an increase of the gastric secretion, and aids in the expulsion of gas.

Therapeutic Indications.

As a *rubefacient* in rheumatism, lumbago, neuralgia, and abdominal colic.

As a *carminative* and stomachic in flatulent dyspepsia, colic, alcoholic gastritis, atony of the stomach, and diarrhea.

CARBOLIC ACID

Properties.—It is a colorless, crystalline mass, with an aromatic odor and a burning, sweet taste.

Synonyms.—Phenol, Phenic Acid, Phenyl Alcohol.

Preparations.

*Glycerite.*—Dose, 2-5 minims.

*Ointment.*—5 per cent. strength.

Physiologic Action.
CARBOLIC ACID

Antiseptic.—Carbolic acid is a strong and efficient antiseptic.

Anesthetic.—Applied to the skin carbolic acid causes a blanching of the surface, followed by numbness or anesthesia. Prolonged action produces a destruction of tissue (caustic).

Cardiac and Respiratory Depressant.—This drug in large doses paralyzes both of these vital functions.

Gastric Sedative.—In very minute doses carbolic acid, by its local action, quiets the stomach.

Renal Irritant.—The drug is excreted by the kidneys and is very irritating to these organs, often causing urinary suppression.

Therapeutic Indications.

As an antiseptic it is extensively used in surgery for many purposes: sterilizing instruments, dressing wounds, and irrigating cavities.

As a gastric sedative and antiseptic in persistent vomiting, flatulent dyspepsia, diarrhea, and fermentative gastritis.

As an anesthetic in toothache and itching of the skin.

Toxicology.—When applied locally in weak solution toxic symptoms often follow the use of this drug. Toxic signs are vomiting, diarrhea, colic, dark-colored urine, cold, moist skin, rapid, feeble pulse, convulsions, and collapse. Gangrene has followed the local use of a 1:20 solution.

Management.—Do not use emetics if there is reason to believe that the gastric mucous membrane is injured. Give antidotes, as magnesium sulphate (Epsom Salt), whisky, and white of egg or milk. Stimulate with whisky, strychnin, and digitalis. Apply heat externally.
CARBON

Synonyms.—Carbo, Charcoal.

Preparations.

Wood Charcoal (Carbo Ligni).—Dose, 10–60 grains.

Animal or Bone Charcoal (Carbo Animalis).—Dose, 10–60 grains.

Physiologic Action.

Deodorant.—On account of its great absorbing power, charcoal frees substances of ill odors. It is used externally and internally.

Therapeutic Indications.

Externally it is used as an applicant to putrid ulcers and foul-smelling wounds, which it will soon rid of their odor. It is used in the form of a poultice.

Internally it is employed in acid gastric fermentation, dyspepsia, diarrhea, and as an antidote to poisoning by opium and nux vomica.

CARAWAY (*)

CARDAMOM (*)

CARYOPHYLLUS (*)

CASCARA SAGRADA

Derivation.—The bark of Rhamnus Purshiana.

Constituent.—Cascarin, a glucosid.

Dosage.—15–30 grains.

Preparations.

Extract.—Dose, 1–6 grains.

Fluidextract.—Dose, 15–60 minims.

Cascarin (Resinoid).—Dose, ¼–1 grain.

Action and Uses.

Cascara when taken internally acts as a tonic to
the intestinal walls and produces normal bowel movements.

It is much employed in chronic constipation. The dose may be gradually decreased in size and frequency and still bring about the desired action. This property makes cascara a most valuable drug, not only for the relief but for the cure of constipation. The objection to the use of the fluidextract is its intense bitterness.

**CASCARILLA (*)**

**CASTOR OIL**

**Derivation.**—A fixed oil expressed from the seeds or beans of *Ricinus Communis*.

**Synonym.**—Oleum Ricini.

**Dosage.**—1 dram to 2 ounces.

**Physiologic Action.**

*Cathartic.*—Castor oil produces soft movements of the bowels in about five hours. Its action is non-irritating and unattended, as a rule, by griping, but is followed by constipation.

*Galactagogue.*—Applied locally to the breasts in the form of the leaves or given internally as a fluidextract (unofficial) it produces an increase in the flow of milk.

**Therapeutic Indications.**

As a *cathartic* whenever it is necessary to move the bowels thoroughly with a period of rest following, as in diarrhea due to the presence of irritating material in the intestines. It is also used in the beginning of acute fevers, as pneumonia, typhoid, and scarlet fevers. Castor oil should not be employed in the treatment of chronic constipation.
As a *galactagogue*, see under Physiologic Action.

**Administration.**—Owing to its disagreeable taste it is difficult to administer this drug to many persons. To overcome this, adults may take the drug in capsules, or its taste can be disguised by mixing it with equal parts of glycerin and adding a few drops of oil of peppermint, wintergreen, or lemon-juice. Castor oil given to pregnant women may stimulate the uterine pains and cause a premature delivery. A drop or two of laudanum may be added to the oil to prevent griping.

**CATECHU (*)**

**CAULOPHYLLUM (*)**

**CERIUM OXALATE (*)**

**CHENOPODIUM (*)**

**CHLORAL HYDRATE**

**Properties.**—It is a colorless crystal or crust with a penetrating, sickening odor and an acrid taste. It is soluble in water (1 part), alcohol (freely).

**Incompatibilities.**—Alkalies, camphor and menthol.

**Dosage.**—5–20 grains.

**Physiologic Action.**

**Hypnotic.**—Taken in medicinal doses chloral produces general quietude, followed by placid, natural sleep.

**Cardiac Depressor.**—Chloral in large doses depresses the heart's action, causing a feeble, irregular pulse.

**Therapeutic Indications.**

The chief use of chloral is as a *sleep producer* in
cases where pain is not a prominent symptom, as in nervous insomnia. As an antispasmodic it is much used in delirium tremens, convulsions, strychnin-poisoning, chorea, asthma, puerperal eclampsia, and hiccoughs.

Administration.—Great care must be taken in giving chloral to patients with heart weakness. In insomnia accompanied by pain if a small dose of morphin be given with the chloral most satisfactory results will be obtained.

Toxicology.—Large doses of chloral cause a slow, feeble, irregular pulse, cold and cyanotic skin, slow, shallow respirations, deep sleep, and coma.

Management.—Empty and wash the stomach. Give antidotes, as cocain, inhalations of amyl nitrite, strychnin, and oxygen. Apply heat externally. Enemata of strong black coffee are useful.

CHLORALAMID (*)

CHLORALOSE (*)

CHLOROFORM

Derivation.—A liquid derived from the action of alcohol on chlorinated lime.

Properties.—A clear, colorless, volatile liquid with a sweet taste and an agreeable ethereal odor.

Preparations.

Water.—Dose, 1-8 drams.

Spirit.—Dose, 15-60 minims.

Liniment.

Emulsion.—Dose, 1-2 drams.

Physiologic Action.

Rubescent.—When applied externally chloroform
causes a burning sensation, followed by redness of the surface and numbness.

Stomachic.—In the stomach the drug produces a sensation of warmth and an increase of the gastric secretion.

Anesthetic.—Given by inhalation chloroform soon causes a loss of consciousness, feeling, and reflexes.

Cardiorespiratory Depressant.—This drug in excess depresses and, later, paralyzes the two great centers of cardiac and respiratory functions.

Antiseptic.—Chloroform is an antiseptic and preservative of much value.

Therapeutic Indications.

As a rubefacient and anodyne it enters largely into the treatment of neuralgias, rheumatism, lumbago, sciatica, and cramps, being used for this purpose chiefly as a liniment.

As a gastro-intestinal stimulant it is much employed in flatulence and colic.

As an antispasmodic it is valuable in convulsions, hysteria, hiccough, eclampsia, epileptic seizures, chiefly employed by inhalation.

As an anesthetic in surgical procedures.

As an antiseptic it is chiefly used to prevent organic liquids from decomposing.

It is highly praised as a cure for tapeworm.

Toxicology.—The pupils, which are first contracted, dilate widely, reflexes are lost, the pulse becomes rapid and feeble, muscular relaxation is complete, and the breathing stertorous.

Management.—Stimulate with amyl nitrite, atropin, strychnin, and digitalis. Apply artificial respiration
and make rhythmic traction on the tongue. Give inhalations of oxygen and apply the faradic current.

CHRYSAROBIN (*)

CIMICIFUGA (*)

CINCHONA

Derivation.—The bark of *Cinchona Calisaya*.

Synonyms.—Calisaya, Peruvian Bark.

Constituents.—Quinin, cinchonin, quininidin, cinchonidin, and cinchotannic acid.

Incompatibilities.—Metallic salts, lime-water, and tartar emetic.

Dosage.—5–15 grains.

Preparations.

Extract.—Dose, 5–30 grains.

Fluidextract.—Dose, 5–60 minims.

Tincture.—Dose, $\frac{1}{2}$–2 drams.

Infusion.—Dose, 2–8 drams.

Quinin.—Dose, $\frac{1}{2}$–15 grains.

Quinin Arsenate.—Dose, $\frac{1}{8}$–$\frac{1}{8}$ grain.

Quinin Bisulphate.—Dose, $\frac{1}{2}$–20 grains.

Quinin Hydrobromate.—Dose, $\frac{1}{2}$–20 grains.

Quinin Hydrochlorate.—Dose, $\frac{1}{2}$–20 grains.

Quinin Salicylate.—Dose, 2–15 grains.

Quinin Sulphate.—$\frac{1}{2}$–20 grains.

Quinin Tannate.—Dose, $\frac{1}{2}$–15 grains.

Cinchonidin.—Dose, 1–20 grains.

Cinchonidin Salicylate.—Dose, 1–10 grains.

Cinchonidin Sulphate.—Dose, 1–20 grains.

Physiologic Action.
Stomachic.—Cinchona stimulates the flow of gastric juice, increases the appetite, and aids digestion.

Antiperiodic.—This drug prevents the return of periodic symptoms of malaria by its action on the plasmodia circulating in the blood.

Cerebral Excitant.—Quinin produces cerebral congestion and stimulation.

Spinal Depressant.—Quinin acts as a depressant to the spinal cord and lessens reflex action.

Cardiac Stimulant.—Cinchona in small doses increases the heart's action.

Antipyretic.—Quinin produces a fall of body temperature when given in febrile conditions.

Eobolico.—In some pregnant women quinin will stimulate uterine contractions.

Therapeutic Indications.

As a stomachic in convalescence, atonic dyspepsia, loss of appetite, and anemia.

As an antiperiodic in all malarial affections.

As an antipyretic in pneumonia, influenza, rheumatism, and other febrile disorders.

Quinin has been found of great value in the treatment of whooping-cough.

Administration.—In malaria, quinin should be given in large doses some time before the expected paroxysm, or it may be used in moderate doses during the entire twenty-four hours before the attack. Persons going to malarial districts should take quinin in small doses as a prophylactic. If a cathartic be first given the action of the quinin is greatly augmented. Quinin should be given in powder form in capsules or konseals and not in pilular or tablet form, for if
these latter are not recently made their action is uncertain.

Pretoxic Signs.—Ringing or buzzing in the ears, fulness of the head, and slight deafness.

Toxicology.—The toxic symptoms of poisoning by quinin or cinchona are grouped as cinchonism: deafness, blindness, tinnitus aurium, skin eruptions, slow pulse, and coma.

CINNAMON (*)

CITRIC ACID (*)

COCA

Derivation.—The leaves of *Coca Erythroxylon*.

Synonyms.—Cuca, Erythroxylon.

Constituent.—Cocain, an alkaloid.

Dosage.—5–30 grains.

Preparations.

Fluidextract.—Dose, 1–4 drams.

*Cocain* Hydrochlorate.—Dose, ¼–2 grains.

Physiologic Action.

Anesthetic.—Cocain, when applied to the mucous membrane, the broken skin, or injected subcutaneously, produces numbness of the parts with a blanching of the surface, due to the constriction of the blood-vessels.

Cerebrospinal Stimulant.—When given in moderate doses coca produces a sense of exhilaration, increases the mental powers, and causes insomnia.

Cardiac Stimulant.—In small doses this drug acts as a heart stimulant.

Mydriatic.—Applied to the conjunctiva, cocain soon produces marked dilatation of the pupils.
Therapeutic Indications.

As a local anesthetic in minor operations and in the relief of pruritus, toothache, painful ulcers, sore gums, and in vomiting.

As a cerebrospinal stimulant in melancholia, neurasthenia, and hysteria.

As a mydriatic in iritis and keratitis.

Administration.—As a subcutaneous injection cocaine may be employed as a 1 to 10 per cent. solution, and not more than $\frac{1}{4}$ grain should be used.

Toxicology.—Cocaine should be used as an anesthetic with great caution, as it may produce grave toxic symptoms, as uncontrollable laughter followed by mental depression, dryness of the throat, nausea and vomiting, dilated pupils, feeble, irregular pulse, cyanosis, fainting, and collapse.

Management.—Wash out the stomach. Give stimulants, as strychnin and aromatic spirit of ammonia. Begin artificial respiration early and give inhalations of oxygen.

CODEIN

(See Opium)

COD-LIVER OIL

Derivation.—A fixed oil derived from the fresh livers of the Gadus Morrhua or the codfish.

Synonym.—Oleum Morrhuæ.

Dosage.—1–4 drams.

Preparation.

Emulsion.—Dose, 1–8 drams.

Physiologic Action.

Alternative.—Taken internally, cod-liver oil so affects
metabolic processes that the general nutrition of the body is improved, the resistance of the person is increased, and adipose tissue is deposited. Part of this action is due to its oily properties, and partly to certain extractives found in the drug.

**Therapeutic Indications.**

Cod-liver oil is employed in all conditions accompanied by failure of the general nutrition of the body, as in tuberculosis, scrofula, diabetes, chronic bronchial affections, anemia, rickets, syphilis, neurasthenia, and chronic rheumatism.

**Administration.**—The clear oil is the best form for giving this drug, but its taste to many individuals is revolting. Children learn to take it readily. It may be given in capsules or mixed with glycerin and a few drops of oil of wintergreen. If a little salt be added to the oil, regurgitation may be prevented.

**COLCHICUM**

**Derivation.**—The corm and seed of *Colchicum Autumnale*.

**Synonym.**—Meadow Saffron.

**Constituent.**—Colchicin.

**Dosage.**—1–5 grains.

**Preparations.**

*Extract of the Root.*—Dose, $\frac{1}{2}$–2 grains.

*Fluidextract of the Root.*—Dose, 2–8 minims.

*Fluidextract of the Seeds.*—Dose, 3–10 minims.

*Tincture of the Seeds.*—Dose, 5–30 minims.

*Wine of the Root.*—Dose, 5–20 minims.

*Wine of the Seeds.*—Dose, 20–60 minims.

*Colchicin.*—Dose, $\frac{1}{18}$–$\frac{1}{8}$ grain.
Physiologic Action.

Irritant.—Applied externally, colchicum causes burning and redness, and if the action continues pustules form.

Gastro-intestinal Irritant.—In very small doses the drug stimulates the gastric, intestinal, and biliary secretions, but in larger doses it acts as an irritant, producing nausea, vomiting, colic, and purging.

Cardiorespiratory Depressant.—Colchicum acts on the heart similarly to aconite, producing a slow, soft pulse. Respirations are first slowed, but later become rapid and shallow.

Antipodagric.—The chief use of colchicum is in gout. How its action is brought about in this disease little is known, but it soon lessens the pain and joint symptoms.

Therapeutic Indications.

As mentioned above, colchicum is chiefly employed in the treatment of podagra (gout). It is also useful in chronic rheumatism.

Toxicology.—Large doses produce vomiting, purging (which may become bloody), rapid, feeble pulse, shallow respirations, most intense colic, cold, moist skin, and collapse.

Management.—Empty the stomach by giving apomorphin or emetics, as mustard- or salt-water. Tannic acid is an excellent antidote. Stimulate with enemata of strong coffee, strychnin, and atropin.

COLOCYNTH (*)

CONIUM (*)
CONVALLARIA

Derivation.—The rhizomes and roots of Convallaria Majalis.

Synonym.—Lily of the Valley.

Dosage.—1–5 grains.

Preparations.

Fluidextract.—Dose, 5–20 minims.

Convallamarin.—Dose, $\frac{1}{2}$–1 grain.

Physiologic Action.

Cardiac Stimulant.—Convallaria produces a slow, powerful heart action, and is said to act especially on the right side of the heart.

Diuretic.—The use of convallaria is followed by an increase of the urinary excretion.

Comparative Action.—Compared to digitalis, convallaria is not so energetic, produces less slowing of the heart, does not cause so great vasoconstriction, and acts especially on the right heart.

Therapeutic Indications.

It is used in cardiac disease as is digitalis, for which it may be substituted.

COPAIBA (*)

COPPER COMPOUNDS (*)

COTARNIN HYDROCHLORATE

(See Part IV.)

CREOLIN (*)

CREOSOTE AND COMPOUNDS

Derivation.—Creosote is an oily liquid derived from the distillation of beech-wood.
Properties.—It is a colorless liquid with an empyreumatic odor and a burning taste. It is soluble in water (150 parts), alcohol (freely).
Constituents.—Guaiacol and Creosol.
Dosage.—1/2–2 minims.
Preparations.
Water.—Dose, 1–2 drams.
Creosote Carbonate (Creosotal).—Dose, 5–20 minims.

Physiologic Action.
The action of this drug is very much like that of Carbolic Acid (which see).
Locally it is an anesthetic and parasiticide. Internally it is an antiseptic and gastric sedative.

Therapeutic Indications.
The chief use of creosote is in pulmonary tuberculosis, when it acts as an antiseptic and increases the nutrition. It is also much employed as an intestinal antiseptic in typhoid fever and diarrhea. In vomiting it is very useful.

Creosote carbonate is less irritating than creosote, and is extensively employed in tuberculosis, pneumonia, and typhoid fever.

Administration.—As creosote is more or less of a gastric irritant, it is best given in capsules or in the form of an emulsion. Creosote is much used as an inhalant, and as such may be given on a mask in the following combination: Chloroform, ether, and creosote, of each 1 dram; then add 2 drams of alcohol and 1 dram of the oil of eucalyptus. Sprinkle about 20 drops of this on the mask or inhaler.

Toxicology.—See under Carbolic Acid.
CROTON OIL

CROTON CHLORAL (*)

CROTON OIL

Derivation.—A fixed oil expressed from the seeds of Croton Tiglium.

Synonym.—Oleum Tiglii.

Dosage.—\frac{1}{4}–1 minim.

Physiologic Action.

Rubefacient and Pustulant.—Applied externally croton oil produces great irritation and redness, soon followed by the formation of pustules.

Drastic Cathartic.—Taken internally the drug causes considerable irritation, with profuse and watery purgation. It may bring about a severe gastro-enteritis.

Therapeutic Indications.

As a counter-irritant in pleurisy, arthritis, bronchitis, and neuralgia.

As a cathartic when it is desirable to get rapid and profuse bowel movements, or for use in unconscious patients, as in apoplexy, mania, and coma.

Administration.—If the patient be unconscious 1 drop of croton oil may be mixed with a little butter or glycerin and placed on the base of the tongue. It should never be given to patients suffering with inflammation of the stomach, intestines, or peritoneum. This potent drug should not be administered to children or pregnant women. Not more than 2 drops should be given as a single dose.

Toxicology.—Nausea, vomiting, great purging, severe abdominal pain, followed by collapse.

Management.—Empty the stomach. Give demul-
cents, as mucilage, starch paste, oils, flaxseed-tea, and white of egg. Give opium for the pain. Stimulate with ammonia, brandy, and strychnin.

**CUBERS** (*)

**CUSSO** (*)

**DIGITALIS**

Derivation.—The leaves of *Digitalis Purpurea*, collected in the second year.

Synonym.—Foxglove.

Constituents.—Digitalin, digitoxin, digitonin, and digitalein—all are glucosids.

Incompatibilities.—Acids, alkalies, tannin, cinchona, and iron and lead salts.

Dosage.—1–3 grains.

Preparations.

*Extract.*—Dose, $\frac{1}{2}$–1 grain.

*Fluidextract.*—Dose, $\frac{1}{2}$–3 minims.

*Tincture.*—Dose, 5–30 minims.

*Infusion.*—Dose, 1–4 drams.

*Digitalin.*—Dose, $\frac{1}{10}$ grain.

Physiologic Action.

Gastro-intestinal Irritant.—Digitalis disorders the stomach and causes nausea and vomiting in many persons.

Cardiac Stimulant.—Upon the heart digitalis acts as a stimulant. The heart action becomes slower, but more forcible.

Vasocostrictor.—By its stimulating action on the vasomotor center of the brain, digitalis causes a
marked constriction of the blood-vessels and raises the
general blood-pressure.

Diuretic.—By the combined action of this drug on
the heart and vessels, together with its local action on
the kidneys, the amount of urine excreted is greatly
increased.

Therapeutic Indications.

As a cardiac stimulant in chronic endocarditis with
involvement of any of the valves. In tachycardia,
palpitation, and irritable heart it is useful. In heart
depression, occurring in the course of typhoid fever,
pneumonia, shock, drug poisoning, acute fevers, and
alcoholism.

As a diuretic in dropsy of renal or cardiac origin.

Digitalis is also employed in exophthalmic goiter,
menorrhagia, and hemorrhage.

Administration.—As digitalis easily disorders the
stomach, it may be given to susceptible persons as an
enema. As a heart stimulant use the tincture, and for
diuretic effect the infusion is preferable. Fever pre-
vents the slowing action of digitalis on the heart.
Children bear digitalis badly. As it is often desirable
to combine digitalis with iron, the black mixture
resulting from such a combination may be readily
cleared by adding a little dilute phosphoric acid.

Digitalis slowly accumulates in the system, and on
this account the drug should be stopped occasionally.

Pretoxic Signs.—A slow pulse becoming rapid,
and a decrease in the flow of urine.

Toxicology.—Large doses produce a rapid, tumult-
uous heart, nausea, vomiting, purging, headache, and,
later, collapse.
Management.—Empty the stomach and wash repeatedly. Give tannin as an antidote. Stimulate with ammonia, brandy, strychnin, and atropin. Keep the patient in the reclining position. This is important.

**ERATIUM (**)**

**ERGOT**

Derivation.—Ergot is produced by the action of a fungus on the grain of common rye.

Synonyms.—Spurred Rye, Ergot of Rye, Ergota.

Constituents.—Ergotin and Cornutin.

Dosage.—30–60 grains.

Preparations.

*Extract.*—Dose, 5–15 grains.

*Fluidextract.*—Dose, $\frac{1}{2}$–2 drams.

*Wine.*—Dose, 1–4 drams.

*Ergotin* (pure aqueous extract).—Dose, 1–10 grains.

Physiologic Action.

Hemostatic.—Ergot given internally causes a general contraction of the blood-vessels and a rise of blood-pressure.

Oxytocic.—Ergot produces, by its action on the muscles of the uterus, great contraction of that organ.

Therapeutic Indications.

As a hemostatic in cerebral and spinal congestion, in post-partum hemorrhage, in hematuria, hemoptyis, hematemesis, and epistaxis; to check secretions in profuse sweating, in diarrhea, diabetes insipidus, and in excessive secretion of milk.

As a uterine stimulant in post-partum hemorrhage, subinvolution, and menorrhagia.
This drug is of value in chronic alcoholism and delirium tremens.

Toxicology.—Acute Poisoning.—Nausea, vomiting, diarrhea, slow pulse, dizziness, giddiness, tremor, disturbed vision, areas of numbness, subnormal temperature, and collapse.

Management.—Empty the stomach with mustard or apomorphin. Give tannin. Stimulate with brandy. Give inhalations of amyl nitrite and hypodermic injections of nitroglycerin.

Chronic Poisoning.—Headache, vertigo, drowsiness, itching, photophobia, spasms of the muscles, coldness and numbness of the fingers and toes, followed by dry gangrene.

**ERIGERON (*)**

**ERIODICTYON (*)**

**ETHER**

**Derivation.**—A liquid derived from the distillation of alcohol with sulphuric acid.

**Synonyma.**—Sulphuric Ether, Ethyl Oxid.

**Properties.**—A clear, volatile liquid with a sweet, burning taste and a characteristic odor.

**Dosage.**—5–60 minims.

**Preparations.**

Spirit.—Dose, 15–60 minims.

*Compound Spirit* (Hoffman's Anodyne).—Dose, 5–60 minims.

**Physiological Action.**

Anesthetic.—Applied locally it produces great cold and numbness, due to its rapid evaporation.
Given by inhalation it soon causes unconsciousness, with loss of reflexes and sensation.

Cardiac Stimulant.—Ether rapidly produces a quick, forcible heart with an increase of blood-pressure.

Respiratory Stimulant.—Ether at first causes rapid and deep respirations.

Therapeutic Indications.

As an anesthetic in surgical procedure.

As an antispasmodic in tetanus, hysterical spasms, convulsions, eclampsia, hiccoughs, and asthma.

As a stimulant in syncope, shock, collapse, and heart depression occurring in the acute fevers.

Externally in neuralgias, toothache, and rheumatism.

Administration.—Ether, when given internally, should be employed in capsules or as a syrup.

Toxicology.—See Chloroform.

ETHYL BROMID (*)

ETHYL CHLORID (*)

EUCAIN (*)

EUCALYPTUS (*)

EUONYMUS (*)

EUPATORIUM (*)

FORMALDEHYD

Derivation.—A colorless gas derived from the action of heat on wood alcohol.

Synonyms.—Formic Aldehyde, Formol.

Preparations.

Formalin, which is a 40 per cent. solution of formaldehyde in water.
Physiological Action.

Antiseptic.—This drug has great powers as an antiseptic and disinfectant. On account of its penetrating power it is most efficient.

Anhidrotic.—Applied externally, formalin soon hardens the skin and lessens sweating.

Therapeutic Indications.

As an anhidrotic for sweating feet or axillae.

As an antiseptic for instruments, catheters, and for dressing wounds.

As a disinfectant for rooms, clothing, and furniture after contagious or infectious diseases.

As a preservative of anatomic and pathologic specimens.

FRANGULA (*)

GALLA

Definition.—Nutgalls are excrescences on the oak, caused by the puncture and eggs of a small insect.

Synonyms.—Nutgalls, Galls.

 Constituents.—Tannic and gallic acids.

 Incompatibilities.—Alkalies, alkaloids, metallic salts, acids, and gelatin.

Preparations.—

Tincture of Nutgalls.—Dose, 1–2 drams.

Ointment of Nutgalls.—20 per cent. strength.

Tannic Acid (Tannin).—Dose, 1–5 grains.

Ointment of Tannic Acid.

Glycerite of Tannic Acid.

Styptic colloidion contains 20 per cent. of tannic acid.

Gallic Acid.—Dose, 1–15 grains.
Physiologic Action.

Astringent.—Applied externally, tannic acid coagulates albuminous discharges, stops bleeding, and astringes the tissues. Internally, it acts as an astringent, diminishing the gastric and intestinal juices.

Gallic acid, on the other hand, does not coagulate albumin, but controls hemorrhage by constricting the blood-vessels.

Therapeutic Indications.

Tannic acid is used locally to stop bleeding; to contract relaxed tissues, as in rhinitis, pharyngitis, and uvulitis; to check excessive sweating of tuberculosis or localized sweating of the feet or axillae. It is useful as an injection in leukorrhea.

Internally it is used in diarrhea, diabetes, and renal bleeding.

Gallic acid is given in the treatment of hematuria, menorrhagia, night-sweats, diabetes, albuminuria, and diarrhea.

GAULTHERIA

Derivation.—A volatile oil distilled from the leaves of Gaultheria Procumbens.

Synonyms.—Oil of Wintergreen, Oil of Teaberry.

Dosage.—5–20 minims.

Preparation.

Spirit.—Dose, 1–2 drams.

Physiologic Action.

The action and uses of the oil of wintergreen are the same as those of Salicylic Acid (which see).

Administration.—It is best given in capsules, as an emulsion, or on sugar. There is on the market a syn-
thetic oil of wintergreen made from carbolic acid derivatives and called methyl salicylate. This preparation should not be employed internally as a substitute for the natural oil.

**Gelsemium**

Derivation.—The rhizomes of *Gelsemium Semprevirens*.

**Synonym.**—Yellow Jasmine.

**Constituents.**—Gelsemin and Gelseminin.

**Dosage.**—3–10 grains.

**Preparations.**

*Fluidextract.*—Dose, 2–5 minims.

*Tincture.*—Dose, 10–30 minims.

*Gelsemin.*—Dose, $\frac{1}{10}$–$\frac{1}{6}$ grain.

**Physiologic Action.**

Spinal Depressant.—Gelsemium acts mainly on the anterior horn of the cord, depressing it, thus causing loss of reflexes and decreased muscular power. The sensory side is also affected, producing anesthesia.

Mydriatic.—This drug produces dilatation of the pupils.

Gelsemium is a cardiorespiratory depressant.

**Therapeutic Indications.**

As an antispasmodic in whooping-cough, asthma, and spasmodic dysmenorrhea.

As an analgesic in neuralgia, rheumatism, headache, and migraine.

**Administration.**—As a mydriatic gelsemin is used in a 1:60 solution in water.

**Toxicology.**—Large doses produce languor, malaise, and weakness, followed by muscular relaxation, as
ptosis and dropping of the jaw. The pupils are widely dilated, the pulse rapid, feeble, and irregular, and the skin cold and moist.

Management.—Empty the stomach with emetics, as mustard-, salt-water, or apomorphin. Give tannic acid. Stimulate with ammonia, atropin, and strychnin.

GENTIAN

Derivation.—The roots of Gentiana Lutea.

Incompatibilities.—Iron and lead salts.

Dosage.—5–30 grains.

Preparations.

Extract.—Dose, 1–10 grains.

Fluidextract.—Dose, 5–30 minims.

Compound Tincture.—Dose, 1–4 drams.

Physiologic Action.

Stomachic.—In medicinal doses gentian sharpens the appetite, increases the flow of the gastric secretions, and the motor power of the stomach and intestines.

Therapeutic Indications.

Gentian is employed whenever a bitter tonic is necessary, as in anorexia, atonic dyspepsia, hysteria, anemia, etc.

GINGER

Derivation.—The rhizomes of Zingiber Officinale.

Synonym.—Zingiber.

Dosage.—5–15 grains.

Preparations.

Fluidextract.—Dose, 5–15 minims.

Tincture.—Dose, 10–60 minims.
GLYCERIN

*Syrup.*—Dose, 1-4 drams.

*Oleoresin.*—Dose, 1-2 minims.

**Physiologic Action.**

**Rubefacient.**—Applied externally ginger produces a burning sensation, followed by redness of the surface.

**Stomachic.**—Ginger increases the flow of saliva and gastric juice and stimulates the appetite.

**Carminative.**—By its stimulating action on the motor power of the stomach and intestines it aids in the expulsion of gas or flatus.

**Therapeutic Indications.**

Ginger is used in dyspepsia, flatulence, colic, diarrhea, and dysmenorrhea. Externally it is used the same as capsicum.

GLYCERIN

**Derivation.**—It is a triatomic alcohol, derived from the action of superheated steam on fats.

**Properties.**—Glycerin is a clear, colorless, thick syrupy liquid with a sweet, warm taste.

**Dosage.**—5-60 minims.

**Preparations.**

*Suppositories.*

*Several glycerites.*

**Physiologic Action.**

**Emollient.**—Applied externally glycerin is soothing and softens the skin, and will aid in the absorption of drugs incorporated with it.

**Laxative.**—Given internally it produces a soft bowel movement. If given by rectum it has the same action.
Therapeutic Indications.

Externally for chapped hands, eczema, psoriasis, and other skin diseases.

Internally it is used in constipation, either by mouth or rectum.

Glycerin is also employed as a sweetening agent for diabetics.

GLYCYRRHIZA

Derivation.—The root of Glycyrrhisa Glabra.
Synonyms.—Liquorice, Licorice.
Constituent.—Glycyrrhizin.
Dosage.—Freely.
Preparations.

Extract.—Dose, 5–60 grains.

Fluidextract.—Dose, 1–2 drams.

Compound Powder contains senna, licorice, sulphur, and oil of fennel. Dose, 1–2 drams.

Compound Mixture contains licorice, paregoric, wine of antimony, and spirit of nitrous ether. It is also known as Brown Mixture. Dose, 1–4 drams.

Ammoniated Glycyrrhisin.—Dose, 5–15 grains.

Physiologic Action.

Demulcent.—Licorice allays irritation of the mouth, pharynx, and bowels.

Laxative.—Licorice is a slight laxative, causing a large, softened stool.

Vehicle.—Owing to its pleasant taste, licorice is much employed to cover the taste of unpleasant drugs.

Therapeutic Indications.

As a demulcent in stomatitis and pharyngitis.
As a laxative it is given in the form of the compound powder, as a mild, non-griping laxative.

**GOSSYPII RADICIS CORTEX (*)**

**GRINDELIA ROBUSTA (*)**

**GUAIAc (*)**

**GUAIAcOL**

**Derivation.**—One of the chief constituents of Creosote.

**Properties.**—It is a colorless, oily liquid with an empyreumatic odor. It is soluble in alcohol and ether (freely), in water (100 parts).

**Dosage.**—¾—10 minims.

**Preparations.**

- **Guaiacol Bensoate** (Benzosol).—Dose, 1–10 grains.
- **Guaiacol Carbonate** (Duotal).—Dose, 1–8 grains.
- **Guaiacol Salicylate.**—Dose, 5–30 grains.
- **Guaiacol Valerianate** (Geosote).—Dose, 3–10 minims.

**Physiologic Action.**

The general action of guaiacol is the same as that of Creosote (which see), excepting that guaiacol has a powerful antipyretic action when applied locally. At times it reduces the temperature from five to seven degrees in a brief time.

Guaiacol carbonate is much employed as an internal antiseptic.

**Therapeutic Indications.**

They are the same as for creosote, but the carbonate is much used in pulmonary tuberculosis, typhoid fever, and diarrhea as an antiseptic.
Administration.—Guaiacol should be given well diluted and its taste disguised by some vehicle or in capsules.

Locally, for reducing fever, it must be used with great caution, as it may produce sudden collapse. Thirty minims of the pure drug mixed with equal parts of glycerin are applied to the skin of the abdomen or chest by means of a camel's-hair brush, and the area covered with oiled muslin to prevent too rapid evaporation.

Applied to painful areas, as in neuralgia, rheumatism, and sciatica, guaiacol rapidly relieves the pain.

HAMAMELIS (*)

HEMATOXYLON (*)

HEROIN
(See Opium)

HIRUDO

Definition.—An aquatic worm of the class Sanguis-uga Medicinalis.

Synonym.—Leech.

Therapeutic Use.

The leech is employed to abstract blood in such conditions as meningitis, mastoiditis, conjunctival ecchymosis, orchitis, and joint affections.

Application.

Have the area shaven and well cleaned, and apply the leech. If the leech does not readily take hold, then apply to the part a little fresh milk or blood. If it is desirable to have the animal attack a certain spot,
then place the leech on a sheet of paper with a small hole in it, and have this hole over the area you wish to have attacked.

The leech will release its hold when it is engorged with blood. If, for any reason, it holds fast when you desire to remove it or if it accidently gets into the external auditory meatus, it may be readily removed by applying salt or a drop of ether to it.

If the leech-bite continues to bleed, the hemorrhage may be controlled by the application of pressure, styptic collodion, Monsel’s solution, lunar caustic, or suprarenal extract.

HOMATROPIN HYDROBROMATE

Action and Uses.

This drug causes dilatation of the pupils, for which purpose it is solely employed.

Its general action is similar to atropin.

Used for the eye in a 1 per cent. solution.

HUMULUS (*)

HYDRASTIS

Derivation.—The rhizome and root of Hydrastis Canadensis.

Synonym.—Golden Seal, Yellow Root.

Constituents.—Two alkaloids: Hydrastin and Berberin.

Dosage.—5–60 grains.

Preparations.

Fluidextract.—Dose, 5–60 minims.

Tincture.—Dose, ¼–2 drams.

Glycerite.
Hydrastin.—Dose, $\frac{1}{4}$–1 grain.

Hydrastinin Hydrochlorate (artificial alkaloid).—
Dose, $\frac{1}{4}$–$\frac{1}{3}$ grain.

**Physiologic Action.**

**Astringent.**—Applied to the skin or mucous membrane it is soothing and astringent, lessening the secretions.

**Stomachic.**—Internally it increases the gastric juice and sharpens the appetite.

**Cholagogue.**—This drug is said to increase the flow of bile.

**Cardiorespiratory Stimulant.**—This action of the drug is very similar to that of nux vomica.

**Styptic.**—Hydrastis contracts the musculature of the vessels, causing vasoconstriction.

**Oxytocic.**—Hydrastis causes contraction of the muscles of the uterus.

**Therapeutic Indications.**

As an **astringent** it is used in the treatment of ulcers, wounds, local sweating, stomatitis and pharyngitis, rhinitis, leukorrhea, and gonorrhea.

As a **stomachic** in atonic dyspepsia and alcoholic gastritis.

As a **cholagogue** in catarrhal jaundice.

As a **styptic** in epistaxis, hemoptysis, menorrhagia, and other forms of bleeding.

**HYDROCHLORIC ACID**

**Definition.**—A liquid containing about 32 per cent. of absolute hydrochloric acid.

**Synonyms.**—Muriatic Acid, Acidum Hydrochloricum.
HYDROCHLORIC ACID

Properties.—A clear, colorless liquid, giving off irritating vapors and having a burning, sour taste.

Incompatibilities.—Alkalies, carbonates, lead and silver salts, and potassium permanganate.

Dosage.—1–10 minims, well diluted.

Preparations.

Dilute Hydrochloric Acid (10 per cent. strength).—

Dose, 10–30 minims.

Physiologic Action.

Caustic.—Applied externally this acid, like all of the mineral acids, causes redness and burning, and if its action is continued, destruction of tissue takes place.

Tonic.—Hydrochloric acid increases the flow of saliva, but decreases the gastric juice if it be taken before or during the meal. If administered after the meal it reinforces the action of the natural acid of the stomach and aids digestion.

Hematinio.—This acid is said to increase the number of red cells of the blood.

Therapeutic Indications.

Hydrochloric acid is useful in all diseases in which the natural acid is deficient, as in nervous dyspepsia, subacid indigestion, achylia, gastric cancer, anemia, and acute fevers, especially typhoid fever.

Administration.—This acid should always be given in a well-diluted form and after meals. If taken through a glass tube its corrosive action on the teeth may be avoided.

Toxicology.—The usual symptoms are burning of the mouth, throat, and stomach; excoriation of the lips, tongue, and mouth; vomiting of dark-colored
material (altered blood); cold, moist skin; rapid, feeble pulse, and collapse.

Management.—Do not use a stomach-tube if a strong acid has been taken, as you may start a severe hemorrhage or perforate the stomach wall. Give antidotes, as soapy water, lime-water, chalk, or saleratus-water. Give demulcents, as olive oil, cotton-seed oil, milk, white of egg, and starch solution. Give morphin for pain and stimulate if necessary.

HYDROCYANIC ACID

Definition.—It is a colorless, clear liquid, with an odor resembling bitter almonds, and is extremely poisonous. One drop of pure acid has caused death.

Synonym.—Prussic Acid.

Preparations.

_Dilute Hydrocyanic Acid_ contains 2 per cent. of hydrocyanic acid, and is the only form used as a medicine. Dose, 1–4 minims. When this solution turns brown it should not be used.

Physiologic Action.

Local Anodyne.—The dilute acid, when applied to the cutaneous surface, is rapidly absorbed and depresses the sensory end filaments, causing numbness.

Analgesic.—Taken internally the dilute acid acts as a sedative to the stomach walls. Being absorbed quickly, it acts upon the sensory nerve tissue, depressing it.

Cardiorespiratory Depressor.—Dilute prussic acid in small doses produces a slow heart; in large doses a rapid, feeble heart. The respiratory function is also depressed.
HYDROGEN PEROXID SOLUTION

Therapeutic Indications.
As a sedative in the hacking cough of chronic bronchitis, pulmonary tuberculosis, and in whooping-cough. In persistent vomiting, colic, and gastralgia.
As a local anodyne in all forms of itching.

Toxicology.—Poisoning by this drug is very rapid. The symptoms are salivation, giddiness, cyanosis, convulsions, fixed, staring eyes, dilated pupils, very weak and rapid pulse, and, if fatal, death will take place in a short time.

Management.—Stimulate vigorously with ammonia inhalations, electricity, and atropin. Inaugurate artificial respiration and give cold affusions.

HYDROGEN PEROXID SOLUTION

Definition.—A 3 per cent. solution of hydrogen peroxide in water.

Synonyms.—Aqua Hydrogenii Dioxidii, Oxygenized Water.

Properties.—A clear, colorless liquid with a slight acid taste, and which in the presence of organic material easily gives up its oxygen.

Dosage.—1–2 drams.

Physiologic Action.

Disinfectant and Deodorizer.—As this preparation gives up its oxygen very readily, it oxidizes organic material with which it comes in contact, thus destroying pus, dead tissue, and micro-organisms (sic).

Therapeutic Indications.
Hydrogen peroxide is employed whenever it is desired to free tissues of pus and necrotic matter, as in ulcers, fistulous tracts, abscess cavities, and diphtheritic
patches. This drug is useful also in stopping the oozing of blood from wounds.

**HYOSCYAMUS**

*Derivation.*—The leaves and flowering tops of the second year’s growth of *Hyoscyamus Niger.*

*Synonym.*—Henbane.

*Constituents.*—Two alkaloids: Hyoscyamin and Hyoscin.

*Dosage.*—5–15 grains.

*Preparations.*

*Extract.*—Dose, $\frac{1}{3}$–3 grains.

*Fluidextract.*—Dose, 5–15 minims.

*Tincture.*—Dose, 1–4 drams.

*Hyoscin Hydrobromate.*—Dose, $\frac{1}{40}–\frac{1}{10}$ grain.

*Hyoscyamin (Amorphous).*—Dose, $\frac{1}{120}$–$\frac{1}{8}$ minim.

*Hyoscyamin (Crystal).*—Dose, $\frac{1}{120}$–$\frac{1}{5}$ grain.

*Physiologic Action.*

The action of hyoscyamus is the same as that of belladonna, except that hyoscyamus has a *sedative* effect on the brain and cord due to the hyoscin, and hyoscyamus is more of a sedative to the bladder.

*Therapeutic Indications.*

This drug is much employed as a *sedative* in bladder troubles, as vesical spasm, cystitis, prostatitis, urethritis, and urinary incontinence.

*Hyoscin* is used in the insomnia and unrest of insanity, mania, and delirium tremens.

*Toxicology.*—See Belladonna.

**ICHTHYOL**

*Derivation.*—A substance produced by the distillation of the fossil remains of fish.
Synonym.—Ammonium Sulpho-ichthyolate.
Properties.—It is a semiliquid, dark brown or black substance, soluble in water, and having a rank bituminous odor.

Dosage.—3–15 minims.

Physiologic Action.

Vulnerary.—This agent, when applied to wounded areas, stimulates the formation of granulation tissue and the growth of epithelia.

Alterative.—Internally ichthyol seems to alter certain morbid processes and to exert a slight antiseptic effect.

Therapeutic Indications.

Externally in the treatment of ulcers, indolent wounds, erysipelas, burns, chilblains, and nearly all skin diseases.

Internally it is said to be useful in tuberculosis, as it decreases the expectoration and lessens the fever. It should be given in capsules.

**INGUVIN (*)**

IODIN

Preparations.

Tincture.—Dose, 1–5 minims.

Ointment.

Compound Solution (Lugol's Solution) contains iodin, potassium iodid, and water. Dose, 1–10 minims.

Physiologic Action.

Counter-irritant.—Externally iodin produces great irritation, with burning and redness.
Parasiticide.—Iodin destroys the lower animal and vegetable parasites that attack the skin.

Therapeutic Indications.

Iodin is used in the various parasitic skin diseases and as an application to enlarged glands, sprained joints, and in pleurisy, pericarditis, rheumatism, and neuralgia.

It is very seldom used internally, but occasionally it will be found of great value if employed in minute doses in persistent vomiting.

Administration.—Rather than make frequent paintings of the part, it is better to at once paint the area until it is almost black and then wait until desquamation is complete before applying the iodin again. This prevents very much local irritation.

Toxicology.—Iodin applied is absorbed and may cause the appearance of toxic signs. Salivation, tenderness of the gums, nausea, coryza, acneal eruption, anemia, various paralyses, and emaciation. These symptoms are classed as iodism.

Management.—Discontinue the use of the drug. Aid in its elimination. If it be a case of acute poisoning, wash out the stomach, give starch solution, and wash out the viscus again. Repeat this several times. Stimulate with brandy and atropin. Apply heat to the body.

IODOFORM

Properties.—A yellow crystalline powder having a penetrating odor and a sweet taste. It is soluble in ether (7 parts), alcohol (52 parts), glycerin (100 parts), and insoluble in water. It contains about 95 per cent. of iodin.

Dosage.—1–3 grains.
Preparation.

Ointment.

Action and Uses.

Iodoform is an antiseptic, disinfectant, alterative, and antitubercular. It is used as a dressing for wounds, ulcers, fistulous tracts, and burns. It is injected into tubercular abscess cavities, joints, and pleural sac.

Toxicology.—See Iodin.

IPECAC

Derivation.—The roots of Ipecacuanha Cephaëlis.

Constituents.—Emetin and Cephaëlin.

Synonym.—Ipecacuanha.

Dosage.—½–20 grains.

Preparations.

Fluidextract.—Dose, ½–20 minims.

Syrup.—Dose, ½–2 drams.

Wine.—Dose, 1–60 minims.

Powder of Ipecac and Opium (Dover's Powder).—

Dose, 3–15 grains.

Tincture of Ipecac and Opium.—Dose, 3–15 minims.

Emetin.—Dose, ½–1 grain.

Physiologic Action.

Irritant.—Applied to the skin or mucous membrane, ipecac produces irritation followed by redness and, if prolonged, by pustules.

Emetic.—Very small doses act as a gastric sedative, but larger doses produce nausea and vomiting by its local irritation and by its action on the vomiting center in the medulla.
Cholagogue.—Ipecac is said to increase the flow of bile.

Diaphoretic.—This drug causes a slight increase in the excretion of the sweat.

Expectorant.—Ipecac produces a congestion of the bronchial mucous membrane and increases its secretions.

Cardiac Sedative.—In moderate doses ipecac reduces the heart's action.

Therapeutic Indication.

As an emetic in all forms of poisoning if the toxic material is in the stomach and is not of a corrosive character. It is also employed to unload the engorged bronchi in suffocative bronchitis and croup in children, and in laryngitis.

As a gastric sedative in some types of persistent vomiting, it is very useful if given in minute doses.

As an expectorant in bronchitis, laryngitis, asthma, and chronic cough.

As a diaphoretic to break up "colds," it is used in the form of Dover's Powder.

Ipecac is said to act as a specific in dysentery, but must be given in very large doses (20 grains every four hours).

EMETIN

The alkaloid of ipecac has come into such prominence of late years that it is now used more frequently than the drug in the treatment of several conditions. Emetin hydrochlorid is the salt commonly employed. Its widest applications are in the treatment of amebic dysentery and pyorrhea alveolaris, or Riggs' disease. It is administered either by mouth, by hypodermic,
or locally. In dysentery, $\frac{1}{4}$ to $\frac{1}{2}$ grain in sterile water may be given under the skin three times a day.

IRON COMPOUNDS

IRIS (*)

REduced iron

Synonyms.—Ferrum Reductum, Quevenne's Iron, Iron by Hydrogen.
Dosage.—1-5 grains.

IRON ARSENATE

Synonym.—Ferri Arsenias.
Action is that of arsenic and iron combined.
Dosage.—$\frac{1}{16}$--$\frac{1}{2}$ grain.

IRON BROMID

Dosage.—1-5 grains.

IRON CARBONATE

Preparations.

Saccharated Iron Carbonate.—Dose, 2-10 grains.
Mixture of Iron Carbonate (Griffith's Mixture).—Dose, 1-4 drams.

IRON CHLORID

Synonyms.—Ferri Chloridum, Ferri Perchloridum, Ferric Chlorid.
Preparations.

Solution of Iron Chlorid.—Dose, 2-10 minims, well diluted.
Tincture of Iron Chlorid.—Dose, 5-60 minims.
Solution of Iron and Ammonium Acetate (Basham's Mixture).—Dose, 1–4 drams.

IRON CITRATE
This is a scale preparation of iron and is soluble in water.
Dosage.—1–10 grains.

IRON HYPOPHOSPHITE
Has combined action of iron and phosphorus.
Dosage.—1–10 grains.

IRON IODID
Preparations.
Saccharated Iron Iodid.—Dose, 5–15 grains.
Syrup of Iron Iodid.—Dose, 5–30 minims.

IRON OXID
Preparations.
Hydrated Iron Oxid (Hydrated Iron).—Dose, 1–4 drams.
Hydrated Iron Oxid with Magnesia (Arsenic antidote).—Prepared by mixing equal parts of the two following solutions: (1) Iron sulphate solution, 2 ounces; water, 3½ ounces. (2) Magnesia, 2½ drams; water, 25 ounces.
Saccharated Iron Oxid (Eisenzucker).—Dose, 10–30 grains.

IRON PHOSPHATE (SOLUBLE)
Dosage.—1–5 grains.

IRON SUBSULPHATE SOLUTION
Synonym.—Monsel's Solution.
Dosage.—2–10 minims.
IRON COMPOUNDS

IRON SULPHATE

Synonyms.—Green Vitriol, Copperas.

Preparations.

Dried Iron Sulphate.—Dose, ½–2 grains.

Blaud’s Mass and Pills contain iron sulphate and potassium carbonate.

IRON VALERIANATE

Has combined action of valerian and iron.

Dosage.—1–15 grains.

COMPOUND IRON PREPARATIONS

Ammonium and Iron Citrate.—Dose, 3–10 grains.

Ammonium and Iron Tartrate.—Dose, 5–10 grains.

Iron and Potassium Tartrate.—Dose, 10–30 grains.

Iron and Quinin Citrate.—Dose, 3–10 grains.

Iron and Strychnin Citrate.—Dose, 2–5 grains.

Iron, Quinin, and Strychnin Citrate.—Dose, 1–5 grains.

Incompatibilities of Iron.

Tannic acid and all substances containing it, as the vegetable infusions and alkalies, lime-water, carbonates, salicylates, mercuric salts, and albumin, should not be prescribed with iron.

Physiologic Action of Iron.

Astringent.—Applied to the mucous surface or the broken skin, iron salts act as powerful astringents, coagulating albumin and checking any secretions or bleeding.

Hematinic.—Taken internally iron causes an increase in the amount of hemoglobin in the blood, and also an increase of the red cells.
Intestinal Astringent.—In the intestines iron lessens the secretions and causes constipation. Unabsorbed iron combines with the sulphur in the bowels and forms iron sulphid, which colors the feces black.

Therapeutic Indications.
As an astringent to control bleeding points or to astringe relaxed tissues, as in pharyngitis, tonsillitis, and relaxed uvula. Also in diarrheas and hemorrhages of the gastro-intestinal tract.
As a hematinic in anemia of any form.

Administration.—As a local astringent the solution of iron chlorid or iron subsulphate are best. As a hematinic in anemia most any form may be employed, but the scale preparations (citrates and tartrates) are least constipating. Blaud’s mass or the reduced iron are very useful in anemia.

In giving the tincture of iron chlorid use a glass tube to prevent action on the teeth.

The administration of an excessive amount of iron is indicated by frontal headache, constipation, and flushing of the skin.

JALAP

Derivation.—The tuberous roots of Jalapa Ipomea.
Dosage.—5–20 grains.
Preparations.

Extract.—Dose, 1–5 grains.

Compound Powder (Purging Powder) contains jalap and cream of tartar. Dose, 15–60 grains.

Resin.—Dose, 1–5 grains.

Physiologic Action.
Purgative (Draastic).—Jalap stimulates the intestinal
peristalsis and secretions and produces profuse watery bowel movements.

Depletant.—By its action on the bowels it lessens the circulation and engorgement in other parts of the body, and also aids in reducing fluid accumulations.

Therapeutic Indications.
As a purgative for obstinate constipation and when rapid emptying of the bowels is necessary.
As a depletant in all forms of dropsy and anasarca. In cerebral congestion and plethora of any part of the body.

JUNIPER (*)
KAMALA (*)
KINO (*)
KOLA (*)
KRAMERIA (*)
LANUM (*)

LEAD COMPOUNDS

LEAD ACETATE

Synonyms.—Plumbi Acetas, Sugar of Lead.
Properties.—A white crystalline powder or mass with a sweet taste. It is soluble in water (2 parts), alcohol (25 parts).
Incompatibilities.—Acids, alkalies, tannin, carbonates, iodids, and lime-water.
Dosage.—½—2 grains.
Preparations.

Solution of Lead Subacetate (Goulard's Extract).—
The dilute form of lead-water is produced by taking 3 parts of this solution and 100 parts of water.

Cerate of Lead Subacetate (Goulard's Cerate).

LEAD CARBONATE

Synonym.—White Lead.

Preparation.

Ointment.

LEAD IODID

Dosage.—1–4 grains.

Preparation.

Ointment.

LEAD OXID

Synonym.—Litharge.

Preparation.

Plaster.—(Lead plaster, diachylon plaster, and lead oleate.)

Physiologic Action of Lead.

Astringent.—Applied externally lead salts produce coagulation of albumin, contraction of the vessels, and a decrease of secretions. Internally the salts act as astringents and cause constipation.

Therapeutic Indications.

Used externally to dress wounds, ulcers, and eczema. Also as an astringent wash in leukorrhea, vulvitis, gonorrhea, and itching.

Internally some of the lead salts are employed in diarrhea, dysentery, intestinal hemorrhage, and night-sweats.
LITHIUM SALTS

Toxicology.—Acute poisoning is characterized by nausea, vomiting, colic, constipation, cold and moist skin, and, finally, collapse.

Management.—Wash out the stomach, and give magnesium sulphate or sodium sulphate. Stimulate if necessary.

Chronic poisoning follows the prolonged use of lead as a medicine; the use of water contaminated by lead pipes; the use of hair dyes containing lead salts; working in lead or using it much as a paint. The signs are: Anemia, severe abdominal colic centering around the umbilicus, obstinate constipation, headache, hard pulse, blue line on the gums near the margin of the teeth, and, later, various forms of paralyses, especially wrist-drop. To this set of symptoms the terms plum-bism or saturnism are applied.

Management.—Stop the administration or source of the poison, then aid in its elimination by giving sulphates, as Epsom salt and also the iodids. For the colic, opium may be given, and for the paralysis, use electricity and strychnin.

LEPTANDRA (*)

LITHIUM SALTS

LITHIUM BENZOATE

Has the same action as Benzoic Acid (which see).

Dosage.—5–20 grains.

LITHIUM BROMID

Same action as, but less irritating than, Potassium Bromid.

Dosage.—5–20 grains.
LITHIUM CARBONATE

Properties.—A white, odorless powder, soluble in water (80 parts) and insoluble in alcohol.
Dosage.—5–15 grains.

LITHIUM CITRATE

Properties.—A colorless crystal, soluble in water (4 parts) and insoluble in alcohol.
Dosage.—5–20 grains.
Physiologic Action.
These salts taken internally render the urine alkaline, are said to prevent the formation of uric-acid calculi, and act as diuretics.
Therapeutic Indications.
They are chiefly used in gout, rheumatic affections, diseases of the bladder, and urinary calculi.

LITHIUM IODID

This salt acts the same as Potassium Iodid, but the former is less irritating.
Dosage.—1–5 grains.

LITHIUM SALICYLATE

Has same action as Sodium Salicylate (which see).
Dosage.—10–30 grains.

LOBELIA (*)

MAGNESIUM COMPOUNDS

MAGNESIUM CARBONATE

Dosage.—½–2 drams.
Preparation.

Effervescent Magnesium Citrate Solution.—This is
MAGNESIUM COMPOUNDS

prepared by taking of magnesium carbonate 1½ drams and citric acid 3 drams, dissolved in 2 ounces of water. Stir these together until dissolved, then strain into a strong 8-ounce bottle and add enough syrup and water to nearly fill the bottle; then to the contents add ½ dram of potassium bicarbonate, cork the bottle securely and quickly, and shake until the bicarbonate is dissolved. Dose, 2–8 ounces.

MAGNESIUM OXID

Synonym.—Magnesia.
Dosage.—10–30 grains.

MAGNESIUM SULPHATE

Synonym.—Epsom Salt.
Dosage.—2–8 drams.
Physiologic Action.
Antacid.—Taken internally the carbonate and oxid act as antacids and gastric sedatives.

Cathartic.—The citrate and sulphate are saline purgatives, increasing the watery contents of the bowels; stimulating peristalsis, and causing watery bowel movements.

Therapeutic Indications.
As an antacid in gastric fermentation, acid dyspepsia, heartburn, and migraine.

As a cathartic to reduce fluid accumulations, as in dropsy (renal or cardiac), and for thoroughly evacuating the bowels.

Administration.—When Epsom salt is given for the purpose of reducing fluid accumulations it should be employed in concentrated solution.
If a highly concentrated solution of magnesium sulphate is given to persons who are not dropsical or edematous, toxic effects may follow and result seriously.

**MANGANESE COMPOUNDS**

**MANGANESE DIOXID**

*Synonyms.*—Manganese Peroxid, Black Oxid of Manganese.

*Dosage.*—1–10 grains.

**MANGANESE SULPHATE**

A colorless, transparent crystal, freely soluble in water and insoluble in alcohol.

*Dosage.*—1–10 grains.

**POTASSIUM PERMANGANATE**

A dark purple crystal or powder, soluble in water (16 parts).

It is *incompatible* with acids, alcohol, bromids, chlorids, tannin, and all forms of organic material.

*Dosage.*—½–3 grains.

**Physiologic Action.**

*Antiseptic.*—The permanganate is a strong antiseptic and oxidizing agent.

*Hematinic.*—Internally manganese increases the number of red cells and the hemoglobin of the blood.

*Emmenagogue.*—The dioxid and permanganate stimulate the menstrual flow.

*Cholagogue.*—The sulphate increases the flow of bile.

**Therapeutic Indications.**

As an *antiseptic* potassium permanganate is employed in solution (1:50 to 1:1000) in mouth affections, rhi-
MENTHA PIPERITA

nitis, diphtheria, gonorrhea, leukorrhea, and also as an application to wounds. Owing to its oxidizing powers this salt is used as a deodorizer on putrid wounds and ulcers.

As a hematinic in anemia of the chlorotic type.

As an emmenagogue in suppressed menstruation due to anemia or atony.

MENTHA PIPERITA

Derivation.—The leaves and tops of Mentha Piperita.

Synonym.—Peppermint.
Constituents.—Menthol and a volatile oil.
Preparations.

Oil.—Dose, 1–5 minims.
Spirit.—Dose, 5–15 minims.
Water.—Dose, 1–8 drams.

Menthol.—A stearopten from the oil of peppermint. Soluble freely in alcohol and in 4 parts of olive oil. Dose, 1–5 grains.

Physiologic Action.

Local Anodyne.—Applied to the skin or mucous membrane the oil or menthol produce first a cooling sensation, followed by numbness.

Carminative.—Peppermint aids in the expulsion of flatus.

Therapeutic Indications.

As an analgesic in toothache, headache, neuralgia, gastralgia, and itching.

As a carminative in flatulent dyspepsia, infantile colic, and diarrhea.
MERCURY COMPOUNDS

AMMONIATED MERCURY

Synonym.—White Precipitate.
Preparation.

Ointment.

MERCURY BICHLORID

Synonyms.—Hydrargyri Chloridum Corrosivum, Corrosive Sublimate.
Properties.—A white crystalline mass, soluble in water (20 parts), in alcohol (5 parts).
Dosage.—\( \frac{1}{6} - \frac{1}{3} \) grain.
Preparation.

Yellow Wash (Lotio Flava).—Prepared by mixing \( \frac{1}{2} \) dram of mercury bichlorid with 1 pint of lime-water.

MERCURY CHLORID

Synonyms.—Hydrargyri Chloridum Mite, Calomel, Mild Chlorid of Mercury.
Properties.—A white powder devoid of odor and taste. Insoluble in water or alcohol.
Dosage.—\( \frac{1}{10} - 10 \) grains.
Preparation.

Black Wash (Lotio Nigra).—Prepared by adding 1 dram of calomel to 1 pint of lime-water.

MERCURY IODID (RED)

Synonym.—Mercury Biniodid.
Properties.—A red powder, insoluble in water, but soluble in a solution of potassium iodid.
Dosage.—\( \frac{1}{10} - \frac{1}{6} \) grain.
Preparation.

Solution of Arsenic and Mercuric Iodid (Donovan's Solution).—Dose, 1-10 minims.
MERCURY COMPOUNDS

MERCURY IODID (YELLOW)
Synonyms.—Protoiodid of Mercury, Green Iodid of Mercury.
Properties.—A yellow or green powder, devoid of taste and odor, and insoluble in water or alcohol.
Dosage.—\(\frac{1}{4}\)–1 grain.

MERCURY OXID (RED)
Synonym.—Red Precipitate.
Preparation.
Ointment.

MERCURY OXID (YELLOW)
Preparations.
Ointment.
Oleate of Mercury.

MERCURY SUBSULPHATE (YELLOW)
Synonym.—Turpeth Mineral.
Dosage.—2–4 grains.

METALLIC MERCURY PREPARATIONS
Mercury with Chalk (Hydrargyrum cum Creta, Gray Powder) contains 38 per cent. of mercury. Dose, \(\frac{1}{4}\)–10 grains.

Mercury Mass (Massa Hydrargyri, Blue Mass) contains 33 per cent. of mercury. Dose, \(\frac{1}{4}\)–15 grains.

Mercury Ointment (Blue Ointment) contains 50 per cent. of mercury.

Mercury Plaster contains 30 per cent. of mercury.
Mercury Plaster (with Ammoniac) contains 18 per cent. of mercury.

Incompatibilities of Mercurial Compounds.
Alkalies, alkaloids, albumin, bromids, lime-water, tannin, and infusions.
Physiologic Action.

Antiseptic.—The bichlorid is one of the best and most efficient of the antiseptics. A 1:1000 solution destroys bacterial life. It is extensively used in surgery for all antiseptic purposes except the sterilization of metallic instruments, which the chemic action will corrode.

Parasiticide.—Mercury preparations rapidly destroy animal and vegetable parasites that may be found on the skin.

Caustic.—Some of the mercurials (red iodid) act upon the skin as an irritant and, if the action is prolonged, as a caustic.

Cathartic.—All mercury preparations are irritating to the intestinal tract, producing looseness of the bowels, but calomel, gray powder, and blue mass are most used for this purpose.

Cholagogue.—Calomel is said to indirectly increase the flow of bile.

Hematinic.—Mercury in small doses increases the number of red cells in the blood, but its prolonged action will produce anemia.

Diuretic.—Calomel when combined with diuretics augments their action.

Salagogue.—Mercury is excreted in the saliva, which secretion it greatly increases.

Antisyphilitic.—Mercurials cause the absorption and disappearance of syphilitic processes.

Therapeutic Indications.

As an antiseptic for sterilizing the hands; the site of operation; the basins, etc. As a wet dressing for infected wounds and as an irrigating solution.
As a parasiticide the bichlorid, blue mass, and ammoniated mercury or the oleate are used for pediculosis, favus, and ringworm.

As a cathartic in the beginning of the acute fevers, especially in the form of calomel, blue mass, or gray powder. It is best to follow the mercurial with a saline.

As a hematinic in anemia.

As a diuretic in nephritis, especially if given with another diuretic, as digitalis and squill.

As an antisyphilitic, mercury may be employed in any stage of the disease.

Administration.—Calomel is given as a cathartic in several ways, among the most frequent are: \( \frac{1}{10} \) grain every half hour until ten doses are taken, or 1 grain every hour until five doses are taken, or in mass doses of 5 or 10 grains. In cases where there is vomiting and all drugs are ejected as soon as taken, a most excellent plan is to place 5 grains of calomel powder on the patient’s tongue and give a small swallow of water. If vomiting occurs, most of the calomel will be retained, as it adheres to the stomach wall. It is always best to follow the administration of calomel with one of the saline purgatives, for two reasons: Calomel acts mostly on the upper part of the intestines, while the salts will effect the lower portion, and, if a large dose of calomel has been given, the saline will wash out the excess before poisoning occurs. Sodium bicarbonate should be combined with mass doses of calomel, as this prevents part of the calomel from being converted into mercury bichlorid.

In syphilis, mercurials may be administered in many ways. By mouth, the best preparation to be given is
probably the yellow or protoiodid. The bichlorid, the red iodid, and gray powder are also much used. By hypodermic, the bichlorid is employed in doses of \( \frac{1}{15} \) grain in 15 minims of water, given every other day, or gray oil may be used by this method. By inunction, the blue ointment or the oleate are most used: 1 dram is well rubbed into the skin every few days, selecting a different site for each application. By fumigation, calomel is generally employed: 15 grains of calomel are placed in a metal or porcelain dish over an alcohol lamp, which is placed under the chair of the patient, and about the entire body of the patient excepting the head is placed a blanket in the shape of a tent. By baths, 2 drams of the bichlorid are dissolved in 20 gallons of water and to this 20 drops of hydrochloric acid are added to aid in the solution of the mercury salt. The patient remains in the bath for only a few minutes. As a local application to the primary lesions, the black or yellow wash are excellent.

Pretoxic Signs.—Slight salivation, vague abdominal colic, and looseness of the bowels.

Toxicology.—Acute Poisoning.—Great flow of saliva, vomiting (which may become bloody), diarrhea, suppression of urine, cold, moist skin, weak pulse, and collapse.

Management.—Empty and wash the stomach. Give milk, white of egg, flour paste, and starch-water. Stimulate with ammonia, brandy, and strychnin.

Chronic Poisoning, or Mercurialism.—This is characterized by anemia, emaciation, dyspepsia, trembling, dizziness, headache, fetor of the breath, soreness of the gums, looseness of the teeth, and various forms of paralyses.
NITROGLYCERIN

METHYLENE-BLUE (*)
MUSK (*)
MUSTARD (*)
NAPHTOL (*)
NITRIC ACID

Definition.—A clear, fuming liquid, which contains 68 per cent of absolute nitric acid in water.
Dosage.—1-5 minims, well diluted.
Preparations.
Dilute Nitric Acid (10 per cent. strength).—Dose, 5-20 minims.
Nitrohydrochloric Acid (Aqua Regia, Nitromuriatic Acid).—Dose, 1-5 minims.
Physiologic Action.
Caustic.—Applied externally it produces a burning sensation, followed by destruction of tissue.
Cholagogue.—This acid increases the flow of bile and stimulates the liver. This is particularly true of the nitrohydrochloric acid.
Therapeutic Indications.
As a caustic nitric acid is much used for cauterizing the bites of animals, and in the treatment of chancroids, warts, indolent ulcers, and condylomata.
Internally these acids are useful in jaundice, chronic hepatitis, and diarrhea.
Toxicology.—See under Hydrochloric Acid.

NITROGLYCERIN

Derivation.—A yellow, clear, oily, explosive liquid, formed by the action of nitric and sulphuric acids on
glycerin. It is soluble in alcohol and only slightly in water.

Synonyms.—Glonoine, Trinitrin, Glyceryl Trinitrate.

Preparation.

Spirit (Spirit of Glonoine, Solution of Trinitrin, Spiritus Glycerylis Nitratis).—This is a 1 per cent. solution of nitroglycerin in alcohol. Dose, 1–3 minims.

Action and Use.

The action and use of nitroglycerin is the same as that of amyl nitrite, except that the action of the former is slower and more prolonged.

NUX VOMICA

Derivation.—The seeds of Strychnos Nux Vomica.

Synonyms.—Poison Nut, Quaker Button, Dog Button.

Constituents.—Alkaloids: Strychnin and Brucin.

Dosage.—1–4 grains.

Preparations.

Extract.—Dose, $\frac{1}{6}$–$\frac{1}{2}$ grain.

Fluidextract.—Dose, 1–4 minims.

Tincture.—Dose, 5–15 minims.

Strychnin.—Dose, $\frac{1}{100}$–$\frac{1}{80}$ grain.

Strychnin Nitrate.—Dose, $\frac{1}{100}$–$\frac{1}{80}$ grain.

Strychnin Sulphate.—Dose, $\frac{1}{100}$–$\frac{1}{80}$ grain.

Physiologic Action.

Stomachie.—Nux vomica excites the secretion of the gastric juice, sharpens the appetite, and stimulates the motor power of the stomach and intestines.

Cardiac Stimulant.—Strychnin is one of our best cardiac stimulants; it increases both the rate and power of the heart.
Respiratory Stimulant.—The number and depth of the respirations are increased by this drug.

Spinal Stimulant.—Strychnin exerts its energy on the motor fibers of the cord, producing increased muscle tone and reflexes. In very large doses it causes muscular twitchings and convulsions.

Cerebral Stimulant.—This drug stimulates the special centers of the brain, producing acuteness of hearing, sight, and smell.

Therapeutic Indications.

As a stomachic in atonic dyspepsia, anorexia, anemia, and constipation.

As a stimulant in shock, syncope, cardiac failure of the acute fevers, and in drug poisoning.

As a muscle tonic in paralysis of apoplexy, neuritis, arsenic- and mercury-poisoning.

Administration.—As a stomachic, the best preparation is the tincture. As a stimulant, any of the salts of strychnin are to be preferred. It is well to remember that the continuous use of strychnin in the acute fevers, especially typhoid fever, may prevent the temperature from becoming normal as soon as it would otherwise.

Protoxic Signs.—Slight twitching of the muscles, increase of reflex action, and restlessness.

Toxicology.—The symptoms of strychnin-poisoning are increased reflex excitability, muscular twitching, rigidity of the neck, rapid pulse, acuteness of hearing, and convulsions of the tetanic type with opisthotonos.

Management.—Give rectal injections of chloral and bromids. Wash out the stomach and administer tannic acid. Inhalations of amyl nitrite are useful.
OPium

Derivation.—The inspissated juice of *Papaver Somniferum*.

Constituents.—Morphin, codein, narcein, narcotin, papaverin, and other alkaloids of less importance.

Dosage.—\(\frac{1}{4}\) to 2 grains.

Preparations.

*Powdered Opium.*—Dose, \(\frac{1}{4}\) to 2 grains.

*Extract.*—Dose, \(\frac{1}{8}\) to 1 grain.

*Tincture* (Laudanum).—Dose, 3 to 15 minims.

*Deodorised Tincture.*—Dose, 3 to 15 minims.

*Camphorated Tincture* (Paregoric).—Dose, 1 to 4 drams.

*Vinegar* (Black Drop).—Dose, 3 to 15 minims.

*Wine* (Sydenham’s Laudanum).—Dose, 3 to 15 minims.

*Deodorised Opium.*—Dose, \(\frac{1}{4}\) to 1 grain.

*Powder of Opium and Ipecac* (Dover’s Powder).—Dose, 3 to 15 grains.

*Plaster.*

*Morphin.*—Dose, \(\frac{1}{6}\) to \(\frac{1}{4}\) grain.

*Morphin Hydrochlorate.*—Dose, \(\frac{1}{8}\) to \(\frac{1}{4}\) grain.

*Morphin Sulphate.*—Dose, \(\frac{1}{8}\) to \(\frac{1}{4}\) grain.

*Codein.*—Dose, \(\frac{1}{4}\) to 2 grains.

*Codein Phosphate.*—Dose, \(\frac{1}{4}\) to 1 grain.

*Codein Sulphate.*—Dose, \(\frac{1}{4}\) to 2 grains.

*Heroin* is an artificial alkaloid formed by the action of acetic acid on morphin.—Dose, \(\frac{1}{4}\) to \(\frac{1}{6}\) grain.

*Heroin Hydrochlorate.*—Dose, \(\frac{1}{4}\) to \(\frac{1}{6}\) grain.

*Dionin* (an artificial alkaloid).—Dose, \(\frac{1}{4}\) to 1 grain.

*Cotarnin Hydrochlorate* (an oxidation product of
Narcotin, known as Stypticin, see Part IV.).—
Dose, $\frac{1}{4}$–4 grains.

Physiologic Action.

Hypnotic.—Opium is our greatest sleep producer. It first stimulates the brain, slightly increasing the intellect and imagination, and then quiets the nervous system, producing sleep.

Analgesic and Antispasmodic.—Opium depresses the motor and sensory fibers, thus producing a decrease of motor excitability and a blunting of the pain sense.

Cardiac Stimulant.—Opium in medicinal doses slows the heart’s action, but increases the force.

Myotic.—Given internally in moderate doses this drug produces contraction of the pupils.

Secretory Depressor.—Opium lessens all the secretions of the body except the perspiration, which is increased. Opium causes constipation.

Therapeutic Indications.

As an hypnotic in cases of sleeplessness accompanied by pain, and in insomnia of exhausting fevers, also in the wakefulness of chronic alcoholism, mania, and insanity.

As an analgesic in pain from nearly all causes except congestion of the brain. Opium should not be administered if its action will dispel any points in making a diagnosis.

As an antispasmodic in epilepsy, asthma, intestinal colic, convulsions, tetanus, cough, biliary, renal, and vesical colic.

As a secretory depressor in diarrhea, dysentery, cholera, ptyalism, and diabetes.

Comparative Action.—Morphin possesses the same
general action of opium, except that the former is less narcotic, more analgesic, more rapid, less constipating, less diaphoretic, and more depressing to the heart.

*Codein* has the same action as morphin, except that the former is more feeble and has especial powers as a cough sedative.

*Heroin* has the same cough-sedative action as codein, but is more depressing.

*Dionin* is similar to heroin.

*Cotarnin* is especially active as a vasoconstrictor.

**Administration.**—As an analgesic morphin is preferable. As a secretory depressor, powdered opium, laudanum, and paregoric are to be employed. As a cough sedative codein or heroin should be chosen. Children bear opium and its derivatives very poorly, and it should be given to them in very small doses and with extreme caution. In susceptible persons and some alcoholics the narcotic should be reinforced by some stimulant, as atropin or strychnin.

**Pretoxic Signs.**—Tendency to pupillary contraction, drowsiness, dryness of the mouth, sweating.

**Toxicology.**—*Acute Poisoning.*—Small pupils, slow, full pulse, becoming rapid, slow respirations, hot skin, cyanosis, and asphyxia.

**Management.**—Wash out the stomach at once or give emetics followed by tannic acid or potassium permanganate. Keep the patient aroused by constant flagellation. Give atropin, coffee enemata, ammonia, strychnin, but not digitalis.

**Chronic Poisoning.**—This is characterized by smallness of the pupils, loss of appetite, anemia, insomnia, mental unrest, constipation, muscular weakness, tremor,
PANCREATIN

immorality. The patient will steal or tell untruths in order to procure the drug.

Management.—Withdraw the drug and substitute hyoscin or cannabis indica temporarily. Overcome insomnia by hydrotherapeutic methods and the bromids, chloral, or paraldehyde. Give tonics and good food and, above all, use moral suasion.

OX-GALL

Derivation.—The fresh bile or gall of Bos Taurus, the domestic ox.

Synonyms.—Fel Bovis, Fel Tauri.

Dosage.—5–15 grains.

Physiologic Action.

In the stomach it interferes with digestion, and for this reason it is much employed in keratin-covered tablets, which pass through the stomach unaffected. Having gained entrance to the intestines it increases the flow of bile and stimulates peristalsis. For this last purpose it is given in the form of an enema by adding 15 grains of powdered ox-gall to the regular enema.

PANCREATIN

Derivation.—A mixture of ferments from the fresh pancreas of the hog.

Dosage.—5–15 grains.

Action and Use.

Pancreatin has the power of digesting meats, starches, sugars, and of emulsifying fats. It can act only in an alkaline solution, therefore it does not act in the stomach unless sodium bicarbonate be given with
it to neutralize the acid of the stomach. Some authorities say that a minute amount of acid will destroy pancreatin, hence its value as a digestive agent is questionable. It is much used, however, as an ingredient of "peptonizing" powders for preparing partially digested milk, junket, etc.

**PAPAIN**

*Derivation.*—A ferment derived from the juice of *Carica Papaya*.

*Synonyms.*—Papayotin, Papoid, Papaw

*Dosage.*—1–5 grains.

*Action and Use.*

This ferment is capable of digesting proteid, carbohydrates, and fats in a neutral, alkaline, or acid medium. Whether it will do all this is much doubted.

Locally it will dissolve necrotic tissue, and is used for this purpose in diphtheria, warts, and small growths.

**PARAFFIN OIL**

Paraffin oil, Russian oil, petrolatum liquidum are terms applied to a liquid petroleum used very extensively for the relief of chronic constipation. It acts in a mechanical way by lubricating the intestinal canal and stimulating peristalsis. It should be taken several times a day in doses of $\frac{1}{2}$ to 1 ounce.

**PARALDEHYD (*)**

**PEPSIN**

*Derivation.*—A ferment derived from the stomach of the pig.
PHENACETIN

Preparations.

_Pure Pepsin._—Dose, 5–15 grains.
_Saccharated Pepsin._—Dose, 5–60 grains.
_Compound Powder (Lactated Pepsin)._—Dose, 5–15 grains.

Action and Use.

Pepsin has the power of digesting proteid matter in an acid solution. According to the U. S. Pharmacopoeia, 1 grain of pepsin must be capable of digesting at least 3000 grains of proteid matter.

PHENACETIN

Derivation.—A white, odorless, and tasteless powder, produced by the action of glacial acetic acid on a coal-tar derivative. It is insoluble in water. This chemical is now commonly known by its technical name, acetphenetidin.

Dosage.—1–10 grains.

Physiologic Action.

Antipyretic.—Phenacetin will cause a fall of febrile temperature.

Analgesic.—The most important action of this drug is its power to relieve pain.

Comparative Action.—Compared to acetanilid and antipyrin, phenacetin is much safer and less depressing, but it is slightly less powerful.

Therapeutic Action.

As an antipyretic in scarlatina, rheumatism, and influenza.

As an analgesic in neuralgias, influenza, headaches, rheumatism, ovarialgia, and locomotor ataxia.

Administration.—Acetphenetidin is very often com-
bined with caffein. This latter drug is supposed to overcome any depressing effects of the former. The author finds the use of an equal weight of sodium bicarbonate more valuable.

Toxicology.—See Acetanilid. The writer has never seen reported a case of fatal poisoning by this drug.

PHOSPHORUS COMPOUNDS

Preparations of Phosphorus.

Oil of Phosphorus.—Dose, 1–4 minims.

Spirit.—Dose, 8–30 minims.

Elixir.—Dose, 3/8–1 dram.

Physiologic Action.

Bone Stimulant.—Given internally phosphorus stimulates the growth of bone.

Hematinic.—This drug aids in the formation of blood, causing an increase of the red cells.

Nervine.—Phosphorus is said to stimulate nerve reconstruction and act as a tonic to the nervous system.

Therapeutic Indications.

As a bone stimulant in rachitis, osteomalacia, and caries of bone.

As a nerve tonic in nervous and sexual exhaustion, typhoid fever, melancholia, and mania.

As a hematinic in anemia, leukemia, and pseudoleukemia.

Toxicology.—Acute Poisoning.—Nausea, vomiting, abdominal colic, jaundice, scanty, high-colored urine, and collapse.

Management.—Wash out the stomach. Give oil of turpentine (especially old oil) and copper sulphate as antidotes. Stimulate.
PHOSPHORUS COMPOUNDS

Chronic poisoning occurs in persons employed where phosphorus is used and is characterized by anemia, bronchitis, spongy gums, and necrosis of bone, especially of the lower jaw.

DILUTE PHOSPHORIC ACID

This is a 10 per cent. solution, and is used in those diseases where phosphorus is indicated.

Dosage.—10–60 minims.

GLYCERINOPHOSPHATES

Calcium Glycerinophosphate.—Dose, 2–5 grains.
Iron Glycerinophosphate.—Dose, 2–5 grains.
Magnesium Glycerinophosphate.—Dose, 1–5 grains.
Potassium Glycerinophosphate.—Dose, 2–10 minims.
Sodium Glycerinophosphate.—Dose, 2–10 grains.

These preparations are generally administered in liquid form in nervous disorders, as neurasthenia, deficient nerve nutrition, and anemia.

HYPOPHOSPHITES

Ammonium Hypophosphite.—Dose, 1–3 grains.
Calcium Hypophosphite.—Dose, 5–20 grains.
Iron Hypophosphite.—Dose, 3–10 grains.
Manganese Hypophosphite.—Dose, 3–10 grains.
Potassium Hypophosphite.—Dose, 5–20 grains.
Quinin Hypophosphite.—Dose, 1–5 grains.
Sodium Hypophosphite.—Dose, 5–20 grains.

Action and Use.
The hypophosphites are used mostly in tuberculosis, nervous exhaustion, anemia, and depraved conditions of the system.
The ammonium salt is especially useful in bronchitis. These salts are generally administered in the form of a syrup.

**PHOSPHATES**

*Calcium Phosphate.*—Used in rickets and anemia. Dose, 5–20 grains.


*Sodium Phosphate.*—This salt is very useful, and is much employed in jaundice, hepatitis, biliousness, rickets, and headaches due to gastric disorder.

**ZINC PHOSPHID**

Used as a substitute for phosphorus.—Dose, \( \frac{1}{10} \) grain.

**PHYSOSTIGMA**

Derivation.—The seed or bean of *Physostigma Venenosum*.

Synonym.—Calabar Bean.

Constituents.—Physostigmin or Eserin.

Dosage.—\( \frac{1}{2} – \frac{1}{4} \) grain.

Preparations.

*Extract.*—Dose, \( \frac{1}{12} – \frac{1}{8} \) grain.

*Tincture.*—Dose, 5–20 minims.

*Physostigmin (or Eserin) Salicylate.*—Dose, \( \frac{1}{12} \) – \( \frac{1}{10} \) grain.

Physiologic Action.

Spinal Depressant.—Eserin depresses both sides of the cord, especially the sensory tracts, and lessens sensation and reflex action.
Involuntary Muscle Stimulant.—This drug stimulates the involuntary muscle of the gastro-intestinal tract, thus increasing peristalsis, and of the vascular coats, causing vasoconstriction.

Myotic.—Eserin produces pupillary contraction.

Therapeutic Indications.

As a spinal depressant in tetanus, strychnin-poisoning, convulsions, and asthma.

As a muscle stimulant in gastric atony and dilatation, in constipation, and in post-operative paresis of the bowels with distention.

As a myotic in glaucoma and ciliary paresis.

Toxicology.—Muscular weakness, tremor, relaxation, small pupils, slow pulse and respirations.

Management.—Give atropin, strychnin, coffee, and ammonia.

PHOTOLACCA (*)

PICRIC ACID

Derivation.—A yellow crystal with a very bitter taste, formed by the action of nitric acid on creosote.

Synonyms.—Picronitric Acid, Carbazotic Acid, Trinitrophenol.

Action and Use.

Picric acid acts somewhat like quinin as an anti-periodic, and is used in the treatment of malaria.

Externally it is used extensively as a dressing for burns. The writer is told that in some of the iron mines and works of Pennsylvania it is exclusively employed for this purpose. It is applied as a saturated watery solution.

It is also recommended in the treatment of trichinosis.
PIROTOXIN (*)

PILOCARPUS

Derivation.—The leaves of Pilocarpus Jaborandi.
Synonym.—Jaborandi.
Constituent.—Pilocarpin, a liquid alkaloid.
Dosage.—5–30 grains.
Preparations.
  Fluidextract.—Dose, 5–30 minims.
  Pilocarpin Hydrochlorate.—Dose, $\frac{1}{3}$–$\frac{1}{4}$ grain.
Physiologic Action.
Sialagogue.—Pilocarpin greatly increases the secretion of saliva.
Diaphoretic.—This drug is our most powerful sweat producer. Its action may continue for from one to three hours, producing from twelve to twenty-four ounces of perspiration.
Galactagogue.—The secretion of milk in nursing mothers is greatly increased by the use of this drug.
Cardiac Depressant.—Pilocarpin, being unique in its other actions, is less frequently used because of its depressing effect on the heart.
Myotic.—The pupils are contracted by the use of this drug.
Therapeutic Indications.
  As a diaphoretic in fluid accumulations, as dropsy.
  In uremia, chronic nephritis, and eclampsia.
  As a myotic in glaucoma.
The use of this drug has been recommended in baldness as a local applicant.
Pretoxic Signs.—Disturbance of vision and vomiting.
PODOPHYLLUM

Toxicology.—Poisoning is characterized by vomiting, purging, salivation, parotid tenderness, contracted pupils, vesical tenesmus, yawning, slow pulse, which becomes rapid, and collapse.

Management.—Empty the stomach by a tube or emetics. Give tannic acid. Stimulate with atropin and ammonia.

PITUITARY GLAND

The use of this gland or, better, of a preparation known as pituitrin has become quite prominent. It is employed as a uterine stimulant in slow labor. Its use is not free from danger. Pituitrin in these cases is given hypodermically in doses of 5 to 15 minims.

PODOPHYLLUM

Derivation.—The rhizome and roots of Podophyllum Peltatum.

Synonyms.—Mandrake, May Apple.

Dosage.—5–30 grains.

Preparations.

Extract.—Dose, 2–10 grains.

Fluidextract.—Dose, 5–30 minims.

Podophyllin (Resin).—Dose, \( \frac{1}{4} - \frac{1}{2} \) grain.

Physiologic Action.

Cholagogue Cathartic.—Internally mandrake acts as a gastro-intestinal stimulant and increases the flow of bile, producing by this combined action free bowel movements containing much biliary material.

Therapeutic Indications.

Mandrake is employed in biliousness and liver disorders, and in infantile diarrhea when the stools lack color.
Mandrake is commonly known as the vegetable calomel.

POMEGRANATE

Derivation.—The root of *Punica Granatum*.
Synonym.—Granatum.
Dosage.—1–2 drams.
Preparation.

*Pelletierin Tannate* (Alkaloid).—Dose, 1–12 grains.

Action and Use.
The chief use of pomegranate is as an anthelmintic for the tapeworm. This drug is also employed as an intestinal astringent in diarrhea.

POTASSIUM COMPOUNDS

POTASSIUM ACETATE

A white, deliquescent, crystalline powder, soluble in water and alcohol. Dose, 5–60 grains.

Potassium acetate is used as a diuretic in acute nephritis and the contagious fevers. It is also useful in rheumatism, gout, scurvy, eczema, and lithiasis.

POTASSIUM ARSENITE

*(See Arsenic Compounds)*

POTASSIUM BICARBONATE

A white crystal, soluble in water, but insoluble in alcohol. It is used for the same purposes as the acetate. Dose, 10–60 grains.

POTASSIUM BICHROMATE

An orange-colored crystal, soluble in water and alcohol.
Applied to the skin this salt acts as an *irritant* and *caustic*. It is used as such in the treatment of warts, condylomata, and vegetations.

Internally it acts as an *expectorant*, and is employed in bronchitis and aphonia.

**Dosage.**—$\frac{1}{16}$–$\frac{1}{4}$ grain.

**POTASSIUM BITARTRATE**

*Synonyms.*—Cream of Tartar, Acid Potassium Tartrate, Tartar Crystals.

This salt given in moderate doses acts as a *saline cathartic* without griping. It is also a *diuretic* and renders the urine alkaline.

**Dosage.**—20 grains to 1 ounce.

**POTASSIUM BROMID**

*Incompatibilities.*—Acids, alkaloids, and metallic salts.

**Dosage.**—5–60 grains.

**Physiologic Action.**—(This answers for all bromids.)

*Gastric Irritant.*—Potassium bromid is irritating to the stomach. It lessens the motor power, causes flatulence, and may produce dyspepsia.

*Nerve Sedative.*—The bromids quiet the nervous system, producing tranquillity, calmness, and decrease of excitability.

*Hypnotic.*—By continued action on the brain centers the bromids produce a more or less natural sleep.

*Antispasmodic.*—These salts depress the motor centers, lessening the reflexes and motor excitability.

*Cardiac Sedative.*—In small doses the heart is not
affected, but in larger amounts the force and rate of the heart are decreased.

Therapeutic Indications.

As a sedative in nervous excitability, hysteria, seasickness, vomiting, and the nervous symptoms of the menopause.

As an hypnotic in nervous insomnia.

As an antispasmodic in delirium tremens, epilepsy, whooping-cough, tetanus, asthma, dysmenorrhea, and strychnin-poisoning.

Administration.—Bromids should never be given in dry form, but always in solution and well diluted, after meals, and not on an empty stomach.

Comparative Action.—Potassium bromid is more depressing to the heart and more irritating to the stomach than other bromids. Sodium bromid is more hypnotic and less irritating than the former. Ammonium bromid is not depressing to the heart, but is very irritating to the stomach. Lithium bromid is said to be the most hypnotic and least irritating. Strontium bromid is non-irritating and is an excellent hypnotic.

Pretoxic Signs.—Acneal rash, dullness of intellect, and drowsiness.

Toxicology.—By the prolonged use of the bromids a certain set of symptoms appear, to which the name bromism is applied. Fetid odor to the breath, apathy, dull expression, dyspepsia, decrease of skin sensibility, hallucinations, and delirium.

POTASSIUM CHLORATE

This salt is much employed as a gargle and mouth-wash in stomatitis, pharyngitis, tonsillitis, and scarlet
fever. One objection to its use in scarlet fever is its irritating action on the kidneys and its liability to cause nephritis. It is used as a 4 per cent. solution.

POTASSIUM CITRATE

Has the same action as the Acetate.

Dosage.—5–30 grains.

POTASSIUM IODID

Incompatibilities.—Starch, sweet spirit of niter, alkaloids, metallic salts, and mercury protoiodid.

Dosage.—5–60 grains.

Physiologic Action.—(This answers for all iodids.)

Gastric Irritant.—The iodids are very irritating to the stomach and may produce nausea, vomiting, and signs of indigestion.

Absorbent.—The iodids have a peculiar action in causing the absorption of connective tissue, especially that which is newly formed. They also aid in reducing fluid accumulations.

Antisyphilitic.—This is probably the most important action of the iodids, and they are extensively employed in the treatment of syphilis.

Therapeutic Indications.

As an absorbent in chronic inflammations, as pleurisy, bronchitis, adenitis, arteritis, aneurysm, asthma, emphysema, and chronic rheumatism.

As an antisyphilitic in the late secondary and the tertiary manifestations.

Administration.—The iodids should never be given in dry form, but always in well-diluted solution.

In syphilis the dose must be steadily increased. To
facilitate this the drug is dissolved in water, so that 1 minim of the solution is equal to 1/4 grain of the iodid.

The iodids are useful in the treatment of poisoning by arsenic and lead.

Toxicology.—Prolonged use of the iodids produce a series of symptoms to which the term iodism is applied. They are nausea, vomiting, and signs of dyspepsia, running and watering of the eyes, nose, and mouth. The writer has known three doses of 5 grains each to have produced in an adult profuse watering of the eyes and nose. Skin eruptions are common, also are anemia, loss of flesh, wasting of the breasts, and melancholia.

POTASSIUM NITRATE

Synonyms.—Saltpeter, Niter.

Dosage.—3–5 grains.

This salt produces gastro-intestinal irritation and cardiac depression. It is a slight diuretic and an anti-spasmodic. For this last action it is used in the treatment of asthma by inhaling the fumes from burning paper, which has been immersed in a 20 per cent. watery solution of saltpeter and then dried.

POTASSIUM PERMANGANATE

(See under Manganese Compounds)

POTASSIUM AND SODIUM TARTRATE

Synonym.—Rochelle Salt.

Dosage.—Up to 1 ounce.

The action is the same as of Potassium Bitartrate.
Preparation.

*Compound Effervescing Powder* (Seidlitz Powder).
—This contains: (a) 40 grains of sodium bicarbonate and 2 drams of Rochelle salt; (b) 35 grains of tartaric acid. Dissolve each powder—(a) and (b)—in water, mix, and drink while effervescing.

**PRUNUS VIRGINIANA (*)**

**QUASSIA (*)**

**QUININ SALTS**
(See under *Cinchona*)

**RESORCIN**

*Properties.*—A coal-tar product of the carbolic acid class, occurring in fine pinkish crystals, soluble in water (freely) and alcohol.

*Dosage.*—1–3 grains.

*Action and Use.*

*Antiseptic.*—Resorcin is a strong antiseptic, and is used as such in cystitis (as an irrigation), gastric fermentation, cholera, diarrhea, and parasitic skin diseases.

*Antipyretic.*—Resorcin will reduce a febrile temperature, but is too dangerous to be used as such.

Resorcin has a special action in keratotic and scaly diseases of the skin, in which it very quickly removes the horny scales. It is used in eczema, psoriasis, dandruff, and other scaly affections.

**RHUBARB**

*Derivation.*—The root of *Rheum Officinale*.

*Synonym.*—Rheum.

*Dosage.*—3–20 grains.
Preparations.

_Extract._—Dose, 1–5 grains.

_Fluidextract._—Dose, 3–20 minims.

_Tincture._—Dose, 1–4 drams.

_Aromatic Tincture._—Dose, ½–2 drams.

_Sweet Tincture._—Dose, 1–4 drams.

_Mixture of Rhubarb and Soda._—Dose, 1–8 drams.

_Syrup._—Dose, 1–4 drams.

_Aromatic Syrup._—Dose, ½–2 drams.

_Compound Powder (Gregory's Powder)._—Dose, 15–60 grains.

Physiologic Action.

_Stomachic._—Taken internally, rhubarb stimulates both the motor and secretory powers of the stomach and sharpens the appetite.

_Cathartic._—In the intestines it stimulates peristalsis, causing free bowel movements, usually attended with griping.

_Astringent._—Owing to the large amount of tannic acid, rhubarb decreases the intestinal secretions and constipation follows the cathartic action.

_Therapeutic Indications._

As a _stomachic_ in atonic dyspepsia, flatulence, anorexia, and during convalescence.

As a _cathartic_, when it is desirable to empty the bowels and then have them rest, as in diarrhea of children, fermentative diarrhea, and biliousness.

_Administration._—Rhubarb is seldom given alone on account of its griping, but is combined with other laxatives and correctives.

Rhubarb may cause the urine to become dark yellow or red in color.
SALICYLIC ACID COMPOUNDS

SACCHARIN (*)

SALICYLIC ACID COMPOUNDS

SALICYLIC ACID

Derivation.—A constituent of such plants as wintergreen and sweet birch, from which it is obtained. It is also extensively prepared from carbolic acid.

Incompatibilities.—Spirit of nitrous ether, iron salts, and potassium iodid.

Properties.—A white, fluffy, crystalline powder, soluble in water (500 parts), alcohol (3 parts), olive oil (125 parts). It is odorless and has a sweet taste.

Dosage.—5–30 grains.

SALICYLATES

*Cinchonidin Salicylate.*—Dose, 1–10 grains.
*Lithium Salicylate.*—Dose, 1–10 grains.
*Methyl Salicylate.*—Artificial oil of wintergreen.
*Sodium Salicylate.*—Dose, 5–30 grains.

SALOL

A product of the action of carbolic acid on salicylic acid. It is insoluble in water. Dose, 1–10 grains.

SALICIN

A glucosid derived from willow bark. It is a white, bitter, crystalline powder, soluble in water. Dose, 5–30 grains.

SALOPHEN

A white, scaly powder, without odor or taste, and insoluble in water. Dose, 5–15 grains.
ASPIRIN

Synonym.—Aspirin is very frequently referred to by its technical name, acetylsalicylic acid.

This preparation is decomposed by water or sodium bicarbonate, and should be given in dry form. Dose, 5–15 grains.

Physiological Action of Salicylic Acid Compounds.

Antiseptic.—Salicylic acid externally and the salicylates internally act as antiseptics.

Anhidrotic.—Applied to the skin, salicylic acid hardens it and prevents excessive sweating.

Cardiac Depressant.—Internally these compounds decrease the cardiac force, and in large doses are distinctly depressing.

Antipyretic.—The salicylates lower febrile temperature.

Antirheumatic.—For this action the salicylates are mostly employed. They relieve the pain, lower the fever, and slow the pulse.

Therapeutic Indications.

As an anhidrotic the acid is used as a dusting-powder for sweating feet and perspiring axillae.

As an antiseptic the salicylates and salol are used in gastric fermentation, flatulent dyspepsia, typhoid fever, and diarrhea.

As an antipyretic in rheumatism and influenza.

As an antirheumatic and antineuralgic they are most frequently employed, being very valuable in rheumatism, neuralgia, migraine, and tonsillitis.

Salicylic acid is much used for its power of removing exuberant tissue, as corns, callosities, warts, and in scaly eczema and psoriasis.

Administration.—The salicylates and salicylic acid,
on account of their disagreeable taste, should be given in capsules, konseals, or tablet form.

In rheumatism any of the salicylic compounds are useful. Sodium bicarbonate, potassium citrate, or some alkaline salt should be combined with the salicylate to aid in its action and to prevent cardiac complications.

As an intestinal antiseptic, salol is preferrable. In neuralgic conditions, salicin, salophen, or salol are good.

Pretoxic Signs.—Ringing in the ears, fulness of the head, headache, and obtunded hearing.

Toxioology.—During the use of the salicylic compounds a set of symptoms may occur to which the term salicylism is applied. They are flushed face, nausea, dyspepsia, deafness, dimness of vision, weak pulse, and delirium. The writer has had small doses of sodium salicylate produce great delirium in rheumatic patients.

SALVARSAN

This is one of the most efficient of the new arsenical preparations. It is known to some as “606.” It is soluble in water and easily deteriorates when exposed to the air.

Salvarsan is used very extensively in the treatment of syphilis, particularly in the early stages. It has also been employed to cure frambesia or yaws. It may be given under the skin, in the muscle, or intravenously. This last is to be preferred.

Usually from 3 to 9 grains of salvarsan made into a dilute solution with normal saline is given into a vein.

Some very severe after-effects have been noted in the use of this drug.
Neosalvarsan, which differs a trifle from salvarsan, is as efficient as the latter drug, but is said not to be so toxic.

**SANTAL WOOD (*)**

**SANTONIN (*)**

**SAVIN (*)**

**SCAMMONY (*)**

**SCOPARIUS**

**Derivation.**—The tops of *Cytisus Scoparius*.

**Synonym.**—Broom Top.

**Constituent.**—Spartein.

**Dosage.**—10–60 grains.

**Preparations.**

*Fluidextract.*—Dose, 10–60 minims.

*Spartein Sulphate.*—Dose, $\frac{1}{2}$–$\frac{1}{4}$ grain.

**Physiologic Action.**

**Diuretic.**—Scoparius taken internally acts upon the kidneys and increases the amount of urine.

**Cardiac Stimulant.**—Spartein represents the heart-stimulating part of scoparius. It acts especially on the nervous mechanism of the heart, causing a slow, forcible heart action.

**Therapeutic Indications.**

As a *diuretic* in dropsy of cardiac origin.

As a *stimulant* in heart affections due to disturbance of the nervous mechanism, as palpitation, tobacco heart, coffee- and tea-drinker’s heart.

**SENEGA (*)**

**SENNNA (*)**
SODIUM COMPOUNDS

SILVER NITRATE

Synonyms.—Argenti Nitras, Lunar Caustic.
Dosage.—\(\frac{1}{2}-\frac{3}{4}\) grain.
Preparations.

Dilute Silver Nitrate.
Fused Silver Nitrate.—Lunar caustic stick.

Action and Use.

Astringent and Caustic.—Applied externally silver nitrate causes an astringing effect, followed by destruction of tissue. It is used for these actions in stopping bleeding and for removing warts and vegetations.

Antiseptic.—Silver nitrate in dilute solution is a strong antiseptic, and is employed in gonorrheal urethritis and ophthalmia neonatorum.

Internally silver nitrate is used in gastritis, gastric ulcer, chronic diarrhea, and epilepsy.

Administration.—In gastric diseases this drug should be given when the stomach is empty, and followed by a large draught of water.

Toxicology.—Acute Poisoning.—The symptoms are burning pain in the abdomen, vomiting, catharsis, spasms, and collapse.

Management.—Give emetics, especially using salt water. Give white of egg, milk, and broths.

Chronic Poisoning.—This is termed Argyria, and is characterized by dyspepsia, gray discoloration of the skin and mucous membranes, anemia, and ulcerations.

SODIUM COMPOUNDS

SODIUM ARSENATE

Same action as Arsenic (which see). Dose, \(\frac{1}{40}-\frac{3}{40}\) grain.
SODIUM BENZOATE

See Benzoin Compounds. Dose, 5–60 grains.

SODIUM BICARBONATE

Synonyms.—Saleratus, Baking Soda.
Dosage.—10–120 grains.
Action and Use.
Given before meals it increases the flow of the gastric juice, given after meals it neutralizes the acid of the gastric secretion. It is used after meals for acid gastritis, pyrosis, and vomiting. This salt tends to render the urine alkaline, and is used in cystitis.
Externally it is a sedative, and is employed in burns and for itching.

SODIUM BORATE

Also known as Borax. (See Boric Acid.)

SODIUM BROMID

Same action and uses as potassium bromid, except that the sodium salt is less irritating. Dose, 10–60 grains.

SODIUM CITRATE

The author has found this salt of great value in the preparation of modified milk for infant feeding. It is supposed to cause the coagulation of milk to take place in the stomach, with the formation of soft, fine curds resembling closely the coagula of mother’s milk. The sodium citrate is added to the milk mixture in the proportion of 1 grain of the salt to each ounce of the feeding mixture.
The solution of sodium citrate is locally used in the treatment of wounds.
SODIUM COMPOUNDS

SODIUM HYDRATE

Synonyms.—Caustic Soda, Sodium Hydroxid, Soda.
Action and Use.
Applied externally this preparation is a strong irri-
tant and caustic. It is but little used as a caustic.

SODIUM IODID

Same action and uses as Potassium Iodid (which
see). Dose, 5–60 grains.

SODIUM NITRITE

Same action and uses as Nitroglycerin, except the
action of the nitrite is slower and more prolonged.
Dose, ½–2 grains.

SODIUM PHOSPHATE

This salt is considered under Phosphorus Com-
pounds.

SODIUM SALICYLATE

See Salicylic Acid Compounds. Dose, 5–30 grains.

SODIUM SULPHATE

Synonym.—Glauber’s Salt.
Dosage.—1–8 drams.
Sodium sulphate is a strong saline cathartic.

SODIUM SULPHITE

This drug is used as a gastro-intestinal antiseptic in
gastric fermentation and also employed locally in para-
sitic skin diseases.
Dosage.—5–30 grains.
MATERIA MEDICA FOR NURSES

SODIUM THIOSULPHATE

Synonym.—Sodium Hyposulphite.

The action of this drug is the same as that of the sulphite, and is used in the treatment of parasitic skin diseases.

SQUILL

Derivation.—The bulb of Urginea Maritima.

Synonyms.—Scilla, Sea Onion.

Dosage.—1–5 grains.

Preparations.

Fluidextract.—Dose, 1–5 minims.

Tincture.—Dose, 5–20 minims.

Vinegar.—Dose, 5–40 minims.

Syrup.—Dose, 15–60 minims.

Compound Syrup.—Dose, 5–30 minims. Also known as Hive Syrup. (See under Antimony and Potassium Tartrate.)

Physiologic Action.

Gastro-intestinal Irritant.—Squill in moderate doses produces nausea and vomiting.

Expectorant.—This drug is a powerful expectorant, causing increase of the bronchial mucus.

Cardiac Stimulant.—Squill acts very much like digitalis on the heart, producing a slow, powerful heart action.

Diuretic.—The kidneys are irritated and their vascularity increased by this drug, thus the flow of urine is increased.

Therapeutic Indications.

As an expectorant in the latter stage of acute bronchitis, chronic bronchitis, and laryngitis.
SULPHURIC ACID

As a diuretic in cardiac dropsy, chronic nephritis, and fluid accumulations of the pleural and pericardial cavities.

STRAMONIUM (*)

STRONTIUM SALTS

The strontium salts used in medicine are the lactate, bromid, salicylate, and iodid. The last three have the same action and uses as the corresponding sodium salts.

Strontium lactate is said to decrease the amount of albumin in the urine of nephritis. Dose, 5–20 grains.

STROPHANTHUS

Derivation.—The seeds of Strophanthus Hispidus.
Constituent.—Strophanthin, a glucosid.
Preparations.

Tincture.—Dose, 2–10 minims.

Strophanthin.—Dose, $\frac{1}{100}–\frac{1}{10}$ grain.

Action and Use.

This drug has the same action on the heart and kidneys as digitalis, except that it does not contract the vessels like digitalis. The uses are the same.

SULPHURIC ACID

Synonym.—Oil of Vitriol.

Properties.—A colorless, oily liquid, which is exceedingly corrosive. It contains 93 per cent. of absolute sulphuric acid.
Preparations.

*Dilute Sulphuric Acid.*—Dose, 5–20 minims, well diluted.

*Aromatic Sulphuric Acid* (Elixir of Vitriol) contains 20 per cent. of sulphuric acid and ginger and cinnamon. Dose, 5–20 minims.

**Action and Use.**

*Externally* the acid is an irritant and caustic.

*Internally* it checks the flow of gastric juice and acts in the intestines as an astringent.

It is used externally as a caustic to remove warts and small growths, and also as a dilute lotion for sweating. Internally it is employed in diarrhea.

**Toxicology.**—See Hydrochloric Acid.

**SUPRARENAL SUBSTANCE**

The active principle of the suprarenal, adrenal, or epirenal gland or capsule is a very useful medicinal agent.

**Form.**—This remedy is placed before the medical profession in numerous forms: As a dry or desiccated gland; as an extract of the gland; in the form of its principal constituent under one of many names, as adrenalin, suprarenalin, adnephrin, epinephrin, and hemostatin.

**Dosage.**—Dried gland, 3–8 grains; Extract, $\frac{1}{4}–1$ grain; Adrenalin (1:1000 solution), 5–15 minims.

**Physiologic Action.**

Applied locally, solutions of the gland will produce great constriction of the vessels of the mucous membranes or the broken skin, thus causing paleness of the parts; later, a secondary relaxation of the vessel walls takes place.
Given internally the drug also causes a constriction of the vessels and a great rise of blood-pressure. The power and force of the heart is increased.

**Therapeutic Indications.**

Locally in capillary hemorrhage and to render operations on the eye, nose, throat, and other parts bloodless. To check secretions and lessen turgescence in hay-fever, rhinitis, etc.

Internally as a stimulant in shock, collapse, and cardiac failure.

TERPIN HYDRATE (*)

THYMOL (*)

**THYROID GLAND**

**Action.**

Given internally thyroid extract produces, in large doses, a rapid heart, dyspnea, frontal headache, and trembling. A continuous use of the drug will produce anemia, loss of weight, and weakness.

**Uses.**

This gland is employed extensively in the treatment of cretinism, myxedema, simple goiter, and obesity. It is also useful in skin diseases, fractures, and slow union of bone.

**Dosage.**—Dried gland, 1–4 grains; Extract of the gland, $\frac{1}{4}$–1 grain.

TRIONAL (*)

TURPENTINE OIL

**Derivation.**—An oil distilled from the oleoresin of turpentine. It is a volatile, clear oil with a pine-like odor.

**Dosage.**—5–30 minims.
Preparations.

Rectified Oil.—Dose, 5–30 minims.

Liniment.

Physiologic Action.

Rubefacient.—Turpentine applied externally is irritating and produces redness of the skin.

Antiseptic.—Externally and internally oil of turpentine will retard bacterial growth.

Stimulant.—Reflexly from the stomach this drug stimulates the heart. It also stimulates intestinal peristalsis.

Anthelmintic.—The various intestinal worms are killed or their expulsion effected by turpentine in moderate doses.

Diuretic.—Turpentine irritates and causes congestion of the kidneys, thus increasing the output of urine. It may even produce bloody urine and partial suppression of this excretion. It imparts a violet-like odor to the urine.

Expectorant.—This drug acts as a powerful expectorant.

Hemostatic.—By its action on the musculature of the blood-vessels it produces vascular constriction.

Therapeutic Indications.

As a rubefacient in rheumatism, pleurisy, bronchitis, and neuralgias.

As an antiseptic in cleansing ragged wounds and ulcers. Internally in typhoid fever.

As an intestinal stimulant in typhoid fever, pneumonia, and other conditions accompanied by tympanities.

As a hemostatic in gastric, intestinal, and uterine hemorrhage.
VALERIAN

Administration.—As a relief for tympanities turpentine stupes are a most useful form of administration, also as enemata.

When giving turpentine either internally or externally a careful watch for toxic signs must be kept.

Turpentine is best given in capsules, as an emulsion, or dropped on sugar.

Toxicology.—Signs of poisoning are vomiting, purging, languor, unsteady gait, suppression of urine, hematuria, skin eruption, and collapse.

Management.—Empty the stomach and give demulcents, as gruels, flaxseed-tea, slippery elm solution. Stimulate if necessary.

UVA URSI (*)

VALERIAN

Derivation.—The root of Valeriana Officinalis.

Dosage.—10–30 grains.

Preparations.

Fluidextract.—Dose, 10–30 minims.

Tincture.—Dose, $\frac{1}{4}$–1 dram.

Ammoniated Tincture.—Dose, $\frac{1}{4}$–1 dram.

Ammonium Valerianate.—Dose, 1–5 grains.

Iron Valerianate.—Dose, 1–3 grains.

Quinin Valerianate.—Dose, 1–10 grains.

Sodium Valerianate.—Dose, 1–5 grains.

Zinc Valerianate.—Dose, $\frac{1}{4}$–2 grains.

Physiological Action.

Gastric Stimulant.—All valerian preparations increase the motor and secretory actions of the stomach and promote the appetite and digestion.

Nerve Sedative.—Valerian tends to quiet nerve
unrest and to relieve functional nervous excitability, for which purpose it is much used.

**Therapeutic Indications.**
The chief use of this drug is as a *nerve sedative* in such conditions as hysteria, nervousness, nervous insomnia, hypochondriasis, and the nervous disorders of pregnancy and the menopause.

**VERATRUM VIRIDE**

**Derivation.**—The rhizomes of *Veratrum Viride*.

**Synonyms.**—American or Green Hellebore.

**Constituents.**—Veratroidin and jervin.

**Dosage.**—1–3 grains.

**Preparations.**

- *Fluidextract.*—Dose, 1–3 minims.
- *Tincture.*—Dose, 5–15 minims (U. S. P., 1900).

**Physiologic Action.**

**General Depressant.**—This drug exerts a depressing action on the spinal cord; on the vasomotor system; on the heart, causing a weak and slow pulse.

**Therapeutic Indications.**

Veratrum viride is the best *heart sedative* for use in the adult, being employed for the same purposes in the adult as aconite is for children. It is useful in the beginning of acute infectious fevers when the pulse is full and bounding, as in pneumonia, erysipelas, and pyemia. It is also invaluable in the treatment of puerperal eclampsia, being given until the pulse is reduced to about 80 beats per minute.

**Pretoxic Signs.**—Slow pulse, nausea, and vomiting.

**Toxicology.**—Although this is a most virulent drug,
yet it is said that but few fatal cases of poisoning have resulted from its use. This is probably due to the emetic action of the drug, which eliminates it from the body when taken in toxic doses.

Signs of poisoning are nausea, vomiting, weak pulse, labored respirations, and cold, moist skin.

Management.—Empty the stomach and stimulate.

VIBURNUM (*)

ZINC COMPOUNDS

ZINC CARBONATE

In the impure state this preparation is known as Calamine, under which name it is much employed in irritating skin diseases.

ZINC CHLORIDE

A white, granular powder, which is very poisonous and caustic. It is also known as Zinc Butter. Used externally only.

ZINC OXIDE

A white, amorphous, tasteless, and insoluble powder. It is employed mostly in the form of an ointment.

ZINC SULPHATE

Also known as White Vitriol. Dose, 1/4−1 grain.

Physiologic Action of the Zinc Salts.

Caustic.—Zinc chloride destroys tissues to which it is applied.

Astringent.—The sulphate especially acts as an astringent, both externally and internally.
Emetic.—Zinc sulphate is a rapid and reliable emetic, causing vomiting by its irritant action on the stomach walls.

Therapeutic Indications.
As a caustic in the treatment of warts, nevi, lupus, condylomata, and epitheliomata.
As an astringent, externally for ulcers of the indolent type, gonorrhea, leukorrhea, and moist skin diseases. Internally in diarrhea and night-sweats.
As an emetic in drug poisoning.
Toxicology.—Nausea, vomiting, abdominal colic, purging, and collapse.
Management.—Wash out the stomach. Give tannic acid and demulcants, as white of egg, milk, lime-water. Stimulate and give opium for pain.

OTHER ZINC PREPARATIONS

Zinc Bromid.—Same action and uses as Potassium Bromid. Dose, 1–3 grains.
Zinc Iodid.—Same action and uses as Potassium Iodid. Dose, 1–3 grains.
Zinc Permanganate.—Same action and uses as Potassium Permanganate.
Zinc Phosphid.—See under Phosphorus. Dose, $\frac{1}{5}$–$\frac{1}{3}$ grain.
Zinc Sulphocarbolute (Zinc Phenolsulphonate).—See Carbolic Acid. Dose, 1–3 grains.
Zinc Valerianate.—See Valerian. Dose, $\frac{1}{2}$–2 grains.
PART III

DRUGS OF MINOR IMPORTANCE

Absinth (Wormwood, Absinthium).—Used as a stomachic in gastric atony and dyspepsia. It is also an anthelmintic. Fluidextract, 15–45 minims.

Acacia (Gum Arabic).—Used as a demulcent in the form of a mucilage.

Adonis Vernalis.—The action of this drug is similar to digitalis, producing a slow and powerful heart action and diuresis. Fluidextract, 1–2 minims; Adonidin, $\frac{1}{10}$–$\frac{1}{2}$ grain.

Agaricin.—A derivative of agaric. It decreases all secretions and is used with good results in night-sweats. Dose, $\frac{1}{4}$–1 grain.

Allspice (Pimenta).—Acts as a stomachic and carminative in dyspepsia, colic, and anorexia. Fluidextract, 5–30 minims.

Ammoniac.—A gum resin having expectorant and antispasmodic properties. Used in bronchitis, asthma, and also as an emmenagogue in amenorrhea. Dose, 5–15 grains.

Apiol.—An oily liquid derived from parsley and used as a diuretic and emmenagogue. Dose, 1–5 minims.

Apopccyxum (Canadian Hemp).—A useful diuretic much employed in dropsy. Extract, 1/8–2 grains; Fluidextract, 2–10 minims.

Arnica.—Used externally in bruises and sprains, and internally as a diuretic and diaphoretic. Fluidextract, 5–15 minims; Extract, 1–3 grains; Tincture, 15–60 minims.

Aasafetida.—This drug is much used as a carminative, nerve sedative, and expectorant. It is excellent to relieve flatulence and colic of infants, being given as an enema. Also used in tympanities of typhoid fever, in nervous disorders of the functional type, and bronchitis. Tincture, 1/4–1 dram; Emulsion, 1–4 drams.

Aspidium (Male fern, Filix mas).—Used extensively as an anthelmintic for tapeworms. Castor oil should not be administered when this drug has been given, as poisoning may result from absorption facilitated by the oil. Oleoresin or Extract, 1–2 drams.

Aspidosperma.—Used in dyspnea, asthma, and bronchitis. Fluidextract, 1/8–1 dram.

Balsam of Peru.—Used externally as a stimulant to indolent granulations and ulcers. As an expectorant in asthma, chronic bronchitis, and pulmonary tuberculosis. Dose, 5–15 minims.

Barium Chlorid.—This salt has a similar action to digitalis, producing a slow and forcible heart. It is used as an alterative in syphilis and scrofula. Dose, 1/16–1/4 grain.

Blue Cohosh (Caulophyllum).—Used as an emmenagogue and as a relief for dysmenorrhea. Fluidextract, 10–30 minims; Caulophylin, 1–5 grains.
Boneset.—This is more or less of a favorite diaphoretic with the laity, and is employed to abort "colds," bronchitis, and acute fevers. Fluidextract, 1–2 drams.

Buohu.—The principal action of this drug is its sedative action on the urinary passages, for which purpose it is used in cystitis and urethritis. It is also employed as a diuretic in dropsy. Fluidextract, $\frac{1}{4}$–1 dram.

Cactus (Night-blooming Cereus, Cereus Grandiflorus).—Cactus is a most valuable heart stimulant, increasing both the rate and force of the heart, and is used in palpitation and as a substitute for digitalis. The drug also possesses diuretic power. Fluidextract, 2–5 minims.

Calamus (Sweet Flag).—This drug is chiefly used as a carminative, and as such acts well in post-operative and fermentative flatulence. Fluidextract, 5–30 minims.

Calumba (Columbo).—This drug is one of the best bitters and stomachics and, as a rule, is acceptable to patients. Fluidextract, 5–20 minims; Tincture, 1–2 drams.

Chamomile, German.—This drug is used as a carminative in flatulence and colic; as an antispasmodic in spasms of teething; as a diaphoretic in aborting "colds" and stimulating menstruation. Fluidextract, 15–60 minims.

Cantharides (Spanish Fly).—Externally this drug acts as a rubefacient and vesicant, and is used as such in neuralgias, meningitis, and pleurisy. Internally it is used as a diuretic and vesical stimulant. Tincture, 1–5 minims; Cerate and Collodion, for external use.

Cardamom.—Used principally as a carminative and

*Cassia* (Cinnamon).—This is used as a flavor. *Carminative* and *astringent* in dyspepsia, flatulence, and diarrhea. *Fluidextract*, 10–20 minims; *Oil*, 1–3 minims.

*Catechu* (Gambir).—This drug is a powerful and valuable *astringent*, both externally and internally. It is useful locally in tonsillitis, pharyngitis, spongy gums, gonorrhea, and leukorrhea. Internally in diarrhea. *Compound tincture*, 1–2 drams.

*Caulophyllum*.—See Blue Cohosh.

*Celery* (Apium Graveolens).—The seeds are used as a *carminative* and *nerve stimulant*. *Fluidextract*, 5–15 minims.

*Cerium Oxalate*.—This metallic preparation is principally used as an *anti-emetic* in vomiting of pregnancy, seasickness, and dyspepsia. It is said to be a cough sedative of some value, but as such the writer has seen no beneficial results. Dose, 1–5 grains.

*Chaulmoogra Oil*.—This substance is greatly praised in the treatment of leprosy. Arrest of the disease by the use of this drug has been frequently reported.

*Chenopodium*, also known as American wormseed, is most useful as an *anthelmintic*. It is particularly active against the hookworm and the round-worm. The dose of the oil is from 6 to 45 minims, given in three portions an hour apart. The administration of the oil of *chenopodium* as a worm medicine should be preceded and followed by a brisk cathartic, as magnesium sulphate or castor oil.

*Chloralamid*.—This preparation is extensively em-
ploved as an hypnotic in insomnia not accompanied by pain. Dose, 15–40 grains.

Chloralose.—This is another hypnotic. Dose, 3–10 grains.

Chrysarobin (Goa Powder).—This is a most excellent application in the treatment of psoriasis and other skin diseases. Used as an ointment or with collodion. This drug should not be applied near the eyes.

Cimicifuga (Black Cohosh, Black Snakeroot).—Acts as an analgesic, antispasmodic, and heart depressant. It is useful in chorea, rheumatism, neuralgia, asthma, and dysmenorrhea. Fluidextract, 15–45 minims; Extract, 1–5 grains.

Cinnamon.—See Cassia.

Citric Acid.—Used as a remedy for scurvy. Dose, 5–20 grains.

Cloves (Caryophyllus).—Used as a carminative and flavor. Fluidextract, 5–20 minims; Oil, 1–5 minims.

Cocculus.—Important because of its principal constituent, Picrotoxin, which is employed in night-sweats. Dose, $\frac{1}{10}$–$\frac{1}{5}$ grain.

Coley’s Fluid.—This is a combination of the products of growth of the streptococcus and the Bacillus prodigiosus. It has been employed in the treatment of sarcoma. It is administered with an antitoxin syringe.

Colocynth.—This drug is a powerful hydragogue cathartic. It is always used in combination with other drugs. Dose, 1–8 grains. Extract, $\frac{1}{2}$–2 grains; Colocynthin, $\frac{1}{4}$–$\frac{1}{2}$ grain.

Conium (Hemlock).—This drug is a motor depressant and is used in chorea, neuralgias, convulsions, and
asthma. Dose, 1–3 grains; Extract, $\frac{1}{2}$–2 grains; Fluidextract, 1–5 minims; Coniin, $\frac{1}{10}$–$\frac{1}{4}$ grain.

Copaiba.—Its chief uses are as an expectorant and urinary stimulant. Used in bronchitis, cystitis, gonorrhea, and leukorrhea. Oil, 5–10 minims; Mass, 5–45 grains; Resin, 5–10 grains.

Copper Compounds.—The arsenite is used in anemia, diarrhea, cholera infantum, typhoid fever, and dysentery. The sulphate is employed locally as an astringent and caustic in the treatment of ulcers, gonorrhea, warts, trachoma, and oozing of blood. Internally as an emetic and astringent. Arsenite, $\frac{1}{10}$–$\frac{1}{4}$ grain; Sulphate, $\frac{1}{10}$–2 grains.

Corn-silk (Zea Mays).—Used as a diuretic and sedative to the urinary tract. Employed in cystitis, leukorrhea, and gonorrhea. Fluidextract, $\frac{1}{2}$–2 drams.

Couch Grass (Triticum).—Uses and dosage the same as for Corn-silk.

Creolin is a deodorant and antiseptic. Used as an irritant and douche in washing out cavities, and in cystitis, leukorrhea, and gonorrhea. With water it forms a milky and soapy solution. Employed in solution of $\frac{1}{2}$–2 per cent.

Croton Chloral (Butyl Chloral Hydrate).—Used as an analgesic, especially in neuralgia of the fifth cranial nerve or tic doloreaux. Dose, 2–5 grains, given every half hour until relief is obtained; or 15 grains in one dose.

Cubeb acts as a diuretic, expectorant, and vesical stimulant. Used in chronic bronchitis, pharyngitis, cystitis, and urethritis. Fluidextract, 10–60 minims; Oil, 5–10 minims; Oleoresin, 5–20 minims; Tincture, 1–2 drams.
Cusso (Kousso).—An excellent anthelmintic in the treatment of tapeworm. Dose, 1-4 drams; Fluidextract, 1-4 drams.

Duboisin.—Used exclusively as a mydriatic and nerve sedative. It is employed largely in place of atropin, as the former is more rapid in its action, less irritating, and more transient. As a nerve sedative it is used to quiet insane patients. Dose, $\frac{1}{10}-\frac{1}{4}$ grain.

Duloamara (Bitter Sweet).—Said to be an alterative, diuretic, and diaphoretic, but is seldom used.

Echinaceae.—Although an old drug, it has lately come to the front again, is much lauded as a powerful and efficient alterative in syphilis, and is very beneficial in the treatment of septic wounds, septicemia, and pyemia. Fluidextract, 10-30 minims.

Elaterium.—A powerful hydragogue cathartic, very useful in rapidly producing free bowel evacuations and in reducing dropsical accumulations. It is best given as Elaterin, dose, $\frac{1}{10}-\frac{1}{4}$ grain. Dose of elaterium is $\frac{1}{10}-\frac{1}{4}$ grain.

Erigeron Oil (Oil of Fleabane).—This drug is useful in stopping oozing of blood in hematuria, menorrhagia, hematemesis, etc. Dose, 5-10 minims.

Eriodictyon (Yerba Santa).—A very agreeable expectorant in bronchitis and asthma. On account of its taste it is used to cover the bitterness of quinin. Dose, 15-60 grains. Fluidextract, 15-60 minims; Aromatic Syrup, 1-3 drams.

Ethyl Bromid.—A clear, volatile, and inflammable liquid, used locally as an anesthetic. It is also employed as a general anesthetic.

Ethyl Chlorid.—A local and general anesthetic.
Eucain.—A substitute for cocaine as a local anesthetic. Used as a 2–10 per cent. solution.

Eucalyptus is an antiperiodic, antiseptic, and expectorant. Employed in malaria, asthma, and bronchitis. Oil, 5–10 minims; Fluidextract, ¼–1 dram; Eucalyptol, 5–10 minims.

Euonymus (Wahoo).—Used principally as a cholagogue cathartic in jaundice, hepatitis, biliousness, and malaria. Extract, 1–5 grains; Fluidextract, 1–2 drams.

Eupatorium.—See Boneset.

Fennel.—Used as a carminative in flatulence and infantile colic. Fluidextract, 5–20 minims.

Frangula (Buckthorn).—A mild and pleasant laxative, used much in chronic constipation. Fluidextract, 15–30 minims; Extract, 5–15 grains.

Gamboge.—An uncertain hydragogue cathartic, attended with griping. Dose, 1–4 grains.

Gossypii Radicis Cortex (Cotton-root Bark) is an emmenagogue and oxytocic. Used in amenorrhea and dysmenorrhea. Fluidextract, 15–60 minims; Extract, 1–10 grains.

Grindelia is an expectorant and antispasmodic, used in asthma, whooping-cough, and hay-fever. The fluidextract is an excellent application for ivy-poisoning. Fluidextract, ¼–1 dram.

Guaiac.—A diaphoretic and antirheumatic. Used in subacute and chronic rheumatism, tonsillitis, pharyngitis, amenorrhea, and dysmenorrhea. Dose, 5–15 grains. Tincture, ¼–1 dram; Ammoniated Tincture, 1–2 drams.

Hamamelis (Witch Hazel).—Used mostly as an astringent and hemostatic in piles, diarrhea, leukorrhea, and gonorrhea. Fluidextract, ¼–1 dram.
Helonias (False Unicorn Root).—Used as a uterine sedative and tonic. Fluidextract, $\frac{1}{2}$–2 drams.

Hematoxylin (Log Wood).—Used as an astringent in diarrhea, dysentery, and cholera infantum. Extract, 5–15 grains.

Humulus (Hops).—This drug acts as a nerve sedative and hypnotic. Fluidextract, $\frac{1}{4}$–1 dram; Tincture, 1–3 drams; Lupulin, 2–10 grains; Fluidextract of Lupulin, 2–15 minims.

Ingluvin (Extract of Chicken Gizzard).—Used as a digestant and anti-emetic. Dose, 5–20 grains.

Iris (Blue Flag).—A cholagogue cathartic, used in hepatic torpor and biliousness. Extract, 1–4 grains; Fluidextract, 5–20 minims; Irisin, $\frac{1}{2}$–3 grains.

Jamaica Dogwood (Piscidia).—Nerve sedative and hypnotic. Fluidextract, $\frac{1}{4}$–1 dram.

Juniper.—A stimulating diuretic, not to be used in acutely congested nephritis. Fluidextract, 1–2 drams; Spirit, $\frac{1}{4}$–1 dram; Oil, 2–10 minims.

Kamala.—Used as an anthelmintic for tapeworm. Fluidextract, 1–20 drams.

Kava Kava.—Useful in mucous-membrane inflammations, as bronchitis, cystitis, and gonorrhea. Fluidextract, $\frac{1}{4}$–1 dram.

Kino.—Very useful astringent in diarrhea. Tincture, 1–3 drams.

Kola (Cola).—Nerve sedative and astringent. Fluidextract, $\frac{1}{4}$–$\frac{1}{2}$ dram.

Krameria (Rhatany).—Strong astringent and hemostatic. Used in diarrhea, sweating, leukorrhea, and bleeding from the mucous membranes. Fluidextract, 10–30 minims; Tincture, 1–3 drams; Syrup, 1–3 drams.
Lactucaarium (Lettuce).—**Hypnotic** and **nerve sedative**. *Fluidextract*, 5–15 minims.

Lanum (Lanolin, Hydrous Wool-fat).—Used as a base for ointments.


Lobelia.—Used as an **expectorant** and **antispasmodic** in asthma, chronic bronchitis, whooping-cough, and spasmodic conditions. *Fluidextract*, 2–10 minims; *Tincture*, 10–30 minims; *Lobelin Sulphate*, \(\frac{1}{4}–2\) grains.

Methylene-blue.—Used as an **antipertodic** in malaria and as an **antiseptic** in the treatment of gonorrhea and cystitis. This drug causes the urine to become of a blue-green color. Dose, 1–4 grains, in capsules.

Musk.—This drug is of animal origin. It acts as an **antispasmodic** and **stimulant** in low nervous conditions of the acute fevers. The drug is extremely expensive. Dose, 3–10 grains; *Tincture*, \(\frac{1}{2}–1\) dram.

**Musk Root** (Sumbul).—Used exclusively as a **nerve sedative** in hysteria, nervousness, and insomnia. *Fluidextract*, 10–20 minims.

Mustard (Sinapis).—Acts as a **rubefacient**, counter-irritant, and **emetic**.


**Naphtol**.—Used as an **intestinal antiseptic** in diarrhea, typhoid fever, cholera infantum, and enteritis. Dose: *Alpha*, 1–8 grains; *Beta*, 5–15 grains.
Paraldehyde.—Used as an hypnotic. The taste is so disagreeable that it should be given well diluted in sweetened water. Dose, ¼–1 dram.

Passion Flower (Passiflora).—Used as a nerve sedative in hysteria, nervousness, and insomnia. Fluidextract, ¼–1 dram.

Phytolacca (Poke Root or Berry).—Used as an alterative in syphilis, rheumatism, and scrofula. Recently has been employed in obesity. Dose, 1–5 grains. Fluidextract, 1–5 minims.

Picrotoxin.—See Cocculus.

Prunus Virginiana (Wild Cherry).—Used as a cough sedative and expectorant. Fluidextract, ¼–1 dram; Syrup, 1–4 drams; Infusion, ½–2 ounces.

Pumpkin Seeds (Pepo).—Used as an anthelmintic for tapeworm. Dose, 1 ounce.

Quassia.—A bitter and anthelmintic. Used in anorexia, dyspepsia, and gastric atony. As an enema for seat- or pin-worms. Fluidextract, 10–30 minims; Tincture, 1–3 drams; Infusion (as enema), 1–2 ounces.

Saccharin (Glusid).—This is a coal-tar product with an intensely sweet taste. It is employed as a substitute for sugar in diabetic patients. One grain is equivalent in sweetening power to 1 ounce of sugar.

Saffron.—Used formerly as an antispasmodic and emmenagogue.

Sanguinaria (Blood Root).—Used as an expectorant in bronchitis, croup, and asthma. Fluidextract, 3–15 minims; Tincture, ¼–1 dram; Sanguinarin, ¼–½ grain.

Santal Wood (Sandal Wood).—Used as an anti-
septic and stimulant to the urinary tract in cystitis and gonorrhea. Fluidextract, ¼–1 dram; Oil, 5–20 minims.

Santonica (Levant Worm-seed).—Used as an anthelmintic for the round-worm. Santonin, ¼–2 grains.

Savin.—Emmenagogue in amenorrhea. Oil, 1–5 minims.

Saw Palmetto.—Bronchial and urinary stimulant. Used in bronchitis, asthma, laryngitis, cystitis, and gonorrhea. This drug is said to produce an increase in weight and nutrition. Dose, ¼–1 dram; Fluidextract, ¼–1 dram.

Seammony.—Hydragogue cathartic, similar to jalap. Resin, 1–5 grains.

Senega acts as an expectorant and diuretic. Used in chronic bronchitis, asthma, croup, and dropsy. Fluidextract, 10–20 minims; Syrup, ¼–2 drams.

Senna.—Chief action is that of a laxative. Fluidextract, 1–2 drams; Compound Infusion (Black Draught), 1–2 ounces.

Spigelia (Pink Root).—Used as an anthelmintic for the round-worm. Fluidextract, 1–2 drams.

Stavesacre (Staphisagria, Delphinium).—Used principally as an antiparasiticide. It is very poisonous.

Stramonium.—This drug is a powerful antispasmodic, belonging to the same class as belladonna and hyoscyamus. Used particularly in asthma by inhaling the vapors from the burning leaves. Fluidextract, 1–5 minims; Tincture, 5–15 minims.

Sulfonal.—Used as an hypnotic. Dose, 10–30 grains.

Sulfur.—Used as a disinfectant by burning. Internally it is a laxative. Precipitated Sulfur, ¼–1 dram.
Terpin Hydrate.—Useful in chronic bronchitis, hay-fever, and cystitis. Dose, 2–5 grains.

Thymol.—Antiseptic and anthelmintic. Used in typhoid fever, gastric fermentation, bronchitis, and coryza. It is also employed in the treatment of intestinal worms, especially the hookworms. For this purpose it is often given in doses as large as 60 grains.

Tolu.—Used as an expectorant. Syrup, 1–4 drams.

Trional.—Used as a hypnotic in insomnia not accompanied by pain. Dose, 10–30 grains.

Uva Ursi (Bear-berry).—Acts as a diuretic and stimulant to the urinary tract. Used in chronic nephritis, cystitis, and gonorrhea. Fluidextract, ¼–1 dram; Arbutin, 2–7 grains.

Viburnum Prunifolium (Black Haw).—Used principally as a uterine antispasmodic in dysmenorrhea, threatened abortion, and habitual miscarriages. Fluidextract, ¼–1 dram.

Viburnum Opulus (Cramp Bark).—Used as a nerve sedative and antispasmodic in asthma, hysteria, and nervousness of women.
PART IV

NEWER MEDICINAL AGENTS

This section refers to the newer definite chemical products and not to the multitude of medicinal mixtures, the ingredients of which are more or less undervalued.

Acetozone.—One of the organic peroxides, claimed to be a powerful germicide. It is soluble in water, non-explosive, and does not corrode tissues or act toxic internally. It is used locally for ulcers, rhinitis leukorrhea, and internally in typhoid fever, diarrhea and fermentative dyspepsia.

Dosage.—Internally it is administered greatly diluted. Two grains or more of the drug are dissolved in a glass of water and this amount taken every two hours. Externally it is used as a dusting-powder, mixed with boric acid, talcum, or other inert powder, or a solution of 1:2000 is used as a lotion or douche.

Actol (Silver Lactate).—This is an organic silver salt. It is a white powder, soluble in 15 parts of water. It acts as an astringent and antiseptic. Like other silver salts, it is especially valuable in those conditions due to the gonococcus. It may be employed sub
cutaneously in erysipelas. Dose, $\frac{1}{4}$–$\frac{1}{2}$ grain. As an irritant in a 1 : 2000 solution.

**Agurin** (Acetotheobromin Sodium).—A white powder, soluble in water. Used as a diuretic for reducing dropsical accumulations due to cardiac or renal disease. Dose, 7–14 grains.

**Airol.**—An iodin preparation of bismuth and gallic acid. Used as a dressing powder for ulcers, wounds, skin diseases, and affections of the nose, ear, and throat. It has been used internally for diarrhea in doses of from 1–3 grains.

**Albargin** (Gelatose Silver).—An organic silver preparation containing 15 per cent. of silver and soluble in water. Used in gonorrheal affections.

**Alphozone** (Succinic Peroxid).—An organic peroxid somewhat similar to acetozone in action and uses.

**Amyloform.**—A combination of formaldehyd and starch. Used as a substitute for iodoform. It does not irritate or cause toxic symptoms.

**Anesthol.**—A clear and transparent liquid with an agreeable odor. It is used as an anesthetic, being a combination of ethyl chloride, ether, and chloroform.

**Argenol.**—A combination of silver and an albuminous substance. Soluble in water and used as other organic silver combinations.

**Argentamin.**—A solution of 10 per cent. of silver in organic combination. It is non-irritating, very penetrating, and stronger than silver nitrate. Used in gonorrheal diseases in solutions of 1 : 100 to 1 : 400.

**Argyrol.**—A combination of silver and yolk of egg. Used in solution of 0.1–4 per cent. strength.
Aristochin.—A tasteless quinin preparation. Dose same as Quinin.

Aristol.—A derivative of thymol and iodin. Used as a dressing for wounds, ulcers, burns, etc. It should be protected from the light.

Atoxyl.—This chemical belongs to the group of later arsenical preparations. It is known as sodium arsonilate. It is less toxic than the older salts of arsenic and its action in certain diseases is much to be preferred. In trypanosomiasis or sleeping sickness it has proved very valuable. Manson gives 2 or 3 grains as an intramuscular injection every alternate day. Others prefer giving a dose of 7½ grains every five or ten days. It has also been used to replace salvarsan in the treatment of syphilis.

Benzosol.—A guaiacol-benzoin combination, containing 54 per cent. of guaiacol. Used as an intestinal antiseptic. Dose, 1–10 grains.

Bromoform.—A bromin derivative, used especially in the treatment of whooping-cough. Dose, 1–10 drops. Its use is not free from danger.

Chloretone.—A derivative of chloroform and acetone. Used as an hypnotic and anesthetic. Dose, 5–15 grains.

Collargol is a soluble metallic silver used in septic conditions, as puerperal fever, pyemia, erysipelas, and all infectious conditions. Administered intravenously, 30 minims of a 5 per cent. solution, well diluted; by rectum, 5 grains in 1 ounce of water; by mouth, tablets of 1 or 2 grains; local application, varying from ½–5 per cent. solution. Unguentum Credé is a 15 per cent. ointment of collargol.
NEWER MEDICINAL AGENTS

**Diuretin.**—A combination of sodium salicylate and theobromin. Used as a diuretic in nephritis and dropsy. It should be given as a fresh solution in water. Not more than six doses of 15 grains each should be given in twenty-four hours.

Dolomol preparations are combinations of various medicaments with the stearate of calcium and magnesium.

**Dormiol** is a combination of chloral and amyline hydrates. Used as an hypnotic. Dose, 5–20 grains.

**Eosote** (Creosote Valerianate).—Used in tuberculosis and diarrheas. Dose, 1–10 minims.

**Euquinin.**—A tasteless quinin. Use and dosage the same as Quinin.

**Exalgin.**—An acetanilid derivative, used the same as Acetanilid. Dose, 1–4 grains.

**Fluorescein.**—Although not used therapeutically, it is of value in ocular diagnosis. If a watery solution of fluorescein is applied to the cornea and conjunctiva, ulcers or raw areas will appear as yellow or green spots and remain so for a few hours. Normal tissues are not stained.

**Formin.**—See Urotropin.

**Geosote** (Guaiacol Valerianate).—Used as an intestinal antiseptic and in tuberculosis. Dose, 3–10 minims.

**Hedonal.**—Used as an hypnotic in nervous insomnia. Best given in dry form or in capsules. Dose, 15–30 grains.

**Helmitol.**—Same action and use as Urotropin.

**Holcoain.**—A substitute for cocain. Used in a 1 per cent. solution.

**Hyrgol.**—A colloidal preparation of mercury. Used
in syphilis and said not to interfere with digestion.
Used as an inunction.

Ichtbalbin.—A combination of ichthyol and albumin.
Used same as Ichthylol. Dose, 3–10 grains, internally.

Ichtargan.—A combination of ichthyol and silver,
and contains 30 per cent. of silver. Used in gonorrheal disease in a 0.2–3 per cent. solution.

Ichthoform.—A combination of ichthyol and formaldehyde. Used as an antiseptic both externally and internally. Dose, 10–30 grains.

Iodol.—An iodin derivative of 89 per cent. strength.
Used as a substitute for iodoform.

Itrol (Silver Citrate).—Used the same as Actol.

Lycoetol.—A compound of piperazin. Used in gout,
lithemia, calculi, and chronic rheumatism. Dose, 4–10 grains.

Lysol.—A brown oily liquid, very similar in action
and uses to creolin. Used in ½–2 per cent. solution.

Mesotan.—A salicylic acid derivative, used locally
as an analgesic in rheumatism and neuralgias. Applied
with an equal part of sweet oil.

Nosophen.—An iodin derivative of 60 per cent.
strength. Used as a substitute for iodoform.

Orthoform.—A benzoic derivative with a local anesthetic action similar to cocain. Used for burns, fissures,
and painful wounds.

Perhydrol.—A 30 per cent. solution of hydrogen peroxid.

Phenolphthalein.—This chemical is very much used
in the relief of chronic constipation. It may be given
alone or in combination with some of the vegetable laxatives, as aloes or rhubarb. The average dose is
7½ grains.
NEWER MEDICINAL AGENTS

Picratol.—A picric acid derivative of silver, containing 30 per cent. of silver. Used as other silver preparations.

Piperazin.—Used as a uric-acid solvent in gout, lithemia, and rheumatism. Dose, 5 grains three times a day, dissolved in plenty of water.

Proferin.—A nucleoprotein combination of iron. Used in anemia. Dose, 5–10 grains.

Protan.—A nucleoprotein combination of tannic acid. Used in diarrhea. Dose, 5–30 grains.

Protargol.—A combination of proteid with 8 per cent. of silver. Used as other organic silver preparations in a 0.2–10 per cent. solution.

Salipyrin (Antipyrin Salicylate).—Analgesic, antipyretic, and antirheumatic. Dose, 5–30 grains.

Scarlet Red.—This is one of the synthetic coal-tar preparations which has been extensively employed locally in the form of a 5 per cent. ointment in the treatment of sluggish and non-granulating ulcers. The author has seen some very good results from its use.

Stovain.—This drug is employed as a local anesthetic. It is not as toxic as cocain. In eye work a 4 per cent. solution is used.

Stypticin (Cotarnin Hydrochlorate).—A derivative of an alkaloid of opium (Narcotin). Locally or internally it causes vasoconstriction. Dose, 1–4 grains. Used in uterine hemorrhage, nosebleed, and hemoptysis.

Sublamin.—A mercurial derivative used as an antiseptic in place of mercury bichlorid. It is non-irritating. Used in 1 : 1000 to 1 : 500 solutions.

Tannalbin.—A combination of albumin and tannic acid. Used as an astringent in diarrheas. Dose, 10–60 grains.
Tannigen.—A tannic acid combination. Used as an intestinal astringent. Dose, 3–15 grains.

Tannocool.—A combination of tannic acid and gelatin. Dose, 7–15 grains.

Tannoform.—A combination of tannic acid and formaldehyde. Used in skin diseases and for local sweating.

Theoocin.—A powerful diuretic, used in doses of 3–5 grains.

Thiocool.—A guaiacol derivative, used in tuberculosis, coughs, and as an intestinal antiseptic. Dose, 5–20 grains.

Thiosinamin.—A tissue solvent. Used in lupus, tumors, old scars, and strictures. Hypodermically, 1–3 grains, in a 15 per cent. alcoholic solution.

Trioresol.—A mixture of three cresols. Used as a disinfectant in $\frac{1}{2}$–1 per cent. solution.

Urotropin (Hexamethyleneamin).—A powerful urinary antiseptic. In the kidneys it sets formalin free, thus converting the urine into an antiseptic solution. Used in cystitis, pyelitis, nephritis, urethritis, and typhoid fever. Dose, 5–7 grains, dissolved in water and given three times a day, after meals. Hexamethyleneamin is now an official preparation.

Veronal.—A hypnotic used in nervous insomnia. Dose, 5–12 grains, given in a hot drink.

Xeroform.—A substitute for iodoform. It is free from odor, taste, and irritation. Used internally as an intestinal antiseptic. Dose, 5–15 grains.

Yohimbin.—An alkaloid from the bark of Yohimbehe, grown in West Africa. Used in impotence. Dose, $\frac{1}{18}$ grain.
PART V

PRACTICAL THERAPEUTICS

HYDROTHERAPY

BATHS

In the treatment of acute febrile diseases baths are used for two chief purposes: To reduce the fever; to impress the nervous system. This latter purpose is fully as important as the reduction of the temperature. Baths are instituted in the treatment of fever when the temperature of the patient reaches a certain height, generally 103° F., or when the nervous symptoms become marked. There are several varieties of baths, the best and most frequently employed methods are: Sponge-bath, tub-bath, bed-bath, and packs.

Sponge-bath.—This form of bathing is used when the fever is not excessive and is easily influenced, especially in the case of children and weak and nervous adults. The patient is placed on several thicknesses of blankets or on a rubber sheet. A sponge is moistened with water of the required temperature, which should be higher for the initial baths than for the subsequent ones; the moist sponge is now lightly applied.
to the patient's body so as to leave a thin film of water on the skin, and not poured on from a dripping sponge, as is often the case. By applying only a thin film of water evaporation takes place rapidly and the temperature of the body falls correspondingly. It is very important that the surface of the body be kept glowing by constant rubbing with the hands to facilitate evaporation and to stimulate the surface circulation. In robust adults a very large part of the surface may be manipulated, but in weak adults and children it is preferable to bathe only a small part of the body at a time. If, after the sponge-bath is completed, alcohol be poured into the palms of the hands and then applied to the patient's body, a very agreeable and beneficial result is obtained. When the sponge-bath is finished the patient is covered with a light sheet.

Tub-bath.—This form of bath is used when the temperature is excessive and the patient is robust. The question as to the temperature of the water at the beginning of the bath is to be solved by the physician in attendance. The water may be warm at first, to prevent the initial shock, and then gradually cooled by cold water or ice to about 80°F., or the water may be employed at 80°F. at the beginning. Many physicians insist that this initial shock is beneficial.

The patient is placed on a stretcher made for the purpose, and is lowered into the tub, or is rolled on to a blanket and lowered into the tub. When in the water, friction should be constantly applied to the patient's body to maintain the surface circulation. As the bathing progresses the water, which is becoming
Hydrotherapy

Warmer, should be cooled by adding cold water or ice. An ice-cap placed on the patient's head will prevent the sometimes troublesome cerebral hyperemia. Before and, if necessary, after the tub-bath a diffusible stimulant, as aromatic spirit of ammonia, spirit of ether, or spirit of vini gallici, may be given.

The temperature of the patient should not be reduced below 100° F., as collapse may follow, because the temperature continues to fall several degrees after the bath is discontinued.

Bed-bath.—This form of bathing has the advantages of a tub-bath, and is devoid of the danger involved in handling the patient necessary in tub-bathing.

A large rubber sheet is placed under the patient, then two blankets are rolled up lengthwise into two bolsters; one of these rolls is placed under the rubber sheet on each side of and running parallel with the patient's body, in such a manner that he lies in the trough. A pillow is placed under the upper end of the rubber sheet and another pillow at the foot under the rubber sheet, thus a rubber bath-tub is improvised, with the patient in it. Water of the required temperature is now poured into the tub and the bath is continued as in a tub-bath. When the bath is completed, the water is allowed to flow into a pail which is held under the edge of the rubber cloth at the foot of the bed, where the pillow has been partially removed.

Packs.—These the writer considers one of the best methods of applying cold for the purpose of reducing the temperature of a fever patient. They are partial and complete.
First, place a rubber sheet under the patient to prevent the bedclothing from becoming wet. Next, wring out a sheet in cold water and wrap it about the patient’s body from the chin to the toes. As the sheet becomes warm, pour cold water on from a pitcher or, better, from a sprinkling can. In the partial form, only the chest or the chest and abdomen are wrapped in the wet sheet.

A word here about the ice-bag will not be out of place.

Ice-bag.—This small, inexpensive, easily obtained, and, as some say (they do not know its value), insignificant piece of apparatus the author considers as the most valuable means of applying cold to a limited area. Not only is it useful in reducing the temperature, but in combating inflammation, preventing exudations, and in overcoming pain, especially in pleurisy, pericarditis, peritonitis, appendicitis, articular rheumatism, and, in fact, any inflammatory pain. This method is not employed as much as it should be.

**HYPODERMOCLYSIS**

This is another and equally important division of hydrotherapy.

Indications.—The subcutaneous injection of normal saline solution is a most valuable therapeutic agent. In the writer’s hands the most gratifying results have been obtained by the use of hypodermoclysis. It will be found useful in those conditions characterized by a loss of body fluids, as hemorrhage and cholera. In circulatory depression of shock, surgical collapse, overanesthetization, and acute fevers, as pneumonia and
typhoid fever. As an aid in the elimination of toxins and poisons in sepsis, septicemia, uremia, and diabetic coma.

Methods.—First, let us consider the solution for injection. By a normal saline or an isotonic solution we mean one which holds about as much saline material as the plasma of the blood, which is about 0.6 per cent. If to 1 quart of sterile water $1^{1/2}$ drams of salt (sodium chloride) be added we have approximately a 0.6 per cent. solution.

Apparatus.—The apparatus necessary is a glass funnel, sufficiently large to hold 1 quart, a rubber tube three feet long, and an aspirating needle. All parts must be absolutely sterile.

Site of Injection.—This may be any place where the subcutaneous cellular tissue is abundant, as below the breasts, the anterior abdominal wall, or the inner portion of the thigh.

Place the solution in the funnel and allow the water to escape until the air is forced from the tube and the needle and the apparatus is warm. Roll up the skin by pinching it between the thumb and index-finger of the left hand, then insert the needle as you would in giving a hypodermic injection, making sure that the end of the needle is under the skin and in the loose cellular tissue. The needle being in place, the solution is allowed to slowly enter the tissues by elevating the funnel. The absorption of the fluid may be facilitated by kneading the tumor formed in the skin. About 1 or 2 pints should be injected at one time. The temperature of the solution should be about $105^\circ$ F.
ENTEROCLYSIS

This is literally a drenching of the bowels.

Indications.—In the treatment of diseases of the intestines; to supply fluid to the system; to add heat to the body; to abstract heat from the body; to wash out poisons eliminated through the intestinal mucous membrane; to reduce intestinal obstruction.

Treatment of Diseases of the Bowels.—Much success has followed the use of enteroclysis in the treatment of cholera. The bowels are washed out with 1 to 3 liters of normal saline solution or, better, with a 1 per cent. solution of tannic acid. The solution should be allowed to flow in slowly from a fountain-syringe held one or two feet above the patient. Dysentery is also efficiently treated by this means, using a 1 : 2500 solution of quinin, which rapidly destroys the ameba. Silver nitrate solutions (15 grains to the pint) are useful in subacute cases. In infantile bowel trouble, washing of the bowels with normal saline solution is most beneficial. Enteroclysis is also valuable in chronic diarrhea.

To Supply Fluid.—Enteroclysis, or rectal infusion of saline solution, is of great value in the same conditions as hypodermoclysis: In hemorrhage, shock, uremia, nephritis, diabetic coma, and diarrheas. After surgical procedures, when thirst is great but water is not allowed by mouth, a rectal infusion of 1 pint of saline solution is invaluable.

To Add Heat.—In shock, collapse, algid malaria, and conditions accompanied with a subnormal temperature a saline rectal infusion with a temperature of 100° F. will aid in the restoration of the normal body heat.
HYDROTHERAPY

To Abstract Heat.—In high fever a rectal irrigation with cold water is advised. It will abstract heat rapidly and from parts where most of the heat is stored, but the method is not without danger.

To Eliminate Poisons.—In toxic conditions, when the poisons are eliminated through the mucous membrane of the intestines, the toxic products may be rapidly removed from the body with a normal saline irrigation of the colon.

In Intestinal Obstruction.—The obstacle may in some cases be removed by filling the bowel with saline solution under slight pressure, but with extreme care.

In conclusion, the writer wishes to state that in using large quantities of hot saline solution in the bowel you may raise the temperature of the body sufficiently high to produce heat-stroke.

GASTRIC LAVAGE

It is frequently necessary to wash out the stomach, especially in drug poisoning, diseases of the stomach, and in persistent vomiting. For this last purpose the writer has seen some excellent results in emesis after operations.

An ordinary stomach-tube with the funnel end is used. The tube is lubricated with warm water, not oil, glycerin, or vaselin, and then passed by directing the extremity well back toward the posterior pharyngeal wall and into the esophagus, when the patient is told to swallow, and the tube is passed into the stomach. If the stomach is empty, warm water is poured into the funnel and allowed to flow into the stomach. When 4 or 6 ounces of water have entered the organ
and before the funnel is empty the outer end is lowered into a basin placed on the floor, when the stomach is emptied by siphonage. This is repeated several times. A small amount of water may be allowed to remain in the stomach. In removing the tube have the lumen closed by pinching the tube between the fingers, thus preventing water escaping from the tube and entering the larynx, which would cause coughing and disagreeable symptoms.

HYPODERMIC MEDICATION

This is the most accurate method of administering drugs. If a drug be given by the stomach, the amount which is absorbed varies between wide margins depending on the condition of the stomach and its contents. Some drugs are altered while in the stomach. If a drug be given to a person hypodermically you can depend on a rapid and accurate action of the same. The dose of drugs when given subcutaneously is less than the dose by mouth.

A description of the hypodermic syringe is unnecessary. The number of different syringes on the market is legion. Many of them are good.

Site of Injection.—Any part of the cutaneous surface where the skin is thin and soft may be selected. If the skin be thick the procedure is painful to the patient, and during the manipulations the needle may be broken or bent. The site should be cleansed with alcohol on a soft and clean cloth.

Method.—The needle is placed in a large iron or agateware spoon containing water and vigorously boiled for a minute or two over a lamp or gas flame, then
HYPODERMIC MEDICATION

draw the barrel of the syringe full of the hot water and throw away what water remains in the spoon, after having carefully removed the needle. Place the hypodermic tablet in the same spoon and eject upon it the water from the syringe, when the tablet will soon dissolve; then fill the syringe with this medicated solution and screw on the needle. Before giving the injection point the needle upward, and slowly press on the piston until a drop of the solution appears at the point of the needle and the air is expelled.

As said before, the injection may be given where the skin is thin and soft, as the inner surface of the arm toward the anterior or posterior aspect, the inguinal region, or the upper and inner part of the thigh. The skin is folded between the thumb and index-finger of the left hand, and with the right hand the needle is thrust through the skin near the base of the fold into the subcutaneous tissues, and the solution slowly injected.

One of the dangers of hypodermic injections is that a vein may be entered and the drug would be carried to the vital centers in a concentrated form. Abscesses occasionally follow an injection, but in a majority of instances are due to carelessness.

The more common drugs given hypodermically are: Aconitin, $\frac{1}{40}$-$\frac{1}{80}$ grain; apomorphin hydrochlorate, $\frac{1}{4}$-$\frac{1}{10}$ grain; atropin sulphate, $\frac{1}{4}$-$\frac{1}{8}$ grain; cocain hydrochlorate, $\frac{1}{10}$-$\frac{1}{6}$ grain; codein phosphate, $\frac{1}{4}$-$\frac{1}{6}$ grain; corrosive sublimate, $\frac{1}{16}$-$\frac{1}{8}$ grain; digitalin, $\frac{1}{10}$-$\frac{1}{8}$ grain; hyoscyamin (crystalline), $\frac{1}{10}$-$\frac{1}{8}$ grain; hyoscin hydrobromate, $\frac{1}{10}$-$\frac{1}{8}$ grain; morphin, $\frac{1}{4}$-$\frac{1}{6}$ grain; nitroglycerin, $\frac{1}{40}$-$\frac{1}{8}$ grain; pilocarpin hydrochlorate, $\frac{1}{10}$-$\frac{1}{8}$ grain; strychnin, $\frac{1}{10}$-$\frac{1}{8}$ grain.
ANTISEPTICS AND DISINFECTANTS

Bichlorid of Mercury.—This is the most used of the stronger antiseptics. It is employed in surgery to disinfect the surgeon's hands and the site of operation. It is used to render sterile rubber and glass tubing, towels, and dressings. It is employed to irrigate wounds, purulent cavities, the vagina, etc. In dressing infected wounds it is very useful as a wet application.

It is employed in solutions of varying strengths, from 1:15,000 to 1:500. For use on the surgeon's hands and the site of operation in a 1:1000 solution; for irrigating cavities in a 1:10,000 solution; for disinfecting bedding from the beds of patients suffering from the acute contagious fevers a 1:500 solution is proper.

Decomposition of the bichlorid solution which often occurs may be prevented by adding to each pint of solution 4 grains of citric acid, or 8 grains of ammonium chlorid, or 8 grains of common salt, or 8 grains of tartaric acid.

Solutions of bichlorid of mercury cause corrosion of metallic substances, and should not be used to disinfect metal instruments or kept in metallic receptacles.

When this antiseptic is used as a moist dressing on wounds or as an irrigant for cavities, vigilance must be kept for the appearance of toxic signs, which may result from absorption of the drug. The first symptoms are salivation, abdominal colic, diarrhea, vomiting, sore gums, and ill-smelling breath.

Mercurial eczema occurs in nurses who are especially susceptible and have their hands immersed much in bichlorid solutions.
Carbolic Acid.—Excepting the bichlorid of mercury this is the most employed of the strong antiseptics. It is used in surgery for sterilizing instruments and for cleansing surfaces.

It is employed in solutions varying from 1:100 to 1:10. A 1:20 solution is sufficiently strong for disinfecting instruments; for irrigating purposes, a 1:100 solution; for disinfecting bedding, a 1:10 solution.

Like bichlorid of mercury, carbolic acid when applied externally may be absorbed and produce such toxic signs as headache, vertigo, nausea, dark-colored urine, and purging. Gangrene has followed the local use of weak solutions of carbolic acid.

Two drawbacks to the use of this antiseptic are its benumbing effects on the fingers of the surgeon and the cracking and chapping of the skin where the solution is in contact.

Formalin.—This is a 40 per cent. solution of formaldehyde in water, and is used for disinfecting wounds and instruments and for irrigating purposes. For the former use 2 per cent. solutions and for the latter 0.25 per cent. solutions. It is irritating not only to the wounded areas, but to the eyes and nose of the patient.

Hydrogen Peroxid.—How much germicidal power this drug possesses is an open question. Nevertheless it is particularly useful in cleaning wounds and cavities contaminated with pus and necrotic tissue. When hydrogen peroxid comes in contact with dead organic material it sets oxygen free and destroys the pus or necrotic tissue.

When injected into deep pockets or cavities there
must be free exit for the foaming material, otherwise the tissues are "ballooned up" and injury may result.

Iodoform.—This substance is said to be devoid of power to inhibit bacterial growth, but does overcome the noxious action of the products of decomposition and fermentation. It is used especially in the treatment of ulcers and abscesses of tubercular origin.

This drug is also capable of producing toxic symptoms through absorption. The most common signs are headache, nausea, loss of appetite, skin eruption, and mental exhilaration.

Lead-and-alum Lotion.—This is much used as a moist dressing, both for its astringent and antiseptic action. It is prepared by mixing together equal parts of two solutions, one of which is alum, 6 drams; water, 1 pint; the other is lead acetate, 9 drams, and 30 grains in 1 pint of water.

Boric Acid.—This is an efficient antiseptic of the weak class, and is used extensively in eye, ear, nose, mouth, and bladder antisepsis. It is employed as a saturated solution (1:25 or weaker).

Silver Salts.—Silver nitrate and the recent organic silver combinations, as protargol, argonin, argyrol, collargol, nargol, etc., are much used in the treatment of purulent conditions due especially to the gonococcus.

Creolin.—This substance is an efficient non-irritating and non-toxic antiseptic. It is used for irrigating and for vaginal antisepsis. With water it forms a soapy emulsion. Used in 1–4 per cent. solutions.

Lysol.—Same action and uses as Creolin.

Potassium Permanganate.—This antiseptic is used in disinfecting the hands before operations, for irriga-
ting purposes, and as a dressing, especially for foul-smelling wounds and ulcers.

After scrubbing the hands well with soap and water, they are immersed in a saturated solution of potassium permanganate, then decolorized with a saturated solution of oxalic acid, and rinsed in sterile water.

Aristol.—This is a compound of iodin and thymol, and is used as a substitute for iodoform. It is non-irritating, non-toxic, and devoid of odor. Useful as a dusting-powder for ulcers.

Resorcin.—This substance is allied to carbolic acid. It is employed as an application in cellulitis and erysipelas. Also useful in washing out the bladder (3 per cent. solution).

Ioththyol.—This is a very valuable mild and non-irritating antiseptic, used extensively in erysipelas, gonococcal infections, abscesses, and cellulitis. It may be used pure or in watery solutions of 1:20 to 1:2.

Borax.—This is used for the same purposes as Boric Acid.

Turpentine.—This oil is a very useful antiseptic for the disinfection of ragged, lacerated wounds resulting especially from car, wagon, and machinery accidents.

Soda-Chlorine Solution (Dakin’s Fluid).—During the Great War a non-irritating and efficient antiseptic was employed in hospital and surgical work, both as a wet dressing and for the irrigation of wounds.

The method of preparation follows:

Sodium carbonate (sal soda) ............... 6 drams.
Chlorinated lime (fresh) .................. 1 ounce.
Boric acid .................................. 2 drams.
Water ...................................... 20 ounces.

Dissolve the sal soda in the water and to this add the chlorinated
lime and stir thoroughly. Allow to stand for one hour, decant the clear supernatant fluid, and filter through cotton. Add the boric acid to the finished product. Only such quantities of this solution should be prepared as will be required for a few days’ use.

**Hygienic Laboratory Pine Oil Disinfectant.**—A disinfectant with a high carbolic acid coefficient was prepared at the United States Public Health Service Hygienic Laboratory. The mode of preparation was given in Reprint No. 304 and is here appended:

"The best results are obtained when the oil, rosin, and alkali solution are mixed in the following proportions and according to the following directions:

<table>
<thead>
<tr>
<th></th>
<th>Metric</th>
<th>Avoirdu-pois (by weight).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grams.</td>
<td>Ounces.</td>
</tr>
<tr>
<td>Pine oil</td>
<td>1000</td>
<td>35.3</td>
</tr>
<tr>
<td>Rosin.</td>
<td>400</td>
<td>14.2</td>
</tr>
<tr>
<td>25 per cent. NaOH solution</td>
<td>200</td>
<td>7.1</td>
</tr>
</tbody>
</table>

"This will make approximately 1500 cubic centimeters or 1.6 quarts of disinfectant.

"The pine oil and rosin are heated together in a covered ‘enameled ware’ pail until the rosin is all dissolved. The mixture is cooled to 80° C., the sodium hydroxid solution added, and the liquid violently stirred or ‘beaten’ for at least ten minutes with a rotary ‘Dover’ egg beater. Sufficient water is added to make mixture to the original weight. The preparation is then cooled quickly by placing the pail in cold water. It is stored in glass or metal containers till used.

"The *finished disinfectant* is a dark reddish-brown liquid, rather thick and oily in appearance, and free
from turbidity or cloudiness. It makes a perfectly white emulsion, much resembling milk when added to water. If the dilution water is at a temperature of less than 30° C. the emulsion will last for weeks. If hot water is used, a layer of oil eventually forms on the surface. The germicidal power of the disinfectant remains practically constant for about two months. After that a noticeable deterioration occurs. Samples four months' old show a phenol coefficient of about 3.5. The pine oil itself is more stable than the emulsified product. It is well to buy only a few months' supply of the oil at a time, and to make up only enough disinfectant for a month's use.

"Uses.—This disinfectant may be used wherever the ordinary coal-tar compounds are used. It has a much more pleasing odor than the coal-tar compounds, and can be used where these products, on account of their odor, are not practical. It will not attack fabrics or metals and is recommended for the disinfection of all articles used in the care of contagious diseases. It has not a displeasing taste, and has been used with success as an antiseptic throat spray and tooth- and mouth-wash.

"It can be used in any dilution up to 1 : 500. The most economic strength depends wholly on the length of time it is allowed to act."

DISINFECTION

We will consider the disinfection of the sick-room, bedclothing, wearing apparel, and the excreta of the patient.

The room of a person ill with a contagious disease should always be disinfected after the patient becomes well. For this purpose we possess several good disin-
fectants, as sulfur, formaldehyd, and bichlorid of mercury.

Sulfur Fumigation.—The room is closed as tightly as possible; the crevices of the windows and doors are filled by packing them with old newspapers. The bedclothing and the wearing apparel used by the patient and nurse are hung about the room loosely. Powdered sulfur is placed in a metal vessel, which in turn is placed in a broad shallow tin or zinc basin to prevent fire. The sulfur is lighted by placing on it a small shovelful of glowing coals or by mixing with the sulfur a small quantity of alcohol and lighting it with a match. Then leave the room and close the door tightly. The room is to remain closed for twenty-four hours, when it is well ventilated by opening all of the windows. Five pounds of sulfur are sufficient for every 1000 cubic feet of space to be disinfected.

Formaldehyd Fumigation.—This method not only furnishes the best results, but it is absolute. The gas penetrates deeply, does not destroy the most delicate fabrics, will not bleach, and is easily manipulated.

The room, as for sulfur fumigation, must be absolutely tight. The clothing should be hung loosely about the room; all drawers of the bureaus and chiffoniers opened, and books standing on their edges with the leaves separated. The carpets and clothing should be sprinkled with water.

Formaldehyd gas may be set free in several ways: By heating wood alcohol; by heating solid formaldehyd; by heating formalin; by treating formalin with chemicals. This last means is very simple, handy, and efficient. The formalin may be treated with sulphuric
acid and unslaked lime or by potassium permanganate. To 6 ounces of formalin add 2 ounces of sulphuric acid and 1 pound of unslaked lime, or add to 1 pint of formalin 6½ ounces of potassium permanganate. Either of these two methods will set sufficient gas free for 1000 cubic feet of space and requires no special apparatus.

The room is closed for twenty-four hours and then thoroughly ventilated.

**Bichlorid of Mercury Method.**—By this method the floor, walls, furniture, and wood work are thoroughly scrubbed with soap and hot water and then wiped with a cloth moistened with a 1:500 solution of bichlorid of mercury. The room is then ventilated well for a day or more.

**Bedclothing.**—Before the clothing from the beds used by persons affected by a contagious or infectious disease are sent to the laundry they should be soaked for twelve hours in a carbolic acid solution (1:10) or a bichlorid of mercury solution (1:500). After this they may be boiled, washed, and hung up in the open air for a day or more.

**Excreta Disinfection**

**Sputum.**—The sputum of patients ill with pulmonary tuberculosis, pneumonia, and influenza is highly infectious, and should be collected and destroyed. Cups may be used for collecting the sputum. Some advise placing a strong antiseptic solution in the cup, which does not seem safe, but if cups are to be used fill them partially with water and add the antiseptic before the cups are emptied. A better way to dispose
of the sputum is to have the patient expectorate into a piece of clean soft cloth and burn it immediately.

**Urine and Feces.**—In cases of typhoid fever these excrements are swarming with germs and should be rendered innocuous.

The disinfectant should not only be added to the excretions, but should be placed in the urinal or bedpan before they are used. Among the best disinfectants for this purpose are carbolic acid (1:10), bichlorid of mercury (1:500), chlorinated lime (full strength), copper sulphate or blue vitriol (1:4), iron sulphate or copperas (1:4), zinc sulphate (1:10). For obvious reasons the chlorinated lime should not be placed in the vessel before the patient uses it, and the bichlorid solution should not be placed in metallic dishes. The mixture of excrement with the disinfectant should not be emptied at once, but allowed to stand several hours.

**SWIMMING POOL DISINFECTION**

The very common use of swimming pools; the not infrequent dissemination of disease by this means; the employment of a nurse in the charge of swimming pools, make it very necessary that the nurse should possess knowledge of swimming pool disinfection.

The spread of diseases of an infectious nature by means of the pool is not at all uncommon, and, in fact, it may become a menace. It is not only necessary that the water placed in the pool should be clear and pure, but it should be kept pure. The class of people using public pools cannot be easily controlled as a rule, and even the most unsuspected individual may contaminate the water.

Venereal diseases, vulvovaginitis, conjunctivitis,
influenza, typhoid fever, intestinal, and ear diseases have all been spread by the pool.

It is necessary that the pool be of sufficient size to accommodate the number of people who use it, otherwise the water must be changed very frequently.

Copper sulphate or blue vitriol has been used for the disinfection of swimming pools. One ounce of the chemical should be used for every 15,000 gallons of water to be treated. The copper sulphate is first dissolved in 5 gallons of water and half of the solution is thrown into each end of the pool. It should then be thoroughly scattered by means of an oar or pole.

To find the amount of water in a pool, multiply the length of the pool (in inches) by the breath of the pool (in inches). This product should be multiplied by the average depth of the pool (in inches). The result is then to be divided by 231 and the number of gallons of water in the pool is thus obtained.

TOPICAL MEDICATION

COUNTER-IRRITATION

When certain drugs are applied to the cutaneous surface a reddening of the skin is produced by stimulating the peripheral circulation and attracting blood from distant parts. This is known as counter-irritation.

In inflammation the first phenomena to occur are increase of blood to the part and transudation of serum and cells from the blood-vessels. If an increased amount of blood can be attracted to other parts of the body, then to a great extent the stasis of blood and transudation in the inflammatory areas may be lessened. It is for this reason that counter-irritation is employed.
Agents.—Among the more common counter-irritants are: Ammonia, capsicum, iodin, mustard, turpentine oil (rubefacients); acetic acid, cantharides, ammonia, kerosene, and croton oil (vesicants).

Indications.—To relieve pain; to aid in the absorption of fluid accumulations; to overcome inflammatory processes. Counter-irritation is useful in bronchitis, pleurisy, pneumonia, vomiting, convulsions, abdominal colic, diarrhea, rheumatism, neuralgias, meningitis, coma, apoplexy, effusions of the pleura, pericardium, and peritoneum.

Rubefacients produce redness of the skin, and if the action is prolonged blisters result. The vesicants cause blister formation.

Mustard.—This is generally applied as a plaster, made by mixing powdered mustard and flour in a proportion of 1:1 to 1:8, depending on the patient, the condition of the skin, and the site of application. The mixture of the mustard and flour is moistened with warm vinegar or water and stirred until it becomes of the desired consistence, when the paste is spread on thin cloth and applied to the part. The mustard paste is also prepared by adding the mustard to a regular flaxseed paste.

Mustard-plasters are left on the skin until the surface is reddened or pain results, when the plaster should be removed and a new one applied over another area. Mustard-plasters generally act sufficiently in fifteen to thirty minutes. If the red area resulting from the use of a mustard-plaster is very painful or irritating, it may be dressed with vaselin or bismuth subnitrate.
A most excellent form of mustard counterirritation is the mustard bath. This will be found especially useful in chest disturbances of children and infants. To every 5 gallons of warm (not hot) water add 1 tablespoonful of powdered mustard. The child is immersed in this five minutes, then removed, and the skin gently but rapidly rubbed until it glows. A mustard foot-bath is useful in congestive headaches, colds, and bronchitis.

Mustard may also be applied as a liniment or cerate.

Capsicum.—This is used mostly in combination with other spices, in what is known as the spice-poultice. This is prepared by mixing (in powdered form) ginger, cloves, cinnamon, and allspice, of each equal parts, and one-half part of Cayenne pepper or capsicum. These are made into a small pillow or bag of cloth and moistened with warm vinegar when used.

Turpentine Oil.—This is best applied as a mixture of warm lard or cotton-seed oil and turpentine, in the proportion of 6 parts of the former to 1 of the latter.

Ammonia.—A most efficient way of applying ammonia as a counter-irritant is as a liniment, composed of equal parts of ammonia-water, alcohol, and soap liniment.

A drop or two of strong ammonia-water is applied to the skin and kept free from air by placing over it an inverted watch-crystal or small glass vial (to blister).

Cantharides (Spanish Fly) is extensively used as a vesicant.

Blistering is employed to aid in the absorption of pleural, pericardial, articular, and meningeal effusions. Blistering agents act by dilating the peripheral vessels,
which relieves some tension in the area of effusion, and by dilating the lymphatics, which absorb the effused fluid.

Cantharides may be applied as a plaster, cerate, liniment, or collodion. The plaster is either cut in narrow strips and applied so as to intersect and cross each other or it may be cut into small squares and applied. Do not cover a very large area, as poisoning may follow absorption.

It takes from four to twelve hours to raise a blister. When the plaster is removed apply an oily or bismuth dressing. To open a blister, do not puncture the raised epithelia, but enter the point of a curved needle in the skin near the base of the blister and force it up under the center of the blister, so as to leave a complete epithelial covering on the area.

**Kerosene Oil.**—This is applied with equal parts of olive or cotton-seed oils.

**Selection of Site.**—For analgesic effect apply the medicament over the seat of pain, unless this is referred when the application is made at the origin of the pain: in the knee pain of hip-joint disease the counter-irritation should be made over the hip and not the knee. In neuralgias and neuritis place a narrow strip of plaster along the course of the nerve. To overcome inflammatory processes the application should be made at some distance from the seat of trouble. In meningitis, cerebral congestion, apoplexy, and coma apply a vesicant at the nape of the neck and a mustard-plaster to the abdomen and legs. In pleurisy, bronchitis, and asthma apply the counter-irritant to the abdomen and over the seat of pain. To influence fluid accumulations,
as in pleurisy with effusion, the application is made below the nipple and in the axillary line; in pericarditis with effusion, at the base of the heart; in peritonitis, over the tender area. For vomiting apply a mustard-plaster over the epigastrium or “pit of the stomach.”

Contraindications to the employment of vesicants are lack of vitality, such as results from long-continued fevers, extremes of age, infancy and old age, and paralytic conditions. Obstinate ulcers may result.

POULTICES

Poultices are used for the purpose of applying moisture with heat to relieve tension and pain and to relax the blood-vessels. They are employed in the first stage of inflammatory processes and should not be used when the inflammatory area is denuded, as the formation of pus is then enhanced and the extension of the process augmented.

In preparing poultices two points are to be borne in mind: The material of which the poultice is to be made is stirred into the hot water and not the hot water stirred into the material; second, the flannel upon which you smear the mass should be hot. The poultice should at least be an inch thick. Do not allow a poultice to remain on the patient until it is cold, but change early.

Flaxseed Poultice.—Into hot water rapidly stir flaxseed meal, which is gradually poured upon the hot water until it is of the consistence of porridge, then spread thickly on hot woolen cloth, apply, and cover with oiled muslin.

Bread Poultice.—This is used especially for eye
affections and is prepared in two ways: Take a thick slice of dry bread and pour hot water upon it, after a minute or so drain off the excess of water and pour on more of the hot liquid, then break the bread and apply; or, allow the bread to simmer in hot water for ten minutes, then mash it into a pulp and apply.

Charcoal Poultice.—This poultice is employed to free putrid ulcers of their odor. To the flaxseed or bread poultice add powdered charcoal.

STUPES

Probably the most-employed stupe is that made with turpentine.

Turpentine Stupe.—This is used especially in the relief of intestinal distention of typhoid fever, pneumonia, and intestinal disorders. It may be prepared in two ways: A piece of flannel is soaked in very hot water and then wrung nearly dry, when turpentine (20 drops) is sprinkled upon it; or, 30 to 60 drops of turpentine are added to hot water and a piece of flannel is immersed in the solution. The oil which floats on the water will be taken up by the cloth. Wring nearly dry and apply.

Chloroform-and-turpentine Stupe.—If after the turpentine stupe is prepared a few drops of chloroform are sprinkled upon it an excellent stupe results.

Stupes should be frequently changed. Care should be taken that turpentine-poisoning does not result from absorption of the drug. This may be prevented by alternating the turpentine stupe with one of plain hot water.
CUPPING

Cupping is a form of counter-irritation used much more in the past than at present. By it blood is drawn to the surface from the deeper parts. Cupping may be performed with wet or dry cups.

Dry Cupping.—The cups used expressly for this purpose have at their summit an air plug, to which may be attached an exhaust pump. The cup is applied to the skin somewhat firmly and by means of the pump the air is withdrawn from the cup, and, in order to equalize the pressure, this loss of air is replaced by a swelling of the skin and tissues into the cup, due to an accumulation of blood in the parts. The cups are allowed to remain in place until they fall off, when they are applied to another part.

The special apparatus described above is not necessary, common graduated medicine-glasses or wine-glasses will accomplish the work fully as well. The inside of the glass is moistened with alcohol, the excess of alcohol is removed, and a lighted match applied to the inside of the glass. The alcohol will immediately take fire. When the alcohol is consumed the cup is firmly applied to the skin and will soon take hold. Allow the cup to remain in place until it releases itself.

Dry cupping is used in congestion and edema of the lungs and in kidney disease.

Wet Cupping.—This is performed exactly the same as dry cupping, except that the area of skin to be cupped is first scarified and the cup then applied as above. By this means the blood is not only drawn to the surface, but into the cups, thus depleting the
tissues. After completing the work the cupped areas should be dressed as an aseptic wound.

Leeching.—See under Hirudo (Part II).

APPLICATION OF HEAT

Varieties.—Heat is applied in two forms: Dry and moist.

Indications.—To relieve pain; to overcome spasms; to stimulate the functions of the skin; to counteract inflammatory processes; to equalize circulation; to preserve the vitality of parts.

To Relieve Pain.—For this purpose nothing is more efficient than the application of heat, unless it be cold (in selected cases). Heat is particularly useful in the pain of pleurisy (hot-water bag or poultice), of sprains (prolonged immersion in hot water), of eye diseases (fomentations), of ear troubles (douching and prolonged irrigation), of dysmenorrhea (sitz-bath).

To overcome spasms of muscles in cases of fracture, sprains, lumbago, wry neck, croup, spasmodic dysmenorrhea, convulsions (infantile, uremic, and puerperal), choree, and cramps of the legs.

To stimulate the functions of the skin (sweating) in nephritis, uremia, and eclampsia.

To counteract inflammatory processes in rheumatism and, in fact, all superficial inflammations.

To equalize the circulation in shock, collapse, and chills.

To preserve the vitality of tissues in injuries of all kinds when life of the part is in danger.
APPLICATION OF HEAT

FORMS OF APPLICATION

Poultices.—See under Topical Medication.

Hot-water Bag.—This is one of the most-employed and handiest forms of applying heat. The bag should not be so full that it is weighty and cumbersome, especially when used on the abdomen or chest. When hot-water bags are used on unconscious and comatose persons care should be taken that burns do not result, as the skin of these patients burn easily because of its lowered vitality and on account of the patient’s inability to realize the amount of heat applied. It is always well to have a piece of woolen cloth between the bag and the skin.

Good substitutes for hot-water bags are found in hot-water bottles, which are large glass bottles (fully tested) filled with hot water, and hot bricks or hot flat-irons.

Hot fomentations are simply woolen cloths wrung out in hot water.

Hot-water baths are useful in infantile convulsions, nephritis, and uremia. The water should be about 104° F. and the room should be warm.

Hot packs are similar to the cold packs, except that hot water is employed instead of cold water. The full hot pack is especially useful in uremia and eclampsia. A woolen blanket is immersed in hot water and then run through a clothes-wringer until nearly dry, when it is wrapped about the patient.

Sitz-bath.—This consists of an immersion of the hips and buttocks in hot water and steam vapor. It is useful in dysmenorrhea, suppressed menstruation, and pelvic disorders.

Hot-air Baths.—The best form of hot-air bath for
the patient who can walk about is the Turkish bath, which consists of a series of rooms, each successive room having a higher temperature, which greatly increases the output of sweat. The final step is a rubbing and shampooing of the whole body, followed by a cold-water plunge or shower. After completion of the bath a rest is necessary before going into the outer air. For bed patients who need hot-air applications the bed-bath is employed, which consists of covering the patient (excepting the head) with blankets and introducing under the cover hot air conducted by a tin pipe from a near-by lamp. Another form of hot-air bath is the cabinet-bath, which is used for patients not confined to the bed. The patient is seated on a stool and is totally enveloped, excepting the head, with a special cabinet constructed for the purpose or with a large blanket. Heat is produced by a lamp placed under the chair of the patient or, better, outside of the apparatus and conducted within by means of a pipe. The baking machine is the last form of hot-air bathing to be considered. It is especially useful in the treatment of chronic joint affections. The limb is suspended in the metal compartment of the apparatus, care being taken that the limb does not touch the machine, as a burn will be produced. The air in the machine is raised to a temperature of 200° to 300° F. by means of a lamp placed beneath the machine. The treatment should continue about one hour.

In all forms of hot-air bathing if sweating does not begin it may be started by giving the patient a drink of cold water.

Russian Bath.—This consists of applying moist heat to the body in the form of heated vapors.
RECTAL ALIMENTATION AND MEDICATION

Medicaments are administered by the rectum in two forms: Enemata and suppositories.

The indications for the use of enemata are: To provide nourishment, to empty the lower part of the bowel, to administer drugs for general action, for local action, and to supply the body with fluid.

To Provide Nourishment.—We use for this purpose what are known as nutritive enemata. They are composed of concentrated, digested, and easily assimilable material. Food is given by rectum only when it is impossible to give it by mouth, as in cases of excessive and persistent vomiting, in unconscious, comatose, delirious, and refractory patients, when there is grave disease of the stomach, as ulcer and cancer, in pharyngeal paralysis, etc.

It has been repeatedly shown that proteid in solution, egg-albumin, saline material, and water are capable of being absorbed in the lower colon or rectum.

A very good nutritive enema is prepared by mixing peptonized milk, 4 ounces; liquid beef preparation, \( \frac{1}{2} \) ounce; white of 1 egg, and about 20 grains of salt. To this a small quantity of whisky may be added.

The rectum should first be emptied with a small enema of plain water about one-half hour before the nutritive enema is given.

To Empty the Bowel.—There are several forms of enemata employed to empty the lower bowel:

**Soapsuds Enema.**—This is one of the simple enemata, and is prepared by mixing thoroughly \( \frac{1}{2} \) ounce of soft soap with 1 pint of warm water. It is also made by
agitating a bar of common soap in warm water until it is quite soapy.

*Simple Mixed Enema.*—Add to the soapsuds enema ½ ounce of molasses and 1 dram of salt.

*Turpentine Enema.*—To the soapsuds enema add ¼ ounce or less of oil of turpentine. This is very useful in relieving tympanites.

*Asafetida Enema.*—To 12 ounces of warm water add 4 ounces of asafetida emulsion (prepared by agitating ½ dram of asafetida powder in 4 ounces of water). This is useful in tympanites and infantile colic.

*Glycerin Enema.*—To 1 ounce of warm water add 1 ounce of glycerin. It is best given with a small hard-rubber syringe.

*Oil Enema.*—Use 1 pint of warm cotton-seed oil.

*Purgative Enema.*—This is a strong-acting enema and is employed when the simple enemata fail. It is given high, through a rectal tube. It consists of soapsuds solution, 1 pint; glycerin, 1 ounce; magnesium sulphate, ½ ounce; oil of turpentine, ¼ ounce.

*Ox-gall Enema.*—To the purgative enema add 15 grains of powdered ox-gall.

*For General Medication.*—If for any reason medicines cannot be administered by mouth, as in persistent vomiting, unconsciousness or deliriousness of the patient, or on account of ill-taste of medicines, they may be given by rectum. Any drug except those of a corrosive character may be administered in this way. Give them in as small bulk as possible to prevent their expulsion.

In diarrhea the *starch-and-laudanum enema* is much employed. Make a thin starch paste in the usual way
(hot method), and to 2 ounces of this paste add the laudanum (5 to 20 drops, depending on the age and condition of the patient). This enema is best given by means of a small hand syringe.

For Local Medication.—In diseases of the rectum and neighboring organs medication is often applied by the rectum. We will consider but one—the *quassia enema*—which is used in treating pin-worms of the rectum. To 1 dram of quassia chips add 8 ounces of cold water, allow to stand two or three hours, strain, and use as a single injection.

To Supply Fluid.—See Enteroclysis.

**ANTITOXINS, SERUMS, AND BACTERIAL VACCINES**

Space will not be given to the discussion of the formation and production of antitoxins.

**Diphtheria Antitoxin.**—Since this serum has come into practical use the mortality from diphtheria has greatly decreased; the disease runs a shorter and less severe course in many instances and the complications are less frequent.

**Administration.**—Antitoxin is to be given as soon as diphtheria is suspected. The initial dose in cases of moderate severity should be at least 3000 units. After giving antitoxin the symptoms soon begin to lessen, the patient feels easier, the pulse is better, the temperature decreases, and the local patches in the mouth and throat look less angry and begin to grow smaller. If improvement does not begin within twelve hours the dose of antitoxin should be repeated. In severe cases the serum should be given at regular intervals.

Antitoxin must be given early in the disease and in
sufficient quantity. The danger is not in overdosing, but in underdosing.

Ill Effects of Antitoxin.—After the administration of antitoxin certain symptoms may arise which are due not to the antitoxin, but probably to the horse serum which contains the antitoxin. These symptoms are, as a rule, trivial, but may cause alarm if their meaning is not understood. The principal after-effects are: Scarlatiniform rash, urticaria, pain, tenderness, and swelling of the joints. These symptoms may occur within a few minutes after giving the antitoxin or may be delayed for several days or weeks.

Immunizing Effect.—In small doses (500 units) the antitoxin will act as a prophylactic against diphtheria in persons exposed to the disease. Nurses attending diphtheria patients and all persons exposed to the disease should receive an immunizing dose of antitoxin.

Site of Injection.—The subcutaneous injection of antitoxin may be given at any suitable site, but probably the best place is between the scapulae, as the patient cannot witness the manipulations and the protection of this area is good.

Before giving the injection the area of skin should be cleansed as in performing a hypodermoclysis.

Antistreptococcus Serum.—The discovery of this serum is due to the efforts of Marmorek (1895).

This serum is employed in the treatment of disease supposed to be caused by the streptococci. The results of its use vary, but in many instances have been most happy.

It is employed in erysipelas, scarlet fever, puerperal sepsis, pyemia, septicemia, and acute articular rheumatism.
Dosage.—This serum is administered in the same way and manner as diphtheria antitoxin. The initial dose is 10 cc., and may be repeated.

Tetanus Antitoxin.—This serum has been used most successfully to prevent tetanus, but after the disease is established it is doubtful if the antitoxin is of great value.

The antitoxin should be given as a prophylactic to patients suffering from wounds produced by rusty nails, slivers of old wood, blank cartridges, fireworks, and accidents occurring in barns or when filth of the street is incorporated in the wound. It is well known that the tetanus bacilli are found around barns and in the roads where excreta from animals abound.

Dosage.—This serum must be given early and in frequently repeated doses of 30 cc. each.

Antipneumococcus Serum.—The use of this serum is still in its infancy. Good results have been reported after its employment. It is said to be abortive and that it lessens the severity of the disease and causes the fever to fall by lysis instead of crisis.

Dosage.—Of this serum 15 cc. should be given every four to six hours during the height of the disease.

Cholera Antitoxin.—An antitoxin against cholera has been found, but is said to be more of a prophylactic than curative.

Antidysenteric Serum.—This serum has lately passed from the experimental to the practical stage. It is used in dysentery due to Shiga’s bacillus. Its usefulness depends on early and sufficient administration.

Dosage.—Of this serum 10 cc. are given two to four times a day during the early stages of the disease.
Antimeningococcic Serum.—An antitoxin to combat cerebrospinal meningitis may now be had. It has been used with considerable success in the treatment of this disease. The fatality has been greatly reduced. The administration of this serum differs from that of other antitoxins. It is necessary that this serum be injected into the spinal canal, which may not be a simple procedure. The initial dose ranges from 10 c.c. for a child to 50 c.c. for an adult.

Antiplague Serum (Yersin’s Serum).—This antitoxin is used both for the prevention and cure of bubonic plague. It should be freely given in doses of 50 c.c., preferably intravenously.

Poliomyelitis Serum.—Work is being done toward the perfection of a serum to be used against infantile paralysis. Happy results seem to have followed the experiments so far undertaken.

Other antitoxins are constantly being experimented with and made practical. They are those against yellow fever, typhoid fever, tuberculosis, syphilis, rabies, cancer, and snake-venom.

BACTERIAL VACCINES

Vaccine Therapy.—It is well known that many individuals recover from infectious diseases without the use of medicines, and at times without the assistance of a medical attendant. This does not depend on luck or good fortune, but upon the sound physiologic basis of tissue resistance. In other words, the human body possesses the property of overcoming, to a certain degree, pathologic or morbid conditions. This physiologic resistance varies in different individuals; some can only withstand the very light infections,
while others conquer the most intense ravages of bacterial life.

It is possible to aid the individual, by artificial means, to acquire to a greater than normal extent the power to destroy the offending bacteria. It is granted that within the human body, especially in the blood, are certain small white cells, which in time, of necessity, may come to the defense of the tissues and help subdue molesting influences. These small cells are termed phagocytes, which literally means scavengers. Whenever infectious disease invades the human economy, these cells are found to be very greatly increased at the focus of bacterial encroachment, and at once begin to hem in and destroy or disarm the enemy. The result of the battle depends on whether the greater force is on the side of the bacteria or in the ranks of tissue resistance. In the blood-serum are certain substances or qualities which act upon the transgressing bacteria, and so alter the germs that they are very readily taken up and destroyed by our friends the phagocytes. The term applied to these helping hands is opsonins, which means “I prepare your food.”

Now, by scientific investigation, it has been found that both the phagocytes and the opsonic property of the blood-serum may be increased by introducing into the person’s system certain substances, called vaccines.

A vaccine is a suspended solution of dead bacteria, the base of the solution being normal saline solution. The vaccine is prepared by growing or cultivating the bacteria on a medium, then killing the germ life by means of heat and suspending them in normal saline solution. The vaccine solution is then standardized so that a given amount contains a certain number of
bacteria. The more common vaccines of the present day are those against the infection by the streptococcus, staphylococcus, colon bacillus, gonococcus, pneumococcus, typhoid bacillus, and tubercle bacillus.

The streptococcus vaccine has been found useful in the treatment of scarlet fever, erysipelas, septic endocarditis, puerperal infections, cellulitis, and lymphatic abscesses. The staphylococcus vaccine is particularly useful in boils, carbuncles, pustular acne, syphillis, and forms of eczema. The colon bacillus vaccine, although not so thoroughly developed, may be of value in forms of cystitis, fistula in ano, etc. The gonococcus vaccine has given remarkable results in various gonorrheal infections, especially arthritis, vulvovaginitis, epididymitis, and prostatitis. It is hoped that the acute urethritis may soon retreat before this agent. The pneumococcus vaccine has been employed with some satisfactory results in the treatment of lobar pneumonia. The typhoid vaccine promises much. The results following its use in the British and American armies have been very gratifying. This is especially so in its use as a preventive agent; in some instances immunization has lasted nearly five years. Tuberculin or tubercle vaccine has been proved of value in some but not all forms of tuberculosis. In gland, bone, and some types of pulmonary disease it has been useful. As a diagnostic agent it is invaluable, and will be discussed in later pages.

As stated above, vaccines are prepared from bacterial cultures. The bacteria employed to make the cultures may be derived from the individual to be treated, and the vaccine is known as an autogenous
vaccine; whereas, if the bacteria are of outside or common origin, a so-called stock vaccine results.

The doses of the various vaccines vary. The initial dose should not be large. The following are the relative amounts to be employed at the beginning: Staphylococcus, 50,000,000 to 500,000,000; streptococcus, 5,000,000 to 50,000,000; gonococcus, 5,000 to 100,000,000; pneumococcus, 10,000,000 to 100,000,000; colon bacillus, 5,000,000 to 100,000,000; typhoid bacillus, 5,000,000 to 40,000,000; tuberculin, \( \frac{1}{1000} \) to \( \frac{1}{100} \) milligram. The vaccines are administered with the hypodermic syringe. The injection is made under the skin and not into the muscles. After giving the vaccine, certain reactions or phases occur. First appears the negative phase or condition in which the opsonins of the blood are lessened, which is followed in two to forty-eight hours by a positive phase with increased opsonic power of the blood, and improvement of symptoms takes place. The dose is repeated when apparent improvement lessens.

Antirabie Therapy.—Rabies or hydrophobia is another horrible disease which science has all but conquered. The disease is communicated to man by wound inoculation induced usually by the bite of a rabid dog, although other animals may transmit the disease, as horses, cattle, cats, and wolverine animals.

As a routine measure the wound should be carefully cleansed, antisepticised, and cauterized. Nitric acid is the best chemical cautery, but in its absence silver nitrate, carbolic acid, or the actual cauteray may be employed.

The rabid or supposed rabid animal inflicting the wound should not be killed, but imprisoned in a safe
place, so that it can do no further injury. The animal usually dies two or three days after the onset of acute symptoms. The reason for not killing the beast is that an absolute diagnosis may be made.

It is to Pasteur that we owe the honor and praise for developing this branch of therapeutics. It was ascertained that the spinal cords of rabbits dying of rabies induced by the injection of rabic virus were very toxic, but if allowed to dry this toxicity became less and less and finally disappeared. It was also learned that by injecting into the suspected person an emulsion made from these cords a state of immunity might be induced. This is the object of the treatment. At first an injection of a very weak emulsion is used, that is, one prepared from a cord that was in the drying process for the longest time. Each successive injection was of an emulsion of greater strength than the preceding. The injections are made daily for twenty-one to twenty-five days or more, depending on the stage when the treatment was begun. The injections should commence soon after the injury is received.

Tuberculin in Diagnosis.—The employment of tuberculin in the diagnosis of tuberculosis must be acknowledged as one of the greatest strides in scientific medicine. There are various tests in existence, each of which has its merits, but the underlying principles of all are the same. The introduction of minute amounts of tuberculin into the system of a healthy person should produce no apparent change. On the other hand, if the injection be into a person afflicted with tuberculosis, a very apparent change or reaction
is usually observed. The reaction may be general or local, or may partake of both. The general reaction consists of a rise in temperature, malaise, nausea, chilliness, and general depression. The local reaction is congestion, heat, swelling, and exudation. The principal tests are four in number, namely, subcutaneous, ophthalmic, percutaneous, and cutaneous. Each of these tests will be separately considered.

Subcutaneous Test.—This form was the original tuberculin test and is not free from danger, and is to be employed only in selected cases. Before using this test the patient should be free from fever several days or only slightly above the normal. The first injection, made by means of a hypodermic syringe, should not exceed $\frac{1}{4}$ milligram of tuberculin (old), but later doses, if necessary, may be greater. Eight to twelve hours after injection the reaction may appear, and consists of a distinct rise of temperature, headache, joint-pains, nausea, malaise, and depression.

Ophthalmic Test.—To Wolff-Eisner belongs the honor of developing this diagnostic means. On the conjunctival surface of the lower eyelid of one eye is placed a drop of tuberculin especially prepared for this test, being careful that it does not flow on the face by depressing the lid until the distribution of the solution is equalized. In six to twelve or even forty-eight hours the reaction appears as a conjunctival congestion, with the sensation of a foreign body in the eye. There may be swelling of the soft tissues and exudation. If there is eye disease of any kind, this test should not be applied.

Percutaneous Test.—This is commonly known as
the Moro test, and consists of rubbing into the skin a small amount of tuberculin ointment prepared for this use. The skin of the abdomen is usually selected, and a circular area about 2 inches in diameter inuncted. After the lapse of ten minutes a gauze dressing is applied. The reaction is revealed by the formation of small papules, which greatly vary in number, depending on the severity of the reaction. They usually appear in twenty-four to forty-eight hours.

The cutaneous, or von Pirquet test, is the form generally used by the author. Its application is simple and free from danger. The arm or forearm is usually selected as the place of test. The skin should be thoroughly cleansed by means of soap and sterile warm water, without the use of strong antiseptics. Then, in a straight line along the long diameter of the limb, three superficial scarifications are made with a needle as in small-pox vaccination. The spots are to be placed about 2 inches apart. Into the upper and lower scarifications are to be rubbed, by means of the needle-point, a drop of tuberculin solution. The middle area is not to be touched, as it acts as a control. After fifteen or twenty minutes a sterile dressing is applied. The reaction, if positive, appears at the two inoculated areas, whereas the central or control area does not change. The reaction consists of a red or congestive areola, followed by infiltration and vesicle formation if severe.

**SMALL-POX VACCINE VIRUS**

Edward Jenner in the last decade of the eighteenth century conclusively demonstrated that an individual might be immunized against small-pox by the inocula-
tion with material obtained from bovine animals suffering with cowpox.

At present the virus is prepared by the inoculation of calves. A few years back and even at present in some localities person-to-person inoculation is practised.

Preparation.—Young healthy calves are selected. The area to be used, the abdominal surface, is shaved and scrupulously cleaned. Long parallel scratches or incisions are made over this whole area and the vaccine virus is carefully applied and gently rubbed in. By the fourth day vesicles or water-blisters will have begun to form on the site of inoculation. The calf is then anesthetized and the vesicle coverings and contents are scraped off and placed in sterile receptacles. To this pulp glycerin is added, and the whole is ground and then allowed to stand. From this the finished product is obtained, which is placed on ivory or glass points, in capillary glass tubes or in larger containers. Vaccine virus is placed on the market only by those manufacturers who are licensed by the Federal Government.

Use of Vaccine Virus.—Vaccination is a surgical procedure and should be performed with the same care and attention to cleanliness and asepsis. Most ill results of vaccination are due to the faulty technic rather than faulty virus.

Vaccination may be accomplished by scarification (cross-scratching), incision (straight scratch), or by puncture. The method of incision is being more frequently employed as time goes on. This is performed by carefully drawing the point of a sharp needle along the skin so as to make a scratch about \( \frac{1}{2} \) inch long, which should not draw blood.
The site of vaccination is on the outer aspect of the arm in its upper third. Members of the female sex may prefer it elsewhere. The upper and outer part of the thigh, the skin over the head of the fibula, or the lower part of the front of the chest may be used. The site should be thoroughly cleaned as for a surgical operation excepting that no antiseptic should be employed. Chemicals interfere with the "working" of the virus. The virus may be gently rubbed into the scratch, or the drop of virus may first be placed on the skin and the incision made through it. Afterward a light sterile dressing should be applied. The author has found it good practice to paint with iodin a large area around the site of vaccination, using care not to approach the site nearer than ½ inch.

THERAPEUTICS IN CHILDHOOD AND INFANCY

The administration of drugs to children and infants differs much in many instances from that of adult life. Many drugs children should never take, others they stand only in minimum doses, while still others may and should be given in relatively large doses. The condition of the child alters the posology; for instance, a poorly developed and ill-nourished child of eighteen months may only be able to take the dose of a twelve-month normal child. There is here appended a descriptive list of the most common drugs used in the treatment of children.

Aconite has from time immemorial been used in child therapy; although a powerful drug, its action when properly applied and employed is of greatest utility. In acute fevers, during the first or shtenic stage, small or repeated doses of tincture of aconite will often act
very favorably. A quarter minim combined with a saline, as potassium acetate or citrate or solution of ammonium acetate, may be given a child of one year every hour for six or eight doses, or until perspiration is free and the pulse rate lowered. In acute nephritis it is also of great value to encourage sweating and thus relieve the kidneys.

Alcohol, as a stimulant for children and infants, in the author's opinion, should not be employed until other means and drugs have been given a trial. If there is any reason to believe that there is cerebral congestiveness in any degree, the use of alcohol should be interdicted. Stuporous conditions forbid alcohol. In cases with a rapid, irregular, and feeble pulse alcohol may be indicated. The best forms in which to administer it are brandy or whisky, which may be given a child of one year in two-hourly doses of 5 to 20 drops, well diluted.

Ammonia, aromatic spirit of, as a circulatory and general stimulant, may be given well diluted to a child of one year in doses of 2 or 3 minims. It is apt to disturb the gastric functions.

Ammonium chlorid, on account of its taste and irritating action on the stomach, should be administered very carefully. It should be well diluted and, if necessary, sweetened and given after the stomach has had some milk introduced. In bronchitis, with scant expectoration and harsh cough, it is often of value. Dose, ½ gr. several times daily to a child of one year. In catarrhal jaundice the author has found it of value in the same dosage.

Antimony and potassium tartrate as an expectorant
in the early stages of laryngitis, croup, and bronchitis is very useful. It should be given in small repeated dosage: \( \frac{1}{10} \) gr. every two hours to a child of one year. This drug is irritating to the gastro-intestinal tract, and should be preceded and followed by water, milk, or gruel.

*Antipyrin* has been advocated as a fever-dispelling agent for children, but the author believes other means should be relied on to reduce high temperatures in infants and children. Its use in whooping-cough certainly demands attention and has been found very valuable in the writer's hands. To a child of one year \( \frac{1}{2} \) to \( \frac{3}{4} \) gr. may be given every three hours.

*Arsenic* is a drug which children stand in relatively larger doses than adults. It also is a gastro-intestinal irritant, and should be given only when the stomach contains food. Its dosage should be gradually increased to get the best results. It is of value in anemia, chorea, adenitis, recurrent mucous membrane diseases, as pharyngitis, bronchitis, gastritis, and enteritis. As a general tonic or alterative in malnutrition, functional nerve disease, and convalescence it is useful. For a child of three years the following doses are appropriate at the beginning: Arsenous acid, \( \frac{1}{4} \) to \( \frac{1}{3} \) gr.; Fowler's solution or liquor potassii arsenitis and all the arsenical solutions of 1 per cent. strength, 1 to 2 minims. During the administration of arsenical preparations certain signs of toxic effect or poisoning may occur if the increase of dosage is pushed too rapidly. These are abdominal griping, loose bowel movements, swelling beneath the lower eyelids.
Asafetida is a very valuable agent to dispel flatus from the bowel. It is used as a rectal injection slowly introduced. To 4 ounces of warm water add 2 gr. of powdered asafetida and agitate well into an emulsion or mixture.

Aspidium, or male fern, is employed in the treatment of worms; 10 gr. of the oleoresin may be given to a child of four years. It should be administered on a fasting stomach after thoroughly evacuating the bowels with castor oil. A second dose of castor oil should be given four hours after the aspidium.

Belladonna and its derivatives may be taken by children in relatively large doses. Belladonna and atropin find their most frequent employment in whooping-cough, nocturnal incontinence of urine, and coryza; $\frac{1}{4}$ gr. of atropin or 2 or 3 minims of tincture of belladonna are average doses for a child of two years.

Bismuth preparations, especially the subnitrate, are useful in the treatment of diarrheal and acute enteric disorders. The subnitrate should be given in fair size dosage (10 to 20 gr. every few hours) to a child over one year of age.

Bromids are valuable as nerve sedatives, and should be given in solution form and very well diluted. For a child two years of age 3 to 5 gr. may be given at three-hour intervals. The bromids of ammonium, potassium, sodium, and strontium are most frequently employed.

Calomel is a valuable cathartic in the initial treatment of acute conditions, and may be given at half-hourly intervals in $\frac{1}{2}$ gr. doses until 1 gr. is adminis-
tered to a child of two years. It should be followed by a saline, as magnesium sulphate, Rochelle salts, or Seidlitz powder mixture.

*Cascara sagrada* is a useful bowel tonic and laxative for children. Its very bitter taste precludes the use of its simple preparations. The aromatic fluidextract may be given to a child of one year in 10- to 20-minim doses.

*Castor oil* is the drug supreme in child therapy. There is hardly any disease whose course is not benefited by a preliminary dose of castor oil. A child of one year will bear a teaspoonful dose. Even if the oil be vomited, it should be repeated, for each time a small amount will be retained, and often after several attempts it is held by the patient.

*Chloral hydrate* is a drug which the writer uses with great caution even for adults. It is thought that children tolerate this drug very well, and it is advised as a nerve sedative in convulsions and chorea in doses of ½ to 2 gr. to a child of one year. Caution should be used.

*Codein* is probably the safest opiate we possess, and is useful in pains, colic, and irritative coughs; ⅕ gr. is an average dose for a child of one year.

*Codliver oil* is foremost among the tonics and reconstructives in childhood. It should not be given on an empty stomach, but always after meals. In very young infants the pure oil may be employed, but in older children a flavored preparation or an emulsion should be used; 10 drops, for an infant of six months, to 1 teaspoonful, for a child six years.

*Creosote* is useful in respiratory diseases, as bron-
chitis and whooping-cough. It is a drug difficult to administer because of its taste and odor. It may be given in doses equal to \( \frac{1}{2} \) minim for every year of the child's age. Creosote carbonate may be used in doses of \( \frac{3}{4} \) minim for every year of the child's age.

*Digitalis*, although a valuable drug, is not always of value in child therapy. It easily deranges the stomach, causing vomiting and other disorders. As its absorption is slow and it accumulates in the system, its use should often be interrupted. In diseases without very high fever, and in which the pulse is rapid, feeble, and irregular, this drug may be employed as a cardiac stimulant. The tincture may be given to a child of two years in 1-drop doses every four or six hours. The infusion may be used when the urinary function is depressed in doses of 15 to 30 drops to older children. These preparations should not be given unless previously a drink of water, milk, or a meal has been taken.

*Dover's powder*, a preparation of opium and ipecac, has a legitimate use in child therapy, but should not be abused. In those conditions accompanied by a severe cough, pain, griping, and diarrhea it may be employed. Its action must be watched and the drug withdrawn on the appearance of drowsiness or systemic depression. Average dosage to a child of one year, \( \frac{1}{4} \) to \( \frac{1}{2} \) gr.; two years, \( \frac{1}{2} \) to 1 gr.; three years, 1 to 2 gr.

*Hexamethyleneamin*, also sold under trade names of urotropin, formin, uriton, and hexamin. This is a very valuable drug, and has been found to be excreted in the urine, bile, feces, middle-ear fluid, arthritic fluid,
and cerebrospinal fluid, and is useful in the treatment of cystitis, arthritis, otitis media, cerebrospinal meningitis, and anterior poliomyelitis. The dosage is about 1 gr. for each year of the child's age.

**Hyoscyamus** may be employed in most instances when belladonna is indicated; it is also useful to relieve pain when opium cannot be used. The tincture may be given a child of one year in 5-minim doses.

**Ipecac** is much employed in child therapy in congestive conditions of the upper respiratory tract, as laryngitis, false croup, tracheitis, and bronchitis. To meet these indications it may be given as the powder in ¼ gr.; syrup, in 5-minim, and the wine in 3- to 5-minim doses to a child of one year. As an emetic to young children in 5-gr. doses of the powder, repeated, or a half-teaspoonful or more of the syrup.

**Iron** is used in various forms and for various purposes. Basham's mixture, or liquor ferri et ammonii acetatis, is of value as a tonic and diuretic in nephritis. Dose, 15 to 30 drops to a child of three years. Syrup of iodid of iron in the hands of the writer has been an extremely valuable iron preparation. In anemia, chronic affections, as tonsillar hypertrophy, adenitis, chronic respiratory troubles of a nasal, pharyngeal, or bronchial nature, and in poor nutrition. Dose, 5 drops to a child of two years. Tincture of iron chlorid is also of great value. This, being of an acid nature, should be given in a well-diluted form after meals, and preferably by means of a glass tube to protect the child's teeth from corrosion. Dose, 5 drops well diluted to a child of two years.

**Mercury**, as in adults, is useful in attacking the syph-
ilitic diseases. Mercury with chalk is a very good preparation, and may be given a child of two years in doses of \( \frac{1}{2} \) to 2 gr. As a preliminary cathartic \( \frac{1}{10} \) gr. may be given every half-hour for ten doses, to be followed by oil or a saline. (See also under Calomel.)

*Niter, Sweet Spirits of.*—This is much used as a diaphoretic, diuretic, and antispasmodic in the beginning of the acute fevers of childhood, in nephritis, and in bronchitis with severe cough. Where used as a diaphoretic the child should be warmly covered and given hot drinks, but if used as a diuretic the covering should be light and cool draughts taken. Dose, 3 to 5 minims for a child of one year.

*Nux vomica* and its alkaloid, strychnin, are of value as tonics and stimulants. In acute diseases, when the pulse becomes rapid, feeble, and irregular, strychnin is of value. Dosage is to a child of six months, \( \frac{1}{40} \) gr.; one year, \( \frac{1}{10} \) gr.; eighteen months, \( \frac{1}{10} \) gr.; two years, \( \frac{1}{4} \) gr.; three years, \( \frac{1}{4} \) gr. The tincture of nux vomica is useful as a general systemic tonic in doses of 1 or 2 minims to a child of two years.

*Potassium acetate* and *citrate* are both used as saline diuretics and refrigerants in nephritis and the acute fevers. They should be given well diluted. Dose for a child of one year is 1 to 2 gr.

*Quassia* is used as a vermifuge for thread-worms. A preliminary cathartic, as castor oil, should first be given to drive the worms to the lower rectum, then an enema of infusion of quassia given. This infusion is made by pouring a pint of boiling water over a table-
spoonful of quassia chips, allowing same to brew for one-half hour, and then strain.

*Quinin salts*, preferably the bisulphate, are not much used for children except as systemic tonics and in whooping-cough, and, of course, in malaria. As a rule young children take quinin salts very readily, but for older children the taste must be covered by syrups. The dose averages about 1 gr. for each year of the child’s age.

*Santonin* is used in the dispelling of the roundworm. The procedure is similar to that of the tapeworm under aspidium, except that santonin is substituted. Dose for a child of four years is 1 to 2 gr.

*Senna* is used as a laxative in the form of the syrup and infusion, the former in ½-dram doses, and the latter 1 tablespoonful for children of three years. The infusion may be prepared by adding to 1 ounce of senna leaves a pint of boiling water and allowing to infuse for one-half hour, then strain and flavor if desirable.

*Strophanthus.*—The tincture of strophanthus is a very valuable cardiac stimulant in acute diseases of childhood. It is to be much preferred to digitalis in pneumonia, collapse of infantile disorders, etc. Dosage, six months, $\frac{1}{2}$ minim; twelve months, 1 minim; eighteen months, 1 to 2 minims; two years, 2 minims.

**Diet Lists**

The tabulation of a diet for every patient suffering from the same disease is impossible, because of the individual differences in persons and the divers courses of the same disease. The following tables are not
meant for routine use, but must at times be modified to suit the conditions at hand.

FEVERS

Although there is a diversity of opinion as to the diet in the acute fevers, the author feels that, as it is a well-established fact that the digestive juices are decreased and the digestive power and function of the stomach and intestines are lessened, that the diet should be of a light nature yet sufficiently nourishing. Milk should really form the basis of diet. The following has been found satisfactory: Milk mixture, peptonized milk, buttermilk, albuminized milk, malted milk (prepared with cow's milk), clam stew and oyster stew (with removal of the clams and oysters), gelatin, ice cream, and coffee. The milk mixture referred to in this list consists of milk, 6 ounces; milk sugar, 1 teaspoonful; beaten white of 1 egg; water and lime-water to make 8 ounces.

Cereal gruels made from farina or cream of wheat, with a milk basis, are valuable. As convalescence approaches we may gradually add such articles of diet as zwieback, toast with milk, egg and milk mixture, junket, broths thickened with dice of toast, or with browned flour. In later convalescence additional diet may be given, as creamed codfish on toast, soft boiled or poached eggs, oysters, boiled rice, tapioca, cereals, baked potato, egg custard, white meat of fowl, broiled lamb or beef (cautiously).

INFANTILE DIARRHEA

During the acute stage the stomach and bowels should be kept in a quiet state with a very scant diet.
Milk seems to act as a poison in these cases during the first forty-eight or seventy-two hours, and should be eliminated from the diet. Simply small quantities of boiled water, rice water, or barley water should be given during the first twenty-four hours; then gradually and cautiously add albumin water, one of the infant foods prepared without the addition of milk. Great care must be employed in returning milk to the diet. Cereal gruels are often well borne later.

**ADULT DIARRHEA**

In the diarrhea of older persons the diet, although it must be modified, does not necessitate so much curtailing as in the infant and small child. The important point is that the diet be non-irritating. Boiled milk served hot is very useful, cereal gruels, toast and milk, albumin water, albuminized milk, eggs in soft forms, gelatin, ice cream (in some cases), and koumiss.

**DIABETES MELLITUS**

This disease must be combatted to a very great extent by a regulation of the diet. Although both extremes have been advocated, none or too much carbohydrate food, it is found expedient to greatly reduce the food of this nature. The articles of diet which may be taken in a moderate case are meats of all kinds except liver, including smoked meats, as ham and bacon, fish of all varieties, oysters, clams, crabs, lobster, and mussels. Clear soups and broths, gelatins, eggs, butter, cheese, milk (not to excess), and cream. Green vegetables, as spinach, sprouts, pickles, lettuce, celery, cucumber, tomato, asparagus, mushrooms, and the various nuts. Fruits, as oranges, currants, and
berries (in small quantities). Unsweetened tea and coffee. All carbohydrates need not be omitted from the diet of the less severe cases. Oatmeal, toast, and potato in small quantities at times do no harm and may prove beneficial. The following articles of diet should be forbidden in diabetes. All foods prepared from flour, starch, or cereals, bread, potatoes, sugar, sweet potatoes, peas, corn, beets, beans, parsnips, carrots, onions, rice, tapioca, puddings, pies, cakes, and sweet fruits.

**CONSTIPATION**

In preparing a diet list for a person suffering from chronic constipation there are three requisites. First, to eliminate such foods as are known to actively produce constipation; second, to include such articles as tend to overcome the condition; third, to omit foods which are extremely difficult to digest and which are likely to disturb the stomach. Foods which may be partaken of are to some extent here enumerated. Clear soups, fish, beef, lamb, mutton, fowl, game, bacon, ham (small quantity). All breads one day old, especially graham, entire wheat, rye, and bran breads. Oatmeal, coarse cereals with plenty of cream and butter. Nearly all vegetables and fruits. Milk only in small portions. Mineral waters and koumiss. The following should be used only in small helpings. Veal, pork, and new breads not at all. Eggs, milk, cheese, potatoes, beans, rice, tapioca, thick soups, pastry, and nuts.

**INDIGESTION AND DYSEPSIA.**

The diet in dyspepsia must be individually selected for various persons. The lists herewith given may act
as guides. Articles of food which are more easily digested are: Soups, clear from fat and grease; fish of all kinds excepting those rich in fats, as salmon, sardines, and mackerel; beef, lamb, and mutton, which are baked, roasted, broiled, or stewed, but not fried; fowl of various kinds; broiled but not fried ham or bacon in small portions; eggs in all forms; such vegetables as asparagus, peas, celery, and cresses; cereals well cooked and in small quantities; bread, at least one day old, and zwieback; butter and cream in moderation; koumiss; junket and peptonized milk. The following foods are difficult of digestion, and should be omitted during the height of the disease and only cautiously added to the diet. Pork, veal, sausage, and fried meats; thick soups; game; lobsters, crabs, and shrimps; vegetables, as corn, dried beans and peas, cabbage, cauliflower, sweet potato, beets, radishes, cucumbers, and turnips; new bread and pastries and fresh or frosted cakes; unripe fruits, nuts, and cheese; coffee, tea, and chocolate; all alcoholic beverages.

KIDNEY DISEASE

In the very acute forms of nephritis the diet must necessarily be light and scant. Milk and water should temporarily form the bulk of the diet. Gradually and cautiously cereal gruels may be added. The amount of salt used to flavor these should be very scant or none at all used. Meat broths should not be given. In the chronic forms of nephritis the diet may be, to a certain extent, quite liberal. Milk soups and gruels; vegetable purées are allowable. Also fish of various kinds; beef, lamb, and mutton once a day; fowl; oys-
PASTEURIZED MILK

ters and clams. Eggs not to excess. Milk in all forms. Such vegetables as celery, spinach, cooked onions, green beans and peas, and cauliflower. Cereals, as rice, farina, tapioca, arrowroot, and sago. Breads a day old. Fruits, as grapes, apples, oranges, and pears. The following articles should not be allowed: Veal, pork, and heavy game; sweets, pastries, and cake; highly seasoned foods; pickles, condiments, and cheese; heavy vegetables, as dried beans or peas; alcoholic beverages.

POSTPARTUM DIET

First Day.—Milk, cereal gruels, oyster or clam soup.

Second Day.—As on first day, with addition of toast, crackers, eggs in soft forms.

Third Day to End of First Week.—There may be added light pudding, as tapioca, boiled rice, and sago; baked potato; gelatin and jellies; and later fish; white meat of fowl; broiled chops, roast beef, light vegetables, and fruits.

PASTEURIZED MILK

Milk has been the cause of great epidemics and spread of diseases. The more common ailments which have been disseminated by milk are typhoid fever, diphtheria, scarlet fever, septic sore throat, tuberculosis, and diarrheal conditions.

It may be safely said that raw milk should never be used, but should always be first rendered safe, preferably by pasteurization. Even the best certified dairy milk, far above suspicion, has been the cause of great outbreaks of disease.
Pasteurized milk differs from sterilized milk. The latter is prepared by bringing the milk to the boiling-point, 212° F., which kills all life. The former is prepared by heating the milk to 148° F. for a certain time, preferably a half-hour. This is sufficient to kill the harmful bacteria. The boiling of milk alters the odor, taste, and digestibility. Pasteurization has no appreciable effect in these respects.

When milk is pasteurized in the bottle it is necessary that the milk itself and not only the surrounding water should reach the required degree of heat, and maintained for at least thirty minutes. It should then be placed in a cooler or refrigerator and care taken that no chance for after-infection is given.

All that is needed for the home pasteurization of milk for general use is a double boiler and a thermometer. When pasteurization of milk for infant feeding is undertaken a Strauss apparatus should be employed. This consists of a covered pot and a tray of bottles sufficient for a day's food.

THE REST TREATMENT

The rest cure, or Weir Mitchell treatment, is employed to very great extent in institutional work; and in the opinion of the writer should be used much more frequently in the home treatment of those individuals for whom it is indicated.

The general principles of treatment are the provision of bodily and mental rest, and yet prevent the general tissues and functions of the body from the depression which they usually undergo in bed patients.
The former is attained by placing the patient in bed, if possible away from all friends and familiar faces, and by you (the nurse) being congenial, pleasant, and interesting, yet firm, persuasive, and a possessor of good common sense. The latter requirements are met by means of forced feeding, baths, massage, and the use of electricity. The rest treatment is applicable to those persons suffering from exhaustion due to a long nervous strain: the society leader, the overworked mother, the superardent scholar, the strenuous business man, the overactive politician, and others who mentally do more than they are constructed to do. The melancholic person, the depressed neurotic, and the individual suffering from some form of hysteria often respond well to this type of treatment.

The room chosen for the patient should be of fair size, light, cozy, and cheerful. The bed should have easy lying springs and a pliable mattress. The room should be so provided that ventilation may be complete. Rest in bed for three to five or six weeks is imperative. The patient during the first part of the treatment should see no friends nor receive any letters. During the first week in some instances it may be necessary that the patient refrain from all conversation, from sitting up in bed, and from exertion of any kind.

The diet in the general run of cases must not only be sufficient to prevent bodily wasting, but must be such that a gain of weight be oncoming. Many patients put on considerable weight while under rest treatment. The diet at first should consist largely of milk in various forms. The writer thinks it well not
to give whole milk, but to partially dilute it with plain water, lime-water, or Vichy. This may be given every two or three hours from 7 a. m. to 9 p. m. The last feeding should be hot milk, as this encourages a more restful night. Gradually other articles of diet may be added. Meat broths, koumiss, buttermilk, ice cream, gelatins, malted milk, cocoa or chocolate, toast, zwieback, rusks, boiled rice, tapioca, eggs in soft forms, and later, substantial meals of soups, meat, easily digested vegetables, and dessert. Unless especially ordered by the attending physician, alcoholic beverages of all kinds, tea, and coffee should not be allowed.

Baths are a very important part of the treatment. They keep the skin active, and thus rid the body of waste products. They also tone up the general system. During the early stage of the treatment the morning and evening warm sponge only are allowable, but later the cold bath, as a needle, douche, or shower, may be given to tone the muscles and circulatory system. The daily warm sponge or tub bath at night is important to bring about a restful sleep.

Massage is very necessary to keep up the nourishment of the tissues, especially the muscles. As is well known, an inactive muscle wastes and an immobile joint becomes stiffened. Massage and passive motions act as substitutes for the active exercise of the normal person. Massage should be performed in mid-morning, and should be of a general character, including all the principal superficial muscles. See the article on Massage.

Electricity is employed for the purpose of bringing about muscular contractions, and thus keep up the
tone and nourishment of the muscles. This, I think, is best given in mid-afternoon, and should preferably consist of application of the interrupted galvanic current, or, for want of apparatus, the faradic current might be substituted. One pole should be placed at some neutral point, as the middle of the back or chest, and with the other pole active contractions of the larger and important muscles should be elicited. In applying electricity in this treatment, no pain at all should be caused.

For an hour toward the end of the morning and afternoon the patient, if possible, should nap. As a means of recreation a pleasant easy conversation may be indulged in, or the nurse might read aloud some light literature.

A general routine after the first week or so is such as that given below, which the author compiled several years ago:

8 A. M.—Breakfast of cereal, cocoa, roll or toast, small chop, or egg.

9 : 30 A. M.—Cool sponge or cold bath, followed by alcohol rub. Glass of milk.

10 : 30 A. M.—Massage, ten to twenty minutes.

11 A. M.—Nap.

1 P. M.—Dinner of clear soup or bisque, meat, baked potato, light vegetable, dessert of farinaceous food, cocoa.

1 : 30 P. M.—Nap.

3 P. M.—Glass of milk.

3 : 30 P. M.—Electricity for ten to twenty minutes.

4 : 30 P. M.—Conversation or reading by nurse.
6 p.m.—Supper of egg in soft form, milk-toast, sauce, and cocoa.

9 p.m.—Warm sponge or bath and cup of hot milk.

**MASSAGE**

The term massage is derived from a Greek word meaning “to knead.” Massage is by no means a new form of therapeutic application, but has been handed to us from ancient days. From the time of the gladiator and the Marathon runner to the present pugilist and foot-ball player, massage has been employed in one or more forms, although crude.

A male person performing massage is known as a masseur, whereas the masseuse is the female person who applies this form of treatment.

There are five fundamental types of massage—stroking (effleurage), kneading (petrissage), rubbing (friction), tapping or percussion (tapotement), and oscillation (vibration). Each of these types of massage have a special and individual effect and indication.

*Stroking* is used for the purpose of stimulating, correcting, or improving the superficial venous and lymphatic circulations and to aid in skin nourishment; and, as a rule, in all massage treatments is the first form to be employed. Stroking consists of slow, firm, winding, or circular-like pressure movements. The limb is firmly grasped, so that the ball of the thumb is pressed against the patient’s limb, and then the operator’s hand is slowly yet firmly moved upward in a cork-screw like manner. Stroking should always be directed from the distal to the proximal extremity of the limb.
**Kneading** is employed to affect the deeper tissues, especially the muscles, and is used to influence the deeper circulation, to aid in the development of the muscular tissue, to hasten absorption of waste products and exudates, and to overcome muscular spasm. In kneading, masses or individual muscles are grasped, and then, with a pinching and rolling action, are manipulated. When kneading muscles care should be exercised that the skin is not pinched or manipulated, but it should form part of the operator's grasp and made to glide over the underlying muscles.

**Rubbing** is useful when the absorption of old or recent exudates of a superficial nature is required. It consists not of rubbing the skin but the underlying tissues by causing the skin to glide or rub over them. By means of the ball or pulp of the operator's fingers a circular rubbing is performed without the fingers changing their position in relation to the patient's skin, but rather moving the cutaneous tissues over those underneath.

**Percussion** acts to a very great extent upon the superficial circulation of the parts manipulated, and consists of rapid, decisive blows delivered by the tips of the fingers or the ulnar side of the hand. The blows should be made at right angles to the long diameter of the muscle.

**Oscillation** consists of very rapidly imparted movements, brought about by vibrating the tips of the clustered fingers against the selected part. The finger-tips are not released from the patient's skin, and the oscillation is produced by the forearm and hand muscles.

In applying general massage it is well to follow a
routine. Either the extremities or the trunk may be first manipulated. Probably the best course is the lower and then the upper limbs, and finally, the back and abdomen. Many operators use an emollient or lubricant of some kind, but it is the author’s opinion that as good if not better service may be accomplished without the aid of these greasy adjuvants. Among the more common substances employed are cocoa butter, coconut oil, vaselin, and sweet oil. It is well to begin massage with the stroke and then progress to the kneading and percussion.

Abdominal massage may require a little more explanation. This form of manipulation is much employed and of great import. The first requisition is a position in which the abdominal wall muscles are relaxed, and may be attained by having the patient flex the knees and thighs well, the back is made convex by introducing a pillow under the upper dorsal spine, and the patient is requested to breathe through the wide-opened mouth. Before trying to influence the intestines the superficial abdominal muscles should be worked for a short time. Friction and kneading are the better forms for employing. When the muscles have been relaxed then the attention may be directed toward the deeper tissues. To influence the small bowel, circular strokes and kneading may be performed in the center of the abdomen around the umbilicus. The large intestine or colon are treated in the same manner, but the progress must be directed along the course of this division of the intestine, namely, from the right iliac fossa upward to the liver, then crossways to the region of the spleen, and down the left side of the abdomen.
ELECTROTHERAPEUTICS

The conditions in which massage is most frequently indicated are general neurasthenia, simple anemia, chronic and some acute joint affections, sprains, sciatica, neuralgias, muscular rheumatism, myalgias, adherent scars, muscular cramps, torticollis, paralysis of various types, constipation, and certain pelvic disorders.

ELECTROTHERAPEUTICS

The use of electricity in the treatment of morbid conditions is held in disrepute by many medical men. It can be truthfully said that electricity has been asked to do too much, that it has been used many times when it should not have been, that it has been a reaping machine for charlatans. Nevertheless electricity has a legitimate place in therapeutics.

First let us consider the various forms of electricity used in medicine. The galvanic current is also known as the continuous or chemical current, and arises directly from the cell without the intervention of other apparatus. It is continuous, that is, flows in a steady stream without interruption or intermission. When applied to the skin it produces no sensation when flowing, except at times a feeling of warmth, but where it is broken by means of a switch or by moving the electrodes, then a perceptible influence is experienced. The faradic current is the current derived by passing electricity through an induction coil which is fundamentally composed of two coils of wire and an interrupter. This current is a broken current, the vibrations being very rapid. The sinusoidal current is a peculiar form of electricity. It is an alternating current, whose cycle is wave-like, the current gradually
ascends to its height, and then not only to the base level, but to a minimum point below the base line, and then gradually returns to the base level, thus traveling over a sine-like course. The alternations average several thousand a minute. This current is derived from the alternating dynamo current and is more smooth and less harsh and stimulating than the faradic current. The static current is produced by the electric influencing machine, and is a form of high potential electricity. This current is applied to the patient placed on an insulated platform. The high-frequency current is another form of high potential electricity. It is a current of very frequent oscillations, which may vary from one hundred thousand to a million or more per second.

The various forms of medical electricity have been enumerated, and the next point to consider is the choice of current in a given case and the action and uses of the several currents. The galvanic current is used when we wish to affect the nutrition of muscles which are paralyzed and do not respond to the faradic current, as in infantile paralysis and neuritis. It is also employed to bring about relief in painful neuralgic conditions, as sciatica, tic douloureux, or trigeminal neuralgia; myalgias in various forms. It is the current used in cataphoresis or the induced absorption of drugs. To accomplish this several layers of gauze are thoroughly moistened with the solution to be used and then placed on the skin. Over this gauze is put the positive pole, while the negative electrode is located elsewhere. The galvanic current is also used to produce heat in the form of a cautery. The faradic cur-
rent is employed to cause muscular contraction in paralyzed muscles, which will respond to this current. When very rapidly interrupted it has a sedative action and may even produce anesthesia. It is useful in hysterical paralyses and anesthesias, in organic paralyses, and as a sedative in nervous excitement and insomnia. The *sinusoidal* current may be used to produce muscular contraction in atrophy and atony of infantile paralysis, myelitis, and neuritis, and especially to stimulate the involuntary muscles in constipation, gastric atony, and uterine diseases. In neuralgias of all kinds it may prove useful. The *static* current seems to be of special value in the functional neuroses, and at times marvelous results are obtained, but who can say they are not of psychic origin. Chorea has been benefited by the application of this form of electricity. Insomnia, lowered blood-pressure, and some skin affections have been favorably impressed. The *high-frequency* current seems to have a very wide field of application. Upon general sensibilities and muscular contraction this current has but little effect, but on the blood-pressure marked changes seem to be produced. The peripheral vessels are widened, with resultant hyperemia and a fall of blood-pressure. Pain is relieved. The absorption of exuberant and morbid tissues is facilitated. This current is of value in painful conditions, as sprains, lumbago, myalgia, neuralgia, headaches, and in such affections where the absorption of inflammatory tissues is required, as in subacute and chronic rheumatism, chronic arthritic conditions, and skin disorders, as eczema, psoriasis, lupus, moles, acne, and alopecia.
DISINFECTION OF WATER

The use of pure drinking-water is a matter of supreme importance. Several epidemic diseases may be water-borne. Great outbreaks of typhoid fever, cholera, dysentery, and diarrheal diseases have been traced to the drinking of infected water.

In the town of Plymouth, Pennsylvania, a place of 8000 people, there occurred in the year 1885 a great epidemic of typhoid fever. Over 1100 of the inhabitants, or nearly one-seventh of the population, contracted the disease; 114, or over 10 per cent. of those ill, died from typhoid fever.

The water-supply of Plymouth was derived from four reservoirs located some distance from the town and on an almost uninhabited watershed.

On investigation it was found that several months before there had been a case of typhoid fever in a house located on the bank of a small stream leading into one of the reservoirs. Much of the excreta of the patient was thrown over the bank of the stream. The heavy spring freshet and rains carried the infective material into the stream and thence to the reservoirs. The great epidemic followed. This great outbreak was due to the carelessness of a nurse.

There are many other epidemics of like nature on record. It will repay the nurse to read accounts of them in Sedgwick's "Sanitary Science and Public Health."

The nurse has nothing to do with the purification of the water-supply of a municipality, but has an important duty relating to the water-supply of the home in which she is employed, especially if the drinking-water is not derived from a good general system but is
taken from wells or streams. In camp life also it is of prime importance that the water drunk be pure.

The question is, How may unsafe drinking-water be made safe? There are several efficient means of accomplishing it. Those most frequently resorted to are: (1) boiling, (2) distilling, (3) filtering, (4) hypochlorization.

Boiling.—This is probably the most rapid, economical, and best way of making unsafe drinking-water safe. If water is thoroughly boiled for fifteen minutes and then covered and placed aside to cool it may be drunk with impunity. The objection to boiled water is its flat taste. One readily becomes accustomed to this taste.

Distilling.—This is usually done by means of one of the many household stills now on the market. It is slower than the boiling method and entails the expenditure of considerable money for the purchase of the apparatus. It is nevertheless very efficient.

Filtering.—There are many forms of household filters. Some are good and many are dangerous. They require constant care. Frequent cleaning is essential. They may become foul or broken. Many are efficient. The author would rather rely on some other means of purification.

Hypochlorite Method.—In recent years the use of chlorine gas in some form for the disinfection of drinking-water has become quite common. Chlorinated lime or hypochlorite of lime has the property of killing infective organisms that may be in the water without altering its potability.

First there should be prepared a stock solution consisting of 1 teaspoonful of fresh chlorinated lime in
1 pint of water. To disinfect the water add 1 teaspoonful of the stock solution to each 10 gallons of drinking-water to be treated. Allow to stand for one-half hour and it is ready for use.

INSECTICIDES AND INSECT REPELLENTS

MOSQUITO

Fumes.—These are used for the purpose of ridding a house or room of mosquitoes.

*Pyrethrum* has been employed extensively for this purpose. It may be burned in a room or the powder may be blown into the air. For use as a fumigant the powder should be piled on a metal dish and some alcohol sprinkled over it and then lighted. The fumes from pyrethrum do not kill the insects, but rather stun or stupefy them. The mosquitoes fall to the floor and should be collected at once before life returns. The room should be tightly closed. One pound of pyrethrum should be used for each 1000 cubic feet of space to be fumigated.

*Mimm's culicide* is prepared by rubbing together in the presence of heat equal parts of carbolic acid and gum camphor. To use, vaporize over a lamp or stove 4 ounces of the liquid to every 1000 cubic feet of space.

*Sulphur* is an excellent insecticide. The objections to its use are that it bleaches colors and tarnishes metals, as brass and silver. Two pounds of sulphur should be burned in a room of 1000 cubic feet.

Personal Protection.—Many substances have been recommended for the purpose of keeping away the mosquito from the individual. Oils of citronella, lavender, pennyroyal, and cassia have all been tried.
Oil of citronella is probably as good as any. It should be mixed with some fixed oil to prevent rapid evaporation. A combination of 1 part oil of citronella and 5 parts of albolene (petrolatum liquidum) may be applied to the exposed parts of the body.

**Remedies against the bite** may be mentioned here. Application of the following may help: Solution of potassium permanganate, hydrogen peroxid, ammonia water, iodin, or glycerin.

**HOUSE FLY**

*Pyrethrum* used as described above also acts well against the house fly.

*Formalin* in water in the proportion of 1 part of formalin to 50 parts of water acts as an efficient poison. Several dishes containing some of this solution should be placed in various parts of the room. A pinch of sugar added to each dish will greatly facilitate the power of fly decoying.

**BEDBUG**

*Sulphur fumigation* sometimes does admirably well in ridding an apartment of bedbugs. The objection to its use are the bleaching of colors and the tarnishing of metals.

*Benzine, gasoline, and naphtha* if sprayed in the cracks of beds and the crevices of floors and walls may prove useful. Care should be taken in using these inflammable liquids.

**COCKROACH**

*Sulphur fumigation* is very satisfactory. Two pounds of sulphur should be burned for every 1000 cubic feet of space.
Borax powder dusted about is an excellent remedy against this vermin. The author has found borax most efficient.

Sodium fluorid or fluorol has been used with success. It should be mixed with an equal amount of starch or fine meal and dusted about the infested places.

Note.—It should be remembered that although formaldehyde fumigation acts well as a disinfectant, it is a very poor insecticide.
## PART VI

### ADDENDA

### STRENGTH OF DRUG PREPARATIONS

<table>
<thead>
<tr>
<th>Cerates.</th>
<th>Per Cent.</th>
<th>Extracts.</th>
<th>Per Cent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camphor,</td>
<td>2</td>
<td>Euonymus,</td>
<td>400</td>
</tr>
<tr>
<td>Cantharides,</td>
<td>32</td>
<td>Gentian,</td>
<td>250</td>
</tr>
<tr>
<td>Lead Subacetate,</td>
<td>20</td>
<td>Hematoxylon,</td>
<td>—</td>
</tr>
<tr>
<td>Resin,</td>
<td>35</td>
<td>Hyoscyamus,</td>
<td>0.25&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Simple,</td>
<td>—</td>
<td>Jalap (Resin),</td>
<td>60</td>
</tr>
<tr>
<td>Spermaceti,</td>
<td>2</td>
<td>Krameria,</td>
<td>—</td>
</tr>
<tr>
<td><strong>Decoctions.</strong></td>
<td></td>
<td>Leptandra,</td>
<td>400</td>
</tr>
<tr>
<td>Cetraria,</td>
<td>5</td>
<td>Licorice,</td>
<td>—</td>
</tr>
<tr>
<td>Sarsaparilla Compound,</td>
<td>10</td>
<td>Malt,</td>
<td>—</td>
</tr>
<tr>
<td><strong>Emulsions.</strong></td>
<td></td>
<td>Nux Vomica,</td>
<td>16.00&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Almond,</td>
<td>6</td>
<td>Opium,</td>
<td>20&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Ammoniac,</td>
<td>4</td>
<td>Physostigma,</td>
<td>2&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Asafoetida,</td>
<td>4</td>
<td>Quassia,</td>
<td>1000</td>
</tr>
<tr>
<td>Chloroform,</td>
<td>4</td>
<td>Rhubarb,</td>
<td>—</td>
</tr>
<tr>
<td><strong>Extracts.</strong></td>
<td></td>
<td>Scopolia,</td>
<td>2&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Aloes,</td>
<td>—</td>
<td>Stramonium,</td>
<td>1.00&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Belladonna,</td>
<td>1.25&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Sumbul,</td>
<td>—</td>
</tr>
<tr>
<td>Cannabis Indica,</td>
<td>800</td>
<td>Taraxacum,</td>
<td>—</td>
</tr>
<tr>
<td>Cascara,</td>
<td>400</td>
<td><strong>Fluidextracts.</strong></td>
<td></td>
</tr>
<tr>
<td>Cimicifuga,</td>
<td>800</td>
<td>All fluidextracts are of the</td>
<td></td>
</tr>
<tr>
<td>Colchicum Root,</td>
<td>1.4&lt;sup&gt;1&lt;/sup&gt;</td>
<td>same strength—i. e., 1</td>
<td></td>
</tr>
<tr>
<td>Colocynth,</td>
<td>600</td>
<td>minim = 1 grain of the</td>
<td></td>
</tr>
<tr>
<td>Digitalis,</td>
<td>—</td>
<td>drug—except the follow-</td>
<td></td>
</tr>
<tr>
<td>Ergot,</td>
<td>500</td>
<td>ing:</td>
<td></td>
</tr>
</tbody>
</table>

<sup>1</sup> Average percentage of the principal alkaloid.
<table>
<thead>
<tr>
<th>Fluidextracts.</th>
<th>Liniments.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aconite,</td>
<td>Soap,</td>
</tr>
<tr>
<td>Belladonna Root,</td>
<td>Soft,</td>
</tr>
<tr>
<td>Cinchona,</td>
<td>Turpentine,</td>
</tr>
<tr>
<td>Coca,</td>
<td></td>
</tr>
<tr>
<td>Colchicum Seed,</td>
<td></td>
</tr>
<tr>
<td>Conium,</td>
<td></td>
</tr>
<tr>
<td>Gelsemium,</td>
<td></td>
</tr>
<tr>
<td>Hydrastis,</td>
<td></td>
</tr>
<tr>
<td>Hyoscyamus,</td>
<td></td>
</tr>
<tr>
<td>Ipecac,</td>
<td></td>
</tr>
<tr>
<td>Nux Vomica,</td>
<td></td>
</tr>
<tr>
<td>Pilocarpus,</td>
<td></td>
</tr>
<tr>
<td>Scopolia,</td>
<td></td>
</tr>
<tr>
<td>Stramonium,</td>
<td></td>
</tr>
<tr>
<td><strong>Per Cent.</strong></td>
<td><strong>Per Cent.</strong></td>
</tr>
<tr>
<td>0.51</td>
<td>6</td>
</tr>
<tr>
<td>0.451</td>
<td>65</td>
</tr>
<tr>
<td>4.51</td>
<td>35</td>
</tr>
<tr>
<td>0.51</td>
<td></td>
</tr>
<tr>
<td>0.41</td>
<td></td>
</tr>
<tr>
<td>0.51</td>
<td></td>
</tr>
<tr>
<td>0.31</td>
<td></td>
</tr>
<tr>
<td>2.01</td>
<td></td>
</tr>
<tr>
<td>0.0651</td>
<td></td>
</tr>
<tr>
<td>2.01</td>
<td></td>
</tr>
<tr>
<td>2.51</td>
<td></td>
</tr>
<tr>
<td>0.61</td>
<td></td>
</tr>
<tr>
<td>0.51</td>
<td></td>
</tr>
<tr>
<td>0.351</td>
<td></td>
</tr>
<tr>
<td>Glycerites.</td>
<td></td>
</tr>
<tr>
<td>Boroglycerid,</td>
<td></td>
</tr>
<tr>
<td>Carbolic Acid,</td>
<td></td>
</tr>
<tr>
<td>Hydrastis,</td>
<td></td>
</tr>
<tr>
<td>Starch,</td>
<td></td>
</tr>
<tr>
<td>Tannic Acid,</td>
<td></td>
</tr>
<tr>
<td>Yeolk of Egg,</td>
<td></td>
</tr>
<tr>
<td><strong>Per Cent.</strong></td>
<td><strong>Per Cent.</strong></td>
</tr>
<tr>
<td>31</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
</tr>
<tr>
<td>1.251</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
</tr>
<tr>
<td>4.5</td>
<td></td>
</tr>
<tr>
<td>Honey.</td>
<td></td>
</tr>
<tr>
<td>Rose,</td>
<td></td>
</tr>
<tr>
<td><strong>Per Cent.</strong></td>
<td><strong>Per Cent.</strong></td>
</tr>
<tr>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Infusions.</td>
<td></td>
</tr>
<tr>
<td>Cinchona,</td>
<td></td>
</tr>
<tr>
<td>Digitalis,</td>
<td></td>
</tr>
<tr>
<td>Senna Compound,</td>
<td></td>
</tr>
<tr>
<td>Wild Cherry,</td>
<td></td>
</tr>
<tr>
<td><strong>Per Cent.</strong></td>
<td><strong>Per Cent.</strong></td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Liniments.</td>
<td></td>
</tr>
<tr>
<td>Ammoniac,</td>
<td></td>
</tr>
<tr>
<td>Belladonna,</td>
<td></td>
</tr>
<tr>
<td>Camphor,</td>
<td></td>
</tr>
<tr>
<td>Chloroform,</td>
<td></td>
</tr>
<tr>
<td>Lime,</td>
<td></td>
</tr>
<tr>
<td>Mustard Compound,</td>
<td></td>
</tr>
<tr>
<td><strong>Per Cent.</strong></td>
<td><strong>Per Cent.</strong></td>
</tr>
<tr>
<td>35</td>
<td></td>
</tr>
<tr>
<td>95</td>
<td></td>
</tr>
<tr>
<td>20.00</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Mucilages.</td>
<td></td>
</tr>
<tr>
<td>Acacia,</td>
<td></td>
</tr>
<tr>
<td>Elm,</td>
<td></td>
</tr>
<tr>
<td>Sassafras,</td>
<td></td>
</tr>
<tr>
<td>Tragacanth,</td>
<td></td>
</tr>
<tr>
<td><strong>Per Cent.</strong></td>
<td><strong>Per Cent.</strong></td>
</tr>
<tr>
<td>34</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Ointments.</td>
<td></td>
</tr>
<tr>
<td>Belladonna,</td>
<td></td>
</tr>
<tr>
<td>Carbolic Acid,</td>
<td></td>
</tr>
<tr>
<td>Chryserobin,</td>
<td></td>
</tr>
<tr>
<td>Diachylon,</td>
<td></td>
</tr>
<tr>
<td>Iodin,</td>
<td></td>
</tr>
<tr>
<td>Iodoform,</td>
<td></td>
</tr>
<tr>
<td>Lead Carbonate,</td>
<td></td>
</tr>
<tr>
<td>Iodid,</td>
<td></td>
</tr>
<tr>
<td>Mercury,</td>
<td></td>
</tr>
<tr>
<td>Ammoniated,</td>
<td></td>
</tr>
<tr>
<td>Nitrate,</td>
<td></td>
</tr>
<tr>
<td>Oxid, Red,</td>
<td></td>
</tr>
<tr>
<td>Yellow,</td>
<td></td>
</tr>
<tr>
<td>Nutgall,</td>
<td></td>
</tr>
<tr>
<td>Potassium Iodid,</td>
<td></td>
</tr>
<tr>
<td>Rose-water (Cold Cream),</td>
<td></td>
</tr>
<tr>
<td>Stramonium,</td>
<td></td>
</tr>
<tr>
<td><strong>Per Cent.</strong></td>
<td><strong>Per Cent.</strong></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

1 Average percentage of the principal alkaloid.
### Strength of Drug Preparations

<table>
<thead>
<tr>
<th>Ointments</th>
<th>Percent.</th>
<th>Solutions</th>
<th>Percent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulphur,</td>
<td>15</td>
<td>Iron Nitrate,</td>
<td>1.4&lt;sup&gt;5&lt;/sup&gt;</td>
</tr>
<tr>
<td>Veratrin,</td>
<td>4</td>
<td>Subsulphate,</td>
<td>13.6&lt;sup&gt;3&lt;/sup&gt;</td>
</tr>
<tr>
<td>Zinc Oxid,</td>
<td>20</td>
<td>Tersulphate,</td>
<td>10</td>
</tr>
<tr>
<td>Oleates</td>
<td></td>
<td>Lead Subacetate,</td>
<td>25</td>
</tr>
<tr>
<td>Atropin,</td>
<td>2</td>
<td>Dilute,</td>
<td>1</td>
</tr>
<tr>
<td>Cocain,</td>
<td>5</td>
<td>Lime,</td>
<td>1.7</td>
</tr>
<tr>
<td>Mercury,</td>
<td>25</td>
<td>Mercury Nitrate,</td>
<td>60</td>
</tr>
<tr>
<td>Quinin,</td>
<td>25</td>
<td>Potassium Arsenite,</td>
<td>1</td>
</tr>
<tr>
<td>Veratrin,</td>
<td>2</td>
<td>Citrate,</td>
<td>8</td>
</tr>
<tr>
<td>Zinc,</td>
<td>5</td>
<td>Hydrate,</td>
<td>5</td>
</tr>
<tr>
<td>Plasters</td>
<td></td>
<td>Sodium Arsenate,</td>
<td>1</td>
</tr>
<tr>
<td>Ammoniac and Mercury, 30</td>
<td></td>
<td>Hydrate,</td>
<td>5</td>
</tr>
<tr>
<td>Arnica,</td>
<td>33</td>
<td>Hypochlorite (Chlorin), 2.6</td>
<td></td>
</tr>
<tr>
<td>Belladonna,</td>
<td>0.4&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Zinc Chlorid,</td>
<td>50</td>
</tr>
<tr>
<td>Capsicum,</td>
<td>Indefinite.</td>
<td>Spirita.</td>
<td></td>
</tr>
<tr>
<td>Iron,</td>
<td>9</td>
<td>Almond, Bitter,</td>
<td>1</td>
</tr>
<tr>
<td>Icinglass,</td>
<td>—</td>
<td>Ammonia,</td>
<td>10</td>
</tr>
<tr>
<td>Lead,</td>
<td>—</td>
<td>Aromatic,</td>
<td>3.4&lt;sup&gt;4&lt;/sup&gt;</td>
</tr>
<tr>
<td>Mercury,</td>
<td>30</td>
<td>Anise,</td>
<td>10</td>
</tr>
<tr>
<td>Opium,</td>
<td>6</td>
<td>Camphor,</td>
<td>10</td>
</tr>
<tr>
<td>Pitch, Burgundy,</td>
<td>80</td>
<td>Chlovoform,</td>
<td>6</td>
</tr>
<tr>
<td>Cantharidal,</td>
<td>8</td>
<td>Cinnamon,</td>
<td>10</td>
</tr>
<tr>
<td>Resin,</td>
<td>14</td>
<td>Ether,</td>
<td>32.5</td>
</tr>
<tr>
<td>Soap,</td>
<td>10</td>
<td>Compound,</td>
<td>32.5</td>
</tr>
<tr>
<td>Solutions</td>
<td></td>
<td>Nitrous,</td>
<td>4&lt;sup&gt;6&lt;/sup&gt;</td>
</tr>
<tr>
<td>Ammonium Acetate,</td>
<td>7</td>
<td>Frumenti (Whisky),</td>
<td>37-47.5&lt;sup&gt;6&lt;/sup&gt;</td>
</tr>
<tr>
<td>Arsenous Acid,</td>
<td>1</td>
<td>Gaultheria,</td>
<td>5</td>
</tr>
<tr>
<td>Arsen. and Merc. Iodids,</td>
<td>1</td>
<td>Juniper,</td>
<td>5</td>
</tr>
<tr>
<td>Iodin Compound,</td>
<td>5</td>
<td>Compound,</td>
<td>0.8&lt;sup&gt;8&lt;/sup&gt;</td>
</tr>
<tr>
<td>Iron Acetate,</td>
<td>7.5&lt;sup&gt;3&lt;/sup&gt;</td>
<td>Lavender,</td>
<td>5</td>
</tr>
<tr>
<td>and Ammonium Acetate, 4&lt;sup&gt;3&lt;/sup&gt;</td>
<td></td>
<td>Lemon,</td>
<td>5</td>
</tr>
<tr>
<td>Chlorid,</td>
<td>10&lt;sup&gt;3&lt;/sup&gt;</td>
<td>Nitroglycerin,</td>
<td>1</td>
</tr>
<tr>
<td>Citrate,</td>
<td>7.5&lt;sup&gt;3&lt;/sup&gt;</td>
<td>Nutmeg,</td>
<td>5</td>
</tr>
</tbody>
</table>

1. Average percentage of the principal alkaloid.
2. Percentage of metallic iron.
3. Percentage of tincture of iron chlorid.
4. Percentage of ammonium carbonate.
5. Percentage of ethyl nitrite.
6. Percentage of absolute alcohol.
### Spirits.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Per Cent.</th>
<th>Tinctures.</th>
<th>Per Cent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phosphorus</td>
<td>0.12</td>
<td>Bryonia</td>
<td>10</td>
</tr>
<tr>
<td>Spearmint</td>
<td>10</td>
<td>Cannabis Indica</td>
<td>10</td>
</tr>
<tr>
<td>Vini Gallici (Brandy), 39–47</td>
<td>10</td>
<td>Cantharides</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Capsicum</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chirata</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Colchicum Seed</td>
<td>0.04³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Digitalis</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gelsemium</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gentian Compound</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hyoscyamus</td>
<td>0.006³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Iodin</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ipecac and Opium</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Iron Chlorid</td>
<td>13.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kino</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lactucarium</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lemon</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lobelia</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Matico</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Musk</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nux Vomica</td>
<td>0.25³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Opium</td>
<td>1.00³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Camphorated</td>
<td>0.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Deodorized</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physostigma</td>
<td>0.015³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sanguinaria</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Squill</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stramonium</td>
<td>0.025³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Strophanthus</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sumbul</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Veratrum Viride</td>
<td>10</td>
</tr>
</tbody>
</table>

### Syrups.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Per Cent.</th>
<th>Tinctures.</th>
<th>Per Cent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acacia</td>
<td>12.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Almonds</td>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blackberry</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Citric Acid</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Garlic</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ginger</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydriodic Acid</td>
<td>1.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ipecac</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iron Iodid</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Krameria</td>
<td>45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lactucarium</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lime</td>
<td>6.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marshmallow</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orange</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rhubarb</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rose</td>
<td>12.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sarsaparilla Compound</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senega</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Squill</td>
<td>45³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tar</td>
<td>7.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tolu</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wild Cherry</td>
<td>15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Tinctures.

All tinctures are of 20 per cent. strength except the following:

- Aconite, 0.05³
- Aloe, 10
- and Myrrh, 10
- Arnica Root, 10
- Belladonna Leaves, 0.05³
- Benzoin Compound, 10

1 Percentage of absolute alcohol.

³ Average percentage of the principal alkaloid.

### Vinegars.

- Opium, 10
- Squill, 10

### Waters.

- Almond, Bitter, 0.1
- Ammonia, 10
- Strong, 28

³ Percentage of vinegar of squill.
### STRENGTH OF DRUG PREPARATIONS

<table>
<thead>
<tr>
<th>Waters.</th>
<th>PER CENT.</th>
<th>Waters.</th>
<th>PER CENT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anise,</td>
<td>0.2</td>
<td>Spearmint,</td>
<td>0.2</td>
</tr>
<tr>
<td>Camphor,</td>
<td>0.8</td>
<td>Wines.</td>
<td></td>
</tr>
<tr>
<td>Chlorin,</td>
<td>0.4</td>
<td>Antimony,</td>
<td>0.4</td>
</tr>
<tr>
<td>Chloroform,</td>
<td>0.5</td>
<td>Colchicum Root,</td>
<td>40</td>
</tr>
<tr>
<td>Cinnamon,</td>
<td>0.2</td>
<td>Seed,</td>
<td>10</td>
</tr>
<tr>
<td>Creosote,</td>
<td>1</td>
<td>Ergot,</td>
<td>20</td>
</tr>
<tr>
<td>Fennel,</td>
<td>0.2</td>
<td>Ipecac,</td>
<td>10</td>
</tr>
<tr>
<td>Hydrogen Dioxid,</td>
<td>3</td>
<td>Iron, Bitter,</td>
<td>5</td>
</tr>
<tr>
<td>Orange Flower,</td>
<td></td>
<td>Citrate,</td>
<td>4</td>
</tr>
<tr>
<td>Peppermint,</td>
<td>0.2</td>
<td>Opium,</td>
<td>10</td>
</tr>
<tr>
<td>Rose,</td>
<td>—</td>
<td>Red,</td>
<td>7–12(^1)</td>
</tr>
<tr>
<td>Strong,</td>
<td>Saturate.</td>
<td>White,</td>
<td>7–12(^1)</td>
</tr>
</tbody>
</table>

\(^1\) Percentage of absolute alcohol.
SYNONYMS

Absinth—Wormwood.
Acetanilid—Antifebrin, phenylacetamid.
Aconite—Wolfsbane, monkshood.
Adonis Vernalis—False hellebore.
Allium—Garlic.
Allspice—Pimenta.
Althea—Marshmallow.
Ammonium Chlorid—Sal ammoniac.
Amylum—Starch.
Anthemis—Roman camomile.
Antifebrin—Acetanilid.
Apium—Celery.
Apocynum—Canada hemp.
Arbor Vitae—Thuja.
Argentum Nitrate—Silver nitrate.
Asclepias—Pleurisy root.
Aspidium—Male fern, Filix mas.
Avena Sativa—Oats.

Baptisia—Wild indigo.
Barosma—Buchu.
Bearberry—Uva Ursi.
Belladonna—Deadly nightshade.
Black Haw—Viburnum Prunifolium.
Snakeroot—Cimicifuga.
Bladder Wrack—Fucus Vesiculosus.
Bloodroot—Sanguinaria.
Blue Flag—Iris.
Vitriol—Copper sulphate.
Boneset—Eupatorium.
Broom-tops—Scoparius.
Buchu—Barosma.

Buckthorn—Rhamnus Frangula.
Burdock—Lappa.
Butter Nut—Juglans.

Cactus—Night-blooming cereus.
Calabar Bean—Physo stigma.
Calamus—Sweet flag.
Calendula—Marigold.
Canada Hemp—Apocynum.
Cannabis Indica—Indian hemp.
Cantharides—Spanish fly.
Capsicum—Cayenne or red pepper.
Caraway—Carum.
Carbo Ligni—Charcoal.
Carbolic Acid—Phenol, phenic acid.
Caryophyllus—Clove.
Cascara—Rhamnus Purshiana.
Cassia—Cinnamon.
Castanea—Chestnut.
Castor Oil—Oleum Ricini.
Caulophyllum—Blue Cohosh.
Celery—Apium.
Cereus—Cactus.
Chamomile, German—Matricaria.
Roman—Anthemis.
Charcoal—Carbo ligni.
Chenopodium—American wormseed.

Chestnut—Castanea.
Chimaphila—Pipsissewa.
Chionanthus—Fringe-tree.
Cimicifuga—Black snakeroot, black cohosh.
Cinnamon—Cassia.
SYNONYMS

Claviceps—Ergot.
Clove—Caryophyllus.
Cochlearia—Horse-radish.
Cohosh, Black—Cimicifuga.
Blue—Caulophyllum.
Cola—Kola.
Colchicum—Meadow saffron.
Conium—Poison hemlock.
Convallaria—Lily of the valley.
Corn-silk—Zea Mays.
Couch Grass—Triticum.
Cranesbill—Geranium.
Cream of Tartar—Potassium bitartrate.
Creta—Chalk.
Culver’s Root—Leptandra.
Cusso—Kousso.
Dandelion—Taraxacum.
Delphinium—Stavesacre, larkspur.
Digitalis—Fox-glove.
Dock, yellow—Rumex.
Dog grass—Triticum.
Dover’s Powder—Powder of ipecac and opium.

Elm—Ulmus.
Epsom Salt—Magnesium sulphate.
Ergot—Claviceps Purpurea.
Erigeron—Canada fleabane.
Eriodictyon—Yerba Santa.
Erythroxylon—Coca.
Euonymus—Wahoo.
Eupatorium—Boneset.
False Hellebore—Adonis Vernalis.
Fels Bovis—Ox-gall.
Filix mas—Aspidium, male fern.
Fleabane, Canada—Erigeron.
Fox-glove—Digitalis.
Fringe-tree—Chionanthus.
Fucus—Bladder or sea wrack.
Garlic—Allium.
Gaultheria—Wintergreen.
Gelsemium—Yellow jasmine.
Geranium—Cranesbill.
Ginger—Zingiber.
Glauber Salt—Sodium sulphate.
Glycyrrhiza—Licorice.
Golden Rod—Solidago.
Seal—Hydrastis.
Green Vitriol—Iron sulphate.
Hematoxylin—Logwood.
Hamamelis—Witch hazel.
Hedeoma—Pennyroyal.
Hellebore, American—Veratrum Viride.
False—Adonis Vernalis.
Green—Veratrum Viride.
Helonias—False unicorn.
Hemlock, Poison—Conium.
Hemp, Canada—Apocynum.
Indian—Cannabis Indica.
Henbane—Hyoscyamus.
Hops—Humulus.
Horse-radish—Cochlearia.
Humulus—Hops.
Hydrastis—Golden seal.
Hydrochloric Acid—Muriatic acid.
Hydrocyanic Acid—Prussic acid.
Hyoscyamus—Henbane.
Indigo, Wild—Baptisia.
Iris—Blue flag.
Jaborandi—Pilocarpus.
Jasmine, Yellow—Gelsemium.
Juglans—Butternut.
Kola—Cola.
Korousso—Cusso.
Krameria—Rhatany.

Lactose—Milk-sugar.
Lactucarium—Lettuce.
Lady Slipper—Cypripedium.
Lappa—Burdock.
Larkspur—Delphinium, Staves-ace.
Lavender—Lavandula.
Leptandra—Culver’s root.
Lettuce—Lactuca.
Licorice—Glycyrrhiza.
Lily of the Valley—Convallaria.
Logwood—Hematoxylon.

Male Fern—Aspidium, Filix mas.
Mandrake—Podophyllum, May apple.
Marigold—Calendula.
Marshmallow—Althea.
Matricaria—German camomile.
May Apple—Podophyllum.
Mentha Piperita—Peppermint.
Viridis—Spearmint.
Monkshood—Aconite.
Muriatic Acid—Hydrochloric acid.
Muskroot—Sumbul.
Myristica—Nutmeg.

Night-blooming Cereus—Cactus.
Nightshade, Deadly—Belladonna.
Nutmeg—Myristica.

Oak—Quercus.
Oats—Avena Sativa.

Passiflora—Passion flower.
Pennyroyal—Hedeoma.

Pepo—Pumpkin seeds.
Pepper, Cayenne—Capsicum.
Peppermint—Mentha Piperita.
Peruvian Bark—Cinchona.
Petrolatum—Vaseline.
Phenazon—Antipyrin.
Phenol—Carbolic acid.
Phenylacetic acid—Acetanilid.
Physostigma—Calabar bean.
Physostigmin—Eserin.
Phytolacca—Poke root or berry.
Pilocarpus—Jaborandi.
Pimento—Allspice.
Pink-root—Spigelia.
Pipsissewa—Chimaphila.
Pix Liquida—Tar.
Pleurisy Root—Asclepias.
Podophyllum—Mandrake, May apple.
Poke Root or Berry—Phytolacca.
Prickly Ash—Xanthoxylon.
Prunus Virginiana—Wild cherry.
Prussic Acid—Hydrocyanic acid.
Pumpkin Seeds—Pepo.

Quercus—Oak.

Rhamnus Frangula—Buckthorn.
Rutshiana—Cascara.
Rhatany—Krameria.
Rheum—Rhubarb.
Rochelle Salt—Sodium and potassium tartrate.
Rumex—Yellow dock.
Sabina—Savin.
Saffron, Meadow—Colchicum.
Sage—Salvia.
Sal Ammoniac—Ammonium chloride.
Salix—Willow.
SYNONYMS

Salvia—Sage.
Sanguinaria—Blood-root.
Santonica—Levant wormseed.
Sarsaparilla—Smilax.
Savin—Sabina.
Scilla—Squill.
Scoparius—Broom tops.
Sea Wrack—Fucus.
Serpentaria—Virginia snakeroot.
Sinapis—Mustard.
Smilax—Sarsaparilla.
Snakeroot, Black—Cimicifuga.
Virginian—Serpentaria.

Sodium Borate—Borax.
Solidago—Golden rod.
Spanish Fly—Cantharides.
Spearmint—Mentha Viridis.
Spigelia—Pink-root.
Squill—Scilla.
Starch—Amylum.
Star Grass—True unicorn root.
Stavesacure—Dolphinium.
Stramonium—Jamestown weed.
Sumbul—Muskroot.
Sweet Flag—Calamus.

Taraxacum—Dandelion.
Tartar Emetic—Potassium and antimony tartrate.
Tea—Tea.

Thea—Tea.
Thuja—Arbor Vite.
Triticum—Dog or couch grass.

Ulmus—Elm.
Unicorn Root, False—Helonias.
True—Star grass.
Uva Ursi—Bearberry.

Veratrum Viride—American or green hellebore.
Viburnum Opulus—Cramp bark.
Prunifolium—Black haw.

Wahoo—Euonymus.
Wild Cherry—Prunus Virginiana.
Willow—Salix.
Wintergreen—Gaultheria.
Witch Hazel—Hamamelis.
Wormseed, American—Chenopodium.

Levant—Santonica.
Wormwood—Absinth.

Xanthoxylon—Prickly ash.

Yellow Jessamine—Gelsemium.
Yerba Santa—Eriodictyon.

Zea Mays—Corn-silk.
Zingiber—Ginger.
**WEIGHTS AND MEASURES**

**TABLES OF EQUIVALENTS**

<table>
<thead>
<tr>
<th>Fraction</th>
<th>Equivalent</th>
<th>Fraction</th>
<th>Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/10</td>
<td>0.0006 gram</td>
<td>1/10</td>
<td>0.0015 gram</td>
</tr>
<tr>
<td>1/8</td>
<td>0.00108</td>
<td>1/8</td>
<td>0.002</td>
</tr>
<tr>
<td>1/4</td>
<td>0.003</td>
<td>1/4</td>
<td>0.005</td>
</tr>
<tr>
<td>1/2</td>
<td>0.006</td>
<td>1/2</td>
<td>0.0081</td>
</tr>
<tr>
<td>1</td>
<td>0.011</td>
<td>1</td>
<td>0.011</td>
</tr>
<tr>
<td>5 grains</td>
<td>0.324</td>
<td>8</td>
<td>0.52</td>
</tr>
<tr>
<td>1 dram</td>
<td>3.89 grams</td>
<td>1 dram</td>
<td>3.89 grams</td>
</tr>
</tbody>
</table>

- 0.05 cc. = 1 minim
- 0.25 " = 4.06 minims
- 0.5 " = 8.11 "
- 1 " = 16.23 "
- 3 " = 48.6 "
- 5 " = 135 drams
- 30 " = 1 ounce
- 100 " = 3.38 ounces
- 1000 " = 33.81 "

**APOTHECARIES’ MEASURE**

- 60 minims = 1 fluidram
- 8 fluidrams = 1 fluidounce
- 16 fluidounces = 1 pint
- 8 pints = 1 gallon
DOMESTIC MEASURES
(These are only Approximate)

1 teaspoonful = about 1 dram or 4 cubic centimeters (cc.).
1 dessertspoonful = " 2 drams or 8 " "
1 tablespoonful = " 1 ounce or 15 " "
1 wineglassful = " 2 ounces or 60 " "
1 teacupful = " 5 ounces or 150 " "

SOLUTION TABLE

These estimates are approximate, to avoid small fractional weights.

<table>
<thead>
<tr>
<th>Percentage strength</th>
<th>Parts</th>
<th>Amount of the substance to make 1 pint.</th>
<th>Amount of the substance to make 1 ounce.</th>
<th>Amount of the substance to make 4 ounces.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4 of 1</td>
<td>1 to 1000</td>
<td>71/4 gr.</td>
<td>1/2 gr.</td>
<td>2 gr.</td>
</tr>
<tr>
<td>1/3 of 1</td>
<td>1 to 500</td>
<td>15 &quot;</td>
<td>1 &quot;</td>
<td>4 &quot;</td>
</tr>
<tr>
<td>1/2 of 1</td>
<td>1 to 200</td>
<td>38 &quot;</td>
<td>23/4 &quot;</td>
<td>93/4 &quot;</td>
</tr>
<tr>
<td>1</td>
<td>1 to 100</td>
<td>76 3/4 &quot;</td>
<td>47/4 &quot;</td>
<td>19 &quot;</td>
</tr>
<tr>
<td>2</td>
<td>1 to 50</td>
<td>153 &quot;</td>
<td>93/4 &quot;</td>
<td>38 &quot;</td>
</tr>
<tr>
<td>5</td>
<td>1 to 20</td>
<td>384 &quot;</td>
<td>24 &quot;</td>
<td>96 &quot;</td>
</tr>
<tr>
<td>10</td>
<td>1 to 10</td>
<td>768 &quot;</td>
<td>48 &quot;</td>
<td>192 &quot;</td>
</tr>
<tr>
<td>20</td>
<td>1 to 5</td>
<td>1536 &quot;</td>
<td>96 &quot;</td>
<td>384 &quot;</td>
</tr>
<tr>
<td>25</td>
<td>1 to 4</td>
<td>1920 &quot;</td>
<td>120 &quot;</td>
<td>480 &quot;</td>
</tr>
<tr>
<td>33 1/3</td>
<td>1 to 3</td>
<td>2560 &quot;</td>
<td>160 &quot;</td>
<td>640 &quot;</td>
</tr>
<tr>
<td>50</td>
<td>1 to 2</td>
<td>3840 &quot;</td>
<td>240 &quot;</td>
<td>960 &quot;</td>
</tr>
</tbody>
</table>

THERMOMETRIC EQUIVALENTS AND CONVERSIONS

EQUIVALENTS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>32°</td>
<td>0.0°</td>
<td>80.0°</td>
<td>26.8°</td>
<td>104°</td>
<td>40.0°</td>
</tr>
<tr>
<td>50°</td>
<td>10.5°</td>
<td>90.0°</td>
<td>32.4°</td>
<td>110°</td>
<td>43.3°</td>
</tr>
<tr>
<td>60°</td>
<td>16.0°</td>
<td>98.6°</td>
<td>37.0°</td>
<td>150°</td>
<td>65.5°</td>
</tr>
<tr>
<td>70°</td>
<td>21.5°</td>
<td>100.0°</td>
<td>37.8°</td>
<td>212°</td>
<td>100.0°</td>
</tr>
</tbody>
</table>

CONVERSIONS

Fahrenheit to Centigrade.—From the Fahrenheit reading deduct 32, multiply this difference by 5, and divide the result by 9. Example: Convert 212° F. into C. 212 minus 32 equals 180; 180 times 5 equals 900; 900 divided by 9 equals 100° C.

Centigrade to Fahrenheit.—Multiply the Centigrade reading by 9, divide the result by 5, and add 32. Example: Convert 37° C. into F. 37 times 9 equals 333; 333 divided by 5 equals 66.6; 66.6 plus 32 equals 98.6° F.
## DRUG DOSAGE TABLE

<table>
<thead>
<tr>
<th>Drugs</th>
<th>C.c. or grains</th>
<th>Minims or grains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetanilid</td>
<td>.13—.65</td>
<td>2—10</td>
</tr>
<tr>
<td>Acid, arsenous</td>
<td>.0011—.0032</td>
<td>1⁄30—1⁄2</td>
</tr>
<tr>
<td>benzoic</td>
<td>.324—.972</td>
<td>5—15</td>
</tr>
<tr>
<td>boric</td>
<td>.324—.972</td>
<td>5—15</td>
</tr>
<tr>
<td>gallic</td>
<td>.065—.972</td>
<td>1—15</td>
</tr>
<tr>
<td>hydrochloric, dilute</td>
<td>.306—1.84</td>
<td>5—30</td>
</tr>
<tr>
<td>nitric, dilute</td>
<td>.306—1.23</td>
<td>5—20</td>
</tr>
<tr>
<td>nitrohydrochloric</td>
<td>.062—.308</td>
<td>1—5</td>
</tr>
<tr>
<td>phosphoric, dilute</td>
<td>.016—.370</td>
<td>10—60</td>
</tr>
<tr>
<td>salicylic</td>
<td>.324—1.95</td>
<td>5—30</td>
</tr>
<tr>
<td>tannic</td>
<td>.065—3.24</td>
<td>1—5</td>
</tr>
<tr>
<td>Aconitin</td>
<td>.00010—.00032</td>
<td>1⁄500—1⁄400</td>
</tr>
<tr>
<td>Adonidin</td>
<td>.0065—.013</td>
<td>1—3</td>
</tr>
<tr>
<td>Aloin</td>
<td>.010—.032</td>
<td>1—2</td>
</tr>
<tr>
<td>Alum</td>
<td>.324—1.95</td>
<td>5—30</td>
</tr>
<tr>
<td>Ammonium benzoate</td>
<td>.65—1.95</td>
<td>10—30</td>
</tr>
<tr>
<td>bromid</td>
<td>.972—1.95</td>
<td>15—30</td>
</tr>
<tr>
<td>carbonate</td>
<td>.324—1.95</td>
<td>5—30</td>
</tr>
<tr>
<td>chlorid</td>
<td>.324—.972</td>
<td>5—30</td>
</tr>
<tr>
<td>hyposulphite</td>
<td>.065—1.05</td>
<td>1—3</td>
</tr>
<tr>
<td>iodid</td>
<td>.324—1.95</td>
<td>5—30</td>
</tr>
<tr>
<td>salicylate</td>
<td>.13—.308</td>
<td>2—6</td>
</tr>
<tr>
<td>valerianate</td>
<td>.13—.518</td>
<td>2—8</td>
</tr>
<tr>
<td>Amyl nitrite</td>
<td>.062—.308</td>
<td>1—5</td>
</tr>
<tr>
<td>Antimony and potassium tartrate</td>
<td>.0022—.011</td>
<td>1⁄4</td>
</tr>
<tr>
<td>Antipyrin</td>
<td>.324—.972</td>
<td>5—15</td>
</tr>
<tr>
<td>Apiol</td>
<td>.062—.308</td>
<td>1—5</td>
</tr>
<tr>
<td>Apomorphin</td>
<td>.0011—.008</td>
<td>1⁄4</td>
</tr>
<tr>
<td>Aspirin</td>
<td>.324—.972</td>
<td>5—15</td>
</tr>
<tr>
<td>Atropin</td>
<td>.00054—.0011</td>
<td>1⁄500—1⁄400</td>
</tr>
<tr>
<td>Bismuth benzoate</td>
<td>.324—.972</td>
<td>5—15</td>
</tr>
<tr>
<td>salicylate</td>
<td>.13—.388</td>
<td>2—6</td>
</tr>
<tr>
<td>subcarbonate</td>
<td>.324—1.95</td>
<td>5—30</td>
</tr>
<tr>
<td>subgallate</td>
<td>.26—.52</td>
<td>4—8</td>
</tr>
<tr>
<td>subnitrato</td>
<td>.324—2.6</td>
<td>5—40</td>
</tr>
<tr>
<td>tannate</td>
<td>.65—1.95</td>
<td>10—30</td>
</tr>
<tr>
<td>Butyl-chloral hydrate</td>
<td>.13—.972</td>
<td>2—15</td>
</tr>
<tr>
<td>Caffein</td>
<td>.032—.324</td>
<td>1—5</td>
</tr>
<tr>
<td>citrated</td>
<td>.13—.65</td>
<td>2—10</td>
</tr>
<tr>
<td>and sodium benzoate</td>
<td>.13—.65</td>
<td>2—10</td>
</tr>
<tr>
<td>Drugs</td>
<td>C.c. or grams</td>
<td>Minims or grains</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Calcium bromid</td>
<td>.324–1.3</td>
<td>5–20</td>
</tr>
<tr>
<td>chlorid</td>
<td>.324–1.3</td>
<td>5–20</td>
</tr>
<tr>
<td>glycerophosphate</td>
<td>.13–.324</td>
<td>2–5</td>
</tr>
<tr>
<td>hypophosphite</td>
<td>.324–1.3</td>
<td>5–20</td>
</tr>
<tr>
<td>sulphid</td>
<td>.0065–.032</td>
<td>10–10</td>
</tr>
<tr>
<td>Calomel</td>
<td>.0065–.05</td>
<td>1–5</td>
</tr>
<tr>
<td>Camphor</td>
<td>.13–.324</td>
<td>2–5</td>
</tr>
<tr>
<td>monobromated</td>
<td>.13–.324</td>
<td>2–5</td>
</tr>
<tr>
<td>Cannabis tannate</td>
<td>.065–.05</td>
<td>1–10</td>
</tr>
<tr>
<td>Cascarin</td>
<td>.016–.065</td>
<td>1–1</td>
</tr>
<tr>
<td>Castor oil</td>
<td>3.70–59.14</td>
<td>60–900</td>
</tr>
<tr>
<td>Cerium oxalate</td>
<td>.065–.324</td>
<td>1–5</td>
</tr>
<tr>
<td>Chloral hydrate</td>
<td>.324–1.3</td>
<td>5–20</td>
</tr>
<tr>
<td>Chloralamid</td>
<td>.024–2.46</td>
<td>15–40</td>
</tr>
<tr>
<td>Cocain</td>
<td>.016–.13</td>
<td>2–2</td>
</tr>
<tr>
<td>Codlein salts</td>
<td>.016–.13</td>
<td>60–240</td>
</tr>
<tr>
<td>Codliver oil</td>
<td>3.70–14.79</td>
<td>10–5</td>
</tr>
<tr>
<td>Colchicin</td>
<td>.00054–.0022</td>
<td>1–3</td>
</tr>
<tr>
<td>Cotarnine hydrochlorid</td>
<td>.032–.26</td>
<td>5–20</td>
</tr>
<tr>
<td>Creosote</td>
<td>.03–.324</td>
<td>1–5</td>
</tr>
<tr>
<td>carbonate (creosotal)</td>
<td>.308–1.23</td>
<td>5–20</td>
</tr>
<tr>
<td>Digitalin</td>
<td>.0075–.065</td>
<td>1–1</td>
</tr>
<tr>
<td>Dionin</td>
<td>.016–.065</td>
<td>5–20</td>
</tr>
<tr>
<td>Diuretin</td>
<td>.324–1.3</td>
<td>2–2</td>
</tr>
<tr>
<td>Dover's powder</td>
<td>.194–.072</td>
<td>6–15</td>
</tr>
<tr>
<td>Emetin</td>
<td>.0055–.0011</td>
<td>3–15</td>
</tr>
<tr>
<td>Ergotin</td>
<td>.016–.13</td>
<td>1–10</td>
</tr>
<tr>
<td>Eserin</td>
<td>.00054–.0026</td>
<td>1–10</td>
</tr>
<tr>
<td>Eucalyptol</td>
<td>.308–616</td>
<td>1–10</td>
</tr>
<tr>
<td>Exalgin</td>
<td>.065–.26</td>
<td>1–1</td>
</tr>
<tr>
<td>Extract, aconite</td>
<td>.008–.032</td>
<td>1–5</td>
</tr>
<tr>
<td>aloes</td>
<td>.065–.324</td>
<td>1–5</td>
</tr>
<tr>
<td>belladonna</td>
<td>.008–.032</td>
<td>1–5</td>
</tr>
<tr>
<td>cannabis indica</td>
<td>.008–.065</td>
<td>1–6</td>
</tr>
<tr>
<td>cascara sagrada</td>
<td>.065–3.98</td>
<td>1–2</td>
</tr>
<tr>
<td>colocynth</td>
<td>.032–1.13</td>
<td>5–15</td>
</tr>
<tr>
<td>ergot</td>
<td>.324–.072</td>
<td>3–3</td>
</tr>
<tr>
<td>hyoscycamus</td>
<td>.032–1.04</td>
<td>1–1</td>
</tr>
<tr>
<td>nux vomica</td>
<td>.008–.032</td>
<td>1–1</td>
</tr>
<tr>
<td>opium</td>
<td>.008–.065</td>
<td>1–1</td>
</tr>
<tr>
<td>physostigma</td>
<td>.0055–.032</td>
<td>1–1</td>
</tr>
<tr>
<td>rhubarb</td>
<td>.065–.324</td>
<td>1–5</td>
</tr>
<tr>
<td>Fluidextract, aconite</td>
<td>.015–.062</td>
<td>1–1</td>
</tr>
<tr>
<td>adonis vernalis</td>
<td>.062–1.24</td>
<td>1–2</td>
</tr>
<tr>
<td>Drugs</td>
<td>Cc. or gr.</td>
<td>Minims or grains</td>
</tr>
<tr>
<td>------------------------------</td>
<td>------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Fluidextract, apocynum</td>
<td>.124-.62</td>
<td>2-10</td>
</tr>
<tr>
<td>belladonna</td>
<td>.03-.124</td>
<td>1/2</td>
</tr>
<tr>
<td>cactus</td>
<td>.124-.308</td>
<td>2-5</td>
</tr>
<tr>
<td>coca</td>
<td>3.70-7.39</td>
<td>60-120</td>
</tr>
<tr>
<td>colchicum root</td>
<td>.124-.403</td>
<td>2-8</td>
</tr>
<tr>
<td>seed</td>
<td>.185-.616</td>
<td>3-10</td>
</tr>
<tr>
<td>convallaria</td>
<td>.308-1.23</td>
<td>5-20</td>
</tr>
<tr>
<td>corn silk</td>
<td>1.84-7.39</td>
<td>30-120</td>
</tr>
<tr>
<td>digitalis</td>
<td>.03-.185</td>
<td>1/2</td>
</tr>
<tr>
<td>ergot</td>
<td>1.84-7.39</td>
<td>30-120</td>
</tr>
<tr>
<td>grindelia</td>
<td>.024-.370</td>
<td>15-60</td>
</tr>
<tr>
<td>ipecac</td>
<td>.03-.616</td>
<td>1/10</td>
</tr>
<tr>
<td>scoparius</td>
<td>.616-.370</td>
<td>10-60</td>
</tr>
<tr>
<td>Gelsemine</td>
<td>.00034-.0011</td>
<td>1/40</td>
</tr>
<tr>
<td>Guaiacol</td>
<td>.03-.616</td>
<td>1/10</td>
</tr>
<tr>
<td>carbonate (duotal)</td>
<td>.065-.518</td>
<td>1-8</td>
</tr>
<tr>
<td>salicylate</td>
<td>.324-.195</td>
<td>5-30</td>
</tr>
<tr>
<td>valerianate</td>
<td>.185-.616</td>
<td>3-10</td>
</tr>
<tr>
<td>Heroin</td>
<td>.0028-.0055</td>
<td>1/12</td>
</tr>
<tr>
<td>Hexamethyleneamin</td>
<td>.344-.518</td>
<td>5-8</td>
</tr>
<tr>
<td>Hydrastin</td>
<td>.016-.065</td>
<td>1/1</td>
</tr>
<tr>
<td>Hyoscyamine</td>
<td>.00016-.00065</td>
<td>1/40-1/60</td>
</tr>
<tr>
<td>Hyoscyamin</td>
<td>.00054-.0011</td>
<td>1/60</td>
</tr>
<tr>
<td>Ichthyol</td>
<td>.185-.024</td>
<td>3-15</td>
</tr>
<tr>
<td>Infusion, buchu</td>
<td>3.70-14.79</td>
<td>60-240</td>
</tr>
<tr>
<td>cinchona</td>
<td>3.70-14.79</td>
<td>60-240</td>
</tr>
<tr>
<td>digitalis</td>
<td>3.70-14.79</td>
<td>60-240</td>
</tr>
<tr>
<td>quassia</td>
<td>3.70-29.57</td>
<td>60-480</td>
</tr>
<tr>
<td>senna, compound</td>
<td>3.70-29.57</td>
<td>60-480</td>
</tr>
<tr>
<td>Iron arsenate</td>
<td>.004-.008</td>
<td>1/4</td>
</tr>
<tr>
<td>bromid</td>
<td>.065-.324</td>
<td>1-5</td>
</tr>
<tr>
<td>carbonate, mass (Blaud's)</td>
<td>.065-.324</td>
<td>1-5</td>
</tr>
<tr>
<td>chlorid, tincture</td>
<td>.308-3.70</td>
<td>5-60</td>
</tr>
<tr>
<td>iodd, syrup</td>
<td>3.08-1.84</td>
<td>5-30</td>
</tr>
<tr>
<td>reduced</td>
<td>.065-.324</td>
<td>1-5</td>
</tr>
<tr>
<td>sulphate</td>
<td>.032-.13</td>
<td>1/2</td>
</tr>
<tr>
<td>valerianate</td>
<td>.065-.324</td>
<td>1-5</td>
</tr>
<tr>
<td>Lead acetate</td>
<td>.032-.13</td>
<td>1/2</td>
</tr>
<tr>
<td>iodid</td>
<td>.065-.26</td>
<td>1-4</td>
</tr>
<tr>
<td>Lime-water</td>
<td>3.70-59.14</td>
<td>60-960</td>
</tr>
<tr>
<td>Lithium benzoate</td>
<td>.324-1.3</td>
<td>5-20</td>
</tr>
<tr>
<td>salicylate</td>
<td>.05-1.05</td>
<td>10-30</td>
</tr>
<tr>
<td>Magnesium sulphate</td>
<td>3.80-31.12</td>
<td>60-480</td>
</tr>
<tr>
<td>Manganese dioxid</td>
<td>.065-.65</td>
<td>1-10</td>
</tr>
<tr>
<td>Drugs</td>
<td>C.c. or grams</td>
<td>Minims or grains</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Manganese hypophosphite</td>
<td>.194-.65</td>
<td>3-10</td>
</tr>
<tr>
<td>sulphate</td>
<td>.065-.65</td>
<td>1-10</td>
</tr>
<tr>
<td>Menthol</td>
<td>.065-.324</td>
<td>1-5</td>
</tr>
<tr>
<td>Mercury bichlorid</td>
<td>.0011-.0055</td>
<td>10-10</td>
</tr>
<tr>
<td>biniodid</td>
<td>.004-.068</td>
<td>1-1</td>
</tr>
<tr>
<td>protiodid</td>
<td>.016-.065</td>
<td>1-10</td>
</tr>
<tr>
<td>with chalk</td>
<td>.032-.65</td>
<td>5-10</td>
</tr>
<tr>
<td>Methyl salicylate</td>
<td>.308-.924</td>
<td>5-15</td>
</tr>
<tr>
<td>Methylene-blue</td>
<td>.065-.26</td>
<td>1-4</td>
</tr>
<tr>
<td>Mixture, Basham's</td>
<td>3.70-14.79</td>
<td>60-240</td>
</tr>
<tr>
<td>Brown</td>
<td>3.70-14.79</td>
<td>60-240</td>
</tr>
<tr>
<td>chalk</td>
<td>3.70-14.79</td>
<td>60-240</td>
</tr>
<tr>
<td>licorice, compound</td>
<td>3.70-14.79</td>
<td>60-240</td>
</tr>
<tr>
<td>rhubarb and soda</td>
<td>3.70-14.79</td>
<td>60-240</td>
</tr>
<tr>
<td>Morphin salts</td>
<td>.0055-.016</td>
<td>1-1</td>
</tr>
<tr>
<td>Nitroglycerin</td>
<td>.00065-.0026</td>
<td>1-1</td>
</tr>
<tr>
<td>Oil, castor</td>
<td>3.70-59.14</td>
<td>60-900</td>
</tr>
<tr>
<td>codliver</td>
<td>3.70-14.79</td>
<td>60-240</td>
</tr>
<tr>
<td>craton</td>
<td>.015-.062</td>
<td>1-1</td>
</tr>
<tr>
<td>erigeron</td>
<td>.308-.616</td>
<td>5-10</td>
</tr>
<tr>
<td>eucalyptus</td>
<td>.308-.616</td>
<td>5-10</td>
</tr>
<tr>
<td>gaultheria</td>
<td>.308-1.23</td>
<td>5-20</td>
</tr>
<tr>
<td>santal wood</td>
<td>.308-1.23</td>
<td>5-20</td>
</tr>
<tr>
<td>turpentine</td>
<td>.308-1.84</td>
<td>5-30</td>
</tr>
<tr>
<td>Oxygall, inspissated</td>
<td>.324-.972</td>
<td>5-15</td>
</tr>
<tr>
<td>Pancreatin</td>
<td>.324-.972</td>
<td>5-15</td>
</tr>
<tr>
<td>Paraldehyde</td>
<td>1.84-3.70</td>
<td>30-60</td>
</tr>
<tr>
<td>Pepsin</td>
<td>.324-.972</td>
<td>5-15</td>
</tr>
<tr>
<td>Phenacetin (acetphenetidin)</td>
<td>.065-.65</td>
<td>1-10</td>
</tr>
<tr>
<td>Physostigmin</td>
<td>.00054-.0016</td>
<td>10-20</td>
</tr>
<tr>
<td>Pilocarpin</td>
<td>.0055-.016</td>
<td>1-1</td>
</tr>
<tr>
<td>Podophyllin</td>
<td>.008-.032</td>
<td>1-1</td>
</tr>
<tr>
<td>Potassium acetate</td>
<td>.324-3.89</td>
<td>5-60</td>
</tr>
<tr>
<td>and sodium tartrate</td>
<td>3.80-31.12</td>
<td>60-480</td>
</tr>
<tr>
<td>bicarbonate</td>
<td>.65-3.89</td>
<td>10-60</td>
</tr>
<tr>
<td>bichromate</td>
<td>.004-.011</td>
<td>1-1</td>
</tr>
<tr>
<td>bitartrate</td>
<td>1.3-15.56</td>
<td>20-240</td>
</tr>
<tr>
<td>bromid</td>
<td>.324-.89</td>
<td>5-60</td>
</tr>
<tr>
<td>chlorate</td>
<td>.065-.26</td>
<td>1-4</td>
</tr>
<tr>
<td>citrate</td>
<td>.324-.95</td>
<td>5-30</td>
</tr>
<tr>
<td>iodid</td>
<td>.324-.89</td>
<td>5-60</td>
</tr>
<tr>
<td>nitrate</td>
<td>.194-.324</td>
<td>5-5</td>
</tr>
<tr>
<td>permanganate</td>
<td>.032-.194</td>
<td>5-3</td>
</tr>
<tr>
<td>Powder, catechu, compound</td>
<td>.324-1.3</td>
<td>5-30</td>
</tr>
<tr>
<td>Drugs</td>
<td>C.c. or grams</td>
<td>Minims or grains</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Powder, chalk, compound</td>
<td>0.32—1.05</td>
<td>5—30</td>
</tr>
<tr>
<td>gray</td>
<td>0.032—0.65</td>
<td>1/10</td>
</tr>
<tr>
<td>ipecac and opium (Dover's)</td>
<td>0.194—0.972</td>
<td>3—15</td>
</tr>
<tr>
<td>jalap, compound</td>
<td>0.972—3.89</td>
<td>15—60</td>
</tr>
<tr>
<td>opium</td>
<td>0.016—0.13</td>
<td>1/2</td>
</tr>
<tr>
<td>rhubarb, compound</td>
<td>0.972—3.89</td>
<td>15—60</td>
</tr>
<tr>
<td>Quinina salts</td>
<td>0.032—1.3</td>
<td>1/20</td>
</tr>
<tr>
<td>Resorcin</td>
<td>0.005—0.104</td>
<td>1/3</td>
</tr>
<tr>
<td>Rochelle salt</td>
<td>3.80—31.12</td>
<td>60—2480</td>
</tr>
<tr>
<td>Saccharin</td>
<td>0.13—3.98</td>
<td>2—6</td>
</tr>
<tr>
<td>Salicin</td>
<td>0.324—1.95</td>
<td>5—30</td>
</tr>
<tr>
<td>Salol</td>
<td>0.005—0.65</td>
<td>1—10</td>
</tr>
<tr>
<td>Salophen</td>
<td>0.324—0.972</td>
<td>3—15</td>
</tr>
<tr>
<td>Santonin</td>
<td>0.016—0.13</td>
<td>1/2</td>
</tr>
<tr>
<td>Silver nitrate</td>
<td>0.008—0.032</td>
<td>1/1</td>
</tr>
<tr>
<td>Sodium benzoate</td>
<td>0.324—3.89</td>
<td>5—60</td>
</tr>
<tr>
<td>bimborate (borax)</td>
<td>0.324—1.05</td>
<td>5—30</td>
</tr>
<tr>
<td>bicarbonate</td>
<td>0.05—7.78</td>
<td>10—120</td>
</tr>
<tr>
<td>bromid</td>
<td>0.05—3.89</td>
<td>10—60</td>
</tr>
<tr>
<td>cacodylate</td>
<td>0.032—0.13</td>
<td>1/2</td>
</tr>
<tr>
<td>citrate</td>
<td>0.324—1.3</td>
<td>5—20</td>
</tr>
<tr>
<td>hyposulphite</td>
<td>0.324—1.3</td>
<td>5—20</td>
</tr>
<tr>
<td>iodid</td>
<td>0.324—3.89</td>
<td>5—60</td>
</tr>
<tr>
<td>nitrite</td>
<td>0.032—0.13</td>
<td>1/2</td>
</tr>
<tr>
<td>phosphate</td>
<td>0.05—3.89</td>
<td>10—60</td>
</tr>
<tr>
<td>salicylate</td>
<td>0.324—1.05</td>
<td>5—30</td>
</tr>
<tr>
<td>sulphate</td>
<td>3.80—31.12</td>
<td>60—2480</td>
</tr>
<tr>
<td>sulphite</td>
<td>0.324—1.05</td>
<td>5—30</td>
</tr>
<tr>
<td>sulphocarbonate</td>
<td>0.13—3.89</td>
<td>2—5</td>
</tr>
<tr>
<td>valerianate</td>
<td>0.065—3.89</td>
<td>1—5</td>
</tr>
<tr>
<td>Solution, ammonium acetate</td>
<td>3.70—14.79</td>
<td>60—240</td>
</tr>
<tr>
<td>arsenic and mercury iodid</td>
<td>0.062—0.616</td>
<td>1—10</td>
</tr>
<tr>
<td>arsenous acid</td>
<td>0.062—0.616</td>
<td>1—10</td>
</tr>
<tr>
<td>Donovan's</td>
<td>0.062—0.616</td>
<td>1—10</td>
</tr>
<tr>
<td>Fowler's</td>
<td>0.062—0.616</td>
<td>1—10</td>
</tr>
<tr>
<td>iron and ammonium acetate</td>
<td>3.70—14.79</td>
<td>60—240</td>
</tr>
<tr>
<td>Pearson's</td>
<td>0.062—0.616</td>
<td>1—10</td>
</tr>
<tr>
<td>potassium arsenite</td>
<td>0.062—0.616</td>
<td>1—10</td>
</tr>
<tr>
<td>sodium arsenate</td>
<td>0.062—0.616</td>
<td>1—10</td>
</tr>
<tr>
<td>Spartein sulphate</td>
<td>0.008—0.032</td>
<td>1/3</td>
</tr>
<tr>
<td>Spirit, ammonia, aromatic</td>
<td>1.84—7.39</td>
<td>30—120</td>
</tr>
<tr>
<td>camphor</td>
<td>0.924—3.70</td>
<td>15—60</td>
</tr>
<tr>
<td>ether, compound</td>
<td>0.308—3.70</td>
<td>5—60</td>
</tr>
<tr>
<td>nitrous</td>
<td>0.924—3.70</td>
<td>15—60</td>
</tr>
</tbody>
</table>
## Drug Dosage Table

<table>
<thead>
<tr>
<th>Drugs</th>
<th>C.c. or grams</th>
<th>Minims or grains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spirit, gaultheria</td>
<td>1.84-7.39</td>
<td>30-120</td>
</tr>
<tr>
<td>glonoin</td>
<td>0.062-0.185</td>
<td>1-3</td>
</tr>
<tr>
<td>mindererus</td>
<td>3.70-14.79</td>
<td>60-240</td>
</tr>
<tr>
<td>Strontium bromid</td>
<td>3.34-1.95</td>
<td>5-20</td>
</tr>
<tr>
<td>iodid</td>
<td>3.34-0.95</td>
<td>5-10</td>
</tr>
<tr>
<td>lactate</td>
<td>3.34-1.3</td>
<td>5-20</td>
</tr>
<tr>
<td>salicylate</td>
<td>0.65-1.3</td>
<td>10-20</td>
</tr>
<tr>
<td>Strophanthin</td>
<td>0.00032-0.00065</td>
<td>1/8-1/4</td>
</tr>
<tr>
<td>Strychnin salts</td>
<td>0.00065-0.0022</td>
<td>1/8-1/4</td>
</tr>
<tr>
<td>Sulforal</td>
<td>0.65-1.05</td>
<td>10-30</td>
</tr>
<tr>
<td>Syrup, calcium lactophosphate</td>
<td>1.84-3.70</td>
<td>30-60</td>
</tr>
<tr>
<td>ipecac</td>
<td>0.616-3.70</td>
<td>10-60</td>
</tr>
<tr>
<td>squill, compound</td>
<td>3.34-1.84</td>
<td>5-30</td>
</tr>
<tr>
<td>Tartar emetic</td>
<td>0.022-0.032</td>
<td>1/5</td>
</tr>
<tr>
<td>Terpin hydrate</td>
<td>0.13-0.324</td>
<td>2-5</td>
</tr>
<tr>
<td>Thymol</td>
<td>0.065-0.65</td>
<td>1-10</td>
</tr>
<tr>
<td>Thyroid extract</td>
<td>0.016-0.65</td>
<td>1/1</td>
</tr>
<tr>
<td>Tincture, aconite</td>
<td>0.062-0.185</td>
<td>1-3</td>
</tr>
<tr>
<td>catechu, compound</td>
<td>1.84-7.39</td>
<td>30-120</td>
</tr>
<tr>
<td>cinchona</td>
<td>1.84-7.39</td>
<td>30-120</td>
</tr>
<tr>
<td>digitalis</td>
<td>0.308-1.84</td>
<td>5-30</td>
</tr>
<tr>
<td>gelsemium</td>
<td>0.616-1.84</td>
<td>10-30</td>
</tr>
<tr>
<td>hyoscyamus</td>
<td>1.84-7.39</td>
<td>30-120</td>
</tr>
<tr>
<td>iodin</td>
<td>0.062-3.08</td>
<td>1-5</td>
</tr>
<tr>
<td>iron chlorid</td>
<td>0.308-3.70</td>
<td>5-60</td>
</tr>
<tr>
<td>kino</td>
<td>7.39-11.09</td>
<td>30-180</td>
</tr>
<tr>
<td>nux vomica</td>
<td>0.308-0.924</td>
<td>5-15</td>
</tr>
<tr>
<td>opium</td>
<td>0.185-0.924</td>
<td>3-15</td>
</tr>
<tr>
<td>camphorated</td>
<td>1.84-7.39</td>
<td>30-120</td>
</tr>
<tr>
<td>squill</td>
<td>0.308-1.23</td>
<td>5-20</td>
</tr>
<tr>
<td>strophanthus</td>
<td>0.125-0.616</td>
<td>2-10</td>
</tr>
<tr>
<td>valerian</td>
<td>0.94-3.70</td>
<td>15-60</td>
</tr>
<tr>
<td>veratrum viride</td>
<td>0.308-0.924</td>
<td>5-15</td>
</tr>
<tr>
<td>Trional</td>
<td>0.65-1.95</td>
<td>10-30</td>
</tr>
<tr>
<td>Wine, antimony</td>
<td>0.308-3.70</td>
<td>5-60</td>
</tr>
<tr>
<td>colchicum root</td>
<td>0.308-1.23</td>
<td>5-20</td>
</tr>
<tr>
<td>seed</td>
<td>1.23-3.70</td>
<td>20-60</td>
</tr>
<tr>
<td>ergot</td>
<td>3.70-14.79</td>
<td>60-240</td>
</tr>
<tr>
<td>ipecac</td>
<td>0.016-0.65</td>
<td>1/1</td>
</tr>
<tr>
<td>Zinc bromid</td>
<td>0.065-0.194</td>
<td>1-3</td>
</tr>
<tr>
<td>iodid</td>
<td>0.065-0.194</td>
<td>1-3</td>
</tr>
<tr>
<td>sulphate</td>
<td>0.016-0.065</td>
<td>1/1</td>
</tr>
<tr>
<td>valerianate</td>
<td>0.032-0.13</td>
<td>1/4</td>
</tr>
</tbody>
</table>
FORMULARY

The "few" formulas here given are of such combinations as the nurse employs in her daily work. They are for local use only.

Yellow Lotion or Yellow Wash:

Uses.—Stimulating application for wounds, ulcers, and skin affections. Especially used for syphilitic sores and ulcers.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bichlorid of mercury</td>
<td>30 grains</td>
</tr>
<tr>
<td>Water</td>
<td>1½ ounces</td>
</tr>
<tr>
<td>Lime-water</td>
<td>1 pint</td>
</tr>
</tbody>
</table>

Dissolve the bichlorid of mercury in the water, and then add sufficient lime-water to make 1 pint. This should be well shaken before using, each time.

Black Lotion or Black Wash:

Uses.—As a stimulating application for wounds, ulcers, and skin diseases.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calomel</td>
<td>50 grains</td>
</tr>
<tr>
<td>Lime-water</td>
<td>1 pint</td>
</tr>
</tbody>
</table>

Mix and shake well before using.

White Lotion:

Uses.—In skin diseases, especially acne and scabies or itch.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulphurated potassa</td>
<td>¼ ounce</td>
</tr>
<tr>
<td>Zinc sulphate</td>
<td>¼ ounce</td>
</tr>
<tr>
<td>Water</td>
<td>1 pint</td>
</tr>
</tbody>
</table>

Mix and shake well.

Red Lotion, Red Wash:

Uses.—Stimulating and astringent lotion for weeping or wet wounds.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc sulphate</td>
<td>32 grains</td>
</tr>
<tr>
<td>Compound tincture of lavender</td>
<td>¼ ounce</td>
</tr>
<tr>
<td>Water</td>
<td>1 pint</td>
</tr>
</tbody>
</table>

Mix and shake well.
Evaporating Lotion:
Uses.—Principally for contusions, also for indolent ulcers.

- Ammonium chlorid: 1 ½ ounces.
- Water: 14 “
- Alcohol to make: 1 pint.
Mix in order given, and shake well.

Lotion of Aluminum Acetate:
Uses.—As an astringent lotion for ulcers and as an antiseptic wet dressing.

- Alum: 3 drams.
- Lead acetate: 5 “
- Water: 1 pint.

Dissolve each of the solid ingredients in 8 ounces of water, mix, allow to stand twenty-four hours, and filter.

Lead and Opium Lotion:
Uses.—As an astringent and anodyne application to bruises, sprains, and inflammations.

- Lead acetate: 2½ drams.
- Water: 1 pint.
- Laudanum (tincture opium): 5 drams.
Mix in order given and shake well.

Solution of Sodium Borate Compound (Dobell’s Solution):
Uses.—As a mild antiseptic for the mouth and nose.

- Sodium borate: 2 drams.
- Sodium bicarbonate: 2 “
- Water: 8 ounces.
- Glycerin: ½ ounce.
- Carbolic acid: 24 minims.
- Water to make: 1 pint.
Mix in order given.

Solution Alum Compound:
Uses.—As an astringent gargle.

- Alum: 3 drams.
- Boric acid: 3 “
- Potassium chlorate: 1½ “
- Water to make: 1 pint.
Saline Solution, Strong:

*Uses.*—To make normal saline solution.

- Table salt: 6 drams.
- Water: 1 pint.

Mix and sterilize.

Normal Saline Solution:

- Strong saline solution: 1/2 ounce.
- Water to make: 1 pint.

Boric Acid Solution (Saturated):

- Boric acid: 5 drams.
- Water: 1 pint.

Boric and Salicylic Acid Solution (Thiersch's Solution):

*Uses.*—Mild antiseptic for washing mucous membrane cavities, as nose, mouth, and bladder.

- Boric acid: 1 1/2 drams.
- Salicylic acid: 15 grains.
- Water: 1 pint.

Strong Potassium Permanganate Solution:

- Potassium permanganate: 1 ounce.
- Water: 1 pint.

Potassium Permanganate Solution (1:1000):

- Strong solution (see above): 2 drams.
- Water: 1 pint.

Bichlorid of Mercury Solution (Strong):

- Bichlorid of mercury: 2 ounces.
- Water: 1 pint.

Bichlorid of Mercury Solution (1:1000):

- Strong solution (see above): 1 dram.
- Water: 1 pint.

Solution Carbolic Acid (20 per cent. or 1:5):

- Carbolic acid: 6 1/2 drams.
- Water: 1 pint.

Borosalicylic Powder:

*Uses.*—Useful for dressing the umbilical stump of newborn infants.

- Acid salicylic: 10 grains.
- Acid boric: 50 "
- Starch powder: 1 ounce.
INDEX

ABDOMINAL massage, 248
Absinth, 167
Absolute alcohol, 46
Acacia, 167
Acetanilid, 40
Acetic acid, 42
glacial, 42
Acetozzone, 180
Acetphenetidin, 137
Acetum, 14, 42
Acetylsalicylic acid, 152
Acid, acetic, 42
dilute, 42
  glacial, 42
  acetylsalicylic, 152
arsenous, 60
benzoic, 65
boracic, 67, 198
boric, 67, 198
  solution of, 276
camphoric, 72
carbazotic, 141
carbolic, 74, 197
  solution of, 276
Cinnamic, 64
citric, 171
gallic, 95
hydrochloric, 104
dilute, 105
hydrocyanic, 106
dilute, 106
muriatic, 104
nitric, 129
nitrohydrochloric, 129
phenic, 74
phosphoric, dilute, 139
picric, 141
picronitric, 141
prussic, 106
salicylic, 151

Acid, sulphuric, 159
  aromatic, 160
dilute, 160
tannic, 95
Acids, administration of, 22
Aconite, 43
  in diseases of children, 228
  preparations, 44
Aconitin, 43, 44
Actions, drug, 14
Actol, 180
Administration, drug, 21
Adneprhin, 160
Adonidin, 167
Adonis vernalis, 167
Adrenalin, 160
Agar-agar, 45
  jelly, 45
Agaricin, 167
Agurin, 181
Airol, 181
Albargin, 181
Alcohol, 46
  absolute, 46
  common, 46
  deodorized, 46
dilute, 46
  ethyl, 46
  in diseases of children, 229
  phenyl, 74
  preparations, 46
Aldehyde, formic, 94
Ale, 47
Alimentation, rectal, 215
Alkalies, administration of, 21
Alkaloid, definition of, 11
  of ipecac, 112
Allspice, 167
Aloes, 49
  preparations, 49

277
<table>
<thead>
<tr>
<th>Index</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aloin</td>
<td>49</td>
</tr>
<tr>
<td>Alphozene</td>
<td>181</td>
</tr>
<tr>
<td>Alterative</td>
<td>14, 36</td>
</tr>
<tr>
<td>Alum</td>
<td>50</td>
</tr>
<tr>
<td>burnt,</td>
<td>50</td>
</tr>
<tr>
<td>compound, solution</td>
<td>275</td>
</tr>
<tr>
<td>Alumen exsiccatum</td>
<td>50</td>
</tr>
<tr>
<td>Aluminum acetate, lotion of</td>
<td>275</td>
</tr>
<tr>
<td>Amaroid, definition of</td>
<td>12</td>
</tr>
<tr>
<td>American hellebore</td>
<td>164</td>
</tr>
<tr>
<td>wormseed</td>
<td>170</td>
</tr>
<tr>
<td>Ammonia, aqua</td>
<td>51</td>
</tr>
<tr>
<td>aromatic spirits of, in diseases of children</td>
<td>229</td>
</tr>
<tr>
<td>Ammonia-water</td>
<td>51, 207</td>
</tr>
<tr>
<td>Ammoniac</td>
<td>167</td>
</tr>
<tr>
<td>Ammoniated mercury</td>
<td>124</td>
</tr>
<tr>
<td>Ammonium benzoate,</td>
<td>52, 65</td>
</tr>
<tr>
<td>bromid</td>
<td>52</td>
</tr>
<tr>
<td>carbonate</td>
<td>53</td>
</tr>
<tr>
<td>chlorid</td>
<td>54</td>
</tr>
<tr>
<td>in diseases of children</td>
<td>229</td>
</tr>
<tr>
<td>hypophosphite</td>
<td>139</td>
</tr>
<tr>
<td>iodid</td>
<td>54</td>
</tr>
<tr>
<td>sulpho-ichthyolate</td>
<td>109</td>
</tr>
<tr>
<td>valerianate</td>
<td>54, 163</td>
</tr>
<tr>
<td>Amyl nitrite</td>
<td>55</td>
</tr>
<tr>
<td>Amyloform</td>
<td>181</td>
</tr>
<tr>
<td>Analgesic</td>
<td>14, 33</td>
</tr>
<tr>
<td>Anaphrodisiac</td>
<td>17</td>
</tr>
<tr>
<td>Anesthetic</td>
<td>15, 32</td>
</tr>
<tr>
<td>Anesthol</td>
<td>181</td>
</tr>
<tr>
<td>Animal charcoal</td>
<td>76</td>
</tr>
<tr>
<td>Anise</td>
<td>167</td>
</tr>
<tr>
<td>Anodyne, general</td>
<td>14, 33</td>
</tr>
<tr>
<td>local</td>
<td>15</td>
</tr>
<tr>
<td>Antacid</td>
<td>15</td>
</tr>
<tr>
<td>Anthelmintic</td>
<td>15, 32</td>
</tr>
<tr>
<td>Antidysenteric serum</td>
<td>219</td>
</tr>
<tr>
<td>Anti-emetic</td>
<td>16, 30</td>
</tr>
<tr>
<td>Antifebrin</td>
<td>40</td>
</tr>
<tr>
<td>Antigalactogogue</td>
<td>16, 38</td>
</tr>
<tr>
<td>Antihidrotic</td>
<td>16, 37</td>
</tr>
<tr>
<td>Antimeningococcic serum</td>
<td>220</td>
</tr>
<tr>
<td>Antimony and potassium tartrate</td>
<td>55</td>
</tr>
<tr>
<td>in diseases of children</td>
<td>229</td>
</tr>
<tr>
<td>tartrated</td>
<td>55</td>
</tr>
<tr>
<td>Antiperiodic</td>
<td>16</td>
</tr>
<tr>
<td>Antiplague serum</td>
<td>220</td>
</tr>
<tr>
<td>Antipneumococcus serum</td>
<td>219</td>
</tr>
<tr>
<td>Antipyretic</td>
<td>16, 37</td>
</tr>
<tr>
<td>Antipyrin</td>
<td>57</td>
</tr>
<tr>
<td>in diseases of children</td>
<td>230</td>
</tr>
<tr>
<td>salicylate</td>
<td>185</td>
</tr>
<tr>
<td>Antirabic therapy</td>
<td>223</td>
</tr>
<tr>
<td>Antiseptic</td>
<td>16</td>
</tr>
<tr>
<td>Antiseptics</td>
<td>39, 196</td>
</tr>
<tr>
<td>intestinal</td>
<td>31</td>
</tr>
<tr>
<td>urinary</td>
<td>35</td>
</tr>
<tr>
<td>Antisialagogue</td>
<td>16, 37</td>
</tr>
<tr>
<td>Antispasmodic</td>
<td>17, 33</td>
</tr>
<tr>
<td>Antistreptococcus serum</td>
<td>218</td>
</tr>
<tr>
<td>Antitoxin, cholera</td>
<td>219</td>
</tr>
<tr>
<td>diphtheria</td>
<td>217</td>
</tr>
<tr>
<td>tetanus</td>
<td>219</td>
</tr>
<tr>
<td>Antitoxins</td>
<td>217</td>
</tr>
<tr>
<td>Aperient</td>
<td>17</td>
</tr>
<tr>
<td>Aphrodisiac</td>
<td>17</td>
</tr>
<tr>
<td>Apiole</td>
<td>168</td>
</tr>
<tr>
<td>Apium graveolens</td>
<td>170</td>
</tr>
<tr>
<td>Apocynum</td>
<td>168</td>
</tr>
<tr>
<td>Apomorphine</td>
<td>58</td>
</tr>
<tr>
<td>Aqua</td>
<td>14</td>
</tr>
<tr>
<td>hydrogenii peroxydii</td>
<td>107</td>
</tr>
<tr>
<td>regia</td>
<td>120</td>
</tr>
<tr>
<td>Arabic, gum</td>
<td>167</td>
</tr>
<tr>
<td>Arbutin</td>
<td>179</td>
</tr>
<tr>
<td>Argenol</td>
<td>181</td>
</tr>
<tr>
<td>Argentamin</td>
<td>181</td>
</tr>
<tr>
<td>Argentum nitrate</td>
<td>155</td>
</tr>
<tr>
<td>Argonon</td>
<td>198</td>
</tr>
<tr>
<td>Argyria</td>
<td>155</td>
</tr>
<tr>
<td>Argyrol</td>
<td>181, 198</td>
</tr>
<tr>
<td>Aristochin</td>
<td>182</td>
</tr>
<tr>
<td>Aristol</td>
<td>182, 199</td>
</tr>
<tr>
<td>Arnica</td>
<td>168</td>
</tr>
<tr>
<td>Aromatic spirit of ammonia</td>
<td>51</td>
</tr>
<tr>
<td>in diseases of children</td>
<td>229</td>
</tr>
<tr>
<td>Arsenic, administration of</td>
<td>22</td>
</tr>
<tr>
<td>antidote</td>
<td>61, 113</td>
</tr>
<tr>
<td>compounds</td>
<td>59</td>
</tr>
<tr>
<td>in diseases of children</td>
<td>230</td>
</tr>
<tr>
<td>iodid</td>
<td>61</td>
</tr>
<tr>
<td>trioxide</td>
<td>60</td>
</tr>
<tr>
<td>white</td>
<td>60</td>
</tr>
<tr>
<td>Arsenous acid</td>
<td>60</td>
</tr>
<tr>
<td>Artificial oil of wintergreen</td>
<td>97</td>
</tr>
<tr>
<td>Asaefida</td>
<td>168</td>
</tr>
<tr>
<td>enema</td>
<td>216</td>
</tr>
</tbody>
</table>
INDEX

Asafetida in diseases of children, 231
Aspidium, 168
in diseases of children, 231
Aspidosperma, 168
Aspirin, 152
Astringent, 17, 39
intestinal, 32
Atzyl, 182
Atropin, 62
as an antidote, 64
Autogenous vaccine, 222

Bacterial vaccines, 220
Bag, hot-water, 213
ice-, 190
Balsam of Peru, 168
Barium chlorid, 168
Basham's mixture, 114
in diseases of children, 234
Bath, bed-, 189, 214
cabinet-, 214
hot-air, 213
hot-water, 213
mercury, 128
mustard, 207
Russian, 214
sitz-, 213
sponge, 187
tub-, 188
Turkish, 214
Baths, 187
in rest cure, 244
Bearberry, 179
Bed-bath, 189, 214
Bedclothing, disinfection, 203
Beer, 47
Belladonna, 62
in diseases of children, 231
preparations, 63
Benzine, 255
Benzic acid, 64
Benzoic compounds, 64
Benzoine lard, 65
Benzosol, 101, 182
Berberin, 103
Bichlorid of mercury. See under Mercury.
Bismuth benzoate, 66

Bismuth betanaphtholate, 66
compounds, 65
in diseases of children, 231
nitrate, 66
salicylate, 65
subcarbonate, 66
subgallate, 66
subnitate, 66
Bitter sweet, 173
Bitters, administration of, 21
Black cohosh, 171
draught, 178
drop, 132
haw, 179
lotion, 274
snakeroot, 171
wash, 124, 274
Blau'd's pills, 115
Blistering, 207
Blood root, 177
Blue cohosh, 168
flag, 175
mass, 125
methylene-, 176
ointment, 125
vitriol, 205
Bone charcoal, 76
Boneset, 160
Boracic acid, 67, 198
Borax, 67, 199
powder, 256
Boric acid, 67, 198
and salicylic acid solution, 276
solution, 276
Boroglycerid, 67
Borosalicylic powder, 276
Brandy, 46
in diseases of children, 229
Bread poultice, 209
Bromids in diseases of children, 231
Bromism, 146
Bromoform, 182
Broom tops, 154
Brown mixture, 100
Brucin, 130
Buchu, 169
Buckthorn, 174
Burnt alum, 50
Butyl chloural hydrate, 172
INDEX

Cabinet-bath, 214
Cactus, 169
Caffein, 68
citrate, 68
Calabar bean, 140
Calamine, 165
Calamus, 169
Calcium bromid, 69
carbonate, 69
clorid, 70
compounds, 69
glycerinophosphate, 139
hypochlorite, 71
hypophosphite, 139
lactate, 70
oxid, 70
phosphate, 140
sulphid, 71
Calisaya, 81
Calomei, 124
in diseases of children, 231
Calumba, 169
Calx, 70
chlorata, 71
sulphurata, 71
Camphor, 71
monobromate, 72
Camphorated oil, 72
Camphoric acid, 72
Canada hemp, 168
Cannabins, 73
tannate, 73
Cannabis indica, 73
Cantharides, 160, 207
Capsicum, 74, 207
Carbazotic acid, 141
Carbo animalis, 76
ligni, 76
Carbolic acid, 74, 197
solution, 276
Carbon, 76
Cardamom, 169
Cardiac sedative, 17, 28
stimulant, 17, 28
Carminative, 17
Carron oil, 71
Caryophyllus, 171
Cascara sagrada, 76
in diseases of children, 232
Cascarin, 76

Cassia, 170
Castor oil, 77
in diseases of children, 232
Cataphoresis, 25
Cataplasm, 209
Catechu, 170
Cathartic, 18, 30
Caulophyllym, 168
Caustic, 39
lunar, 155
soda, 157
Cayenne pepper, 74
Celery, 170
Cephealin, 111
Cerate, 12, 257
camphor, 72
cantharides, 169
Gouard's, 118
lead subacetate, 118
Cereus grandiflorus, 169
night-blooming, 169
Cerium oxide, 170
Chalk, 69
Chalybeate, 18
Chamomile, German, 169
Champagne, 47
Charcoal, animal, 76
bone, 76
poultice, 210
vegetable, 76
Chaulmoogra oil, 170
Chenopodium, 78, 170
oil of, 170
Childhood, therapeutics in, 228
Chloral, croton, 172
hydrate, 78
butyl, 172
in diseases of children, 232
Chloralazid, 170
Chloralose, 171
Chloretone, 182
Chlorinated lime, 71
Chloroform, 79
Chologogue, 18, 31
Cholera antitoxin, 219
Chrysarobin, 171
Cimicifuga, 171
Cinchona, 81
Cinchonidin, 81
Cinchonin, 81
INDEX

Cinchonism, 83
Cinnamic acid, 64
Cinnamon, 170
Citric acid, 171
Citronella, oil of, 254, 255
Classification, drug, 26
Clove, 171
Coca, 83
Cocain, 83
Coccus, 171
Codein, 132, 133
in diseases of children, 232
Cod-liver oil, 84
in diseases of children, 232
Coffee, 68
Cohosh, black, 171
blue, 168
Cola, 175
Colchicin, 85
Colchicum, 85
Cold, local use of, 187
packs, 189
Coley's fluid, 171
Collargol, 182, 198
Collodion, styptic, 95
Colocynth, 171
Colocynthin, 171
Colombo, 160
Conin, 172
Conium, 171
Constipation, diet in, 239
Constituents, drug, 11
Convallamarin, 87
Convallaria, 87
Copaba, 172
Copper arsenite, 172
compounds, 172
sulphate, 172, 205
Copperas, 115
Corn-silk, 172
Cornutin, 92
Corrosive sublimate. See Mercury bichlorid.
Cotarnin hydrochlorate, 132, 185
Cotton-root bark, 174
Couch grass, 172
Counter-irritant, 18, 38
Counter-irritation, 205
Cramp-bark, 179
Cream of tartar, 145

Credé, unguentum, 182
Creolin, 172, 198
Creosotal, 88
Creosote, 87
carbonate, 88
in diseases of children, 232
inhalant, 88
valerianate, 183
Cresol, 88
Croton chloral, 172
oil, 89
Cubebs, 172
Cuca, 83
Culver's root, 176
Cupping, 211
dry, 211
wet, 211
Cusso, 173
Cutaneous tuberculin test, 226

DAKIN's fluid, 109
Deadly nightshade, 62
Decoction, 12, 257
Definitions, 11
Delphinium, 178
Deodorized alcohol, 46
Depilatory, 18
Dermaoil, 66
Diabetes mellitus, diet in, 238
Diachylon plaster, 118
Diaphoretic, 18, 37
Diarrhea, adult, diet in, 238
infantile, diet in, 237
Diet in constipation, 237
in diabetes mellitus, 238
in diarrhea, 238
in dyspepsia, 239
in fevers, 237
in indigestion, 239
in infantile diarrhea, 237
in kidney disease, 240
in nephritis, 240
in rest cure, 233
lists, 236
pasteurized milk in, 241
postpartum, 241
Digestant, 18, 30
Digitalein, 90
Digitalin, 90
Digitalis, 90
  in diseases of children, 233
Digitonin, 90
Digitoxin, 90
Dionin, 132
Diphtheria antitoxin, 217
Disinfectant, 18, 196
  formaldehyde, 250
  pine oil, 200, 201
Disinfection, 201
  of bedclothing, 203
  of excreta, 203
  of feces, 204
  of swimming pool, 204
  of urine, 204
  of water, 252
    boiling, 253
    distilling, 253
    filtering, 253
  hypochlorite method, 253
Diuretic, 18, 34
  stimulating, 34
  systemic, 34
  uses of, 35
Diuretin, 183
Dobell’s solution, 275
Dog button, 130
Dolomol, 183
Donovan’s solution, 59, 124
Dormiol, 183
Dosage rules, 25
  of drugs, 25
  table, drug, 268
Dover’s powder, 111, 132
  in diseases of children, 233
Draught, black, 178
Drug, actions, 14
  administration, 21
  classification, 26
  constituents, 11
  preparations, 12
Drugs acting on alimentary system, 29
  on circulatory system, 28
  on excretory apparatus, 37
    externally, 38
  on eye, 34
  on genital tract, 36
  on heat mechanism, 37
  on metabolism, 36
Drugs acting on nervous system, 32
  on respiratory system, 26
  on urinary tract, 34
  table of doses, 268
Duboisin, 173
Dulcamara, 173
Duotal, 101
Dyspepsia, diet in, 239

ECBOLIC, 19
Echinacea, 173
Eisenzucker, 114
Elaterin, 173
Elaterium, 173
Electricity, faradic, 240, 250
  galvanic, 240, 250
  high-frequency, 250, 251
  in disease, 249
  in rest cure, 244
  sinusoidal, 240, 251
  static, 249, 251
Electrotherapeutics, 240
Elixir, 12
Emetic, 19, 30
Emetin, 111, 112
  hydrochlorid, 112
Emmenagogue, 19, 36
Emplastrum, 13
Emulsion, 12, 257
  asafetida, 168, 215
  chloroform, 79
  cod-liver oil, 84
Endermic medication, 24
Enema, asafetida, 216
  glycerin, 216
  nutritive, 215
  oil, 216
  ox-gall, 135, 215
  purgative, 216
  quassia, 217
  simple, 216
  soapsuds, 215
  starch-and-laudanum, 216
  turpentine, 216
Enemata, 215
Enteroclysis, 192
Eosote, 183
Epinephrin, 160
INDEX

Epispastic, 19
Epsom salt, 121
Ergot, 92
Ergotin, 92
Erigeron oil, 173
Eriodictyon, 173
Erythroxylon, 83
Eserin, 140
Ether, 93
Ethyl alcohol, 46
  bromid, 173
  chlorid, 173
  oxid, 93
Eucaian, 174
Eucalyptol, 174
Eucalyptus, 174
Euonymus, 174
Eupatorium, 174
Euquinin, 183
Evaporating lotion, 275
Exalgin, 183
Excreta, disinfection, 203
Expectorant, 19, 27
Extract, 12, 257
  aconite, 44
  aloe, 49
  apocynum, 168
  arnica, 168
  aspidium, 168
  belladonna, 62
  cannabis indica, 73
  cascara, 74
  cimicifuga, 171
  cinchona, 81
  colchicum, 85
  colocythis, 171
  conium, 171
  cotton-root bark, 174
  digitalis, 90
  ergot, 92
  euonymus, 174
  frangula, 174
  gentian, 98
  Goulard's, 118
  hematoxylon, 175
  hyoscyamus, 108
  iris, 175
  jalap, 116
  leptandra, 176
  licorice, 100

Extract, nux vomica, 130
  opium, 132
  physostigma, 140
  podophyllum, 143
  rhubarb, 150
  suprarenal, 160
  thyroid, 161

Faradic current, 249, 250
Feces, disinfection, 204
Fel bovis, 135
  tauri, 135
Fennel, 174
Fern, male, 168
  in diseases of children, 231
Ferrum. See Iron.
  reductum, 113
  Fevers, diet in, 237
Felix mas, 168
Flag, blue, 175
  sweet, 169
Flaxseed poultice, 209
Fleabane, oil of, 173
Fluid, Coley's, 171
  Dakin's, 199
Fluidextract, 12, 257
  absinth, 167
  aconite, 44
  adonis vernalis, 167
  allspice, 167
  apocynum, 168
  arnica, 168
  aspidosperma, 168
  belladonna, 62
  boneset, 169
  buchu, 169
  cactus, 169
  calamus, 169
  calumba, 169
  cannabis indica, 73
  capsicum, 74
  cardamom, 170
  cascara, 76
  castor oil, 77
  caulophyllum, 168
  celery, 170
  chamomile, 169
  cimicifuga, 171
  cinchona, 81
Fluidextract, cinnamon, 170
   cloves, 171
coca, 83
colchicum root, 85
   seed, 85
conium, 171
convallaria, 87
corn-silk, 172
cotton-root bark, 174
cubebs, 172
cusso, 173
digitalis, 90
echinacea, 173
ergot, 92
eriodictyon, 173
eucalyptus, 174
fennel, 174
frangula, 174
gelsemium, 97
gentian, 98
    ginger, 98
grindelia, 174
hamamelis, 174
helonias, 175
humulus, 175
hydrastis, 103
hyoscyamus, 108
ipeca, 111
iris, 175
juniper, 175
kamala, 175
kava kava, 175
kola, 175
krameria, 175
lactuca, 176
leptandra, 176
licorice, 100
lobelia, 176
lupulin, 175
nux vomica, 130
passiflora, 177
phytolacca, 177
pilocarpus, 142
podophyllum, 143
quassia, 177
rhubarb, 150
sanguinaria, 177
santal wood, 177
saw palmetto, 178
scoparius, 154

Fluidextract, senega, 178
   senna, 178
   spigelia, 178
   squill, 158
   stramonium, 178
   sumbul, 176
   uva ursi, 179
   valerian, 163
   veratrum viride, 164
   viburnum, 179
   wild cherry, 177
   witch hazel, 174
Fluorescein, 183
Fluorol, 256
Fomentations, hot, 213
Formaldehyde, 94
   fumigation, 202
Formalin, 94, 197, 255
Formic aldehyde, 94
Formin, 183
Formol, 94
Formulary, 274
Fowler's solution, 60
Foxglove, 90
Frangula, 174
Frin's balsam, 65
Fumigation, 24
    bichlorid of mercury, 203
    formaldehyde, 202, 256
    sulphur, 202, 255

Galactagogue, 19, 38
Galla, 95
Gallic acid, 95
Galvanic current, 249, 250
Gambir, 170
Gamboge, 174
Gasoline, 255
Gastric lavage, 193
Gaultheria, 96
Gelatin, vegetable, 45
Gelsemion, 97
Gelsemium, 97
Gentian, 98
Geosote, 101, 183
Gin, 46
Ginger, 98
Glacial acetic acid, 42
Glauber salt, 157
<table>
<thead>
<tr>
<th>INDEX</th>
<th>285</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glonoin, 130</td>
<td></td>
</tr>
<tr>
<td>Glucosid, definition of, 12</td>
<td></td>
</tr>
<tr>
<td>Glusid, 177</td>
<td></td>
</tr>
<tr>
<td>Glycerin, 99</td>
<td></td>
</tr>
<tr>
<td>enema, 216</td>
<td></td>
</tr>
<tr>
<td>Glycerinophosphates, 139</td>
<td></td>
</tr>
<tr>
<td>Glycerite, 13, 258</td>
<td></td>
</tr>
<tr>
<td>boroglycerin, 67</td>
<td></td>
</tr>
<tr>
<td>carabolic acid, 74</td>
<td></td>
</tr>
<tr>
<td>hydastis, 103</td>
<td></td>
</tr>
<tr>
<td>tannic acid, 95</td>
<td></td>
</tr>
<tr>
<td>Glycerol trinitrate, 130</td>
<td></td>
</tr>
<tr>
<td>Glycyrhiza, 100</td>
<td></td>
</tr>
<tr>
<td>Glycyrrhizin, 100</td>
<td></td>
</tr>
<tr>
<td>Goa powder, 171</td>
<td></td>
</tr>
<tr>
<td>Golden seal, 103</td>
<td></td>
</tr>
<tr>
<td>Gossypii radix cortex, 174</td>
<td></td>
</tr>
<tr>
<td>Goulard’s cerate, 118</td>
<td></td>
</tr>
<tr>
<td>extract, 118</td>
<td></td>
</tr>
<tr>
<td>Granatum, 144</td>
<td></td>
</tr>
<tr>
<td>Gray powder, 69, 125</td>
<td></td>
</tr>
<tr>
<td>Green hellebore, 164</td>
<td></td>
</tr>
<tr>
<td>vitriol, 115</td>
<td></td>
</tr>
<tr>
<td>Gregory’s powder, 150</td>
<td></td>
</tr>
<tr>
<td>Griffith’s mixture, 113</td>
<td></td>
</tr>
<tr>
<td>Grindelia, 174</td>
<td></td>
</tr>
<tr>
<td>Guaia, 174</td>
<td></td>
</tr>
<tr>
<td>Gualacol, 88, 101</td>
<td></td>
</tr>
<tr>
<td>benzoate, 101</td>
<td></td>
</tr>
<tr>
<td>carbonate, 101</td>
<td></td>
</tr>
<tr>
<td>salicylate, 101</td>
<td></td>
</tr>
<tr>
<td>valerianate, 101, 183</td>
<td></td>
</tr>
<tr>
<td>Guaranin, 67</td>
<td></td>
</tr>
<tr>
<td>Gum arabic, 167</td>
<td></td>
</tr>
<tr>
<td>camphor, 71</td>
<td></td>
</tr>
<tr>
<td>Hamamelis, 174</td>
<td></td>
</tr>
<tr>
<td>Heart sedative, 28</td>
<td></td>
</tr>
<tr>
<td>stimulant, 28</td>
<td></td>
</tr>
<tr>
<td>Heat, application of, 212</td>
<td></td>
</tr>
<tr>
<td>Hedonal, 183</td>
<td></td>
</tr>
<tr>
<td>Hellebore, American, 164</td>
<td></td>
</tr>
<tr>
<td>green, 164</td>
<td></td>
</tr>
<tr>
<td>Helmitol, 183</td>
<td></td>
</tr>
<tr>
<td>Helonias, 175</td>
<td></td>
</tr>
<tr>
<td>Hematinic, 19</td>
<td></td>
</tr>
<tr>
<td>Hematoxylon, 175</td>
<td></td>
</tr>
<tr>
<td>Hemlock, 171</td>
<td></td>
</tr>
<tr>
<td>Hemostatic, 19</td>
<td></td>
</tr>
<tr>
<td>Hemostatin, 160</td>
<td></td>
</tr>
<tr>
<td>Hemp, Canadian, 168</td>
<td></td>
</tr>
<tr>
<td>Indian, 73</td>
<td></td>
</tr>
<tr>
<td>Henbane, 108</td>
<td></td>
</tr>
<tr>
<td>Heroin, 132</td>
<td></td>
</tr>
<tr>
<td>Hexamethylenamin, 186</td>
<td></td>
</tr>
<tr>
<td>in diseases of children, 233</td>
<td></td>
</tr>
<tr>
<td>High-frequency electricity, 250, 251</td>
<td></td>
</tr>
<tr>
<td>Hirudo, 102</td>
<td></td>
</tr>
<tr>
<td>Hive syrup, 158</td>
<td></td>
</tr>
<tr>
<td>Hoffmann’s anodyne, 93</td>
<td></td>
</tr>
<tr>
<td>Holocain, 183</td>
<td></td>
</tr>
<tr>
<td>Homatropin, 103</td>
<td></td>
</tr>
<tr>
<td>Hops, 175</td>
<td></td>
</tr>
<tr>
<td>Hot baths, 213</td>
<td></td>
</tr>
<tr>
<td>fomentations, 213</td>
<td></td>
</tr>
<tr>
<td>packs, 213</td>
<td></td>
</tr>
<tr>
<td>Hot-air baths, 213</td>
<td></td>
</tr>
<tr>
<td>Hot-water bag, 213</td>
<td></td>
</tr>
<tr>
<td>Humulus, 175</td>
<td></td>
</tr>
<tr>
<td>Hydargyrum. See Mercury.</td>
<td></td>
</tr>
<tr>
<td>Hydrastin, 104</td>
<td></td>
</tr>
<tr>
<td>Hydrastin, 104</td>
<td></td>
</tr>
<tr>
<td>Hydrastis, 103</td>
<td></td>
</tr>
<tr>
<td>Hydrated iron, 114</td>
<td></td>
</tr>
<tr>
<td>Hydrochloric acid, 104</td>
<td></td>
</tr>
<tr>
<td>dilute, 105</td>
<td></td>
</tr>
<tr>
<td>Hydrocyanic acid, 106</td>
<td></td>
</tr>
<tr>
<td>dilute, 106</td>
<td></td>
</tr>
<tr>
<td>Hydrogen dioxid, 107</td>
<td></td>
</tr>
<tr>
<td>peroxid, 107, 197</td>
<td></td>
</tr>
<tr>
<td>Hydrophobia, treatment of, 223</td>
<td></td>
</tr>
<tr>
<td>Hydrotherapy, 187</td>
<td></td>
</tr>
<tr>
<td>Hygienic laboratory pine oil disinfectant, 200, 201</td>
<td></td>
</tr>
<tr>
<td>Hyoscin, 108</td>
<td></td>
</tr>
<tr>
<td>Hyoscyamin, 108</td>
<td></td>
</tr>
<tr>
<td>Hyoscyamus, 108</td>
<td></td>
</tr>
<tr>
<td>in diseases of children, 234</td>
<td></td>
</tr>
<tr>
<td>Hypnotic, 20, 33</td>
<td></td>
</tr>
<tr>
<td>administration of, 22</td>
<td></td>
</tr>
<tr>
<td>Hypodermic medication, 23, 194</td>
<td></td>
</tr>
<tr>
<td>Hypodermolysis, 190</td>
<td></td>
</tr>
<tr>
<td>Hypophosphites, 139</td>
<td></td>
</tr>
<tr>
<td>Hyrgol, 183</td>
<td></td>
</tr>
<tr>
<td>Ice-Bag, 190</td>
<td></td>
</tr>
<tr>
<td>Ichthalin, 184</td>
<td></td>
</tr>
</tbody>
</table>
Ichthargan, 184
Ichthoform, 184
Ichthyol, 108, 199
Indian hemp, 73
Indigestion, diet in, 230
Infancy, therapeutics in, 228
Infantile paralysis serum, 220
Infusion, 13, 258
cinchona, 81
digitalis, 90
quassia, 177
senna, compound, 178
wild cherry, 177
Ingluvin, 175
Inhalation, 24
Insect bite, remedies for, 255
personal protection from, 254
repellents, 254
bedbug, 255
benzine, 255
borax powder, 256
cockroach, 255
fluorol, 256
formalin, 255
gasoline, 255
house fly, 255
mosquito, 254
naptha, 255
pyrethrum, 255
sodium fluorid, 256
sulphur fumigation, 255
Insecticides, 254
fumes, 254
Mimm's culicide, 254
oil of citronella, 254, 255
pyrethrum, 254
sulphur, 254
Intestinal antiseptics, 31
astringents, 32
Inunction, 24
Iodin, 100
Iodism, 110, 148
Iodoform, 110, 198
Iodol, 184
Ipecac, 111
alcohol of, 112
in diseases of children, 234
Iris, 175
Irisin, 175
Iron arsenate, 113
Iron bromid, 113
carbonate, 113
mass, 113
saccharated, 113
chlorid, 113
tincture, 113
citrate, 114
compounds, 113
glycerinophosphate, 139
hydrated, 114
hypophosphite, 114, 139
in diseases of children, 234
iodid, 114
syrup, 114
oxid, 114
phosphate, 114, 140
Quevenne's, 113
reduced, 113
sulphate, 115
valerianate, 115, 163
Itrol, 184
Jaborandi, 142
Jalap, 176
Jamaica dogwood, 175
Jasmine, yellow, 97
Jervin, 164
Juniper, 175
Kamala, 175
Kava kava, 175
Kidney disease, diet in, 240
Kino, 175
Kneading, 247
Kola, 175
Kousso, 173
Krameria, 175
Lactucarium, 176
Lanolin, 176
Lanum, 176
Lard, benzoinated, 65
Laudanum, 132
Laxative, 20, 31
Laxatives, administration of, 22
Lead acetate, 117
and opium lotion, 275
INDEX

Lead carbonate, 118
  compounds, 117
  iodid, 118
  oleate, 118
  oxid, 118
  plaster, 118
  sugar of, 117
  white, 118
Lead-and-alum lotion, 198
Leech, 102
Leptandra, 176
Lettuce, 176
Licorice, 100
Lily of the valley, 87
Lime, 70
  chlorinated, 71
  lactate, 70
  sulphurated, 71
Lime-water, 70
Liniment, 13, 258
  ammonis, 51
  belladonna, 63
  calcium, 71
  camphor, 72
  chloroform, 79
  lime, 71
  turpentine, 162
Liquid petroleum, 136
Liquor, 13
  calcis, 70
Liquorice, 100
Litharge, 118
Lithium benzoate, 65, 119
  bromid, 119
  carbonate, 120
  citrate, 120
  iodid, 120
  salicylate, 120, 151
Lobelia, 176
Lobelin, 176
Logwood, 175
Lotio flava, 124
  nigra, 124
Lotion, black, 274
  evaporating, 275
  lead and opium, 275
  of aluminum acetate, 275
  red, 274
  white, 274
  yellow, 274
Lugol’s solution, 109
Lunar caustic, 155
Lupulin, 175
Lycetol, 184
Lysol, 184, 198
Magnesia, 121
Magnesium carbonate, 120
  compounds, 120
  glycerinophosphate, 139
  oxid, 121
  sulphate, 121
  solution of, 122
Male fern, 168
  in diseases of children, 231
Mandrake, 143
Manganese dioxide, 122
  hypophosphite, 139
  oxid, black, 122
  peroxid, 122
  sulphate, 122
Mass, 258
  blue, 125
  copaiba, 172
  iron carbonate, 113
  mercury, 125
  Vallet’s, 113
Massage, 246
  abdominal, 248
  in rest cure, 244
  kneading, 247
  oscillation, 247
  percussion, 247
  rubbing, 247
  stroking, 246
Materia medica, 11
May apple, 143
Meadow saffron, 85
Mentha piperita, 123
Menthol, 123
Mercurial eczema, 196
Mercurialism, 128
Mercury, ammoniated, 124
  bath, 128
  bichlorid, 124, 196, 203
  solution, 276
  strong, 276
  biniodid, 124
  chlorid, 124
INDEX

Mercury in diseases of children, 234
  iodid, red, 124
  yellow, 125
mass, 125
oleate, 125
oxid, red, 125
yellow, 125
protoiodid, 125
sub sulphate, 125
  with chalk, 69, 125
Mesotan, 184
Methyl salicylate, 97, 151
Methylene-blue, 176
Milk, pasteurized, 241
Mimm's culicide, 254
Mindererus, spirit of, 53
Mistura, 13
Mixture, 13, 221
  Basham's, 114
  brown, 100
  chalk, 69
  Griffith's, 113
  iron carbonate, 113
  licorice, compound, 100
  rhubarb and soda, 150
Monkshood, 43
Monobromated camphor, 72
Monsel's solution, 114
Moro's percutaneous tuberculin
  test, 225
Morphin salts, 132
Motor depressants, 33
Mucilate, 13, 258
Muriate, ammonium, 54
Muriatic acid, 104
Musk, 176
  root, 176
Mustard, 176, 206
  bath, 207
Mustard-plaster, 206
Mydriatic, 20, 34
Myotic, 20, 34
Myrrh, 176

Naphtha, 255
Naphtol, alpha-, 176
  beta-, 176
Narcein, 132

Narcotic, 20
Narcotin, 132
Nargol, 198
Nephritis, diet in, 240
Nerve sedative, 20, 33
Night-blooming cereus, 169
Nightshade, deadly, 62
Niter, 148
  sweet spirits of, in diseases of
  children, 235
Nitric acid, 129
Nitroglycerin, 129
Nitrohydrochloric acid, 129
Normal saline solution, 191
Nosophen, 184
Nutgalls, 95
Nutritive enema, 215
Nux vomica, 130
  in diseases of children, 235
Oil, anise, 167
  camphorated, 72
carron, 71
  castor, 77
  in diseases of children, 232
  chaulmoogra, 170
  chenopodium, 170
cinnamon, 170
  citronella, 254, 255
clove, 171
cod-liver, 84
  in diseases of children, 232
copaiba, 172
croton, 89
cubeb, 172
erigeron, 173
eucalyptus, 174
fleabane, 173
gaultheria, 96
juniper, 175
paraffin, 136
peppermint, 123
phosphorus, 138
pine, 200, 201
  disinfectant, 200, 201
Russian, 136
  santal wood, 178
savin, 178
teaberry, 96
<table>
<thead>
<tr>
<th>INDEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil, turpentine, 161, 199, 207</td>
</tr>
<tr>
<td>wintergreen, 96</td>
</tr>
<tr>
<td>Ointment, 13, 258</td>
</tr>
<tr>
<td>belladonna, 63</td>
</tr>
<tr>
<td>blue, 24</td>
</tr>
<tr>
<td>carabolic acid, 74</td>
</tr>
<tr>
<td>collargol, 182</td>
</tr>
<tr>
<td>Credé, 182</td>
</tr>
<tr>
<td>iodin, 109</td>
</tr>
<tr>
<td>iodoform, 111</td>
</tr>
<tr>
<td>lead carbonate, 118</td>
</tr>
<tr>
<td>iodd, 118</td>
</tr>
<tr>
<td>mercury, 125</td>
</tr>
<tr>
<td>ammoniated, 124</td>
</tr>
<tr>
<td>oxid, red, 125</td>
</tr>
<tr>
<td>yellow, 125</td>
</tr>
<tr>
<td>nutgall, 95</td>
</tr>
<tr>
<td>red precipitate, 125</td>
</tr>
<tr>
<td>tannic acid, 95</td>
</tr>
<tr>
<td>white precipitate, 124</td>
</tr>
<tr>
<td>Oleate, 13, 259</td>
</tr>
<tr>
<td>lead, 118</td>
</tr>
<tr>
<td>mercury, 125</td>
</tr>
<tr>
<td>Oleoresin, aspidium, 168</td>
</tr>
<tr>
<td>capsicum, 74</td>
</tr>
<tr>
<td>cubeb, 172</td>
</tr>
<tr>
<td>ginger, 90</td>
</tr>
<tr>
<td>Oleum morrhuae, 84</td>
</tr>
<tr>
<td>ricini, 77</td>
</tr>
<tr>
<td>tiglii, 89</td>
</tr>
<tr>
<td>Ophthalmic tuberculin test, 225</td>
</tr>
<tr>
<td>Opium, 132</td>
</tr>
<tr>
<td>preparations, 132</td>
</tr>
<tr>
<td>Opsonins, 221</td>
</tr>
<tr>
<td>Orthoform, 184</td>
</tr>
<tr>
<td>Oscillation, 247</td>
</tr>
<tr>
<td>Ox-gall, 135</td>
</tr>
<tr>
<td>enema, 135, 216</td>
</tr>
<tr>
<td>Oxytocic, 20</td>
</tr>
<tr>
<td>Passiflora, 177</td>
</tr>
<tr>
<td>Passion flower, 177</td>
</tr>
<tr>
<td>Pasteurized milk, 241</td>
</tr>
<tr>
<td>Pasteur's treatment of rabies, 223</td>
</tr>
<tr>
<td>Pearson's solution, 62</td>
</tr>
<tr>
<td>Pelletierin tannate, 144</td>
</tr>
<tr>
<td>Pepo, 177</td>
</tr>
<tr>
<td>Pepper, Cayenne, 74</td>
</tr>
<tr>
<td>red, 74</td>
</tr>
<tr>
<td>Peppermint, 123</td>
</tr>
<tr>
<td>Pepsin, 136</td>
</tr>
<tr>
<td>lactated, 137</td>
</tr>
<tr>
<td>powder, compound, 137</td>
</tr>
<tr>
<td>saccharated, 137</td>
</tr>
<tr>
<td>Percussion massage, 247</td>
</tr>
<tr>
<td>Percutaneous tuberculin test, 225</td>
</tr>
<tr>
<td>Perhydrol, 184</td>
</tr>
<tr>
<td>Peroxid, hydrogen, 107, 197</td>
</tr>
<tr>
<td>Peru, balsam of, 168</td>
</tr>
<tr>
<td>Peruvian bark, 81</td>
</tr>
<tr>
<td>Petrolatum liquidum, 136</td>
</tr>
<tr>
<td>Phagocytes, 221</td>
</tr>
<tr>
<td>Pharmacopoeia, 11</td>
</tr>
<tr>
<td>Phenacetin, 137</td>
</tr>
<tr>
<td>Phenic acid, 74</td>
</tr>
<tr>
<td>Phenol, 74</td>
</tr>
<tr>
<td>Phenolphthalein, 184</td>
</tr>
<tr>
<td>Phenyl alcohol, 74</td>
</tr>
<tr>
<td>Phenylacetonilid, 140</td>
</tr>
<tr>
<td>Phosphates, 140</td>
</tr>
<tr>
<td>Phosphoric acid, 139</td>
</tr>
<tr>
<td>Phosphorus compounds, 138</td>
</tr>
<tr>
<td>Physostigma, 140</td>
</tr>
<tr>
<td>Physostigmin, 140</td>
</tr>
<tr>
<td>Phytoleca, 177</td>
</tr>
<tr>
<td>Picratol, 185</td>
</tr>
<tr>
<td>Picric acid, 141</td>
</tr>
<tr>
<td>Picronitric acid, 141</td>
</tr>
<tr>
<td>Picrotoxin, 171</td>
</tr>
<tr>
<td>Pilocarpin, 142</td>
</tr>
<tr>
<td>Pilocarpus, 142</td>
</tr>
<tr>
<td>Pimeta, 167</td>
</tr>
<tr>
<td>Fine oil disinfectant, 200</td>
</tr>
<tr>
<td>Pink root, 178</td>
</tr>
<tr>
<td>Piperazin, 184</td>
</tr>
<tr>
<td>Pirquet's cutaneous tuberculin test, 226</td>
</tr>
<tr>
<td>Piscidia, 175</td>
</tr>
<tr>
<td>Pituitary gland, 143</td>
</tr>
<tr>
<td>Pituitrin, 143</td>
</tr>
</tbody>
</table>
INDEX

Plaster, 13, 259
belladonna, 63
cantharides, 208
capsicum, 74
diachylon, 118
lead oxid, 118
mercury, 125
    with ammoniac, 125
mustard, 206
opium, 132
Spanish-fly, 208
spice, 207
Plumbism, 119
Plumbum. See Lead.
Podophyllin, 143
Podophyllum, 143
Poison nut, 130
    treatment of, 131
Poke berry, 177
    root, 177
Poliomyelitis serum, 220
Pomegranate, 144
Postpartum diet, 241
Potash alum, 50
Potassio-aluminum sulphate, 50
Potassium acetate, 144
    in diseases of children, 235
    and sodium tartrate, 148
arsenite, 144
    solution, 50
bicarbonate, 144
bichromate, 144
bitartrate, 145
bromid, 145
chlorate, 146
citrate, 147
    in diseases of children, 235
glycerinophosphate, 139
hypophosphate, 139
iodid, 147
nitrate, 148
permanganate, 122, 198
    solution, 276
    strong, 276
tartrate, acid, 145
    in diseases of children, 229
Poul'tices, 209
    bread, 209
charcoal, 210
flaxseed, 209
spice, 207

Poul'tices, 209
    Powder, 13
    anise, 167
    borax, 256
    borosaliclyc, 276
    chalk, compound, 69
    Dover's, 111, 132
    effervescent, compound, 149
    goa, 171
    gray, 69, 125
    Gregory's, 150
    ipecac and opium, 111, 132
    jalap, compound, 116
    licorice, compound, 100
    opium, 132
    pepsin, compound, 137
    purging, 116
    rhubarb, compound, 150
    Seidlitz, 149
Proferrin, 185
Protan, 185
Protargol, 185, 198
Protoiodid of mercury, 125
Prunus virginiana, 177
Prussic acid, 106
Ptyalgogae, 20
Pulvis, 13
Pumpkin seed, 177
Purgative, 20, 31
    cholagogue, 31
    drastic, 31
    enema, 216
Purging powder, 116
Pyrethrum, 254, 255

Quaker button, 130
Quassia, 177
    enema, 217
    in diseases of children, 235
Quevienne's iron, 113
Quinm hypophosphate, 139
    salts, 81
    in diseases of children, 236
    valerianate, 163

Rabies, treatment of, 223
Rectal alimentation, 215
    medication, 215
INDEX

Red lotion, 274
mercury iodid, 124
oxid, 125
precipitate, 125
scarlet, 185
wash, 274
wine, 46
Reduced iron, 113
Resin, copaiba, 172
jalap, 116
podophyllum, 143
scammony, 178
Resorcin, 149, 199
Respiratory stimulants, 27
Rest cure, 242
Rhamnus purshiana, 76
Rhatany, 175
Rheum, 149
Rhubarb, 149
Rochelle salt, 148
Root, blood, 177
Culver’s, 176
pink, 178
poke, 177
Rubbing, 247
Rubefacient, 20, 38
Rum, 46
Russian bath, 214
oil, 136
Rye, spurred, 92

Saccharated pepsin, 137
Saccharin, 177
Saffron, 177
meadow, 85
Sal ammoniac, 54
Saleratus, 156
Salicin, 151
Salicylates, 151
Salicylic acid, 151
Salicylam, 153
Saline cathartics, 31
administration of, 23
solution, normal, 276
strong, 276
Salipyrin, 185
Salol, 151
Salophen, 151
Salt, Epsom, 121

Salt, Glauber, 157
Rochelle, 148
volatile, 53
Salt peter, 148
Salvarsan, 153
Sandal wood, 177
Sanguinaria, 177
Santal wood, 177
Santonica, 178
Santonin, 178
in diseases of children, 236
Saturnism, 119
Savin, 178
Saw palmetto, 178
Scammony, 178
Scarlet red, 185
Scilla, 158
Scoparius, 154
Sedative, cardiac, 17, 28
nerve, 20, 33
Seidlitz powder, 149
Senega, 178
Senna, 178
in diseases of children, 236
Serums, 217
Sialagogue, 21, 37
Silver citrate, 184
gelatose, 181
lactate, 180
nitrate, 155, 198
Sinapis, 176
Sinusoidal electricity, 249, 251
Sitz bath, 213
Small-pox vaccine virus, 226
Snakeroot, black, 171
Soapsuds enema, 215
Soda, caustic, 157
Soda-chlorine solution, 199
Sodium arseniate, 182
arsenate, 62, 155
benzoate, 65, 156
biborate, 67
bicarbonate, 156
borate, 67, 156
compound, solution of, 275
bromid, 156
cacodylate, 62
citrate, 156
compounds, 155
dimethyldarsenlate, 62
Solution, Thiersch’s, 276
ammonia, 51
ammonium acetate, 53
arsenic and mercury iodid, 59, 124
arsenous acid, 60
boric acid, 276
and salicylic acid, 276
carbolic acid, 276
Dakin’s, 199
Dobell’s, 275
Donovan’s, 59, 124
fluorescein, 183
Fowler’s, 60
iodin, compound, 110
iron and ammonium acetate, 114
lead subacetate, 118
Lugol’s, 110
magnesium sulphate, 122
Monsel’s, 114
normal saline, 191
of sodium borate compound, 275
Pearson’s, 62
potassium arsenite, 60
permanganate, 276
strong, 276
saline, normal, 191, 276
strong, 276
salvarsan, 153
soda-chlorine, 190
sodium arsenate, 62
citrate, 156
stovain, 185
table, 267

Sodium fluorid, 256
glycerinophosphate, 139
hydrate, 157
hydroxid, 157
hypophosphite, 139
hyposulphite, 158
iodid, 157
nitrite, 157
phosphate, 140, 157
salicylate, 151, 157
sulphate, 157
sulphite, 157
thiosulphate, 158
valerianate, 163

Solution, 13, 221, 222
alum, compound, 275
ammonium acetate, 53
arsenic and mercury iodid, 59, 124
arsenous acid, 60
boric acid, 276
and salicylic acid, 276
carbolic acid, 276
Dakin’s, 199
Dobell’s, 275
Donovan’s, 59, 124
fluorescein, 183
Fowler’s, 60
iodin, compound, 110
iron and ammonium acetate, 114
lead subacetate, 118
Lugol’s, 110
magnesium sulphate, 122
Monsel’s, 114
normal saline, 191
of sodium borate compound, 275
Pearson’s, 62
potassium arsenite, 60
permanganate, 276
strong, 276
saline, normal, 191, 276
strong, 276
salvarsan, 153
soda-chlorine, 190
sodium arsenate, 62
citrate, 156
stovain, 185
table, 267

Solution, Thiersch’s, 276
trinitrin, 130
Somnifacient, 21
Soporific, 21
Spanish fly, 169, 207
Spartein, 154
Spice-plaster or poultice, 207
Spigelia, 178
Spirit, 14, 259
ammonia, 51
aromatic, 51
camphor, 71
chloroform, 79
er, 93
compound, 93
gaultheria, 96
glonoin, 130
juniper, 175
compound, 46
mindererus, 53
nitroglycerin, 130
of wine, 46
peppermint, 123
phosphorus, 138
wintergreen, 96
Spiritus frumenti, 46
juniperis comp., 46
vini gallici, 46
Sponge-bath, 187
Sputum, disinfection, 203
Squill, 158
Staphisagria, 178
Starch-and-laudanum enema, 216
Static electricity, 250, 251
Stavesacre, 178
Stearopten, 12
Stimulant, cardiac, 17, 28
respiratory, 27
urinary, 35
Stock vaccine, 223
Stomachic, 21, 29
Stovain, 185
Stramonium, 178
Stroking, 246
Strontium compounds, 159
lactate, 159
Strophanthin, 159
Strophanthus, 159
in diseases of children, 236
Strychnin, 130
INDEX

Strychnin salts, 130
Strychnin, 130
Stupe, turpentine, 210
and chloroform, 210
Stupes, 210
Styptic, 21
collodion, 95
Stypticin, 185
Subcutaneous tuberculin test, 225
Sublamin, 185
Succinic peroxid, 181
Sudorific, 21
Sugar of lead, 117
Sulfonal, 178
Sulphur, 178, 254
fumigation, 202, 255
Sulphuric acid, 159
aromatic, 160
Sumbul, 176
Suppository, 14
Suprarenal substance, 160
Suprarenalin, 160
Sweet flag, 169
spirits of niter in diseases of children, 235
Synonymns, 262
Syrup, 14, 260
eriodictyon, aromatic, 173
ginger, 99
hove, 158
ipeca, 111
iron iodid, 114
krameria, 175
lime, 71
rhubarb, 150
aromatic, 150
senega, 178
squill, 158
compound, 56, 158
tolu, 179
wild cherry, 177

Tannigen, 186
Tannin, 95
Tannicol, 186
Tannoform, 186
Tartar emetic, 55
Tartrated antimony, 55
Teaberry, oil of, 96
Teniacide, 21
Terpin hydrate, 179
Tests, tuberculin, 224, 225, 226.
See also Tuberculin tests.
Tetanus antitoxin, 219
Thein, 67
Theocin, 186
Therapeutics, 11
in childhood and infancy, 228
Thermometric equivalents and conversions, 267
Thiersch’s solution, 276
Thiocol, 186
Thiosinamin, 186
Thymol, 179
Thyroid gland, 161
Tincture, 260
aconite, 44
aloes, 49
and myrrh, 49
arnica, 168
asafetida, 168
benzoin, 65
compound, 65
calumba, 160
cannabis indica, 73
cantharides, 169
capsicum, 74
cardamom, compound, 170
catechu, compound, 170
cinchona, 81
colchicum, 85
cubeb, 172
digitalis, 90
gelsemium, 97
gentian, compound, 98
ginger, 98
guaiac, 174
ammoniated, 174
humulus, 175
hydrastis, 103
hyoscyamus, 108
iodin, 109

TABLE of drug dosage, 268
strengths, 257
of synonyms, 262
of weights and measures, 266
solution, 267
Tannalbin, 185
Tannic acid, 95
INDEX

Tincture, ipecac-and-opium, 111
iron chlorid, 13
kino, 175
krameria, 175
lobelia, 176
musk, 176
myrrh, 176
nutgall, 95
nux vomica, 130
opium, 132
camphorated, 132
deodorized, 132
physostigma, 140
quassia, 177
rhubarb, 150
aromatic, 150
sweet, 150
sanguinaria, 177
squill, 158
stramonium, 178
strophanthus, 159
valerian, 163
ammoniated, 163
veratum viride, 164
Tolu, 179
Toxicology, 11
Tricresol, 186
Trinitrin, 130
Trinithrophenol, 141
Trional, 179
Triticum, 172
Tub-bath, 188
Tuberculin in diagnosis of tuberculosis, 224
tests, 224, 225, 226
cutaneous, 226
Moro's percutaneous, 225
ophthalmic, 225
percutaneous, 225
subcutaneous, 225
von Pirquet's cutaneous, 226
Woll-Eisner ophthalmic,
225
Tuberculosis, tuberculin in diagnosis of, 224
Turkish bath, 214
Turpentine enema, 216
oil of, 101, 199, 207
stupes, 210
Turpeth mineral, 125

UNGUENTUM, 13
Credé, 182
Unicorn root, false, 175
Urinary antiseptics, 35
stimulants, 35
Urine disinfection, 204
Urotropin, 186
Uva ursi, 179

Vaccine virus, small-pox, 226
Vaccines, autogenous, 222
bacterial, 220
dose of, 223
stock, 223
therapy, 220
Valerian, 163
Valerianates, 163
Vallet's mass, 113
Vasoconstrictor, 21, 29
Vasodilator, 21, 29
Vegetable gelatin, 45
Veratrum viride, 164
Veronal, 186
Vesicant, 21, 38
Viburnum opulus, 179
prunifolium, 179
Vinegar, 14, 42, 260
opium, 132
squill, 158
Vinum, 14
album, 46
rubrum, 46
Virus, vaccine, small-pox, 226
Vitriol, blue, 172, 205
elixir of, 160
green, 115
oil of, 159
white, 165
Volatile salt, 53
von Pirquet's cutaneous tuberculin test, 226
Vulneraries, 39

WAHHOO, 174
Wash, black, 124, 274
red, 274
yellow, 124, 274
Water, 14, 260
INDEX

Water, ammonia-, 51
    stronger, 51
    camphor-, 71
    chloroform-, 79
    creosote-, 88
    disinfection of, 252
    lime-, 70
    oxygenized, 107
    peppermint-, 123
Weights and measures, 266
Weir Mitchell rest cure, 242
Whisky, 46
    in diseases of children, 229
White lead, 118
    lotion, 274
    precipitate, 124
    vitriol, 165
Wild cherry, 177
Wine, 14, 261
    antimony, 56
    colchicum root, 85
    seed, 85
    ergot, 92
    ipecac, 111
    opium, 132
    red, 46
    spirit of, 46
    white, 47
Wines, 46, 47
Wintergreen, oil of, 96
    artificial, 97, 151
Witch hazel, 174
Wolff-Eisner ophthalmic tuberculin test, 225

Wolfsbane, 43
Wormseed, American, 170
Levant, 178
Wormwood, 167

Xeropon, 186

YELLOW jasmine, 97
    lotion, 274
    root, 103
    wash, 124, 274
Yerba santa, 173
Yersin's serum, 220
Yohimbin, 186

Zea mays, 172
Zinc bromid, 166
    butter, 165
    carbonate, 165
    chlorid, 165
    compounds, 165
    iodid, 166
    oxid, 165
    permanganate, 166
    phenolsulphonate, 166
    phosphid, 140, 166
    sulphate, 165
    sulphocarbonate, 166
    valerianate, 163, 166
Zingiber, 98
Books for Nurses

PUBLISHED BY

W. B. SAUNDERS COMPANY
West Washington Square Philadelphia
London: 9, Henrietta Street, Covent Garden

Sanders’ Nursing

New (2d) Edition

This new edition is undoubtedly the most complete and practical work on nursing ever published. Miss Sanders’ already superior work has been amplified and the methods simplified to bring it down to the newest ideas in nursing. There is none other so full of good, practical information detailed in a clean-cut, definite way.

Modern Methods in Nursing. By GEORGIANA J. SANDERS, formerly Superintendent of Nurses at Massachusetts General Hospital. 12mo of 900 pages, with 217 illustrations. Cloth, $2.50 net. Published August, 1916

Dunton’s Occupation Therapy

Emphasizing Basic Principles

Dr. Dunton gives those forms likely to be of most service to the nurse in private practice. You get chapters on puzzles, reading, physical exercises, card games, string, paper, wood, plastic and metal work, weaving, picture puzzles, basketry, chair caning, bookbinding, gardening, nature study, drawing, painting, pyrography, needlework, photography, and music.

Occupation Therapy for Nurses. By WILLIAM RUSH DUNTON, Jr., M. D., Assistant Physician at Sheppard and Enoch Pratt Hospitals, Towson, Md. 12mo of 240 pages, illustrated. Cloth, $1.50 net. October, 1915

This Catalogue Revised to August, 1917
Stoney’s Nursing

Of this work the American Journal of Nursing says: “It is the fullest and most complete and may well be recommended as being of great general usefulness. The best chapter is the one on observation of symptoms which is very thorough.” There are directions how to improvise everything.

Practical Points in Nursing. By EMILY M. A. STONEY. Revised by LUCY CORNELIA CATLIN, R. N., Youngstown Hospital, Ohio. 12mo, 511 pages, illustrated. Cloth, $1.75 net. Published August, 1916

Stoney’s Materia Medica

Stoney’s Materia Medica was written by a head nurse who knows just what the nurse needs. American Medicine says it contains “all the information in regards to drugs that a nurse should possess.”

Materia Medica for Nurses. By EMILY M. A. STONEY, formerly Superintendent of the Training School for Nurses in the Carney Hospital, South Boston, Mass. 300 pages. Cloth, $1.50 net. April, 1906

Stoney’s Surgical Technic

The first part deals with bacteriology, including antitoxins; the second with all the latest developments in surgical technic. The National Hospital Record says: “Pregnant with just the information nurses constantly need.”

Bacteriology and Surgical Technic for Nurses. By EMILY M. A. STONEY. 342 pages, illustrated. Cloth, $1.75 net. October, 1916

Goodnow’s First-Year Nursing

Miss Goodnow’s work deals entirely with the practical side of first-year nursing work. It is the application of text-book knowledge. It tells the nurse how to do those things she is called upon to do in her first year in the training school—the actual ward work.

First-Year Nursing. By MINNIE GOODNOW, R. N., formerly Superintendent of the Women’s Hospital, Denver. 12mo of 354 pages, illustrated. Cloth, $1.50 net. Published February, 1916
Aikens' Hospital Management

This is just the work for hospital superintendents, training-school principals, physicians, and all who are actively interested in hospital administration. The Medical Record says: "Tells in concise form exactly what a hospital should do and how it should be run, from the scrubwoman up to its financing."

Hospital Management. Arranged and edited by Charlotte A. Aikens, formerly Director of Sibley Memorial Hospital, Washington, D.C. 488 pages, illustrated. Cloth, $3.00 net. April, 1911

Aikens' Primary Studies

Trained Nurse and Hospital Review says: "It is safe to say that any pupil who has mastered even the major portion of this work would be one of the best prepared first year pupils who ever stood for examination."

Primary Studies for Nurses. By Charlotte A. Aikens, formerly Director of Sibley Memorial Hospital, Washington, D.C. 12mo of 472 pages, illustrated. Cloth, $1.75 net. Published June, 1915

Aikens' Training-School Methods and the Head Nurse

This work not only tells how to teach, but also what should be taught the nurse and how much. The Medical Record says: "This book is original, breezy and healthy."

Hospital Training-School Methods and the Head Nurse. By Charlotte A. Aikens, formerly Director of Sibley Memorial Hospital, Washington, D.C. 267 pages. Cloth, $1.50 net. October, 1907

Aikens' Clinical Studies

This work for second and third year students is written on the same lines as the author's successful work for primary students. Dietetic and Hygienic Gazette says there: "is a large amount of practical information in this book."

Clinical Studies for Nurses. By Charlotte A. Aikens, formerly Director of Sibley Memorial Hospital, Washington, D.C. 12mo of 569 pages, illustrated. Cloth, $2.00 net. Published August, 1916
Bolduan & Grund’s Bacteriology 2d Edition

The authors have laid particular emphasis on the immediate application of bacteriology to the art of nursing. It is an applied bacteriology in the truest sense. A study of all the ordinary modes of transmission of infection are included.


Fiske’s The Body

A NEW IDEA

Trained Nurse and Hospital Review says “it is concise, well-written and well illustrated, and should meet with favor in schools for nurses and with the graduate nurse.”


Beck’s Reference Handbook NEW (3d) EDITION

This book contains all the information that a nurse requires to carry out any directions given by the physician. The Montreal Medical Journal says it is “cleverly systematized and shows close observation of the sickroom and hospital regime.”


Roberts’ Bacteriology & Pathology NEW (2d) EDITION

This new work is practical in the strictest sense. Written specially for nurses, it confines itself to information that the nurse should know. All unessential matter is excluded. The style is concise and to the point, yet clear and plain. The text is illustrated throughout.

Bacteriology and Pathology for Nurses. By JAY G. ROBERTS, Ph. G., M. D., Oskaloosa, Iowa. 206 pages, illus. $1.50 net. August, 1916
DeLee's Obstetrics for Nurses

Dr. DeLee's book really considers two subjects—obstetrics for nurses and actual obstetric nursing. *Trained Nurse and Hospital Review* says the "book abounds with practical suggestions, and they are given with such clearness that they cannot fail to leave their impress."

*Obstetrics for Nurses.* By Joseph B. DeLee, M.D., Professor of Obstetrics at the Northwestern University Medical School, Chicago. 12mo volume of 506 pages, illustrated. Cloth, $2.50 net. July, 1913

Davis' Obstetric & Gynecologic Nursing

JUST OUT—NEW (5th) EDITION

*The Trained Nurse and Hospital Review* says: "This is one of the most practical and useful books ever presented to the nursing profession." The text is illustrated.

*Obstetrical and Gynecological Nursing.* By Edward P. Davis, M.D., Professor of Obstetrics in the Jefferson Medical College, Philadelphia. 480 pages, illustrated. Cloth, $2.00 net. Published May, 1917

Macfarlane's Gynecology for Nurses

NEW (2d) EDITION

Dr. A. M. Seabrook, Woman's Hospital of Philadelphia, says: "It is a most admirable little book, covering in a concise but attractive way the subject from the nurse's standpoint."

*A Reference Handbook of Gynecology for Nurses.* By Catharine Macfarlane, M.D., Gynecologist to the Woman's Hospital of Philadelphia. 12mo of 156 pages, with 90 illustrations. Flexible leather, $1.25 net. Published May, 1913

Asher's Chemistry and Toxicology

Dr. Asher's one aim was to emphasize throughout his book the *application* of chemical and toxicologic knowledge in the study and practice of nursing. He has admirably succeeded.

12mo of 100 pages. By Philip Asher, Ph. G., M. D., Dean and Professor of Chemistry, New Orleans College of Pharmacy. Cloth, $1.25 net. Published October, 1914
Aikens’ Home Nurse’s Handbook NEW (2d) EDITION

The point about this work is this: It tells you, and shows you just how to do those little things entirely omitted from other nursing books, or at best only incidentally treated. The chapters on “Home Treatments” and “Every-Day Care of the Baby,” stand out as particularly practical.

Home Nurse’s Handbook. By Charlotte A. Aikens, formerly Director of the Sibley Memorial Hospital, Washington, D. C. 12mo of 303 pages, illustrated. Cloth, $1.50 net. Published March, 1917

Eye, Ear, Nose, and Throat Nursing

This book is written from beginning to end for the nurse. You get antiseptics, sterilization, nurse’s duties, etc. You get anatomy and physiology, common remedies, how to invert the lids, administer drops, solutions, salves, anesthetics, the various diseases and their management. New (2d) Edition.

Nursing in Diseases of the Eye, Ear, Nose and Throat. By the Committee on Nurses of the Manhattan Eye, Ear and Throat Hospital. 12mo of 291 pages, illustrated. Cloth, $1.50 net. Published Sept. 1915

Paul’s Materia Medica NEW (2d) EDITION

In this work you get definitions—what an alkaloid is, an infusion, a mixture, an ointment, a solution, a tincture, etc. Then a classification of drugs according to their physiologic action, when to administer drugs, how to administer them, and how much to give.

A Text-Book of Materia Medica for Nurses. By George P. Paul, M.D. 12mo of 282 pages. Cloth, $1.50 net. Published September, 1911

Paul’s Fever Nursing NEW (3d) EDITION

In the first part you get chapters on fever in general, hygiene, diet, methods for reducing the fever, complications. In the second part each infection is taken up in detail. In the third part you get antitoxins and vaccines, bacteria, warnings of the full dose of drugs, poison antidotes, enemata, etc.

Nursing in the Acute Infectious Fevers. By George P. Paul, M. D. 12mo of 275 pages, illustrated. Cloth, $1.00 net. October, 1915
McCombs' Diseases of Children for Nurses

NEW (3d) EDITION

Dr. McCombs' experience in lecturing to nurses has enabled him to emphasize just those points that nurses most need to know. National Hospital Record says: "We have needed a good book on children's diseases and this volume admirably fills the want." The nurse's side has been written by head nurses, very valuable being the work of Miss Jennie Manly.

Diseases of Children for Nurses. By ROBERT S. MCCOMBS, M.D., Instructor of Nurses at the Children's Hospital of Philadelphia. 12mo of 399 pages, illustrated. Cloth, $2.50 net. Published June, 1916

Wilson's Obstetric Nursing

NEW (3d) EDITION

In Dr. Wilson's work the entire subject is covered from the beginning of pregnancy, its course, signs, labor, its actual accomplishment, the puerperium and care of the infant. American Journal of Obstetrics says: "Every page emphasizes the nurse's relation to the case."


American Pocket Dictionary

NEW (9th) EDITION

The Trained Nurse and Hospital Review says: "We have had many occasions to refer to this dictionary, and in every instance we have found the desired information."

American Pocket Medical Dictionary. Edited by W. A. NEWMAN DORLAND, A. M., M. D. Flexible leather, gold edges, $1.25 net; indexed, $1.50 net. April, 1915

Lewis' Anatomy and Physiology

THIRD EDITION

Nurses Journal of Pacific Coast says "it is not in any sense rudimentary, but comprehensive in its treatment of the subjects." The low price makes this book particularly attractive.

Anatomy and Physiology for Nurses. By LEROY L. WIS, M.D. 12mo of 326 pages; 150 Illustrations. Cloth, $1.75 net. Published September, 1913
Pope's Materia Medica

The important knowledge of the physiologic action of drugs is given here. You learn what symptoms to watch for, and the results of each drug upon the various organs and functions of the body. Vaccines are included.

12mo of 400 pages. By Amy E. Pope, formerly Instructor in the Presbyterian Hospital School.

Warnshius' Surgical Nursing

The author gives you here the essential principles of surgical nursing, and reliable fundamental knowledge based on his own personal conclusions and experiences. Secondary matter is excluded, and all primary and pertinent points are set down briefly and concisely.


Friedenwald and Ruhrah's Dietetics for Nurses

This work has been prepared to meet the needs of the nurse, both in training school and after graduation. American Journal of Nursing says it "is exactly the book for which nurses and others have long and vainly sought.''

Dietetics for Nurses. By Julius Friedenwald, M.D., Professor of Diseases of the Stomach, and John Ruhrah, M.D., Professor of Diseases of Children, College of Physicians and Surgeons, Baltimore. 12mo volume of 437 pages. Cloth, $1.50 net. Published September, 1913

Friedenwald & Ruhrah on Diet

This work is a fuller treatment of the subject of diet, presented along the same lines as the smaller work. Everything concerning diets, their preparation and use, colonic values, rectal feeding, etc., is here given in the light of the most recent researches.

Published July, 1913

Diet in Health and Disease. By Julius Friedenwald, M.D., and John Ruhrah, M.D. Octavo volume of 857 pages. Cloth, $4.00 net
Pyle’s Personal Hygiene

Dr. Pyle's work discusses the care of the teeth, skin, complexion and hair, bathing, clothing, mouth breathing, catching cold; singing, care of the eyes, school hygiene, body posture, ventilation, heating, water supply, house-cleaning, home gymnastics, first-aid measures, etc.


Galbraith’s Personal Hygiene and Physical Training for Women

Dr. Galbraith’s book tells you how to train the physical powers to their highest degree of efficiency by means of fresh air, tonic baths, proper food and clothing, gymnastic and outdoor exercise. There are chapters on the skin, hair, development of the form, carriage, dancing, walking, running, swimming, rowing, and other outdoor sports.


Galbraith’s Four Epochs of Woman’s Life

This book covers each epoch fully, in a clean, instructive way, taking up puberty, menstruation, marriage, sexual instinct, sterility, pregnancy, confinement, nursing, the menopause.


Griffith’s Care of the Baby

Here is a book that tells in simple, straightforward language exactly how to care for the baby in health and disease; how to keep it well and strong; and should it fall sick, how to carry out the physician’s instructions and nurse it back to health again.

The Care of the Baby. By J. P. Crozer Griffith, M.D., University of Pennsylvania. 12mo of 458 pages, illustrated. Cloth, $1.50 net
Aikens’ Ethics for Nurses

This book emphasizes the importance of ethical training. It is a most excellent text-book, particularly well adapted for classroom work. The illustrations and practical problems used in the book are drawn from life.

Studies in Ethics for Nurses. By Charlotte A. Aikens, formerly Superintendent of Columbia Hospital, Pittsburgh. 12mo of 318 pages. Cloth, $1.75 net.
Published April, 1916

Goodnow’s History of Nursing

Miss Goodnow’s work gives the main facts of nursing history from the beginning to the present time. It is suited for classroom work or postgraduate reading. Sufficient details and personalities have been added to give color and interest, and to present a picture of the times described.

History of Nursing. By Minnie Goodnow, R.N., formerly Superintendent of the Women’s Hospital, Denver. 12mo of 370 pages, illustrated. Cloth, $2.00 net.
Published December, 1916

Berry’s Orthopedics for Nurses

The object of Dr. Berry’s book is to supply the nurse with a work that discusses clearly and simply the diagnosis, prognosis and treatment of the more common and important orthopedic deformities. Many illustrations are included. The work is very practical.

Orthopedic Surgery for Nurses. By John McWilliams Berry, M.D., Clinical Professor of Orthopedics and Rontgenology, Albany Medical College. Cloth, $1.00 net.
Published July, 1916

Whiting’s Bandaging

This new work takes up each bandage in detail, telling you—and showing you by original illustrations—just how each bandage should be applied, each turn made. Dr. Whiting’s teaching experience has enabled him to devise means for overcoming common errors in applying bandages.

Bandaging. By A. D. Whiting, M.D., Instructor in Surgery at the University of Pennsylvania. 12mo of 151 pages, with 137 illustrations. Cloth, $1.25 net.
Published November, 1915
Smith’s Operating-Room
The object is to show you how to assist the surgeon according to the newest operative technic. You get the result of active experience systematized; and in concise form. You get a thorough digest of every essential; detailed lists of instruments; glossary of medical terms. Every phase of the subject is covered by ample, practical instruction.

The Operating-Room. A Primer for Nurses. By AMY ARMOUR SMITH, R.N., formerly Superintendent of Nurses at the Woman’s Hospital of the State of New York. 12mo of 295 pages, illustrated. Cloth, $1.50 net. Published October, 1916

Bandler’s The Expectant Mother
This is an anatomy, physiology and hygiene covering those points and functions concerned in child-bearing and designed for the use of the nurse and the mother. Every question of interest to the expectant mother is treated.

The Expectant Mother. By S. Wyllis Bandler, M.D., Professor of Diseases of Women, New York Post-Graduate Medical School and Hospital. Cloth, $1.25 net. Published October, 1916

Winslow’s Prevention of Disease
Here you get a practical guide, giving you briefly the means to avoid the various diseases described. The chapters on diet, exercise, tea, coffee, alcohol, prevention of cancer, etc., are of special interest. There are, besides, chapters on the prevention of malaria, colds, constipation, obesity, nervous disorders and tuberculosis. It is a record of twenty-five years’ active practice.

By KENELM WINSLOW, M.D., formerly Assistant Professor of Comparative Therapeutics, Harvard University. 12mo of 348 pages, illustrated. Cloth, $1.75 net. Published November, 1916

Brady’s Personal Health
This is different from other health books. It is written by a physician with some fifteen years’ experience in writing for the laity. It covers the entire range of health questions—care of mouth and teeth, catching cold, adenoids and tonsils, eye and ear, ventilation, skin, hair and nails, nutrition, nervous ailments, etc.

Personal Health. A Doctor Book for Discriminating People. By WILLIAM BRADY, M.D., Elmira, N.Y. 12mo of 400 pages. Cloth, $1.50 net. Published September, 1916
Hoxie & Laptad’s Medicine for Nurses

Medicine for Nurses and Housemothers. By George Howard Hoxie, M.D., University of Kansas; and Pearl L. Laptad. 12mo of 351 pages, illustrated. Cloth, $1.50 net. Second Edition—April, 1913

Böhm & Painter’s Massage

Massage. By Max Böhm, M.D., Berlin, Germany. Edited by Chas. F. Painter, M.D., Tufts College. Octavo of 91 pages, 97 illustrations. Cloth, $1.75 net. June, 1913

Boyd’s State Registration for Nurses


Morrow’s Immediate Care of Injured


deNancrede’s Anatomy

Eighth Edition


Morris’ Materia Medica

Seventh Edition

Essentials of Materia Medica, Therapeutics, and Prescription Writing. By Henry Morris, M.D. Revised by W. A. Bastedo, M.D., Columbia University, New York. 12mo of 300 pages, illustrated. Cloth, $1.25 net. Published March, 1905

Register’s Fever Nursing

To avoid fine, this book should be returned on or before the date last stamped below.

DEC 7 1917

SEP 5

OCT 5 '23

1881 8 18

APR 18