

FIRST AID TO THE INJURED

PART III.

POISONS AND THEIR ANTIDOTES.

How Poisons Enter the System.—Under the head of poisons, it is intended to include all those substances which exercise pernicious, as distinguished from medicinal, effects upon the human body, tending to disturb its action or organization injuriously, and if not remedied to possibly cause death. Such substances may be swallowed, or taken in by the breath, absorbed through the skin, or the thinner and more delicate mucous membranes, or implanted by bites, stings, or other punctured wounds.

Symptoms of Poison.—In many cases persons are aware almost immediately after the act that they have swallowed a poison; but in many others, also, no suspicion is entertained at first. In a general way, it may be stated that it is reasonable to surmise a person has swallowed some poisonous substance, if, shortly after taking food or drink, he is seized with violent pain in the stomach, with vomiting and purging, especially if convulsions or paralysis are present, or if the individual suffer from marked giddiness or delirium, or should there be a great tendency to sleep. The first thing to do is to send for the nearest reputable physician, and any neglect of this involves a heavy responsibility if the illness prove mortal, as it is certainly very possible that it will do.

Never Lose a Moment.—In the meantime not a moment should be lost. There are three rules which should always guide an effort to remedy the effect of poison, no matter what it may be: First, to get rid of the poison; second, to stop its effects; and, third, to remedy the evil it has done. In carrying out the principles thus inculcated, whatever is readiest is best; for the poorest remedy given at the moment, is better than the most appropriate, administered an hour later.

Effect of Some Poisons.—A considerable number of poisons are what might be called self-evacuating; that is, having been swallowed, they set up vomiting and purging, and are thereby eliminated. In such cases, all that is needful is to aid the self-evacuating process, especially to assist the vomiting, and so, perhaps, get rid of the poison altogether. If vomiting, however, has not occurred, or has not been profuse, the first thing is to bring it on immediately.

The Mustard Emetic.—The three handy emetics are, usually, mustard, common or kitchen salt, and lukewarm water. If we have a choice, mustard should be used in poisoning where the noxious substance has had a sedative influence, and it is less applicable to those cases where an irritant effect has been produced.

Mustard Dose.—The dose of mustard is a tablespoonful, stirred up in a pint of warm, not hot, water, and, after drinking it, the patient should swallow as much warm water as his stomach will hold, both to dilute the poison and to promote the action of the mustard. After a few minutes, if no signs of vomiting appear, the back of the throat ought to be tickled with a feather, or roll of paper, which will often hasten the emetic effect. When the stomach has emptied itself, it is well to repeat the process, so as to give it a good washing out.

Salt Water Dose.—Should there be no mustard at hand, salt water, mixed in the proportion of a small handful to a pint of lukewarm fluid, and followed by copious draughts of the warm fluid, as before suggested, and tickling the throat if needful, will generally answer the purpose. It is a good plan to send at once to the nearest drug store for some wine of ipecacuanha, to be administered in tablespoonful doses every ten minutes, should the ordinary home remedies fail in their customary energetic effect.

Need of an Antidote.—In some instances, this treatment is all that is required, but frequently the simple plan of getting rid of the poison will not suffice. Its effects must be neutralized or remedied, or, in other words, some antidote is needed. No one antidote is suited to all emergencies. The antidote is required to be adapted to the poison, and therefore an effort should be made, instantly after the emetic is given, to find out what kind of a noxious substance has been swallowed, and the proper remedy should be administered in accordance with the following suggestions.

Object of an Antidote.—The object of most antidotes is to render the active poison an inert substance, after which treatment may be instituted with a view to remedy the mischief which it has previously done. Antidotes, therefore, are generally chemical agents, which attack or combine with the poison in such a way as to render it insoluble, and so inert. But some are medicines, the virtues of which are apparently opposed to the active qualities of the poison, constituting what may be correctly called counter-poisons.

Milk and Eggs.—If we are totally ignorant of the kind of poison which has been swallowed, as may occasionally happen, the treatment

Alphabetical Table of Principal Poisons With Antidotes for Immediate Use.

A case of poisoning is the mightiest of emergencies—one of life or death. Every minute counts. One must know what to fly to on the instant. Here the poisons are arranged alphabetically so as to be found in a second, and followed by their quickest and most effective antidotes at hand in the home.

POISONS	ANTIDOTES
ABSINTHE.—Give an active emetic; then flaxseed tea freely; stimulate.	
ACETATE OF LEAD.—Same as SUGAR OF LEAD.	
ACETIC ACID.—Same as CITRIC ACID.	
ALCOHOL.—Treat by emetics, harts-horn and external warmth.	
ALKALI, VOLATILE.—Drink freely of water with vinegar or lemon juice in it.	
AMMONIA.—Lemon juice, diluted vinegar or acetic acid.	
ANTIMONIAL WINE.—Give warm water freely to encourage vomiting.	
ANTIMONY.—Same as TARTAR EMETIC.	
AQUA FORTIS.—Magnesia or soap dissolved in water, every two minutes.	
ARSENIC.—Give prompt emetic of mustard and salt—tablespoonful of each. Follow with sweet oil, butter or milk.	
BED BUG POISON.—Give milk or white of eggs in large quantities.	
BELLADONNA.—Active emetic; stimulate.	
BITTER ALMONDS.—Same as PEACH KERNELS.	
BLUE VITRIOL.—Same as SULPHURIC ACID.	
CANTHARIDES.—Evacuate stomach; give mild drinks.	
CARBOLIC ACID.—Give flour and water, or other glutinous drinks.	
CARBONATE OF SODA.—Prompt emetic; soap or mucilaginous drinks.	
CAUSTIC POTASH.—Drink freely of water with vinegar or lemon juice in it.	
CAUSTIC SODA.—Drink freely of water, with vinegar or lemon juice in it.	
CHEESE.—Same as MILK.	
CHLORAL HYDRATE.—Cold water on head and face; artificial respiration; galvanic battery.	

POISONS	ANTIDOTES
CHLORIDE OF LIME.—Give acids; evacuate bowels; stimulate.	
CHLOROFORM.—Emetic of table-spoonful of mustard in warm water. Follow with stimulating treatment.	
CITRIC ACID.—Chalk or magesia water; flaxseed tea; lime water.	
COAL GAS.—See GAS.	
COBALT.—Prompt emetic; soap or mucilaginous drinks.	
COPPERAS.—Prompt emetic; soap or mucilaginous drinks.	
CORROSIVE SUBLIMATE.—Milk or white of eggs, freely. Emetic.	
CREOSOTE.—Starch or flour mixed with water; or white of eggs and milk; or evacuate stomach with an emetic.	
DIGITALIS.—Evacuate; lie prone; stimulate.	
ERGOT.—Evacuate; give purgatives; stimulate.	
ETHER.—See CHLOROFORM.	
FISH.—Emetic, followed by saline purgatives and alkaline drinks; or promptly evacuate stomach and bowels, and then stimulate.	
FOWLER'S SOLUTION.—Prompt emetic of mustard and salt—table-spoonful of each. Follow with sweet oil, butter or milk.	
GAS.—Remove patient to air, use artificial respiration, apply heat to extremities; send for doctor.	
HAIR OF CATERPILLAR.—Apply cloths saturated with camphor. Don't rub.	
HONEY, POISONOUS.—Black coffee, smell of camphor, and rub with same.	
ICE CREAM.—Same as MILK.	
IODINE.—Starch, flour, or arrowroot, mixed with water.	
IVY, POISON.—Same as SUMACH.	
JIMSON WEED.—Prompt emetic of mustard and salt—tablespoonful of each to pint of warm water, then stimulate with coffee or brandy.	

NOTE.—In most cases of poisoning vomiting should be excited at once. The common emetics are mustard, a tablespoonful to a pint of warm water; salt, a small handful to a pint of warm water; warm water itself, in copious draughts. Salt and mustard mixed, a tablespoonful of each to a pint of warm water, make a quick and powerful emetic. Should an emetic prove tardy, tickling the throat with a feather will help to promote vomiting.

POISONS	ANTIDOTES
LAUDANUM.—Strong coffee, followed by ground mustard or grease in warm water to produce vomiting; keep in motion.	
LEAD WATER.—Milk or white of eggs in large quantities.	
LEAD, WHITE, RED, LITHARGE.—Prompt mustard or salt emetic, then castor oil; heat to bowels.	
LIME.—Vinegar or lemon juice, then starch water.	
LUNAR CAUSTIC.—A strong brine of salt; then milk and sweet or castor oil.	
LYE.—Give vinegar or oil.	
MAD-DOG BITE.—Tie band tightly around limb above wound; cut out and cauterize wound; apply antiseptic dressing; give purgative and warm drinks; send to Pasteur Institute.	
MATCHES.—See PHOSPHORUS.	
MEATS, PUTREFIED.—Emetic, followed with vinegar or lemon juice.	
MERCURY.—White of eggs freely; afterwards evacuate; mild drinks.	
MILK.—Cleanse stomach and bowels; apply heat; stimulate.	
MORPHINE.—Strong coffee, followed by ground mustard or grease in warm water to produce vomiting; keep in motion.	
MURIATIC ACID.—Magnesia or soap dissolved in water, every two minutes.	
MUSHROOMS.—Same as TOADSTOOLS.	
NICOTINE.—Same as TOBACCO.	
NIGHTSHADE.—Same as BELLADONNA.	
NITRATE OF SILVER.—Give common salt in water, freely.	
NITRE.—An emetic, then drinks of barley water, followed with castor oil.	
NITRIC ACID.—Same as AQUA FORTIS.	
NUX VOMICA.—Same as STRYCHNIA.	
OAK, POISON.—Same as SUMACH.	
OIL OF VITRIOL.—Same as SULPHURIC ACID.	
OPIUM.—Same as LAUDANUM.	
OXALIC ACID.—Magnesia or soap dissolved in water, every two minutes.	
PARIS GREEN.—Same as ARSENIC.	
PEACH KERNELS.—Spirits of harts-horn, strong coffee; cold applications.	
PHOSPHORUS.—Excite vomiting, then give milk and magnesia, followed by tea of flaxseed or slippery elm.	
PINK ROOT.—Coffee without milk, smell of camphor.	
POKE ROOT AND BERRY.—Evacuate stomach and bowels; stimulate.	
POTASH.—See CAUSTIC POTASH.	

POISONS	ANTIDOTES
POTASSA, BICARBONATE.—Magnesia or soap dissolved in water, every two minutes.	
PRUSSIC ACID.—Coffee in plenty and quickly; smell spirits of ammonia, camphor or vinegar, pour water on head and back. Death generally ensues so quickly that there is no time for emetics.	
RAT PASTE.—Quick emetic of salt and mustard, then flaxseed tea freely.	
RED PRECIPITATE.—Milk or white of eggs in large quantities.	
SALTPETRE.—Milk or white of eggs in large quantities.	
SNAKE BITES, POISON.—Tie band around limb above bite; suck out venom with mouth; cauterize wound; give strong stimulants.	
SODA.—See CAUSTIC SODA.	
SPANISH FLY.—Same as CANTHARIDES.	
STINGS.—Apply salt water, or sweet oil, or fresh mould. Always take out the sting of a bee.	
STRYCHNIA.—Emetic of mustard in warm water.	
SUGAR OF LEAD.—Milk or white of eggs in large quantities.	
SULPHATE OR CHLORIDE OF ZINC.—Solution of soda, milk, white of eggs.	
SULPHURIC ACID.—Prompt use of magnesia, soap, chalk or lime water. Afterwards mucilage water or milk.	
SUMACH.—Apply to parts a paste of equal parts of starch and glycerine.	
TANSY.—Evacuate stomach; stimulate; artificial respiration.	
TARTAR EMETIC.—Drink warm water freely to encourage vomiting.	
TARTARIC ACID.—Soap water, lime water, magnesia or chalk.	
TIN.—White of eggs and milk, or sugar water.	
TOADSTOOLS.—Evacuate stomach and bowels; give Epsom salts; stimulate.	
TOBACCO.—Encourage vomiting with salt and mustard water, then stimulate with spirits of ammonia or whiskey and water.	
TURPENTINE.—Fresh air, flaxseed or slippery elm tea.	
VERDIGRIS.—Same as COPPERAS.	
VERMILION.—Milk or white of eggs in large quantities.	
WHITE PRECIPITATE.—Prompt emetic of mustard and salt—tablespoonful of each. Follow with sweet oil, butter or milk.	
WHITE VITRIOL.—Same as SULPHATE OF ZINC.	

is first to provoke vomiting, as already advised, and after the stomach is completely emptied, to give a moderate quantity of some bland liquid, such as milk, eggs beaten up with milk, or sweet oil.

Wine and Brandy.—If the patient feels cold, and the skin is cool and clammy, a little wine or brandy well diluted may be administered; and if he seems drowsy, narcotic poisoning is to be suspected, so that strong coffee, and belladonna under the direction of a physician, should be employed.

Hot Water and Mustard.—If the prostration is very great, stimulants freely, heat to the skin by hot-water bags or bottles, and mustard plasters to the abdomen, are to be resorted to.

When the poison taken into the stomach is known, and prompt attempts have been made to eject it by vomiting, then administer its antidote.

Elimination by Vomiting.—Theoretically the administration of the chemical antidote is the only requisite, the vomiting, with its accompanying discomfort and depression, being uncalled for; but it is safer to eliminate the poison or what part of it can be removed by vomiting, and so take as few chances as possible upon the quality and efficacy of the drug used as an antidote. Chemical results obtained in the laboratory are not always confirmed when the same combinations are attempted within the human system.

Classification of Poisons.—To facilitate the study of the subject some system of management should be adopted. No classifications of poisons is entirely satisfactory, and the following is offered as probably as good as any other for public use:

1. Gases and volatile substances.
2. Metals.
3. Minerals and metallic salts.
4. Corrosive poisons, acids and alkalies.
5. Vegetable poisons, in form of drugs.
6. Vegetable poisons in natural state.
7. Bacterial and food poisons.
8. Animal secretions.

GASES AND VOLATILE SUBSTANCES.

Illuminating Gas.—In the process of manufacture of illuminating gas from coal but little, if any, injury is done the workmen, owing to the distillation of its more deadly constituents in retorts.

In its distribution its escape from imperfect pipe connections and collection in trenches, sewers and houses occasionally causes poisonings and explosions. Illuminating gas known as water-gas is much more deadly and much more dangerous on account of its presence being less easily detected by smell.

On animal organism both forms act as a narcotic and depressant of the nervous system; uniting with that portion of the blood normally taking up the oxygen and displacing the oxygen.

Symptoms.—These depend upon amount of poison absorbed. When poisoning occurs gradually there is discomfort, sense of fullness of blood-vessels, headache, dizziness, hot skin, weakness. There may be nausea, vomiting and convulsions. Coma occurs, which, in some cases of recovery, may last for days; it may precede death but a few hours, or it may continue for days before a fatal termination takes place.

Treatment.—Removal of the patient to the open air; the use of artificial respiration, and the application of heat to the extremities are about all that can be done before the arrival of a physician. Artificial respiration hastens the expulsion of the poison and its substitution by oxygen. This result may be effected more promptly by inhalation of commercial oxygen. Nitro-glycerine and amyl nitrite might be used with advantage.

Aniline.—This is made from coal tar, a biproduct in the manufacture of illuminating gas. It is an oily, colorless liquid, but its poisonous effects are chiefly caused by its volatility. The vapor produces headache, dizziness, marked depression, nausea, vomiting. Delirium and convulsions may occur.

Treatment should be same as for illuminating gas poisoning.

Bromine.—This in its commercial form is a red fluid, but the fumes arising from it when pouring, etc., is to be ascribed nearly all cases of bromine poisoning. Bromine vapor causes irritation of the respiratory organs, cough, spasm of the opening into the larynx and suffocation. It also causes increased flow of tears and saliva and bronchial asthma.

Treatment.—Inhalation of aqueous vapor.

Carbon Bisulphide.—This is a colorless volatile liquid that causes poisoning chiefly by the vapor arising from it. It is used very largely in the manufacture of rubber goods; has a very offensive odor. Acute cases of poisoning do not occur, except where the substance is used for suicidal purposes, when the symptoms are pallor, vomiting, depression, deep, heavy breathing, characteristic odor of breath, feces and urine.

Carbon Dioxide.—This is the poisonous gas sometimes met with in wells, cisterns, etc. It is the “after damp” of the coal mines. Its deleterious effects and treatment are similar to those of illuminating gas. It will not support flame.

Chlorine.—This is a gas of peculiar odor; is used chiefly as a bleaching agent. The public is familiar with it as a disinfectant in the form of chloride of lime, made by allowing pure slaked lime to take up all the chlorine gas it will absorb. It is a strong irritant to the respiratory tract. Continued exposure to it produces skin eruptions, inflamed eyes, asthma and bronchitis.

Chloroform.—This has been taken as a liquid by accident and intention. In this form its poisonous effects do not occur so soon as when the vapor alone is absorbed.

One teaspoonful has been known to have brought death to a boy of four years. Twelve times this amount killed an adult. Several adults have recovered after swallowing sixteen teaspoonfuls.

Treatment.—1. Empty the stomach by giving a tablespoonful of wine of ipecac, or a tablespoonful of mustard in warm water. Twenty grains of sulphate of zinc or thirty grains of powdered ipecac may be given in warm water for the same purpose. A hypodermic injection of one-tenth grain of hydrochlorate of apomorphine and use of the stomach tube are very effective measures to remove the poison from the stomach.

2. Stimulating treatment must be used extensively, as, for instance, brisk switching, or towel slapping or flicking; hot external applications; injection of hot strong coffee into the rectum, pint at a time; application of mustard plaster to calves and legs and over the heart; hypodermic injections of ether and hot brandy, atropine, strychnia and digitalis; use of the interrupted current by sweeping poles over the surface of the body; placing victim with his head lower than his body that the brain might be supplied with blood with the least possible effort of the heart.

Even though apparently there is no response to treatment efforts at resuscitation should be continued for a comparatively long time, as recoveries have occurred at the end of an hour of continuous effort.

Chloroform.—Chloroform taken into the lungs in form of vapor is supposed to act more promptly than when taken into the stomach as a liquid. In this form there is a wider range between the smallest quantity producing death and the largest amount taken without fatal result. Records show that less than half a teaspoonful mixed with air and administered by a competent person for surgical purposes has caused death,

on the other hand, a woman suffering with convulsions following child-birth (post-partum eclampsia) has been kept under the influence of chloroform vapor for seventy hours continuously.

Symptoms.—The symptoms of poisoning by inhalation of the vapor are similar to those following taking the drug in liquid form into the stomach.

Treatment.—1. The treatment differs only in refraining from any attempts at the production of vomiting or emptying the stomach by use of stomach pump. Equally applicable to both forms of poisoning are the following aids to resuscitation, not previously mentioned: Prompt commencement of artificial respiration. The occasional inhalation of amyl nitrite. The measure advocated in the following quotation might be of some avail.

2. "When the patient seems to be in extremis a couple or more violent blows on the chest quickly given may restore the action of the heart."

3. **Electric Treatment.**—Regarding the use of the interrupting current as an aid to recovery authorities differ in details of application. One advocates placing one pole of the battery at the pit of the stomach and the other at the region of the larynx, with the idea of stimulating the phrenic nerve, which causes the diaphragm to act and aid respiration. Another authority states this method is dangerous, because nerves (cardiac inhibitory nerves) which tend to slow or stop the action of the heart lie so near the phrenic nerve that it is impossible to stimulate the latter without exciting the former to action, and so defeating instead of promoting recovery; hence the previously mentioned method of sweeping the poles of the battery over the surface of the body.

Chronic Chloroform Poisoning.—Chronic chloroform poisoning is a condition the existence of which would not be readily suspected. It occurs among a class of people who use chloroform constantly, for the same purposes or reasons that the other type of inebriate uses alcohol. Although the path to ruin and death is probably more direct by the chloroform than the alcohol method, yet that the former is occasionally comparatively long is shown by the record of a woman dying at the age of forty-two in a chloroform stupor, who for at least ten years had taken by inhalation a pint of chloroform daily.

Ether is a colorless volatile liquid. It is highly inflammable, and when taken by the mouth imparts a burning taste. It is not so dangerous a drug as chloroform when used by inhalation and probably not when

taken in liquid form. Although less apt to cause death, it has greater tendency to produce diseases of the respiratory tract than chloroform when taken by inhalation.

Symptoms of Ether Poisoning.—The symptoms and treatment of poisoning by ether are similar to those of chloroform, except the use of ether hypodermically as a stimulant should not be permitted.

When in poisoning by ether the face becomes cyanotic, flushed, the failure to breathe properly is not due to weakness of the heart but to respiratory trouble, and the head should not be placed lower than the body. When the poisonous effects are carried beyond the cyanotic stage pallor succeeds the same as in chloroform poisoning and indicates lowering the head below the body in the same way as the latter drug.

Treatment.—Traction upon the tongue, simulating normal respiration in frequency, duration, regularity and evenness is a method of causing recovery that is equally applicable to both ether and chloroform poisoning.

Amyl Nitrite.—This is a product of the chemical combination of amylic alcohol and nitric and nitrous acids. It is a clear volatile liquid having an aromatic penetrating odor. For administration by the public it is prepared in small glass receptacles called pearls, resembling some forms of capsules, and containing from three to five drops. The pearl is broken in a handkerchief and the contents inhaled.

Symptoms of Amyl Poisoning.—An excessive amount causes alarming prostration, very rapid and tumultuous beating of the heart, difficult respiration, bursting sensation in the head and roaring in the ears. Recovery is said to have occurred after taking one-third of an ounce. With the exception of prussic acid amyl nitrate is the quickest of all nervous depressants.

Treatment.—Artificial respiration. Hypodermic injection of strychnia and atropine. Give digitalis and whiskey. Apply heat in form of hot water in bottles or rubber bags if required.

Ammonia.—See Corrosive Poisons.

Nitro-benzine.—This is a yellow liquid formed in the manufacture of anilene by adding nitric acid to benzine. It has the odor of bitter almonds and has been used to perfume soaps. It is a subtle, dangerous poison both as a liquid and vapor.

Symptoms.—Inhalation of a poisonous amount is followed by appearances of slow intoxication except the mind remains clear until a period of insensibility is reached. Insensibility may occur with great suddenness,

may be delayed for several hours and may continue for several hours before death occurs.

There is an odor of bitter almonds upon the breath.

Treatment.—If the liquid has been taken empty the stomach with a pump or by emetics. If the poison has been inhaled, or taken into the stomach apply heat. Use strychnia and general stimulating treatment.

Turpentine and white lead instead of white lead and oil are largely used for painting interior, and so forth. It is claimed by the painter and the physician, and denied by the employer, that the use of turpentine in confined places, such as between decks, causes watery discharges from the nose, a feeling of fullness or stuffiness in the head, difficult urination and bloody urine.

Treatment.—Recovery follows exposure to the fresh air and use of mild bland drinks such as tea made from slippery elm or flaxseed. There is no record of the occurrence of any fatalities. Taken into the stomach in excessive amounts turpentine produces the same symptoms of strangury and bloody urine caused by inhalation of its vapors. In addition it may cause inflammation of the kidneys, stomach and intestines.

Iodine in its process of manufacture and manipulation volatilizes at ordinary temperature. In its liberation from seaweed it gives off fumes in the same way as chlorine and bromine in their process of extraction. Its vapors cause the same effects as those of chlorine and bromine. For poisoning resulting from its use in drug form, see Minerals, Metallic Salts.

Prussic Acid.—This colorless, transparent, inflammable, volatile liquid is perhaps the most rapid and deadly of poisons. Taken in sufficient quantity it has been claimed to have caused almost instant death.

Symptoms.—These vary with the quantity of poison taken. When not sufficient to be promptly fatal there may be open, staring eyes, fixed jaws, pallor or cyanosis, depending upon whether the cardiac or respiratory functions are the more affected, convulsions, vomiting, unconscious discharge of feces, urine and semen. The odor of bitter almonds is noticeable upon the breath and upon post-mortem examination, but rapidly disappears.

Treatment.—This is, of course, confined to those cases that afford time for action and may be outlined as use of stomach pumps, artificial respiration, oxygen inhalation, cold applications to head and spine, electricity, ammonia by inhalation or intravenously.

Sulphurous Acid.—This is a strong solution of sulphurous oxide gas. Its poisonous effects are directed chiefly against the respiratory tract.

Remedies.—The remedies are fresh air, artificial respiration and stimulants.

Nitrous Oxide.—This is known also as nitrogen monoxide, and laughing gas is used chiefly as a brief anesthetic in dentistry. It is capable of producing alarming symptoms and even death by respiratory paralysis. Recovery is to be attempted by fresh air, rhythmic traction upon the tongue, artificial respiration.

METALS, MINERALS, METALLIC SALTS.

Antimony.—This is found both as a metal and a mineral. The preparations of the metal best known to the public, and from the abuse of which poisoning is liable to occur, are tartar emetic, oxide of antimony, sulphureted antimony, wine of antimony and compound syrup of squills, known as Coxe's hive syrup.

Symptoms of Poisoning.—Marked depression characterizes poisoning by this substance. Violent purging and vomiting occur. The bowel discharges are characteristic and known as rice water stools; that is upon standing in a glass a separation can be noticed into two layers: an upper watery and clear, and a lower white and flocculent.

Treatment.—Evacuate the stomach by means of a stomach pump. Give tannic acid freely to form the insoluble and inactive tannate of antimony. The general precautions taken in all cases of depression are to be observed. Maintain the prone position, not raising the head to vomit, nor the body for defecation. Apply heat and use stimulating treatment, whiskey, strychnia and digitalis hypodermically. Give opium to allay pain; but counteracting its tendency to after depression by strychnia.

Arsenic.—This is a brittle crystalline metal of steel-gray color. Its freshly broken surface is very brilliant. It is found in its native state in the rocks of many different localities. It is also a constituent of cobalt, copper, nickel and tin ores.

Symptoms of Poisoning.—Rarely the course is one of rapid succession of severe pain, prostration and death. Frequently the period between ingestion and fatal ending is of five or six days' duration, including a time when there is an absence of marked symptoms and an apparent beginning of recovery. There is a burning sensation in the mouth and œsophagus. The stomach and bowels are strongly irritated. There is violent purging and vomiting with great pain over the entire abdominal region. The pain is of cramp-like character, and sometimes extends to the calves

of the legs or legs in general. The bowel evacuations are bloody "rice water" in character, and contain stringy mucus, supposed to be mucous membrane stripped from the bowels.

Treatment.—The acknowledged effective preparation to counteract arsenic when taken into the stomach is hydrated oxide of iron with magnesia, and is made as follows: Solution of tersulphate of iron, one thousand parts; magnesia, one hundred and fifty parts; water, a sufficient quantity. Mix the solution of tersulphate of iron with twice its weight of water, and keep the mixture in a well-stoppered bottle. Rub the magnesia and water to thin and smooth mixture; transfer this to a bottle capable of holding thirty-two fluid ounces, and fill it up with water. When the preparation is wanted for use mix the two liquids by adding the magnesia mixture gradually to the iron solution, and shake them together until a homogeneous mass results.

The Stomach Pump.—This antidote will not produce the desired result if the arsenic is not in solution, consequently the stomach pump takes a position of primary importance in the attempts at recovery. Following the evacuation of the stomach should be the application of external heat and the administration of stimulating drugs; morphia if necessary to quiet the pain. Water to flush the entire system.

Calcium.—This is a very abundant element in nature, occurring as limestone, marble, chalk, and so forth. Calcium chloride is perhaps the only drug derivative that might prove dangerous to the public. In excess this drug is a strong gastro-intestinal irritant, and poisonous effects should be treated by vegetable acids and demulcent drinks. Calcium chloride is not chloride of lime. For the latter see Lime.

Chlorine occurs in combination with sodium, potassium, magnesium and calcium. It is in its liberation that it proves itself dangerous to life on account of its poisonous vapor. (See Gases and Volatile Substances.)

Chromium.—The preparations of this mineral, most familiar to the public, are chromic acid, bichromate of potassium and chromate of lead. All the chromium preparations are irritants to the stomach and bowels and can cause death when taken internally. To counteract, use the stomach pump and give demulcent drinks. Administer stimulants under the skin and apply heat. Give lime-water or other weak alkalies if chromic acid has been taken.

Copper.—The salts of copper taken into the stomach in excess are powerful irritants to the stomach and bowels, giving the following symp-

toms: Copperish taste, intense pain in stomach, vomiting, purging, convulsions. Death may follow.

Treatment.—Give the chemical antidote, yellow prussiate of potassium, mild drinks, such as sweet oil, milk, white of eggs. Soaps and alkalies are said to be antidotal. The stomach should be emptied of the compounds formed either by emesis or stomach pump. Stimulating treatment and opium to relieve pain should be given.

Gold.—The pharmaceutical preparations of gold are decidedly poisonous, the chloride more so than corrosive sublimate, it is claimed. They are corrosive in their action, with symptoms similar to copper and other gastro-intestinal irritant poisons.

Treatment.—For treatment, evacuate stomach; stimulate. Sulphate of iron is said to be a chemical antidote.

Iodine.—This is a non-metallic substance, having a metallic lustre. It volatilizes at a low temperature and gives off a crimson-purple vapor. For poisoning by this drug, see Gases and Volatile Substances.

Iodoform.—This is a yellowish powder, with a strong and objectionable odor. It is used principally in the treatment of surgical wounds, and has caused local and systemic poisoning when so applied.

Symptoms of Poisoning.—Fatal results have been rare, but when occurring the symptoms were local rash, headache, vomiting, delirium, convulsions, coma. The kidneys may be affected and retention of urine or bloody urine occur.

Treatment.—Cause sweating by the hot pack and give diuretics to relieve the kidneys. Bicarbonate of sodium is said to be useful in promoting the elimination of the iodine constituent of the drug. Stimulate.

Iron.—The only salt of iron likely to do harm by its unguarded use by the public is the subsulphate or Monsel's salt, a solution of which known as Monsel's solution is used to stop hemorrhage.

Antidote.—The antidote is common soap. Monsel's solution should be applied and not taken inwardly.

Lead.—Perhaps no other metal has such diversity of uses in the arts and manufactures. It might be more accurate to say no other metal furnishes such an array in number and variety of instances of poisoning. As a rule industrial lead poisoning is a slow, chronic process, and does not call for the prompt attention required by the ingestion of excessive amounts of lead-burdened drugs.

Sugar of Lead.—Acetate of lead, known to the public as sugar of lead,

is the preparation of lead most frequently prescribed by medical practitioners.

Symptoms of Poisoning.—Indications of poisoning are pain in the region of the stomach and vomiting of a white, curdy material, resulting from the chemical combination of the hydrochloric acid of the gastric juice with the lead. Inflammation of the stomach occurs sometimes with constipation, sometimes diarrhœa, with black discharges, caused by the formation of sulphide of lead in the bowels.

Treatment.—Epsom and Glauber salts are preferred as chemical antidotes for their effective action chemically and for their purgative influence. Other antidotes are alkaline carbonates, soap and salt. Use stomach pump or emetics to insure evacuation of stomach contents. Apply heat and give stimulants. Use opium to relieve pain.

Lime.—Chloride of lime, used as a disinfectant and germicide, is slaked lime to which has been added 35 per cent. of chlorine. Its poisonous properties depend upon the chlorine gas it contains, for which see Chlorine, under Gases and Volatile Substances. If lime is taken into the stomach it causes great thirst, abdominal pain and constipation.

Antidotes.—To counteract give vegetable acids and demulcent drinks. Evacuate stomach; stimulate.

Mercury.—This is a silvery, white, heavy fluid metal, obtained chiefly from cinnabar, a sulphide of the metal. In the mining of the ore and in the many industrial uses made of the pure metal, its compounds and combinations, chronic poisoning occurs. Acute poisoning is more frequently due to the injudicious use of drugs containing some preparation of the metal.

Symptoms of Poisoning.—In severe cases these are metallic taste, burning sensation in the throat and stomach, vomiting, bloody stools, convulsions, coma.

Antidote.—The antidote is white of egg; additional treatment same as given in case of other corrosive poisons; evacuation; bland drinks; stimulants. Potassium iodide to aid in elimination. Opium to relieve pain.

Paris Green.—Symptoms of poisoning and treatment same as in arsenic.

Phosphorus is a non-metallic element, discovered in 1669 by Brandt, who obtained it from urine. In 1769 it was found in bones, the chief source of supply at present.

Symptoms of Poisoning.—In acute poisoning symptoms do not appear

for several hours. Pain in the œsophagus, stomach and bowels may be accompanied by purging or constipation. Discharged matters have characteristic odor and luminosity in the dark. The second or third day there may be a cessation of vomiting or of such symptoms for several hours, followed by a jaundice, pain, vomiting, delirium, convulsions, coma.

Antidotes.—Hare suggests peroxide of hydrogen and permanganate of potassium as antidotes. Sulphate of zinc is recommended for the same purpose. To the victim rescued from even acute poisoning is held out the gloomy prospect of an early death through fatty degeneration of vital organs.

Silver.—The salts of this metal that are most apt to cause poisoning are cyanide and nitrate. The cyanide is dangerous on account of its liberation of hydrocyanic acid when strongly heated. The nitrate is frequently used as a caustic, and when taken into the stomach produces marked gastric and intestinal inflammatory symptoms.

Symptoms of Poisoning.—The lips are first white from the caustic action of the drug, then become black. The vomited matter and the discharges from the bowels turn black upon exposure to the air. Convulsions, coma, paralysis, death may follow.

Treatment.—The chemical antidote is common salt. Soap and alkalis are supposed to annul the poisonous tendencies or to prevent the action of the poison upon the mucous membrane of the alimentary canal.

Tartar Emetic.—See Antimony.

Tin.—In the separation of tin from its ores poisoning is a rare occurrence, except from the deleterious substances combined with the tin. Pharmaceutically it is of little or no value, consequently it is not likely to fall into the hands of the public for perverted use. Of the chloride, three-quarters of a grain injected into the veins of a dog caused death. Fifteen grains introduced into the stomach caused vomiting and gastric irritation. Effective treatment would be evacuation, magnesia, mucilaginous drinks.

Zinc.—All the salts of zinc which can be absorbed in excess have a strongly depressing, even paralyzing, action upon the heart and all voluntary muscles, and may cause death by this means. Convulsions, coma and death is the brief statement of another bond of effects following zinc poisoning.

Treatment.—Empty the stomach. Give milk mixed with sugar and white of egg to form insoluble albuminate of zinc. Sodium or potassium carbonate, tannic or gallic acid have also been recommended as antidotes.

Overcome depression by stimulants, strychnia, digitalis, and so forth. Apply heat, give morphia for pain.

CORROSIVE POISONS.

Acetic Acid.—Acetic acid of the pharmacopeia is very mildly caustic. Taken internally it may prove very dangerous. Recovery has followed the injection of three ounces, followed by collapse and asphyxia from closure of the glottis. Suffocation was prevented by tracheotomy. Gastro-enteritis is liable to result.

Antidotes.—The chemical antidotes are lime-water and soap-water; milk and other bland drinks should be given. The stomach pump should be applied. Heat and stimulating treatment may be required.

Carbolic Acid.—This, in its pure state, is a white substance, appearing as needle-like crystals. It is very deliquescent and, with the addition of 10 per cent. of water or glycerine, becomes liquid; in this form it is usually dispensed.

Symptoms of Poisoning.—In large doses it has produced death in two or three minutes. In smaller doses it causes gastro-enteritis, marked by extreme pallor, cold sweats, stupor, coma, subnormal temperature, dark urine or suppression of renal secretion, very much contracted pupils. The drug has produced poisonous effects by absorption from surgical dressings.

Treatment.—Give soluble sulphates, Epsom or Glauber salts as the chemical antidote. A well-known authority says the lapse of several hours does not counter-indicate the use of the chemical antidotes as they follow the acid into the blood-vessels and tissues to unite with it. The stomach pump, heat, hypodermic stimulation, bland drinks should follow the use of the soluble sulphates. The use of oil as an emollient drink is prohibited owing to the belief that it aids the absorption of carbonic acid.

Hydrochloric Acid is not so destructive in its action as nitric or sulphuric acids. When swallowed the tissues are superficially destroyed, but rarely does deep erosion or perforation occur. It causes great thirst and restlessness, burning skin, agonizing stomach pain. Chemical antidotes are magnesia, soap or any dilute alkali. Supportive treatment may be required.

Nitric Acid.—In industrial occupations the inhalation of the fumes arising from this acid has repeatedly produced death. Its irritative action upon the larynx may cause spasm of the glottis severe enough to end

fatally by asphyxia. Taking it into the lungs has been followed by pulmonary edema and death. As a liquid in excess its action upon the alimentary canal is extremely corrosive, and where death does not follow promptly the following symptoms may appear:

Symptoms.—Burning of the mouth, œsophagus, stomach and intestines; intense pain, distention of stomach and intestines, frequent eructations, emesis, extremely fetid odor of exhalations and vomit, great thirst, cold extremities, anxiety, collapse. The stain upon the clothing and lips is yellow in color and is resembled by the stains of iodine and bromide. Discolorations made by the latter two drugs can be removed by caustic potash, but nitric acid stains are increased in brightness by the same application.

Treatment.—The treatment is the same as for other corrosive acid poisons, alkaline solutions, magnesia, soap, chalk, oils, demulcent drinks, heat and stimulation. Opium to allay pain. Recovery is rare and usually followed by early demise from destructive effects, such as constriction of œsophagus or bowels or loss of function in digestive organs.

Oxalic Acid.—Accidental poisoning has occurred by taking oxalic acid in mistake for epsom salts. The sour taste is very different from the taste of epsom salts.

Symptoms vary with the quantity taken. Taylor says the minimum fatal dose is one drachm. Death has occurred as early as ten minutes after taking the poison in excess. With large amounts the early indications are those of a corrosive poison, pain in œsophagus and stomach, retching and bloody vomit. They may be followed by great depression and death without a struggle.

Treatment.—The antidotes are lime-water, magnesia, chalk; plaster from the wall has been suggested in emergency. These should be given promptly to form insoluble oxalates of magnesium or calcium. The oxalates of ammonium and potassium are soluble, poisonous and require the same antidotes as oxalic acid.

Sulphuric Acid.—This is the most corrosive and the most extensively used of mineral poisons, having the same poisonous symptoms as the other strong corrosive acids. The tissue discoloration due to its action is black. Death may be caused by laryngeal obstruction through violent inflammatory effects; by collapse due to perforation of the stomach or by shock due to extensive destruction of tissues. If recovery occurs the injured tissue sloughs off and subsequent contracture or loss of function may cause death later on.

Treatment consists in the prompt use of magnesia, soap, chalk, lime-water as antidotes. After neutralization of the acid give mucilaginous drinks, milk or other bland drinks. The deep and extensive tissue destructions render the use of emetics and stomach pump dangerous. The strong muscular effort accompanying emesis and the manipulation of the pump both tend to result in perforation. Counteraction of depression by heat and hypodermic administrations is, of course, strongly indicated.

Tartaric Acid, more irritant, but less expensive than citric acid, is sometimes used instead of the latter in making a substitute for lemonade. In large quantities it is a gastro-intestinal poison and has caused fatal results.

Antidotes.—Give soap-water, lime-water, magnesia, chalk as antidotes. Use the stomach pump or emetics; administer stimulants; apply heat.

Ammonia.—This is a transparent, colorless gas, having an acrid taste and an exceedingly pungent smell. It is alkaline in reaction. The best publicly-known preparation containing this gas is aqua ammoniæ or water of ammonia, a solution of 10 per cent. by weight of the gas in water. Death has been caused by inhalation of the gas, by ingestion of the liquid and by the muriate and carbonate. Fatal results have followed after the lapse of four minutes through spasm of the glottis. The same ending may occur after comparatively long periods as with other corrosive poisons, causing stricture or prolonged prostration.

Symptoms.—These are pain, burning sensation from mouth to stomach, vomiting of bloody mucus. Cardiac and respiratory efforts are greatly stimulated, but soon equally depressed. Lachrymation, sneezing and cough are marked. Ammonia differs from the other alkalies in affecting the nervous system, while the other are destructive in local effects only.

Treatment.—As an antidote, lemon juice and dilute vinegar or acetic acid may be given. Bland drinks and vigorous efforts to counteract prostration should follow. Opium may be required to allay pain and reduce nervous symptoms.

Soda.—This is the hydrate of sodium, known commonly as caustic soda. When fluid it is moulded and placed upon the market in the shape of small sticks or cylinders not quite as large as an ordinary lead pencil.

Symptoms of Poisoning.—It is corrosive in its action, causing, when taken, pain throughout the alimentary tract and destroying, by softening, all tissues with which it comes in contact. Vomiting occurs. The soft-

ened and destroyed tissues slough, sometimes in mass, and inflammatory conditions follow.

Treatment.—Give weak acids, oils, demulcents, and use stimulating treatment.

Potash.—This is the hydrate of potassium, commonly called caustic potash. It is more corrosive than caustic soda. Poisonous symptoms and treatment are the same. (See Soda.)

VEGETABLE POISONS (in form of drugs).

Limited space and the great number of substances included under this heading compel the briefest notice of symptoms and treatment where poisoning has occurred by accident or overdoses.

Acetanilid, a white powder; common constituent of advertised headache powders. Causes cyanosis, prostration, heart failure. Use strong stimulants, external heat.

Acid, Boric, in large amount produces nausea, vomiting, collapse, cardiac failure. Treatment is to evacuate stomach, stimulate.

Acid, Salicylic, in large amount causes deafness, delirium, defective breathing, respiratory failure. Treatment is by strychnia and other stimulants.

Aconite, a dangerous drug; small amount may prove fatal.

Symptoms of Poisoning.—Tingling of mouth and throat becoming general, pallor, anxiety, slow pulse, weak respiration, great muscular weakness, heart failure.

Treatment.—Keep victim on flat of back, with head below body. External heat, hypodermic injections of ether, alcohol, digitalis, strychnia in large doses, atropine, artificial respiration if required.

Alcohol.—Frequent cases of acute alcoholic poisoning occur among children.

Symptoms.—Giddiness, drunken gait and manner, flushed face, may be pale, stupor, coma, sometimes death long after apparent recovery.

Treatment.—Digitalis, strychnia hypodermically, external heat, artificial respiration, prone position, with head lower than body.

Antipyrine.—This causes erythema or other skin disturbances, tingling sensations, depression. Treatment is same as aconite poisoning.

Apomorphine causes prompt and severe vomiting, depression, cardiac failure. Use hypodermic stimulation, external heat as antidotes.

Absinthe causes insensibility, convulsions, involuntary evacuations, possibly death. Evacuate stomach, give demulcent drinks, stimulate.

Aspidium or Male Fern.—Used to destroy tape worm. Overdose might cause gastro-enteritis, collapse, death. Evacuate, stimulate.

Atropine, Belladonna, Hematropine cause flushed face, general redness of skin, great dryness of mouth and throat, dilated pupils, prostration. For treatment insist upon prone position, evacuate stomach if seen early, stimulate, use artificial respiration if necessary.

Bloodroot.—See *Sanguinaria*.

Camphor.—In large doses produces roaring in the ears, delirium, convulsions, possibly gastro-intestinal symptoms. To treat, evacuate, stimulate.

Cantharides.—Produces vomiting, bloody stools, priapism, strangury, convulsions, coma, respiratory paralysis. For treatment, evacuate, give morphia for pain, bland drinks, stimulate.

Colchicum.—Symptoms of gastro-enteritis, great pain, fatal depression. For treatment, evacuate, give tannic acid, stimulate, morphia for pain.

Conium.—Muscular depression, paralysis of respiratory muscles. Evacuate, give tannic acid, atropine, stimulate.

Digitalis.—Produces headache, slow full pulse becoming irregular; great prominence of the eye-ball, pearly color of sclerotic coat, vomiting. Death is caused probably by cardiac spasm.

Treatment.—Give tannic acid as a chemical and aconite as a physiological antidote. Evacuate, enforce prone position, stimulate. Prone position should be maintained for days after apparent recovery, as death has immediately followed erect posture after digitalis poisoning of a day or two previous.

Elaterin and Elaterium in excess cause gastro-enteritis. Use stomach pump, heat, stimulant, opium.

Ergot.—Enormous doses are required to cause fatal results. Symptoms are tingling sensations, vomiting, muscular spasm, great coldness of the surface. Evacuate, give purgatives, stimulate, enforce prone position.

Eusel Oil causes muscular rigidity, respiratory failure. Evacuate, stimulate, use artificial respiration.

Gamboge causes gastro-enteritis. Evacuate with pump, stimulate, apply heat, give demulcent drinks.

Gelsemium causes great depression, falling or dropping of the eyelids,

double vision, respiratory failure. Evacuate, stimulate hypodermically with atropine, strychnine, ether, digitalis, apply heat, use artificial respiration.

Hemlock.—See Conium.

Henbane.—See Hyosciamus.

Hyosciamus causes giddiness, incoherence of speech, loss of power to swallow, partial loss of voice, difficulty in respiration, delirium. For treatment, evacuate, stimulate.

Jaborandi.—Profuse sweating, salivation, vomiting, diarrhoea, ocular irregularities. Give atropine as antidote, evacuate, stimulate.

Laudanum.—See Opium.

Lobelia causes vomiting, sometimes purging, great depression, respiratory failure. Give tannic acid, stimulate, apply heat, use artificial respiration.

Morphine.—See Opium.

Nicotine.—See Tobacco.

Nitro-Glycerine causes severe headache, rapid, irregular cardiac action, collapse. Give atropine, digitalis, strychnine. Maintain recumbent position.

Nux Vomica.—See Strychnia.

Opium causes mild excitement or contentment, followed quickly by sleepiness, stupor. Cyanotic face, contracted pupils, gradually decreased frequency of breathing, respiratory failure. For treatment evacuate stomach with pump; give strong coffee by mouth or rectum; use flagellation or the battery to keep patient awake; keeping victim in motion by walking is also useful for the purpose, but may exhaust him. Give hypodermic injection of strychnine; apply heat; use artificial respiration.

Pinkroot.—See Spigelia.

Bloodroot, Sanguinaria, causes salivation, vomiting, purging, convulsions, respiratory failure. For treatment evacuate, stimulate.

Spanish Fly.—See Cantharides.

Spigelia causes dilatation of the pupils, prominence or protrusion of the eyeballs, internal strabismus, retching, increasing muscular weakness, depressed respiration, coma, death.

Treatment.—Evacuate; stimulate; use heat and artificial respiration.

Squills produce gastro-enteritis, bloody urine, strangury, convulsions, death.

Treatment.—Evacuate; stimulate; give demulcent drinks.

Strychnine.—Symptoms may begin gradually or be pronounced from

beginning. If they come on slowly, there is stiffness of jaw and neck; slight, then strong muscular contractions, with body bent backward and resting on head and feet. Intervals of relaxation succeeded by tonic convulsions; death from exhaustion, or more frequently by asphyxia due to spasm of muscles of respiration.

Treatment.—Give tannic acid. Evacuate stomach, administer bromides and chloral. Amyl nitrite may lessen the spasm. If drugs cannot be given by mouth on account of convulsions, prevent same by chloroform, and at same time give bromides and chloral per rectum. If periods of relaxation are too brief to permit of chloroform securing control give amyl nitrite hypodermically.

Sulphonal causes sleepiness, stupor, scanty or suppressed urine, unconsciousness, death by respiratory failure. For treatment evacuate, stimulate. Give diuretics; use artificial respiration.

Tansy produces abortive tendencies, convulsion, coma, respiratory failure. For treatment evacuate, stimulate, use artificial respiration.

Tobacco contains an alkaloid, nicotine, that is said to cause death as promptly as hydrocyanic acid. Thirty grains of tobacco or one to two drops of nicotine are sufficient to cause death in less than half hour by the first and in a few minutes by the second.

Symptoms.—Nausea, vomiting, cold, clammy skin, general muscular relaxation, pupils contracted, then dilated, odor of person disagreeable.

Treatment.—Recumbent position; tannic acid; evacuation of stomach; stimulants; heat.

Fungi, toadstools, and so forth, may cause vomiting, purging, convulsions, delirium, stupor, death. Evacuate, give Glauber or Epsom salts, stimulate.

Poison Ivy, Poison Oak, Poison Vine cause irritation of skin, particularly of face, itching, swelling, vesicular eruption. If taken inwardly drowsiness, stupor, delirium, convulsive movements.

Treatment.—Externally use alkaline solutions or dilute subacetate of lead. Rest, low diet, laxatives, opium.

Poke Berry and Root causes nausea, vomiting, purging, cardiac and respiratory depression, convulsions. For treatment evacuate, stimulate.

Sumach.—See Poison Ivy, and so forth.

Toxicodendron.—See Poison Ivy, and so forth.

FOOD OR PTOMAININE POISONS.

A person can be poisoned from eating foods as: meat, fish, milk, etc. The poisons which cause food poisoning (usually called ptomaine poisoning) depend upon their presence in the food when eaten because of the development in the food or its mixture with poisons.

Poisonous Meat.—Poisonous meat results from the presence of bacteria and their poisonous secretions. The infection from eating meat arises in two ways: 1. The meat derived from an animal which may be perfectly healthy and when slaughtered yield flesh entirely wholesome and free from bacteria, acquires poisonous properties only by the introduction of bacteria from without by being placed or handled in unclean utensils, vessels, etc., and thus becomes contaminated. Meat kept in a warm temperature favors the development of the bacteria which came from without, the germs thus produced multiply and give rise to poisonous products and these render meat dangerous which was previously healthy, and this is particularly true in respect of canned meats. The chopping of meat favors the spreading of bacteria throughout the mass. Secondly, the infection of meat results from the use of meat derived from animals which were diseased at the time of slaughter. Meat from such a source contains germs which will cause symptoms of poison or allow poisonous bacteria to develop rapidly on being kept for a short time. Poisoning will follow the eating of this meat and may readily lead to an acute infection, rendering the users very ill or cause death. Many cases of inflammation of the stomach and bowels (gastro-enteritis) are due to the eating of diseased meat.

Change in the odor or taste of meat is not always indicative of the presence of poisonous products.

Owing to so many poisonous products developing in meat, it is impossible to draw a sharp difference between the symptoms arising from the different ones. However, two important forms of symptoms are contrasted. In one, the nervous symptoms predominate and are well marked, and in the other the symptoms are in the stomach and intestines. The first groups of symptoms are spoken of as Botulismus.

Poisoning from Sausage Bacillus (*Botulismus*).—Under this title are included all forms of poisoning caused by eating sausage. The poisonous products in the sausage are a result of the presence of the Bacillus Botulismus, named by Van Ermengem, who discovered the germ in 1905 in poisonous ham.

SYMPTOMS.—The attack begins in from twenty to thirty-six hours after eating the diseased meat. The patient feels like vomiting (nausea), pains in the stomach and vomiting then follow. Diarrhœa or constipation, usually the former, are complained of. In thirty-six to forty-eight hours interference with vision develops, the patient does not see clearly and does not recognize persons about him. Double vision is present, the upper eyelids droop and a peculiar strong stare can be seen. A burning thirst and a sensation of strangling are complained of. The mucous membranes of the mouth, nose and throat are reddened and covered with a thick, glistening mucus, which causes violent attacks of coughing and suffocation. The swallowing of food or even water is difficult and causes attacks of choking. Extreme weakness of the muscles which lasts for weeks after the attack are annoying symptoms.

Diseased Meats.—Under this title are included the poisons in meat which cause sickness due to the animals being diseased at the time of slaughter. These constitute the most common form of meat poisoning, and cause severe gastro-intestinal (stomach and bowel) symptoms. The bacteria symptoms are too numerous to mention here, but they are said to be due to any one of a group of germs in the meat which show close affinity on the one hand for the colon bacillus and on the other for the hog-cholera bacillus. Each group of these germs cause poisonous symptoms which represent a number of diseases, resembling each other as regards their symptoms and are difficult to tell apart.

THE SYMPTOMS ARISING FROM EATING DISEASED MEAT.—The attacks may begin immediately following a meal, but usually occur in from six to eight hours after eating. Patient desires to vomit (nausea) then vomiting occurs, followed by sharp, colicky pains in the abdomen, profuse diarrhœa and great exhaustion. A rash and itching of the skin is present. Death often follows these symptoms, but not as often as in poisoning from eating diseased sausage which contains the bacillus botulismus.

The above symptoms are usually due to eating beef, veal, pork and horse flesh derived from animals which suffered at the time of slaughter from blood poisoning or intestinal infection. Boiling of such meat does not necessarily prevent the human being from suffering from the same disease which the animal had when slaughtered.

TREATMENT.—Any person taken suddenly with any of the above symptoms following the eating of meat, should summon the family doctor. Early action may save life. The sufferer can be given hot mustard water to cause vomiting. The bowel should be washed out with a rectal syringe,

using warm salt water (two teaspoonfuls to the quart) every hour until the doctor arrives. Calomel in one-fourth grain doses every half hour until two grains are taken. Active purging is necessary. Diarrhœa is a favorable symptom, as nature is trying to eliminate the poison by the bowel, it should not be checked too soon.

Poisonous Fish.—Many fish are always poisonous, while certain fish are only poisonous to man during the spawning period and other fish contain poisons in the testicles and ovaries which when eaten cause severe and even fatal poisoning. The latter are classified as Physiologic Poisons, and are simply normal poisons within the body of the fish and are not due to bacteria. Another group of fish poisons which occur and are dangerous to man when eaten, are the Bacterial Poisons. These are poisons which occur in fish and cause disease when eaten. They are due to bacteria and may be in fish which were diseased at the time of killing and when eaten raw will cause the person to become ill. On the other hand, fish may be perfectly wholesome before death and the following careless handling and lack of preservation cause bacterial contamination with the production of poisonous products.

The poisons occurring in fish are caused by many varieties of bacilli, too numerous to mention in these pages.

Boiling will not destroy all bacteria in fish, but the danger of infection is reduced only by eating fish which is thoroughly boiled or baked.

SYMPTOMS OF FISH POISONING.—General weakness occurs in from ten to twenty-eight hours after eating a meal with fish, the greater the severity of the attack if the meal has consisted of fish only. A small amount of diseased fish eaten will often prove fatal if the stomach is empty. A larger amount may not be so fatal if the person has eaten other foods at the same time which have prevented the poisonous fish from being rapidly absorbed. Other symptoms are a dull pain in the abdomen, difficult breathing, impaired sight, double vision and dizziness, complete dryness of the mouth and tongue, inability to swallow and loss of speech. The temperature does not rise.

Another group of symptoms may occur from poisonous fish differing from the former. These consist of violent vomiting, excessive diarrhœa, dizziness, the hands and feet tremble, prostration and heart weakness, and a rash and itching of the skin are present in some cases.

Canned fish has caused disease, but these cases usually occur from the fish having decomposed from either being diseased before packing or

improperly preserved, and these conditions have favored the development of bacteria and their poisonous products within the can.

Animal Parasites.—Worms can develop in the human being from eating fish which contain the larvæ of these worms. The *Bothriocephalus* is the one most often developed from eating fish. Fish also cause disease by eating decomposed meat, etc., and then being eaten by man, the poison in the fish poisoning his system. All fish should be thoroughly cooked before eating.

Poisonous Shellfish.—These will cause disease because they are found in polluted waters and certain bacteria which cause symptoms of fish poisoning in man when eaten.

Poisoning from Mussels.—The common mussel (*Mytilus edulis*) causes poisonous symptoms in man when used as a food, particularly in England and on the continent of Europe.

SYMPTOMS OF MUSSEL POISONING.—There are three types of symptoms. First type: Severe pains in the stomach, nausea, vomiting, diarrhœa come on some hours after eating; death is rare as a rule. Second type: The patient complains of nervous sensations, as of heat, itching of the eyelids, this spreads over the rest of the face and may involve a large part of the body. A diffused rash with hives develops. Sore throat and difficult breathing are sometimes pronounced. Death rarely ever occurs. Third type: The symptoms of this type resemble the infection due to the bacillus botulismus found in diseased sausage. They arise from eating mussels which have lived in polluted water. Boiling does not destroy the germs. The onset of symptoms is sudden, almost immediately after eating a meal. Giddiness with inability to stand or sit, mental excitement or delirium, numbness of the hands and feet, diminished sensation, the pupils dilated, abdomen distended, throat dry, the neck constricted and difficulty in breathing and swallowing are commonly observed. Death occurs more often in this type!

Oyster Poisoning.—Oysters cause many cases of illness when used as a food. This is due to the fact that they come from oyster beds which are located in polluted water. They carry typhoid germs which cause typhoid fever. Also gastro-intestinal symptoms due to their contained bacilli and poisonous products derived from the polluted water. Whole-some oysters can be contaminated by dirty handling or improper preservatives before distribution.

SYMPTOMS OF OYSTER POISONING.—A few hours after a person has eaten a raw oyster, he complains of headache, pains in the side, difficulty in

swallowing, impaired vision, the gait becomes staggering, swallowing impossible, speech difficult and mumbling. Rash appears with itching in different parts of the body. They usually recover, but death has occurred following the eating of raw oysters on an empty stomach.

Lobster and Crab Poisoning.—The eating of these as articles of food have been followed by severe pains in the stomach, diarrhoea, rash and itching of the skin and in some cases symptoms similar to those occurring in persons who have eaten oysters, fish and diseased meat.

Lobsters and crabs are dangerous unless wholesome and alive when cooked; even then they may be dangerous, as they are filled with bacteria and their products derived from decomposed fish, slop, etc., which they live upon in polluted waters.

Poisonous Milk and Its Products.—Milk is the cause of many cases of acute poisoning due to its extensive use in the raw state and ready exposure to contamination from bacteria. It also carries typhoid fever, diphtheria, scarlet fever. It is responsible for the gastro-intestinal complaints occurring during the summer months, especially among infants. Milk can contain the same bacteria and their poisonous products as are found in diseased meat, and thus similar diseases result with the same set of symptoms. The products of milk as cheese, ice cream, cream puffs, etc., cause diseases due to a poisonous product called tyrotoxin. This arises no doubt as a result of bacterial action and causes severe illness, as well as death in some cases. The symptoms derived from decomposed milk products are the same in a general way as those caused by bacteria in diseased meat, fish, etc.

Treatment of any of the above diseases consists in summoning a physician immediately; cause vomiting by giving mustard water. Calomel, one-quarter grain every half hour until two grains are taken. Wash bowels out with a warm salt solution (two teaspoonfuls to a quart of water) and repeat every hour until all signs of poison are removed. Apply hot water bottles or bags to warm the patient.

Any person (or those in attendance) should be careful whenever possible to place the can or sample of food from which the person has eaten where it can be kept intact until examined by the physician for the purpose of finding the nature of the poison which caused the patient to be ill.

Poisonous Vegetables.—The eating of vegetables containing bacteria and their poisonous products causes the same group of diseases as occurred from eating diseased meats, fish, etc., showing that the bacteria infected meat, fish, etc., if contaminated vegetables will have the same result.

Many of the diseases derived from eating canned vegetables are due to the presence of metallic poisons, usually due to carelessness or ignorance in canning in permitting too much dangerous metal to enter the can.

People who eat too much rye and other grains, particularly in European countries, often suffer from Ergot poisoning, caused by the grain containing parasitic fungus called *Claviceps purpurea*, which develops in the flowers of rye and other grains. The symptoms of this poisoning may be nervousness and convulsions or else gangrenous sores break out upon the body.

Vetch poisoning is another rare condition occurring in Austria and Italy, in Northern Africa and India. It is due to the use of Vetch seed in the form of a flour as a partial substitute for wheat. Persons after eating bread made of this Vetch seed flour, complain of sudden and severe pains in the back, inability to walk, due to paralysis of the limbs, also tremors and fever. The nature of the poison is not definitely known, but it is considered as belonging to the tonal groups of proteins.

Mushroom Poisoning.—This is due to persons eating the poisonous varieties in mistake or ignorance instead of the edible variety, which is harmless. The dangerous species contain a highly poisonous substance called muscarin.

SYMPTOMS OF MUSHROOM POISONING.—Severe depressing of the heart and circulation. Severe watery diarrhœa. Pain in the stomach. Death may occur in three to four hours after eating.

TREATMENT OF MUSHROOM POISONING.—Send for the nearest physician, wash out the stomach with a stomach pump, or cause vomiting by taking hot mustard water. Apply external heat and administer a cup of hot coffee, or brandy or whiskey in teaspoonful doses every half hour until physician arrives.

BOOK VI

Is a simple method of diagnosing disease by symptoms.

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DIAGNOSIS CHARTS**Simple method of locating ailments by pain symptoms**

Pain is nature's means of indicating that natural laws are disturbed.

The study and location of pain is therefore the study of diseases.

The presence of pain indicates an abnormal condition in some part of the body. The location of the pain may be quite remote from the condition producing it because of the close relation of the cerebro-spinal and sympathetic nerve systems in the brain.

Therefore pain should be carefully studied. The following diagrams will aid in the diagnosis when the location of the pain is taken into consideration with other symptoms.



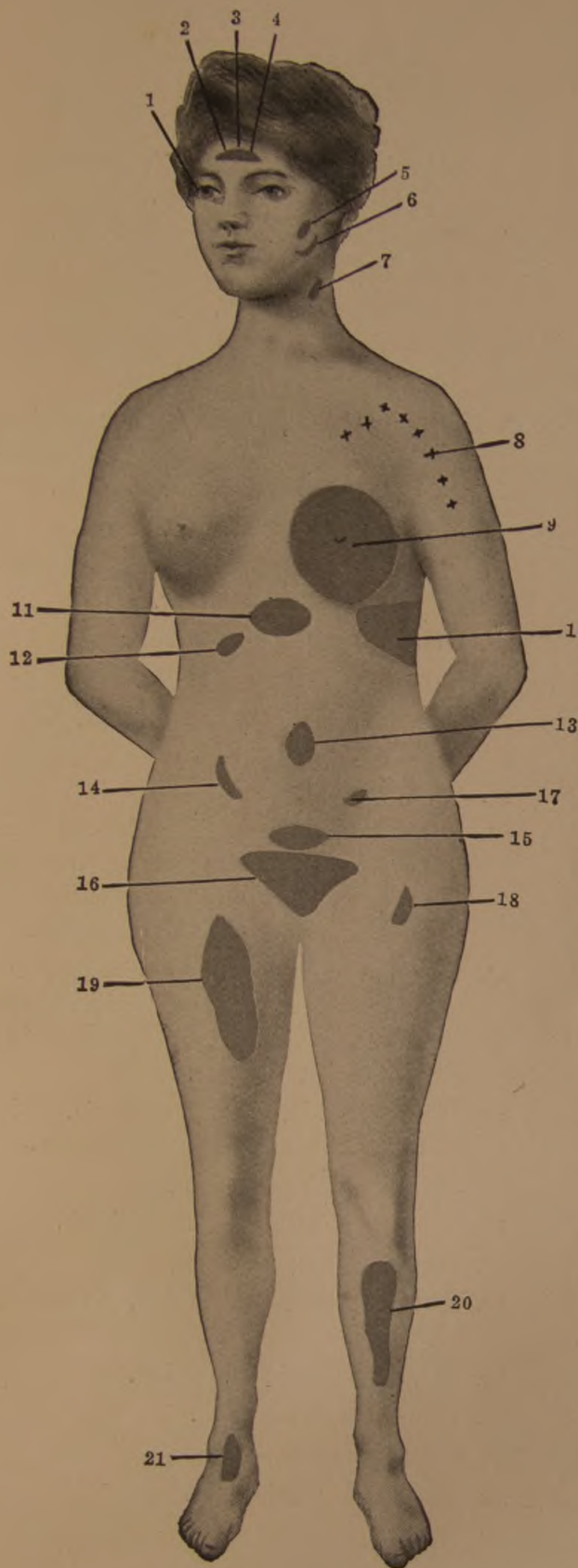


CHART 1

1. Inflamed Eyes or Neuralgia.
- 2, 3, 4. May be due to Constipation, Dyspepsia, or Nasal disease (Frontal Headaches).
5. Diseased Teeth, Neuralgia.
6. Diseased Teeth, Neuralgia, Mumps.
7. Tonsilitis, Inflamed Glands.
8. Angina Pectoris.
9. Pregnancy, Ovarian disease, Hysteria, Neuralgia, Abscess, Cyst or Cancer of the Breast.
10. Impacted Splenic Colon, Colitis, Stomach Ulcer or Cancer, Enlarged Spleen, Acute Rheumatism.
11. Stomach.
12. Kidney and Gall Bladder.
13. Stomach, Ulcer, Cancer of Omentum.
14. Seat of pain reflected from the Appendix (Appendicitis).
15. Uterus or Womb.
16. Cystitis, Neuralgia, Ulcer, Uterine or Ovarian disease, Inflammation, Menstrual Pains.
17. Ovary, Inflammation or Neuralgia.
18. Ovarian disease.
19. Ovarian or Uterine disease, Displaced Uterus, Psoas Abscess.
20. Rheumatism, Periostitis, Bone Tuberculosis, Locomotor Ataxia.
21. Rheumatism, sprain at Ankle.

The shaded portions in this chart indicate the location of the pain and the numbers refer, in the text, to the source of the trouble.

This is not an anatomical chart, and does not show the location of the organs.

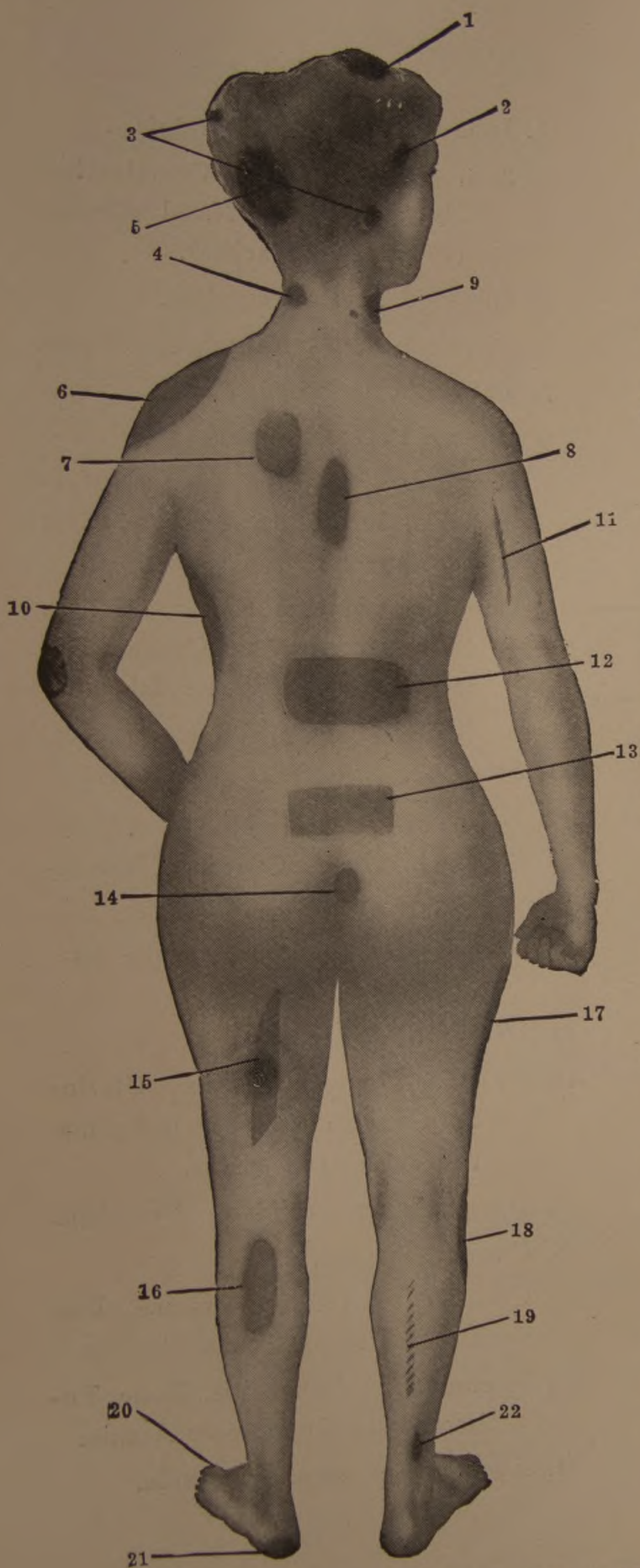


CHART 2

1. Anæmia, Hysteria, Neurasthenia, Uterine and Ovarian.
2. May originate in the eye or teeth.
3. Earache, Neuralgia, disease of the Tongue or Bone.
4. Rheumatism, Cerebro-Spinal Meningitis.
5. Neurasthenia, Irritation of the Spine, Epilepsy, disease of the Vertebræ, Uterine, Brain Tumor.
6. Muscular Rheumatism.
7. Flatulence (gas), Rheumatism, Gastritis, Gastric Ulcer.
8. Diseases of the Stomach.
9. Laryngitis, Sore Throat.
10. Pleurisy, Pleuro-Pneumonia, Neuralgia.
11. Rheumatism.
12. Lumbago, Fatigue, Flatulence, Hernia, Cystitis, Uterine or Ovarian disease, Acute Inflammation of the Kidneys, Spinal Irritation.
13. Ovarian and Uterine disease, Inflammation of the Pelvis, Rectal Ulcer, Cancer, Hemorrhoids, Hip Joint disease.
14. Hemorrhoids, Coccygodynia, Fistula, Abscess, Uterine disease.
15. Sciatica, Rheumatism.
16. Cramps, Fatigue, Fallen Arch.
17. Rheumatism, Fatigue.
18. Inflammation of Joint, Varicose Veins.
19. Sciatica, Varicose Veins.
20. Gout, Ingrown Nail.
21. Gout, Rheumatism.
22. Sprained Ligaments.

The shaded portions in this chart indicate the location of the pain and the numbers refer, in the text, to the source of the trouble.
This is not an anatomical chart, and does not show the location of the organs.

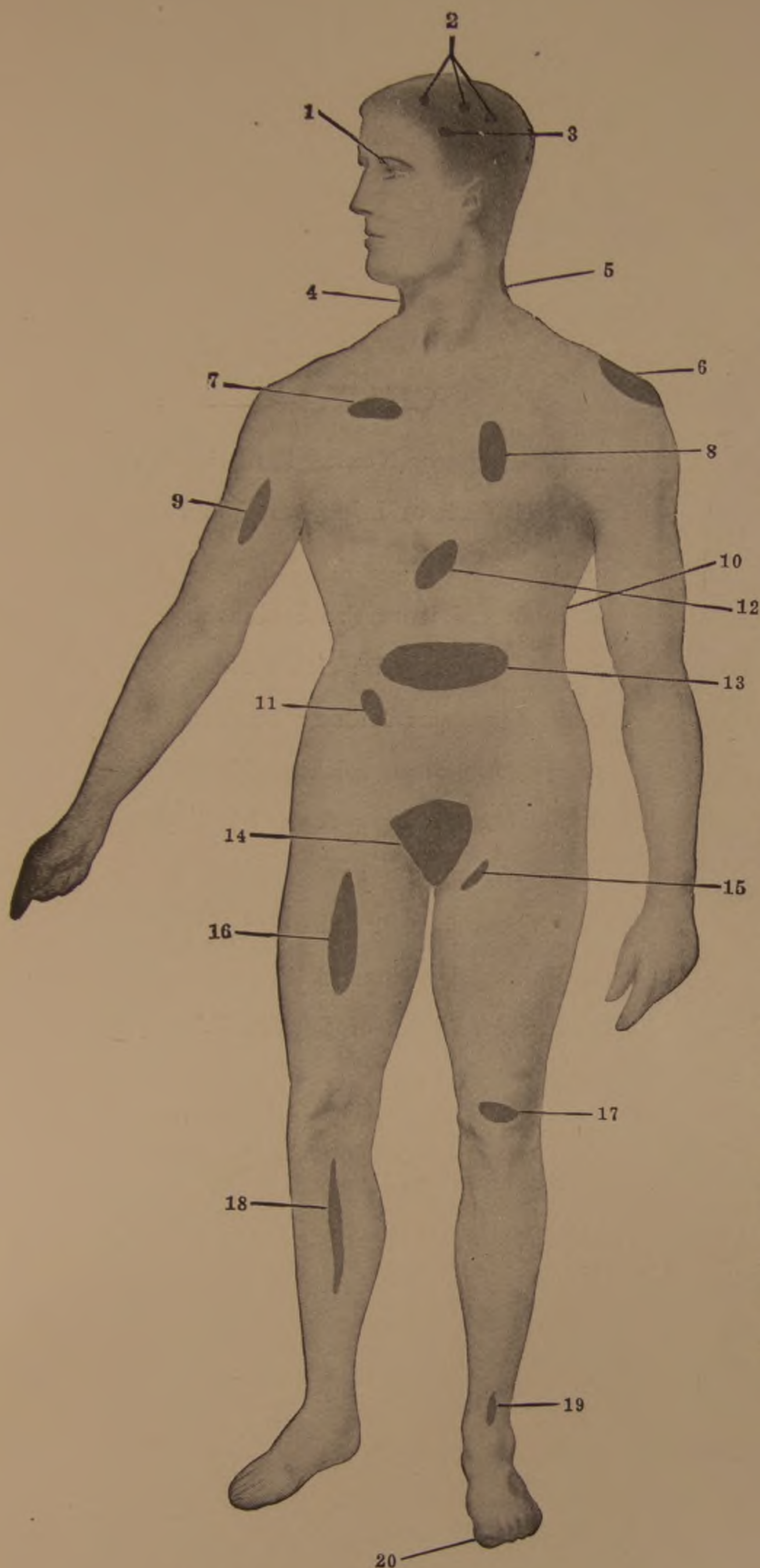


CHART 3

1. Diseases of the Eye or Lids, inflammation or Neuralgia.
2. Headaches due to Constipation, Indigestion and Neuralgia.
- 3 Temporal Neuralgia.
4. Goitre, Laryngitis and various Throat diseases.
5. Diseases of the Spine and Brain, Rheumatism.
6. Muscular Rheumatism.
7. Pneumonia, Tuberculosis, etc.
8. Heart and Pericardium.
9. Rheumatism, Neuralgia, Fatigue.
10. Pleurisy, Pleuro-Pneumonia.
11. Appendicitis and Inflammation of the Bowels.
12. Stomach Indigestion, Flatulence, Cancer and Ulcer.
13. Inflammation of the Bowels, Colitis.
14. Inflammation of the Bladder.
15. Abscess in Groin.
16. Rheumatism, Fatigue.
17. Inflammation of the Joint.
18. Varicose Veins, Rheumatism.
19. Inflamed Joint or Torn Ligaments.
20. Gout.

The shaded portions in this chart indicate the location of the pain and the numbers refer, in the text, to the source of the trouble.

This is not an anatomical chart, and does not show the location of the organs.

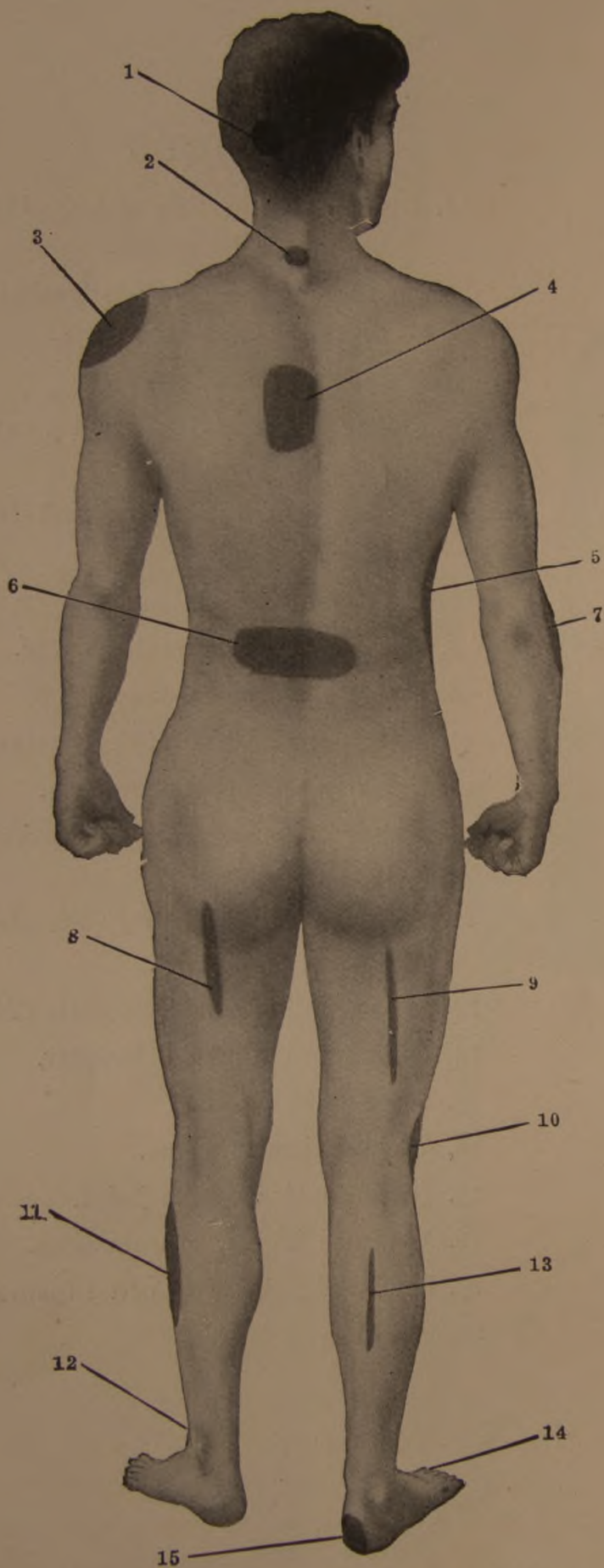


CHART 4

1. Headache or Neuralgia of the Scalp.
2. Stiff Neck or injury to Spine.
3. Rheumatism.
4. Reflected from the Stomach.
5. Pleurisy may be either side
6. Lumbago or Kidney Disease.
7. Neuritis along either side of arm.
8. Sciatica running down back of leg.
9. Sciatica.
10. Rheumatism or Inflamed Joint.
11. Enlarged Veins or Rheumatism.
12. Inflamed joint or Sprained Ankle.
13. Sciatica.
14. Gout.
15. Rheumatism.

The shaded portions in this chart indicate the location of the pain and the numbers refer, in the text, to the source of the trouble.

• This is not an anatomical chart, and does not show the location of the organs.

Book VI

DIAGNOSIS

OR THE ART OF TELLING A COMPLAINT BY ITS SYMPTOMS

Diagnosis is one of the most difficult things in medical practice, yet in order to give proper treatment it is first necessary to be sure of the complaint. Generally this must be discovered by diagnosis, that is by taking into consideration various symptoms and their meaning.

In making diagnosis consideration must be given to age, sex and temperament. Symptoms which might indicate serious illness in a child might mean nothing with an adult; a man of highly nervous temperament might show peculiarities that in no way would disturb his normal state, yet in respect of one of phlegmatic temperament these same symptoms might be indicative of very serious trouble; conditions which might mean much in the case of a woman might mean nothing in the case of a man. A man who has high brain qualities without proportionate body development will show symptoms which a man whose body development is equal to that of his brain would not show. When the brain power is predominant the person is said to be of cephalic temperament, that is thinking temperament. When the lungs and heart are largely developed and this development preponderates, as shown by large chest, force of circulation, redness of skin and general animal activity, the person is said to be of thoracic temperament. When the abdomen, which contains the organs of receiving, digesting and disposing of the materials which nourish the body, is predominant the person is said to be of abdominal temperament. When the bones are large and the muscles naturally exceptionally strong and there is a largeness of frame and solidity of structure and exceptional powers of muscular endurance the person is said to be of muscular temperament.

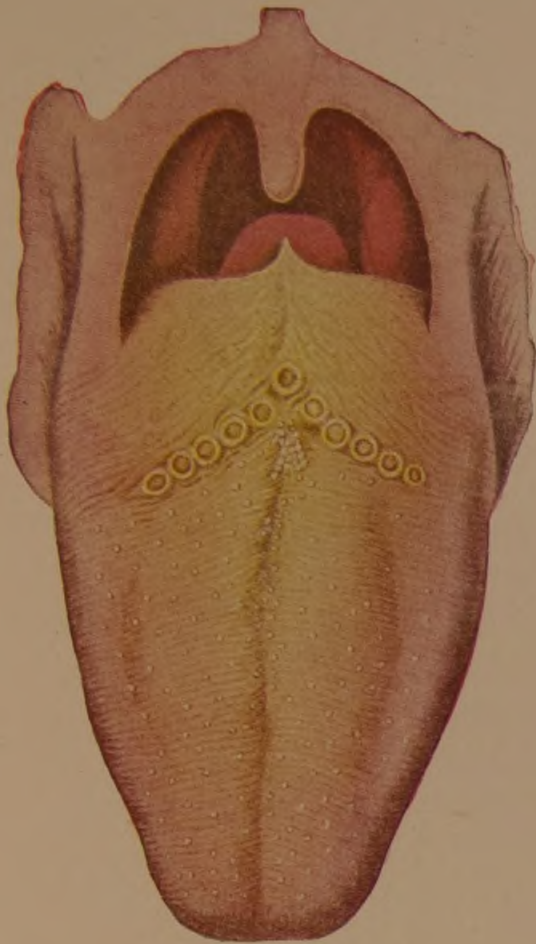
To diagnose a case properly, one must consider :

- (1) The age and sex of the patient.
- (2) The appearance of the patient at the time.
- (3) Whether or not there is suffering and if so, where the pain is located.
- (4) How long illness has existed; and what different abnormal conditions have shown themselves.

The temperature, the pulse, the condition of the mouth, the tongue, respiration, urine, fecal discharges, etc., must be carefully examined and inquiry made as to digestion and generally as to the condition of the patient preceding the time of diagnosis.

One of the great factors in diagnosis is the location of pain. Pain is of diagnostic significance and should be carefully studied in respect of every case. It indicates a primary cause but it must not be overlooked that the location may be far removed from that part of the body in which the cause exists. Pain may be reflex; that is, it may result from a stimulation or irritation of either the cerebro-spinal or the sympathetic system of nerves, or both. The cerebro-spinal and sympathetic nerves are in close association and there are special nerves for the conduction of pain and special organs which are affected thereby and which convey to the consciousness the sensation of pain which thereupon attempts to designate the locality or region in which the pain is being produced. Sensibility to pain differs in degree according to the location of its cause. A nerve may be stimulated in any part of the nervous system and if such stimulation be sufficient pain will be localized either at or in the neighborhood of the end of the nerve. It happens, however, that these nerves are closely associated in the brain with nerve fibres which supply structures at distant points that they sometimes become irritated and pain will in consequence be felt in spots quite remote from the actual seat of trouble (reflex pain).

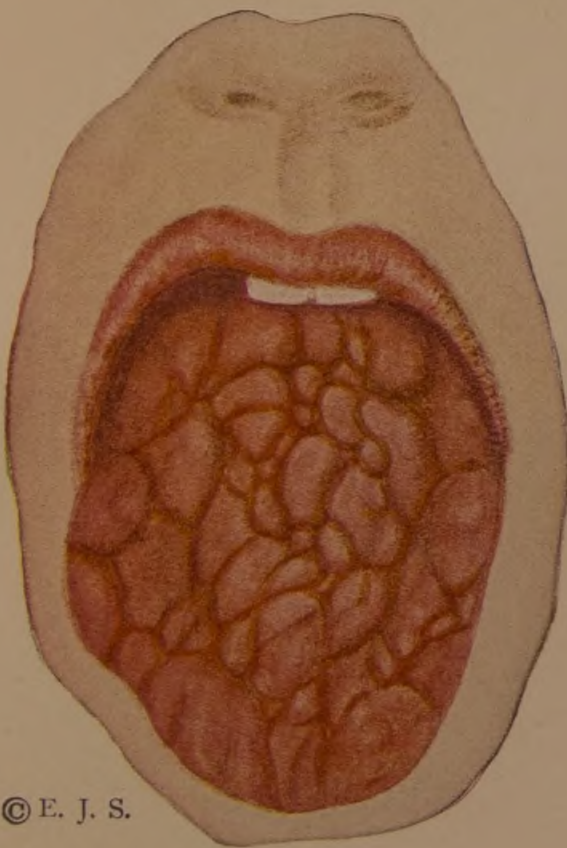
It is claimed by some authorities that in disease of any internal organ pain is never felt in the organ itself, but is communicated through the sympathetic to the cerebro-spinal nerves and then to the surface of the body in one or many points, sometimes diffusing over a much greater area than that occupied by the organ affected. If the organ be highly inflamed or otherwise seriously diseased the nerve may communicate to certain surface centres a feeling or sensation of actual pain, but where there is less stimulus the sensation of pain may only be felt upon the part of the surface of the body in question being touched. In locating pain produced by pressure it is necessary to be exact in order to be sure of the particular nerve which is



Coated or Bilious Tongue.



Normal Tongue.



© E. J. S.

Syphilitic Lobulation of the Tongue.
"Cobblestone Tongue."



Herpetic Inflammation of the Tongue.

sending the sensation so that this nerve may be traced back and its association with other nerves in the cerebro-spinal and sympathetic systems properly considered.

Without years of study of the human body it is impossible for any layman to correctly locate the exact seat of a trouble without full and exact description and tables showing clearly the action of the nerves upon different parts of the body in respect of the various diseases to which the organs of the body are subject. The object of this present chapter is to give such tables and so clearly set forth the effect of different diseases upon different parts of the body that the layman may, in a vast majority of cases, as efficiently diagnose most diseases as the ordinary physician.

In diagnosing care should be taken to exactly locate any pain. Consideration should be given as to how long the pain has been felt. Is the pain continuous or intermittent, and if the latter does it appear at any particular part of the day or night, or after eating, going to stool, urinating, etc.? Is it worse at certain times of the year or in certain kinds of weather? Is it relieved or increased by any special posture or action? The question of intensity of pain is important, yet is oftentimes hard to arrive at. People suffering from nervous troubles are apt to exaggerate the severity of the pain they feel. Temperament modifies the expression of pain complained of. Some patients complain bitterly of slight pain, others pride themselves upon being stoical. The pulse and temperature when the pain is at its height should be compared with the pulse and temperature during intervals of relief. Consideration should be given to the quality of the pain, whether it is spasmodic, darting, gnawing, burning, tingling, griping, and so forth. It must be remembered, too, that the same disease may manifest itself in different ways in different people, and so it happens that what is the most prominent symptom with one patient may be a minor symptom with another. Thus in pleurisy, the most distressing feature with one patient may seem to be the coughing spell, while with another the coughing spell may not be particularly noticeable, but respiration be so painful that the difficulty in breathing becomes the outstanding feature.

It is to be borne in mind by everyone in studying a table or description of symptoms that there is always a possibility of the reader coming to the conclusion that he has this or that symptom of some disease, when as a matter of fact, such symptoms are in reality lacking. In their early study of disease at college, medical students frequently become obsessed with the idea that they have this or that disease from reading and studying

such disease and then imagining that they have the symptoms described. Quack doctors and patent medicine men so thoroughly appreciate this that they build up their advertising literature to impress people who may read that they are sufferers from the complaint which the quack or the patent medicine is supposed to cure. This fact must always be kept in mind, not only in studying the table of symptoms which is here given, but in reading the general description of disease in the special articles in respect thereof to be found in different parts of this work.

TABLE OF SYMPTOMS.

The following table if carefully studied in conjunction with the special articles throughout this work on the diseases indicated will prove a ready and practical method of telling what complaints may be by their symptoms. To illustrate: Someone in your family may have a chill. It may be of such character that no one need be concerned, or it may be the onset of some serious illness. It is important to know at once. You turn to the following table and run your finger down the first column (Most Noticeable Symptoms), which is arranged alphabetically, until you come to the word *Chills*; you then consult the second and third columns ("Additional Symptoms" and "Disease Indicated") in line with the word *Chills* and you see that chills, when accompanied with piercing pain on one side of the chest, dry cough, short breathing and difficulty of lying on affected side are set down as the symptoms of Pleurisy, while chills followed by violent pain in the abdomen, increased by the slightest pressure, nausea, dry tongue and full hard pulse, are symptoms of Peritonitis. Suppose the symptoms point to Peritonitis; you at once turn to the index in the back of the book and find at what page or pages information may be found in respect of this disease and you are at once in possession of the best knowledge extant in respect of the subject.

It is to be observed also that each set of symptoms as hereafter following is numbered and that at the end of this chapter there is an index showing the symptom number or numbers of the different diseases for which symptoms are given in this chapter. This index relates only to the actual contents of this chapter, its object being to enable the reader to quickly turn to different outstanding symptoms in the same disease, and it must not be confused with the general index at the back of the book which refers to articles throughout the whole book. Thus symptom No. 2 indicates inflammation of the bladder and by turning to the index at

end of this chapter we find that symptom No. 150 and 220 also refer to the same disease but give different outstanding features; but when it is desired to read full particulars in regard to this disease reference must be made to the general index at the back of the book, where reference will be found to special articles on the disease.

BLOOD PRESSURE

The value of blood pressure at the present time is recognized by all modern physicians. Like the clinical thermometer or stethoscope, the sphygmomanometer, or blood pressure apparatus is recognized as an aid to accuracy in diagnosis. At the present time, it is used in hospitals and private offices frequently. Also medical examinations for life insurance companies contain the blood pressure test of applicants.

The blood pressure is especially taken to show the contractile powers of the heart, and the resistance of the blood vessels. This resistance depends very largely on the tonicity of the walls of the blood vessels. The changes in blood pressure are largely due to departures from the normal force of the heart and to alterations in the elasticity and tonicity of the arteries. The pulse pressure gives a figure which measures the pumping capacity of the heart.

The normal average pressure at the age of twenty is 120. This increases every two years about one degree, so that at the age of thirty the pressure would be approximately 125 and at the age of sixty would be approximately 140. These figures vary according to the condition of the patient. Physically weak persons show a slightly lower pressure, while exercise will show a higher degree. These readings can only be taken by a competent physician and with a reliable apparatus.

TABLE OF SYMPTOMS FOR DIAGNOSIS

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Abdomen— Swelling of.	¹ Picking at the nose; itching about anus; grinding of teeth in sleep.	Worms
Abdomen— Painful urination.	² Pain in lower part of the abdomen; urine scanty, high colored, even bloody, sometimes with mucus or pus; much straining with sometimes but a few drops passed at time.	Inflammation of the Bladder. (Cystitis.)
Abdomen— Intense pain.	³ Pain increased by slightest pressure even of bedclothes; high temperature; rapid, wiry pulse; inclination to draw up the legs in relaxation of the abdominal muscles; abdomen tense from distension; pinched and anxious appearance of face; skin cold and clammy.	Inflammation of the Bowels. (Peritonitis.)
Abdomen— Pain when urinating.	⁴ Severe pains in one loin extending to the hip on the same side and running down the groin to the bladder; frequent urination; stream suddenly interrupted after starting; pain or crawling sensation at head of penis (males) or in the vagina (females); bloody urine; sometimes nausea and vomiting.	Gravel or Stone in the Bladder. (Calculus.)

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.



Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
<p>Abdomen— Sensation of burning in stomach.</p>	<p>5 Colicky pains in abdomen, with looseness of bowels, sometimes vomiting; headache; depression of spirits; later gripping pains are felt; faintness and depression over heart; pulse weak, may be absent at wrist; copious purging of thin, watery matter, sometimes tinged with blood; violent vomiting; sensation of burning in stomach; in a few hours there follow coldness and dampness of whole surface of body, lividity of lips, cold breath, an unquenchable thirst; feeble, rapid pulse; difficult respiration; suppression of kidney secretion.</p>	<p>Asiatic Cholera.</p>
<p>Abdomen— Rupture.</p>	<p>6 Protrusion of some portion of the bowel or any abdominal viscera through the wall of the abdomen, commonly known as rupture, is so well known that it is unnecessary to give symptoms, but there is a form known as strangulated hernia, which may occur with anyone suffering from rupture. In ordinary rupture a little loop of intestine escapes in a small pouch; if this intestine loop becomes crowded into the pouch, so as to be tightly squeezed, the bowels cannot act and there is danger of mortification. There is intense pain, not only in the neighborhood of the rupture, but over the whole abdomen, especially around the navel; obstinate vomiting and cessation of passages from the bowels; vomiting persists in spite of all remedies and results in bringing up fecal matter through the throat, being a curious phenomena only known to occur in strangulated rupture.</p>	<p>Hernia and Strangulated Hernia.</p>

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Anus— Irritation of.	7 Itching about anus; grinding teeth in sleep; picking at nose; with or without swelling of abdomen.	Worms.
Anus— Protrusion of mucous lining.	8 Much pain and tenderness of the part; fever; restlessness.	Falling of the Bowels. (Prolapsus Anus.)
Anus— Itching and pricking.	9 Peculiar sickening sensation when at stool; feeling of obstruction in rectum; sometimes bleeding and if this be copious it gives temporary relief.	Piles. (Hemorrhoids.)
Anus— Fissure of.	10 Itching pain and fullness about rectum; cuts or channels from anus into rectum; discharge of pus which is frequently of offensive odor.	Fistula.
Appetite— Voracious.	11 Great thirst; marked loss of weight and strength; anemia; passing of excessive quantities of pale urine; sweetish breath.	Diabetes.
Appetite— Voracious.	12 Severe pain extending upward from region of the navel; pain relieved by eating; nausea, sometimes vomiting; often diarrhoea; itching at nose; loss of weight. Sometimes the passing of a yellowish or whitish flat, flexible substance, either with stools or otherwise.	Tape Worm.
Bed-Wetting.	13 See Urine, Incontinence of, No. 226.	

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.



Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
<p>Back— Pain in the lower part.</p>	<p>¹⁴ Pain severe, but spasmodic; relieved if restful in one position, but suddenly acute upon making any movement affecting the muscles of the back, such as turning in bed, or rising from a chair.</p>	<p>Lumbago (Muscular Rheumatism).</p>
<p>Back— Pain and tenderness in small of.</p>	<p>¹⁵ Pain and tenderness also in loins, extending down inside of limbs; constant desire to urinate and inability to retain; urine hot, dark and bloody.</p>	<p>Inflammation of the Kidneys.</p>
<p>Back— Dull pain.</p>	<p>¹⁶ Dull pain over kidneys, extending downward; frequent passage of scanty, high-colored and albuminous urine of high specific gravity; puffy face; chills followed by fever.</p>	<p>Acute Bright's Disease.</p>
<p>Back— Intense pain.</p>	<p>¹⁷ Sharp, intense pain in region of kidneys radiating downward toward the groin; nausea and vomiting may occur; cold sweats; in males the testicle on affected side drawn up.</p>	<p>Stone in Kidney (Renal or Nephritic Colic).</p>
<p>Back— Neuralgic pains.</p>	<p>¹⁸ A dragging sensation in the back; sharp pains shooting from the back down to the groin; uneasy feeling in both sides; sometimes hysteria; relief obtained while lying down but pain returning on rising.</p>	<p>Floating or Movable Kidney.</p>

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

TABLE OF SYMPTOMS FOR DIAGNOSIS.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
<p>Back— Spinal sensations.</p>	<p>¹⁹ Intermittent sensations of pain and tenderness over the spinal column, radiating to the chest and extremities; convulsive twitchings; sometimes hysteria; mental lassitude; muscular weakness; wakefulness; sometimes derangement of sexual functions.</p>	<p>Nervous Prostration (Neurasthenia).</p>
<p>Bowels— Swelling of.</p>	<p>²⁰ Tenderness over bowels; slight fever; mucous or blood passages; colicky pains; constant desire to defecate; stools of bloody slime, having peculiar offensive odor.</p>	<p>Dysentery.</p>
<p>Bowels— Confined.</p>	<p>²¹ Irregular action, one day costive, next relaxed; pain in right side; coated tongue; headache.</p>	<p>Liver Complaint (Hepatitis).</p>
<p>Bowels— Relaxed.</p>	<p>²² Gripping pains in stomach, sometimes twisting; coated tongue; fever; tenderness of stomach; frequent loose, watery stools.</p>	<p>Diarrhœa.</p>
<p>Bowels— Costive.</p>	<p>²³ Vomiting, tenderness; pain; thirst; quick, high pulse.</p>	<p>Inflammation of the Bowels.</p>
<p>Bowels— Burning pain in.</p>	<p>²⁴ Cold, clammy skin; small, weak pulse; collapse; violent vomiting and diarrhœa.</p>	<p>Cholera Morbus.</p>

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Bowels— Infantile.	²⁵ Relaxed; great pain; feverishness and thirst; head hot; tenderness of abdomen.	Cholera Infantum.
Body— Pain, liver and right shoulder.	²⁶ Hectic fever, high in the evening and low in the morning; chills sometimes present; pain is variable and may be felt in back of right shoulder; liver is enlarged, painful and tender; marked jaundice is rare; there may be bulging which is apt to vary at different times.	Abscess of the Liver.
Blood— Poisoning of.	²⁷ Poisoning of the blood which may come from internal causes or be introduced into the system through external wounds, give symptoms of chill, followed by high fever; profuse sweating; great prostration, delirium, etc. There may or may not be abscesses.	Blood Poisoning (Septicemia and Pyemia).
Breath— Offensive.	²⁸ Constipation; headache; pain in head and right shoulder.	Liver Complaint.
Breath— Shortness of.	²⁹ Fatigue on slight exertion; loss of weight, debility; loss of appetite; anæmia; hectic flush in cheeks; hacking cough with considerable expectoration; night sweats.	Consumption (Pulmonary Tuberculosis).
Breathing— Rapid.	³⁰ Sudden hard chill and sharp pain in side; high fever; short dry cough with brownish or blood-stained sputum.	Pneumonia (Congestion of the lungs).
Breathing— Laborious (Children)	³¹ Usually sudden attack at night; child gasps for air and breathing causes a peculiar whistling sound; barking cough; hoarse whispering voice; muscular contractions of fingers and toes; sometimes convulsions	Croup.

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

TABLE OF SYMPTOMS FOR DIAGNOSIS.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Breathing— Difficult.	³² Inspiration short and jerky; expiration inordinately prolonged; breathing produces a wheezing or whistling sound; face pallid and distressed.	Asthma.
Breathing— Painful.	³³ Pronounced chill followed by fever; sharp, stabbing pain in the side, aggravated by motion, coughing or attempt to take long breath; pain usually high up in region of nipple, but may extend to the shoulder, armpit and back; painful cough accompanied by expectoration streaked with blood and sometimes pus; vomiting; tongue parched; decided thirst; urine scanty and high-colored.	Pleurisy. For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.
Breathing— Spasmodic.	³⁴ Palpitation or throbbing of the heart; occasional short, sharp pains in the region of the heart; swelling of the feet, particularly in the evening.	Heart Disease (Endocarditis, Pericarditis, or Carditis).
Breathing— Spasmodic.	³⁵ Irregular beating of the heart, which sometimes seems to pound.	Palpitation of Heart.
Breathing— Affected by exertion.	³⁶ Irregular, feeble and slow pulse; heart beats almost imperceptible; vertigo; frequently severe pains in chest; pallid face; enfeebled muscular power; cold feet and hands; swelling of feet.	Fatty Degeneration of the Heart.
Chest— Contraction of.	³⁷ Short, dry cough; hectic fever; night sweats; general debility; loss of appetite; constipation.	Consumption (Pulmonary Tuberculosis).

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
<p>Chest— Feeling of rawness.</p>	<p>³⁸ Aggravated by coughing and feeling of rawness extending through chest into the back; severe cold in head; shortness of breath; husky voice; wheezy respiration; inflamed throat; barking cough; coated tongue; fever; full pulse.</p>	<p>Bronchitis.</p>
<p>Chest— Sharp pains in.</p>	<p>³⁹ See Breathing, No. 33.</p>	<p>Pleurisy.</p>
<p>Chest— Whooping cough in.</p>	<p>⁴⁰ For week or ten days, symptoms of an ordinary cold, with cough, slight fever, etc. Cough gradually increases and assumes a spasmodic character; paroxysms consist of a series of short, expulsive soughs, in which child often becomes blue in the face and apparently on the verge of suffocation, when a long-drawn, noisy, whooping inspiration occurs; expectoration of thick, stringy mucus, often with vomiting and sometime with hemorrhages from nose, lungs, and so forth; several attacks may follow in close succession, followed by a respite of varying length.</p>	<p>Whooping Cough.</p>
<p>Chest— Inflammation of the breast.</p>	<p>⁴¹ Uneasiness of the breast in either male or female followed by a chill and usually fever; gland becomes intensely swollen, red and exceedingly painful; inflammation may be so great as to cause an abscess.</p>	<p>Mastitis or Mammitis.</p>

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Chest— Cancer of the breast.	<p>⁴² When a woman discovers a lump in the breast she should at once consult a physician as, although it may be a simple matter, it may, on the other hand, be the first indication of a cancerous growth.</p>	Cancer of the Breast.
Chills— With short breathing.	<p>⁴³ Lancinating pain on one side of the chest; dry cough; difficulty of lying on affected side.</p>	Pleurisy.
Chills— Swelling of throat and tonsils.	<p>⁴⁴ Headache; fever; high pulse; hoarseness; dry skin; ulcerated sore throat.</p>	Tonsillitis.
Chills— Vomiting.	<p>⁴⁵ Fever; backache; whitish ulcers in throat; vomiting; great prostration.</p>	Diphtheria.
Chills— Violent pain in abdomen.	<p>⁴⁶ Pain increased by slightest pressure, even the bedclothes; nausea; dry tongue; full, hard pulse.</p>	Peritonitis.
Chill— With shortness of breath.	<p>⁴⁷ Chill followed by pain; pulse quick and hard; pain aggravated by cough.</p>	Pneumonia.

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Chill— With intense headache.	⁴⁸ Sore throat; pain in chest; nausea; scarlet rash in about forty-eight hours, face, neck, throat and limbs.	Scarlet Fever.
Chill— Followed by watery eyes.	⁴⁹ Headache; vomiting; rash usually comes on early, generally first or second day; nausea; dry, irritating cough.	Measles.
Chill— Pain at pit of stomach.	⁵⁰ Tongue and teeth coated with a dark brown fur; headache; vomiting; clammy perspiration.	Typhus Fever.
Chill— Pain in head and limbs.	⁵¹ Slight prostration; skin hot and dry; pulse rapid; temperature high; frequently diarrhoea.	Typhoid Fever.
Chill— Pain in muscles of neck, back and legs.	⁵² Great prostration; severe pains in head; sneezing; hoarseness; paroxysmal hard cough; impaired breathing; running from nose; acute nervous symptoms; severe gastric disturbance.	La Grippe (Influenza).
Chills—	⁵³ In addition to the foregoing specific diseases which commence with chill it may be stated that almost all acute diseases start with chills or chilly sensations.	
Cough— Deep, hoarse.	⁵⁴ See Chest, No. 38.	Bronchitis.

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Cough— Quick, distressing.	55 See Breathing, No. 30.	Pneumonia..
Cough— Hacking.	56 See Breath, No. 29.	Consumption (Pulmonary Tuberculosis.)
Cough—	57 In addition to being a symptom in the foregoing diseases, cough is frequently an accompaniment of many other ills.	
Constipation—	58 Descent or protrusion of mucous membrane of the lower bowel through the anus; straining at stool.	Prolapsus Anus.
Constipation—	59 Veins of rectum distended in little lumps which may be within the rectum or may protrude at the anus; sometimes hard and sore, sometimes bleeding, generally accompanied by an irritating itching of the part.	Piles.
Delirium— At onset.	60 Coldness of body and limbs; nausea; intense thirst; severe pains in head; spots on body, bleeding at touch.	Spotted Fever (Cerebro-spinal Fever).
Diarrhoea— Violent pain at navel.	61 Bowels hot and tender to pressure; a blue line on the gums.	Painter's (Lead) Colic.

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Diarrhœa—	<p>62 Diarrhœa in more or less severe form is also an accompaniment in other diseases than those above specifically mentioned.</p>	
Dizziness— Pain in right side and shoulder.	<p>63 Bowels irregular, one day costive, the next relaxed; feverishness; tongue coated.</p>	Liver Complaint.
Ears— Ringing in.	<p>64 Violent pain in head; redness of eyes; flushing of face; fever; constipation; delirium.</p>	Meningitis.
Ear— Swelling behind.	<p>65 Inflammation with pus; severe pain.</p>	Mastoiditis.
Eruptions—	<p>66 See Skin, Nos. 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 190, 191, 192, 193, 194, 195, 196, 197, 201, 202, 203, 204.</p>	
Expectoration— Slimy and blood-stained.	<p>67 See Breathing, No. 30.</p>	Pneumonia.
Expectoration— Frothy blood.	<p>68 Preceded by cough; difficult breathing; salty or sweetish taste; blood may be coughed up in small quantities or come with a gush.</p>	Hemorrhage of the Lungs.
Expectoration— Dark, elotted blood.	<p>69 Usually occurring with vomiting caused by eating.</p>	Hemorrhage of the Stomach.

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated	
Face— Puffy.	See Back, No. 16. 70	Bright's Disease.	For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.
Face— Yellow.	Yellow skin, yellow urine and whites of eyes especially yellow; nausea; vomiting; dizziness; feces pasty and light in color. 71	Jaundice.	
Face— Shooting pains in.	Stabbing or shooting pains in head or face; usually confined to some particular area, but may be general. 72	Facial Neuralgia.	
Face— Swollen.	Swelling of the Parotid Gland; in front and beneath the ear, sometimes extending to breasts and testicles; pain when chewing and swallowing. 73	Mumps.	

TABLE OF PULSE AND TEMPERATURE

In all illness where fever is present there not only is a rise of temperature, but quickened circulation, a change of tissue and disordered secretion. Rise of temperature is a predominant feature. The height of fever may always be determined by the use of the clinical thermometer. When temperature is in excess of normal (98.6) degrees, but is under 100 degrees, the patient is spoken of as being feverish; from 100 degrees to 101 degrees, as having slight fever; 102 degrees to 103 degrees, moderate; 104 degrees to 105 degrees, high; in excess of 105 degrees, intense.

As a general rule, circulation is quickened much in the same ratio as is the temperature, one degree Fahr. usually showing an increase of from eight to ten beats of the pulse per minute. A fairly accurate comparison between temperature and pulse may be made from the following table:

- A temperature of 98 degrees F. corresponds to a pulse of 60
- A temperature of 99 degrees F. corresponds to a pulse of 70
- A temperature of 100 degrees F. corresponds to a pulse of 80
- A temperature of 101 degrees F. corresponds to a pulse of 90
- A temperature of 102 degrees F. corresponds to a pulse of 100
- A temperature of 103 degrees F. corresponds to a pulse of 110
- A temperature of 104 degrees F. corresponds to a pulse of 120
- A temperature of 105 degrees F. corresponds to a pulse of 130
- A temperature of 106 degrees F. corresponds to a pulse of 140

Tissue waste is usually proportionate with the severity and duration of the fevered condition, being almost absent in slight fevers, but excessive in prolonged fevers, such as Typhoid. Disordered secretions are indicated by salivary, gastric, intestinal and urinal deficiency, causing furred tongue, clammy mouth, excessive thirst, constipation and scanty, high-colored, and commonly acid urine.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated	
Fever— Eruptive.	<p style="text-align: center;">74</p> <p>Violent chill in adults and convulsions in children; intense frontal headache, agonizing lumbar pains and vomiting; high fever from commencement; delirium usually present and frequently violent; face flushed; eyes bright and clear; eruption of small red spots, appearing on the third or fourth day, first on forehead and wrists and rapidly spreading over the face and body.</p>	Small-pox.	For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Fever— Eruptive.	<p>75</p> <p>Slight fever accompanied by chills, vomiting, headache, and pain in back and legs; an eruption which is the most marked feature comes out during the first day, usually appearing first on chest or back in the form of red spots, sometimes first appearing on forehead; in light cases there may be only one or two spots.</p>	Chicken-pox.
Fever— Eruptive.	<p>76</p> <p>Chill; vomiting; high fever; on second day scarlet eruption appears first on chest and rapidly spreads over the body; tongue coated; quick pulse; sore throat; ash-gray patch on palate.</p>	Scarlet Fever.
Fever— Eruptive.	<p>77</p> <p>Symptoms of cold in head with feverishness, headache and nausea, shortly followed by cough. These persist with increasing fever until fourth day when eruption appears, beginning on forehead, neck and face and within twenty-four hours extending over entire body; eruption in form of slightly raised red spots resembling flea-bites, which disappear momentarily upon pressure, becoming confluent as disease progresses and forming continuous patches of dusky redness.</p>	Measles.

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
<p>Fever— Sometimes eruptive.</p>	<p>⁷⁸ Chilliness, followed by fever, vomiting, intense headache, vertigo, painful muscular stiffness, soon developing into continuous spasms, particularly affecting the muscles of the head and back; breathing rapid; pulse irregular, varying from 30 to 40 beats within a few hours. In malignant cases there is usually a rash.</p>	<p>Spotted Fever (Cerebro-spinal Fever).</p>
<p>Fever— Eruptive.</p>	<p>⁷⁹ Onset three to five days after incubation, attack usually sudden, frequently a night after retiring in usual health; temperature rises in a few hours to 103 degrees and in one or two days may reach 106 or 107 degrees; skin becomes dry and hot; countenance indicates utter helplessness and prostration; usually pain in the head, back, limbs and small joints, which latter swell up as in Rheumatism; rapid pulse; loss of appetite; coated tongue; slight nocturnal delirium; concentrated urine. The pain may be so severe that the patient cannot move. First stage lasts about forty-eight hours, but may vary from twelve hours to three days, when symptoms subside and there is a period of two or three days remission, general debility and muscular pains predominating and fever usually absent, but on fourth day reappears; on fifth or sixth day an eruption develops, which is sometimes more like the flush of erysipelas than the</p>	<p>Break-Bone Fever (Dengue).</p>

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
<p>Fever— Eruptive.</p>	<p>papules of Measles or Scarlet Fever, though the color is not so intense. The eruption spreads over the whole body. When it reaches its height, painful swellings of the lymphatic glands of neck, back of head, armpits and groins occur, the nose, mouth and throat becoming implicated, swelling up and growing excessively painful. On the seventh or eighth day scaling commences and the acute stage terminates.</p> <p style="text-align: center;">80</p> <p>Violent headache; transient shiverings; palpitation of the heart; irregularity of the pulse; vomiting; difficulty in breathing; spitting of blood; syncope or fainting; pale face; apathetic expression, eyes dull and pupils dilated; patient lies three or four hours in state of absolute prostration, then has violent fever with delirium, during which urine is suppressed and bowels constipated; dark purplish spots, from one-tenth of an inch to one inch in diameter, appear over the body, exhaling a peculiar odor somewhat resembling honey.</p>	<p>For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.</p>
<p>Fever— Non-eruptive.</p>	<p>Moderate fever elevation rarely exceeding 103 degrees; frequent pulse; flushed face; headache; sense of lassitude and weariness; loss of appetite; nausea and restlessness; in children perhaps delirium; termination usually sudden on third or fourth day. Symptoms much like those of Typhoid, but Diarrhoea and other symptoms are absent.</p> <p style="text-align: center;">81</p>	<p>Bubonic Plague.</p> <p>Ferbicular or Ephemeral Fever.</p>



Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
<p>Fever— Non-eruptive.</p>	<p style="text-align: center;">82</p> <p>Slight chill or chilly feelings, followed in a few hours by headache, quickened pulse, rise in temperature and constipation; frequently nausea and sometimes vomiting during first twelve or twenty-four hours; sometimes a slight eruption of Roseola or Prickly Heat about the loins and over the back; sometimes delirium, especially at night; fever usually subsides without further derangement of the system than copious and debilitating perspiration, or perhaps an outbreak of vesicles of Herpes, commonly called cold sores about the face or elsewhere.</p>	<p>Protracted Simple Continued Fever.</p>
<p>Fever— Non-eruptive.</p>	<p style="text-align: center;">83</p> <p>Incubation period short, attacks may occur promptly after exposure, but usually from five to eight days; onset generally abrupt without preliminary symptoms; fever severe, but of short duration, and when over the patient is left comparatively well for a few days; after interval of about a week there is another attack; onset of malady is marked by chill or shivering fit, severe headache, vomiting and often jaundice; white, moist tongue; tenderness over pit of stomach; constipation; enlarged liver and spleen; high-colored urine; frequent, full and often bounding pulse; pains in back and limbs; frequently delirium.</p>	<p>Relapsing Fever (Febris Recurrence).</p>

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Fever— After childbirth. Non-eruptive.	<p style="text-align: center;">84</p> Violent chill third or fourth day after delivery; great thirst and extreme prostration; fever may run very high; uterine discharge becomes very foul and the odor nauseating; delirium.	Child-bed Fever (Puerperal Fever).
Fever— Non-eruptive.	<p style="text-align: center;">85</p> Indisposition and general debility for a week or two without any predominating symptoms, yet usually accompanied by a certain feeling of chilliness and a slightly feverish condition, then temperature rises more rapidly, reaching 103 or 105 degrees; continual headache; constipation, followed by diarrhoea; weak, rapid pulse; unnatural respiration; slight cough; dull, apathetic face; general listlessness; tremulous tongue; pain in lower part of abdomen, on which may be found rose-colored spots; watery stools, quickly developing to severe diarrhoea; delirium.	Typhoid Fever.
Fever— Non-eruptive.	<p style="text-align: center;">86</p> Chill and general chilliness followed by fever; headache; backache; tongue coated; occasionally looseness of bowels, but generally the reverse; sometimes, but not always, vomiting. Fever usually continues three of four hours, but may vary from one to twelve hours and is then followed by a sweating stage. Patient feels weak, languid and depressed. The attack over, it returns periodically, usually every other day, or every third day.	Malarial Fever (Ague.)

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.



Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
<p>Fever— Non-eruptive.</p>	<p>87 Sometimes prolonged chilliness and in other cases chill hardly perceptible; rise in temperature usually slow; face pallid at commencement, but gradually becoming flushed as fever rises; frontal headache; nausea; belching; sometimes delirium at night; eyes more or less yellow; urine dark and cloudy. Duration of attack is usually twenty hours or longer; reoccurrence at uncertain intervals, sometimes every twenty-four hours, sometimes forty-eight hours or longer.</p>	<p>Remittent Fever.</p>
<p>Fever— Non-eruptive.</p>	<p>88 Chill followed by intense fever; jaundiced face and anxious countenance; scanty, albuminous urine of high color, sometimes almost completely suppressed; rapid pulse; high temperature; profuse vomiting, matter vomited being of coffee color, frequently called black vomit; watery and somewhat reddened eyes; mind usually clear.</p>	<p>Yellow Fever.</p>
<p>Fever— Non-eruptive.</p>	<p>89 Fever occurs in connection with many other ills. Whenever normal conditions of the body are disturbed fever is a possible symptom and therefore other symptoms must be taken into consideration therewith.</p>	<p>For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.</p>

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
<p>Head— Unnaturally large.</p>	<p>⁹⁰ Dull, languid child; capricious appetite; irregular bowels; pale, unhealthy stools; emaciated limbs; tumid belly; face full and head disproportionately large, forehead projecting and the sutures of the cranium remaining open, sometimes expanding; extremities of the long bones swollen out into knobs; legs bent outward at knee; chest deformity.</p>	<p>Rickets.</p>
<p>Headache—</p>	<p>⁹¹ Headache may be due to some local disturbance, such as might be caused by over-eating, or it may be one of the symptoms of many different diseases.</p>	<p>For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.</p>
<p>Heart— Palpitation of, without other noticeable symptoms.</p>	<p>⁹² This may be a symptom of heart disease, but commonly it is due to some functional disorder without disease of the heart of any kind. It often thus occurs in anaemia and is not uncommon in dyspepsia. It is sometimes caused by the use of tobacco, aleahol, strong tea or coffee.</p>	<p>Anæmia; Dyspepsia; Nervous Disorder.</p>
<p>Heart— Palpitation of, with swelling of feet.</p>	<p>⁹³ Shortness of breath; swelling of feet, especially in the evening; occasional pains over the heart region.</p>	<p>Endocarditis; Pericarditis; Carditis.</p>

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
<p>Heart— Slow action accompanied by difficult breathing, etc.</p>	<p>94 Heartbeats almost undiscernable; pulse slow, irregular and feeble; difficult breathing, especially on exertion; dizziness and sometimes attacks of faintness; frequent pain in the heart region; cold hands and feet; slight swelling of feet with stout people; poor digestion; weak muscular power.</p>	<p>Fatty Degeneration of the Heart.</p>
<p>Heart— Shooting pains.</p>	<p>95 Agonizingly sharp pains, chiefly on the left side in the heart region, but sometimes extending to both sides of chest and to shoulders and arms. Pain generally of short duration, but during occurrence arouses fear of death.</p>	<p>Angina Pectoris (Neuralgia of the Heart).</p>
<p>Heartburn—</p>	<p>96 With uneasy, rather distressing feeling in stomach; sometimes belching.</p>	<p>Indigestion.</p>
<p>Heartburn—</p>	<p>97 With gripping pains; belching; retching; vomiting; tenderness at pit of stomach; looseness of bowels.</p>	<p>Cholera Morbus.</p>

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Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
<p>Insensibility— With premonitory symptoms.</p>	<p>98 Flushed appearance of face and eyes; heated head; throbbing of carotid arteries; distension of temporal arteries and jugular veins; constipation; languor; dullness; drowsiness; dimness of sight; vertigo; headache. Attack marked by sudden stupor, slow and sometimes stentorious breathing; full slow pulse; dusky or turgid appearance of face. In sensibility may be of short duration; slight convulsive movements not uncommon; paralysis of muscles for short time after attack. Attack may prove fatal, but usually there is recovery.</p>	<p>Congestive Apoplexy.</p>
<p>Insensibility— Without clear premonitory symptoms.</p>	<p>99 Sudden attack or stroke; individual falls insensible without warning; duration of insensibility may be seconds, minutes or hours; upon return to consciousness there is general or local paralysis, usually on but one side; mental powers commonly impaired. During attack breathing usually stentorious; pulse slow and full; head hot and face dark or flushed; eyes dilated or one dilated and the other contracted; mouth usually drawn away from affected side of face.</p>	<p>Hemorrhagic Apoplexy.</p>
<p>Insensibility— Epileptic.</p>	<p>100 Victim feels a peculiar premonitory sensation commencing in a finger or toe, utters a sharp cry and falls suddenly to the floor, with partial or complete loss of conscious-</p>	<p>Epilepsy.</p>

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Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
<p>Insensibility— Feigned; hysteric.</p>	<p>ness. Then follows frothing at mouth; biting of the tongue; clenching of fingers; face becomes bluish; pupils dilated; stupor for a varying period. There is soreness, weakness and mental confusion on return to consciousness.</p>	
<p>Insensibility— Cataleptic.</p>	<p style="text-align: center;">101</p> <p>A "fit of hysterics" may vary from mere uncontrollable laughter to severe convulsions in which epilepsy is simulated, but the patient usually falls in a comfortable place and while feigning unconsciousness is in reality quite aware of what is going on.</p> <p style="text-align: center;">102</p> <p>State of trance; patient apparently insensible and sometimes having the general characteristics of death; breathing suspended; limbs remain in any position placed; patient is powerless to speak or make movement of any muscle, yet is mentally conscious of all that takes place. There is danger of burying patient alive while in this state.</p>	<p>Hysteria.</p> <p>Catalepsy.</p>
<p>Itching— Eruptions.</p>	<p style="text-align: center;">103</p> <p>Very severe itching of small, pointed vesicles which usually first appear on the wrists and between fingers, but if not at once eradicated quickly spread to any and all parts of the body excepting the face; itching always worse at night, when it becomes almost unbearable. Extremely contagious.</p>	<p>Itch (Scabies).</p>

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Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
<p>Itching— Of blistery patches.</p>	<p>¹⁰⁴ Intense itching of blistery patches on the skin in any part of body, but especially about the flexures of the joints; the blisters break and exude a serous fluid, which dries into thin yellow crust. The itching at times is so severe that it is impossible to avoid scratching which aggravates the trouble. Not contagious.</p>	<p>Eczema (Moist Tetter).</p>
<p>Itching— At rectum.</p>	<p>¹⁰⁵ Itching in and about anus; veins of rectum distended in little lumps, sometimes within the rectum and sometimes outside; when within the rectum usually burst and bleed, which affords relief, but when outside the lumps simply grow larger and harder and the pain and itching becomes intense.</p>	<p>Piles.</p>
<p>Itching— At rectum and nose.</p>	<p>¹⁰⁶ Itching at the nose and in neighborhood of the anus; swelling of abdomen; offensive breath; grinding of teeth in sleep.</p>	<p>Worms.</p>
<p>Joints and Muscles— Stiffness, accompanied by prostration and vomiting.</p>	<p>¹⁰⁷ General feeling of debility and discomfort; loss of appetite; nausea and vomiting; diarrhoea; prostration; sensation of stiffness about neck, arms and legs; high fever; frequent pulse; copious, offensive perspirations, although the temperature of body does not reach high elevation; stiffness of limbs increases and muscles become more painful and swollen, being very sensitive to the touch; about end</p>	<p>Trichiniasis.</p>

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Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
	<p>of first week, edematous swelling of the eyelids and root of the nose, which are characteristic; sometimes severe hiccup, hoarseness and loss of voice; if the case be severe a paralyzed condition of the muscles may occur.</p>	
<p>Joints and Muscles— Inflammation of.</p>	<p style="text-align: center;">108</p> <p>Chills and fever followed or accompanied by pain, heat, redness and swelling of one or more joints, with tendency to leave one point suddenly and fasten upon another; sore throat; irregular fever; acid sweats; tendency to attack the heart; larger joints, such as hips, knees, wrists, ankles, are more generally the seats of trouble than are the smaller joints.</p>	<p>Acute or Inflammatory Rheumatism, or Rheumatic Fever.</p>
<p>Joints and Muscles— Swollen and painful.</p>	<p style="text-align: center;">109</p> <p>Stiff, swollen painful joints, aggravated by motion; no general fever and appetite may be good and digestion sound; smaller joints commonly attacked, sometimes rendering them permanently swollen and deformed and causing atrophy of the muscles connected with them.</p>	<p>Chronic Rheumatism.</p>
<p>Joints and Muscles— Pain in muscles.</p>	<p style="text-align: center;">110</p> <p>Generally located in either the neck, the back or the side; pain severe but spasmodic; relieved if restful in one position, but suddenly acute upon any movement affecting the muscles concerned.</p>	<p>Stiff or Wry Neck; Lumbago; Pleurodynia.</p>

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Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
<p>Joints and Muscles— Occasional painful affection of the smaller joints.</p>	<p>III Indisposition, sometimes impaired digestion, nausea and vomiting with light fever, suddenly followed by an acute pain in one of the smaller joints, usually the big toe. The pain is intense during attack, but the attack is usually of short duration. After one attack there is generally reoccurrence at more or less frequent intervals.</p>	<p>Acute Rheumatic Gout.</p>
<p>Joints and Muscles— Chronic affection of smaller joints.</p>	<p>II2 Constant or semi-constant painful swelling and immobility of smaller joints, which sometimes become permanently deformed. Pain is absent and swelling less for more or less longer periods, but suddenly returns in full severity after slight exposure to cold and moisture, excess at table or vivid emotions. There is tendency for pain to suddenly leave one joint for another.</p>	<p>Chronic Gout.</p>
<p>Joints and Muscles— Stiffness in jaw muscles.</p> <p>Kidneys—</p> <p>Lungs—</p>	<p>II3 Stiffness of the jaws; rigidity of muscles; arching of the body upon the neck and heels; difficult respiration; chewing of food impossible.</p> <p>II4 See Nos. 11, 15, 16, 17, 18, 70, 71, 160, 189, 222, 223, 224.</p> <p>II5 See Nos. 29, 30, 37, 47, 55, 56, 67, 68, 163.</p>	<p>Lock-jaw (Tetanus).</p>

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Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Menses— Painful.	116 Gripping pains, colic and cramps at time of menses; sometimes convulsions.	Painful Menstruation (Dysmenorrhœa).
Menses— Excessi	117 Excessive flow of blood at the regular monthly periods.	Excessive Menstruation (Menorrhœa).
Menses— Deficient.	118 Small flow of blood, continuing perhaps only one or two days and sometimes occurring at six weeks or other irregular periods.	Partial Amenorrhœa.
Menses— Whitish discharge.	119 Discharge whitish, thick and gelatinous or thin and milky.	Leucorrhœa (The Whites).
Menses— Cessation of,	120 Morning sickness; enlargement of the nipples; darkening and increase in size of the areolae.	Pregnancy.
Menses— Irregularity and final cessation.	121 Irregularity in menstrual flow after forty-five years of age (occasionally earlier); intervals extended to five six or seven weeks; period last longer; nervous headache; insomnia; general disarrangement of nervous system; sometimes disorders of digestive system and mind sometimes affected.	Change of Life (Menopause or Amenorrhœa).

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Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
<p>Menses— Anæmic.</p>	<p>122 Pale and scanty menses, sometimes none; pale face, bloodless lips; easily fatigued; restless nights; capricious appetite; longing for sharp and acid foods or for slate, chalks and so forth.</p>	<p>Green Sickness (Chlorosis).</p>
<p>Menses— Discharge.</p>	<p>123 Sudden coming on of greenish-yellow discharge accompanied by burning pain at urination.</p>	<p>Gonorrhœa.</p>
<p>Mouth— Bad taste in.</p>	<p>124 Offensive breath; headache; heavy stupid feeling; dizziness; coated tongue.</p>	<p>Biliousness.</p>
<p>Mouth—</p>	<p>125 Rising of water or food to mouth.</p>	<p>Heartburn (Waterbrash).</p>
<p>Mouth— Inflammation of.</p>	<p>126 General redness; areas of marked congestion where irritation is most intense; painful mastication.</p>	<p>Acute or Simple Stomatitis.</p>
<p>Mouth— Small ulcers in,</p>	<p>127 First characterized by small red spots or vesicles, which may rupture, leaving small ulcers, surrounded by a red area. Usually occurring in children under three years of age.</p>	<p>Aphthous Stomatitis or Follicular Stomatitis.</p>

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Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Mouth— Ulcerated.	<p>128</p> <p>Attacks both adults and children, but particularly children after first dentition. Low condition of nutrition; gums of lower jaw chiefly affected, being swollen red and spongy. There is increased salivation; teeth become loose; the breath foul and mastication painful.</p>	Putrid Sore Mouth or Ulcerative Stomatitis.
Mouth— Fungus growth in.	<p>129</p> <p>Slightly raised pearly spots on the tongue which spread and coalesce, sometimes covering the whole membrane lining of the mouth. The fungus growth may be scraped off and examined under the microscope, when it is readily recognized.</p>	Parasitic Stomatitis or Thrush.
Mouth— Ulcerated with proud flesh.	<p>130</p> <p>Of rare occurrence. Usually follows one of the specific fevers, especially measles and whooping cough. The mucous membrane is first affected, usually of the gums or of one cheek. The process is gradual; externally the cheek is swollen, hard, red and glazed; inside the mouth there is an ulcer with a great deal of proud flesh or slough.</p>	Gangrenous Stomatitis, or Cancrum Oris, or Noma.
Mouth— Salivation of.	<p>131</p> <p>Tenderness of the gums, manifested by forcibly bringing the teeth together; redness of the gums near the insertion of the teeth; a metallic taste and increased flow of saliva. Unless checked symptoms become accentuated with profuse flow of saliva, foul breath, tenderness. Sometimes there is ulceration.</p>	Mercurial Stomatitis or Salivation.

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Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Mouth— Vesicles in.	<p>132 Vesicles containing a yellowish matter on the mucous membranes of the lips and tongue and sometimes in the hard palate; burning sensation in mouth; painful swelling; speech and swallowing difficult; copious salivation; later appearance of vesicles between fingers and toes and around nails; feverish condition; loss of appetite.</p>	Glanders.
Mouth— Inflammation of gum.	<p>133 Usually in connection with the root of a tooth which may be ulcerated, causing great pain, which is generally relieved after three or four days by discharge of matter or pus.</p>	Inflammation of the gum.
Mouth— With abscess from ulcerated tooth.	<p>134 A boil or abscess forms in the gum in proximity to the tooth affected. There is great pain until the boil is surgically treated or naturally bursts. Do not apply poultices to outside of face as there is danger of forcing it to break outward through the cheek.</p>	Gumboil (Alveolar Abscess).
Nausea—	<p>135 Nausea occurs in respect of so many slight ailments and is an accompaniment of so many different diseases that it becomes necessary to diagnose from other symptoms, not losing sight of the fact, however, that nausea is present.</p>	<p>For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.</p>

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Nose— Offensive discharge from.	136 Sneezing; pain in forehead; huskiness of voice; soreness of throat; irritation along the nasal passage to the head; excessive and offensive discharge.	Acute Nasal Catarrh.
Nose— Formation of fetid crusts in.	137 Dried secretions or crusts form on the nostrils emitting a peculiar stench. The condition is accompanied by burning, itching and dryness, causing great discomfort to the sufferer.	Chronic Nasal Catarrh (Fetid Catarrh or Ozcna).
Nose— Grape-like tumors in.	138 These tumors form in the upper part of the nose; when small they may present no decided symptoms, but if they become large usually cause obstruction to the respiration, pervert the nasal secretions, give a nasal twang to the voice and in some cases provoke asthmatic attacks.	For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491. Nasal Polyps (Grape-like Tumors).
Nose— Redness and thickness of.	139 See Skin, No. 177.	Acne Rosacea.
Nose— Running of, snuffling, etc.	140 Severe cold in the head, constant sneezing, great discharge from nose, and in many cases difficulty in breathing; slight cough; feverishness; eye and tear ducts affected, causing a watery state of the eyes. It is a complaint of the summer months.	Hay Fever (Hay Asthma; Summer Catarrh; Rose Cold).

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
<p>Ovaries— Severe pain in side.</p>	<p>141 Fever; severe pain on affected side, which is increased in walking or standing; patient prefers lying on back with knees drawn up; lower part of the abdomen extremely sensitive; menstruation as a rule painful, pains coming on a few days before the flow.</p>	<p>Inflammation of the Oviducts (Salpingitis).</p>
<p>Ovaries— Extreme sensitiveness of abdomen.</p>	<p>142 Excruciating pain low down in the abdomen near the groin; pain often shoots down the leg of affected side and may extend into the back and hip; lower part of abdomen extremely sensitive, even weight of bedclothing giving rise to distress; fever; urination and bowel movements usually accompanied by more or less pain.</p>	<p>Inflammation of the Ovary (Ovaritis).</p>
<p>Ovaries— Lump on affected side.</p>	<p>143 Attention first called by one side of the abdomen being larger than the other and later a lump may be felt on that side, which rapidly increases in size, the whole abdomen becoming distended and resembling pregnancy, for which it is often mistaken; later on there is sensation of weight in the pelvis, bowel movements become painful and the bladder very irritable; painful and profuse menstruation are common. Later there is swelling of the legs, privates may become swollen and there is shortness of breath; pain more or less constant and at times violent in character.</p>	<p>Tumors of the Ovary.</p>

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Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Pain in Body— (Abdominal region) With slimy stools.	144 Chill; slight fever; tenderness over bowels; urgent desire for stool; defecations of bloody slime, having a peculiar offensive odor.	Dysentery.
Pain in Body— (Abdominal region) With watery stools.	145 Gripping pains in bowels; nausea; flatulence; loose and watery stools; coated tongue; tenderness of stomach.	Diarrhoea.
Pain in Body— (Abdominal region) Tense pain increased by slightest pressure.	146 See Abdomen, No. 3.	Inflammation of the Bowels (Peritonitis).
Pain in Body— (Abdominal region) Without diarrhoea.	147 Gripping, twisting pains, radiating from the navel and relieved by pressure. Care must be taken not to confuse with strangulated hernia, gall stone, gravel and other serious diseases, also not to mistake these latter for colic.	Intestinal Colic.
Pain in Body— (Abdominal region) Sometimes with Vomiting and diarrhoea.	148 Paroxysmal pains in the bowels of sharp, gripping, tearing, cutting or knowing character; heavily-coated tongue; headache; sometimes jaundice and frequently vomiting or diarrhoea.	Bilious Colic.
Pain in Body— (Abdominal region) With green discharge.	149 Severe, writhing pain, aggravated by slightest pressure; diarrhoea with green discharge of foul odor.	Flatulent or Inflammatory Colic.

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TABLE OF SYMPTOMS FOR DIAGNOSIS.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Pain in Body— (Abdominal region) With constipation and vomiting.	150 Paroxysmal followed by continuous pain in neighborhood of stomach; vomiting; constipation; pain in limbs; blue line around gums.	Lead Poisoning (Painter's Colic).
Pain in Body— (Abdominal region) Vomiting; clammy skin.	151 See Bowels, No. 24.	Cholera Morbus.
Pain in Body— (Abdominal region) Vomiting; Jaundiced appearance.	152 Pain in right side, sometimes shooting to breast bone, shoulder blade or right arm; urine dark and clouded; jaundiced face and eyes; bitter taste in mouth; vomiting; irregular action of bowels, one day costive and next relaxed.	Hepatitis (Liver Complaint).
Pain in Body— (Abdominal region)	153 General indisposition for two or three days; onset is usually with colicky pains which at first may be general over whole abdomen, but particularly around navel; by second day pain distinctly located in appendix region (see manikin); right leg drawn up; rapid pulse; fever; nausea, vomiting; constipation; tenderness.	Appendicitis.
Pain in Body— (Abdominal region) With tenderness of groin.	154 Premonitory symptoms are: Pain in groin with a dragging sensation; backache; fever. These are followed by swelling of the testicles accompanied by sharp shooting or aching pains in testicles, which become hard yet tender to touch; Neuralgic pains in back, hips and thighs.	Epidymitis (Orchitis, or Swelled Testicles).

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Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Pain in Body— (Abdominal region) Itching and pain in anus.	155 See Anus, No. 9.	Piles.
Pain in Body— (Abdominal region) Affecting liver.	156 Feeling of fullness; dyspepsia; flatulence; emaciation; swelling of abdomen; feet swollen in morning; dark-colored urine; clayey stools; bleeding piles.	Cirrhosis (Gin-drinker's Liver).
Pain in Body— (Abdominal region) Affecting loins and bladder.	157 See Abdomen, No. 4.	Gravel or Stone in the Bladder (Calculus).
Pain in Body— (Abdominal region) Affecting region of the liver.	158 Sudden and intense pains in region of the liver, shooting over the abdomen; abdominal muscles tense and tender to pressure; com- monly nausea and vomiting; constipation; generally jaundiced appearance; pain ceases suddenly on passage of stone through the gall duct.	Liver, or Hepatic Colic or (Gall Stones).
Pain in Body— (Abdominal region) With fruitless straining at urina- tion.	159 See Abdomen, No. 2.	Inflammation of the Bladder (Cystitis).

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TABLE OF SYMPTOMS FOR DIAGNOSIS.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Pain in Body— (Abdominal region) Affecting kidneys and felt in different parts.	<p style="text-align: center;">160</p> <p>See: Back, No. 15 (Inflammation of Kidneys). Back, No. 17 (Stone in Kidney). Back, No. 18 (Floating or Movable Kidney).</p>	Kidney Complaints.
Pain in Body— (Region of Stomach)	<p style="text-align: center;">161</p> <p>See Stomach, Nos. 206, 207, 208, 209, 210.</p>	Stomach Troubles.
Pain in Bones—	<p style="text-align: center;">162</p> <p>Pain in bones of any part of body, usually worse at night; gradual swelling of the affected part; tenderness on pressure; skin over the inflamed area becomes red. See article on Diseases of Bone as per general index.</p>	Diseases of the Bones.
Pain in Chest—	<p style="text-align: center;">163</p> <p>See Chest, Nos. 29, 30, 33, 34, 35, 36, 38, 41, 42, 43.</p>	Heart and Lung Troubles.
Pain in Face—	<p style="text-align: center;">164</p> <p>See Face, Nos. 72 and 73.</p>	
Pains in Head—	<p style="text-align: center;">165</p> <p>Headache may be due to some local disturbance, such as might be caused by overeating, or it may be one of the symptoms of many different diseases.</p>	
Pain in Joints—	<p style="text-align: center;">166</p> <p>See Joints and Muscles, Nos. 108, 109, 111, 112.</p>	

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Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Pain in Fingers—	<p style="text-align: center;">167</p> <p>Swelling and intense pain at end of a finger, accompanied by great heat at the location, becoming very sore; festering, even to the bone.</p>	Felon (Whitlow).
Pain in Hip or Knee—	<p style="text-align: center;">168</p> <p>Usually the chief premonitory symptom is pain in the knee, generally with a small red spot on the knee-cap; more or less pain and inability to use the limb; after rest of a day or two symptoms disappear and little is thought of the matter until recurrence some weeks later; pain increased on moving the limb, by rotating it, or by turning the foot outward. The position in which the leg is kept by the patient is peculiar; in the early stages of the disease there is a tendency to support the weight on the toes, the knee being bent and turned out. As the disease advances the affected side is higher than the undiseased side.</p>	Hip Disease.
Pain in Limbs—	<p style="text-align: center;">169</p> <p>See Joints and Muscles, Nos. 108, 109, 111, 112.</p>	
Skin— Malignant pimple.	<p style="text-align: center;">170</p> <p>When a malignant pimple or small growth appears on the face, hand or other part of the body, the possibility of its being cancerous should be considered and the family physician consulted. See article on cancer in the chapter on constitutional diseases.</p>	Cancer.

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Skin— Malignant Pustule.	<p>¹⁷¹ Red spot, something like a mosquito bite appears on exposed surfaces, such as arms, face or hands, which is soon followed by a spreading hardness of the surrounding tissues, which mortify and turn black; secondary vesicles appear, neighboring lymphatic glands become inflamed, breath grows fetid and there is thirst, high temperature and frequent pulse; general symptoms of severe blood poisoning.</p>	Anthrax or Malignant Pustule.
Skin— Redness, swelling and tension of	<p>¹⁷² Feverish condition; swelling and tension of skin, rapidly increasing; inflammatory redness; may first appear at different parts but commonly is first noticed over the bridge of the nose and on the cheeks; inflammation quickly spreads; tenderness and burning pain in affected part; chill and high fever; inflamed area has distinct margin separating it from the healthy skin.</p>	Erysipelas.
Skin— Slight redness with itching.	<p>¹⁷³ Appears suddenly and is characterized by formation of "Wheals" or rounded patches of elevated skin, whiter than the surrounding parts, which are slightly reddened at the margins; may occur on any or all parts of the body, but is usually rather general over the whole body; itching is a prominent feature; usually occurs only in hot weather. Infants and fat people are especially liable and are commonly affected behind the joints.</p>	Hives, Nettle Rash (Urticaria).

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Skin— Raw, red patches of.	<p style="text-align: center;">174</p> Catarrhal inflammation of the skin, presenting at first irritable, raw, red patches, with occasional little blisters which soon break, discharging a fluid which in drying forms crusts or scabs, which become dry, scaly, and often cracked; intense itching which is aggravated by scratching; may appear on wrists, backs of hands or any part of the body, but is especially apt to appear about the flexures of the joints, such as the hollows of the elbows and knees.	Eczema.
Skin— Pimples; black-heads.	<p style="text-align: center;">175</p> Small pimples or wheals, generally appearing on the face, but sometimes on the stomach and other parts and frequently also on the shoulders. The spots or pimples are slightly raised, cause little pain, and usually, but not always, have black heads or yellow points of pus, that is, containing pus; commonly occurring during the years of acquisition of puberty and continuing sometimes for a few years later; seldom appearing before 14 or after 25; more commonly male than female affliction.	Acne.
Skin— Serious eruptions without itching. Skin— Thickness and redness of nose.	<p style="text-align: center;">176</p> When there is serious eruption without itching, it may be indicative of syphilis. Consult articles on syphilis as per general index.	Syphilitic Eruptions. Acne Rosacea.

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated	
Skin— Blisters in groups.	<p style="text-align: center;">178</p> Eruption appearing on any part of the body in form of little blisters which come out in small groups, and which when appearing about the mouth and nose, constitute the cold sores with which almost everyone is familiar.	Shingles (Herpes).	
Skin— Large blisters.	<p style="text-align: center;">179</p> Blisters from one-half to two inches in diameter, resting on slightly reddened surfaces and usually attended with severe itching. These blisters sometimes appear on the fingers, but commonly attack the lower limbs. They generally indicate an impoverished state of the system.	Pemphigus.	For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 123r. For treatment by various schools of medicine see page 149r.
Skin— Pustular eruptions.	<p style="text-align: center;">180</p> Separate pustules somewhat like those of smallpox. They may attack any part of the body, but are most apt to appear upon the face and limbs.	Impetigo.	
Skin— Boils.	<p style="text-align: center;">181</p> Boils begin with pain and itching, the skin being tight; a hard point forms, at first only perceptible to the touch, but grows larger until it reaches the size of a pea, a cherry, or even as large as a hickory nut, the skin being red and tense. One boil is generally followed by a number of others.	Boils.	

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Skin— Carbuncle.	<p>182</p> <p>Carbuncles differ from boils in the larger area inflamed; a core of dead connective tissue, called a "slough," several inches in diameter may come away. They are apt to come on the nape of the neck and the back, but may appear on any part of the body. A large carbuncle may keep a patient in bed for a month or six weeks. The pain and exhausting discharge are very wearing on the strength and may cause death.</p>	Carbuncles.
Skin— Pimples on children.	<p>183</p> <p>Eruption of innumerable small reddish pimples occurring chiefly on the face, neck and arms; irritation and general disturbance is slight. Eruption is usually due to digestive derangement, such as may be caused by the cutting of a tooth and passes away with cessation of the cause.</p>	Red Gum or Tooth-rash. (Strophulus).
Skin— Prickly heat, with pimples.	<p>184</p> <p>Reddish pimples or small granules, appearing on the body and limbs during hot weather and which subside on the approach of the cooler season; occasionally cases take on a severe form and may become chronic.</p>	Prickly Heat (Lichen).
Skin— Pale, elevated pim- ples.	<p>185</p> <p>Eruption of pale, slightly elevated pimples, generally on the trunk of the body; intense irritation, especially at night, causing the patient to scratch to such an extent that marks of the nails can almost always be seen, and aid in recognizing the malady. It is frequently the result of the presence of vermin.</p>	Prurigo.

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

TABLE OF SYMPTOMS FOR DIAGNOSIS.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
<p>Skin— Scaly eruption.</p>	<p>186 Oval or rounded patches of slight irritation followed by an eruption of scales, which grow dense and white toward the center. Afterward the spot expands from its outer edge, the skin generally being reddened and slightly raised above the level of the surrounding surface. The whole body may be covered with these white scales, excepting the face, the palms of the hands and the soles of the feet and even these are sometimes subject. After some time the skin chaps and breaks; severe soreness with exudation of fluid, intense irritation and itching, with great physical exhaustion, lasting for many weeks, or perhaps months. Is prone to teoccur in a patient who has once suffered. It is often hereditary. It is not contagious.</p>	<p>Tetter (Psoriasis). For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.</p>
<p>Skin— Scaly scalp.</p>	<p>187 In mild form it gives rise to the shedding of an immense number of bran-like scales, resembling an exuberant crop of dandruff. A rare variety affects the whole body, generally proving fatal.</p>	<p>Pityriasis.</p>
<p>Skin— Itching, without eruption.</p>	<p>188 General itching without any eruption or other apparent change in the appearance of the part affected. Children and elderly people are particularly apt to suffer and the localities involved are generally those about the orifices of the body.</p>	<p>Pruritis.</p>
<p>Skin— Yellow.</p>	<p>189 See Nos. 21, 28, 63, 124, 148, 152, 156, 158, 189, 221.</p>	<p>Jaundice, Liver Complaint, etc.</p>

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Skin— Yellowish scales on infants.	<p style="text-align: center;">190</p> Excessive secretion of oily matter accumulating upon the surface of the body in the form of thin, yellowish scales.	Seborrhea.
Skin— Fungous growth.	<p style="text-align: center;">191</p> Development of fungus not only invading the skin, but affecting also the hair and hair follicles. The fungus consists of microscopic threads corresponding to the stem of a grape-vine and microscopic seeds in bunches like grapes, called spores. This is a vegetable parasite growth and is contagious.	Fungous or Vegetable Parasitic Growth.
Skin— Head ringworm.	<p style="text-align: center;">192</p> Commences usually as a little pimple, soon spreading and taking on a ring-like appearance, showing a circle of minute scales, pimples and vesicles at the circumference of the patch; hairs included in circle become dull, dry, twisted and easily broken off, the stumps of the hairs becoming covered with a grayish white powder; as patch becomes dry and scaly the hairs die and drop out at the center, so that ultimately a bald spot of from one-half inch to two inches in diameter is left. The disease is of a vegetable parasitic or fungous order.	Ringworm of the Head (Tinea Tonsurans).
Skin— Body ringworm.	<p style="text-align: center;">193</p> Symptoms are the same as Ringworm of the Head, starting with a small pimple spreading with great rapidity and the rings of eruption may attain a diameter of four or five inches. The characteristic of the affection is	Ringworm of the Body (Tinea Circinata, or Herpes Circinatus).

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
	<p>its healing up in the middle, presenting after a time a patch of healthy or slightly reddened skin, surrounded by an angry red ring about a quarter of an inch wide.</p>	
<p>Skin— Barber's Itch.</p>	<p>194 A fungous parasitic vegetable growth of the nature of ringworm forming on the face of an adult male. Much irritation from the roots of the hairs of the beard, extending deeply into the skin and growing down along the sides of the hair follicles; large papules and even pustules; itching and burning.</p>	<p>(Tinea Sycosis).</p>
<p>Skin— Scald Head.</p>	<p>195 Of ringworm character, peculiar dry, sulphur-yellow crusts, in form of little cups about a quarter of an inch in diameter, these sups, as the disease advances, so running together that they are only recognizable at the edge of a patch; peculiar mouse-like odor emitted from head. Disease frequently occurs with neglected, ill-nourished children.</p>	<p>Scald Head (Tinea Favoso or Favus)</p>
	<p>196 Intense itching, generally much worse at night, after becoming warm in bed. The parts most commonly affected are the hollows of the elbows and knees, the fronts of the wrists, and the backs of the hands just between the roots of the fingers, but other parts of the body are subject, especially where the skin is tender, and the palms of the hands and the soles of the feet are sometimes affected, notwithstanding the thickness of the skin in these</p>	<p>Itch. (Scabies).</p>

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
	<p>Eruption quickly occurs, varying in character, in some cases being best to find upon the forearms and lower part of abdomen and inner portion of the thighs, while in others it is more frequent about the fingers and breasts. The disease is caused by the Itch mite, spreads rapidly and may cause serious, permanent skin trouble if not eradicated. It is very contagious.</p>	
<p>Skin— Lice Itch.</p>	<p>197 There are three varieties of lice, one infesting the head, another the body, and the third the pubes of man. They cause intense itching until eradicated.</p>	<p>Lice Itch.</p>
<p>Skin— Blueness of.</p>	<p>198 Blueness of skin at birth, occasionally but not often making appearance several weeks or even months later; shade of blueness varies in different cases; color becomes deeper on exertion; blueness most noticeable on cheeks, lips, tongue and extremities; feeble circulation; cold skin.</p>	<p>Blue Disease (Cyanosis).</p>
<p>Skin— Unhealthy whiteness of.</p>	<p>199 Face, hands and general surface pallid and slightly waxen; dizziness; faintness; palpitation; cold hands and feet; weak and feeble pulse; impaired action of organs generally, especially stomach and bowels.</p>	<p>Anæmia.</p>
<p>Skin— Putrefaction of.</p>	<p>200 Mortification or death of a part of the living body; moist, pale, shrivelled, bluish mottled specks; dark, livid and swollen skin; foul odor.</p>	<p>Mortification or Gangrene.</p>

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Skin— Sore with discharge.	201 Open sores which discharge a yellowish-white fluid, which is foul smelling.	Ulcer.
Skin— Kernels under.	202 Kernels under the skin which thicken, inflame and discharge a thick red secretion; skin is usually delicate and irritable; eyelids are apt to be red and swollen; eyes very liable to inflammation; hemorrhages from the nose, cold in head, enlarged tonsils are frequent; muscles lack firmness; swelling of the lymphatic glands, more particularly about the neck; after a time suppuration occurs, the swellings become softer and skin over them assumes a dusky red hue, finally bursting and giving outlet to pus mixed with curd-like deposits.	Scrofula.
Skin— Purple spots on body.	203 Langour, weariness on very slight exertion, faintness, gnawing pains in stomach; variable appetite, generally poor but sometimes inordinate; tongue yellowish and coated; countenance sallow and dingy, or face may have pale, bloated appearance with swelling beneath eyelids; purple spots on legs and afterwards without any regular order on the thighs, arms and trunk of the body, their formation being attended with great weakness and depression of spirits; deep-seated pains in stomach region, also in chest and loins. Sallow or waxy-colored and dingy complexion, dropsical swellings of the feet and legs, with gangrenous sores are dangerous symptoms.	Land Scurvy (Purpura).

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.



Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
<p>Skin— Flea bite-like eruptions</p>	<p>204 Languor, debility and lowness of spirits first occur, then swelling; sponginess and bleeding of gums, loosening of teeth and offensive breath,—palpitation of the heart and difficulty in breathing sometimes present; spots on limbs; diarrhoea and dysentery commonly occur; all parts of the body extremely sensitive to pressure; slightest possible blow may produce extensive bruise; small eruptions like flea bites are often to be seen on the legs and about the same time the muscles of legs and thighs become hard and painful, the skin grows yellow and then purple and thus appears in spots over the body, the spots at the commencement being frequently as large as the palm of the hand, and afterward usually extend until they cover a large area.</p>	<p>Scurvy (Scorbutus).</p>
<p>Skin— Dropsical condition.</p>	<p>205 Symptoms of Anæmia developing into acute dropsy; coldness of hands and feet; palpitation of the heart; difficult respiration after the slightest exercise; rapid pulse; marked pallidity of face; debility in action of the kidneys; tongue of a semi-bloodless appearance. The progress of the disease is very slow and insidious; in the later stages languor, swelling of the extremities with partial loss of muscular power and finally complete loss; dropsical swelling of feet and legs gradually extends upward until the whole body seems to be bloated with water; urine is passed in very small quantities of light color; constipation; nausea; hot and dry skin.</p>	<p>Beri-Beri.</p>

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Stomach— Acute distress in.	<p style="text-align: center;">206</p> Severe pains over pit of stomach shooting through to the back, increased by taking food and temporarily relieved by vomiting; vomited matter consists of the glairy mucus, stained with bile of a greenish-yellow or bright green color; coated tongue, the edges and tip frequently being red and irritated; bowels usually confined; scanty and high-colored urine. Symptoms often commence with chilliness followed by hot skin, weak, rapid pulse, difficult breathing and obstinate hiccough. In severe cases there may be great prostration.	Acute Indigestion or Inflammation of the Stomach. (Acute Gastritis).
Stomach— Dyspeptic.	<p style="text-align: center;">207</p> The symptoms of Dyspepsia are so many and so varied, including as they do, heartburn, pyrosis, waterbrash, distension of stomach, etc., that to gain any adequate idea the full article on Dyspepsia must be read. See general index at back of book.	Dyspepsia.
Stomach— Gnawing pain after eating.	<p style="text-align: center;">208</p> Pain and tenderness over pit of stomach, shortly after eating and increasing until relieved by vomiting; sometimes distress extends through to the back; seat of tenderness coincides with that of pain and is localized over comparatively small surface. Vomiting of blood occurs in about one-third of cases and is usually profuse; it may be in black clots or fresh blood, also blood is frequently passed by the bowels. The pain is often described by	Ulcer of the Stomach.

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
	<p>patients as of a gnawing character and is generally made worse by condiments, animal food, saccharine substances and alcohol. Usually occurs in early rather than advanced life.</p>	
<p>Stomach— Cancerous.</p>	<p>209 Ordinary symptoms of Gastritis or mere Dyspepsia followed in a few weeks or months as a rule by the vomiting of small quantities of blood so mixed with gastric juice as to present a brown color, which with the minute clots have caused the expressive name of "coffee-ground vomit,"—not an infallible sign, but constituting one of the surest early evidences of cancer of the stomach. The disease resembles ulcer of the stomach, but is distinguished by the fact that it occurs in advanced life instead of youth, by the character of the blood vomit, by greater diffusion of the tenderness, by constancy of the pain, by the anæmic state and by the increasing tumor which generally can be felt through the thin walls of the abdomen.</p>	<p>For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.</p> <p>Cancer of the Stomach.</p>
<p>Stomach— Neuralgia in.</p>	<p>210 This is a purely nervous affection, its only symptom being intense pain in the region of the stomach, shooting outward in different directions. The pain may be so great that the patient will roll upon the floor and writhe in agony. There is no tenderness over the stomach and pressure sometimes relieves pain to a certain extent.</p>	<p>Neuralgia of the Stomach. (Gastralgia).</p>

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
<p>Swelling— Of the feet and ankles.</p>	<p>²¹¹ Soft, inelastic swelling of feet and ankles; pressure of the finger upon swollen part creates an indentation which remains for a minute or so before it is filled up by return of watery fluid; the reproductive organs often become enormously swollen and the disease soon reaches the abdomen; distress in breathing as disease progresses; scanty urine; palpitation of the heart; deficient perspiration; mental distress; thirst; constipation; daily increasing weakness.</p>	<p>Dropsy.</p>
<p>Swelling— Of the veins.</p>	<p>²¹² Hard, swollen, knotted veins of dark blue or purple color, the legs and thighs being most commonly affected.</p>	<p>Varicose Veins (Phlebitis) Inflammation of the Veins.</p>
<p>Swelling—</p>	<p>²¹³ Swelling is also an accompaniment of sprains, bruises and many minor troubles, and if occurring apart from the foregoing general symptoms, some other prominent symptom, occurring in connection with the swelling must be looked for.</p>	
<p>Throat— Inflamed.</p>	<p>²¹⁴ Chill, followed by rise of temperature; pains in back and limbs; redness and dryness of throat with painful swallowing; tonsils may be felt as hard lumps behind the angle of the jaw; if only one tonsil swollen, the uvula is drawn to the affected side; usually white patches cover the tonsils,</p>	<p>Tonsillitis or Inflammation of the Tonsils.</p>

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.



Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
	<p>which must not be confused with diphtheria, in which the white coating is continuous over the tonsils and extends up upon the fauces and uvula and is grayish-white in color, tonsillitis on the contrary being in patches of white or whitish color.</p>	
<p>Throat— Abscesses in.</p>	<p>²¹⁵ Abscess or boil forms in the substance of the tonsils attended with great pain and swelling, difficulty of swallowing and some loss of strength; sometimes earache; breathing much interfered with; abscess may break on fifth day or linger until tenth day, after which recovery is usually rapid.</p>	<p>Quinsy or Abscess of Tonsil.</p>
<p>Throat— Membranous, whitish-gray coating of.</p>	<p>²¹⁶ Symptoms of slight cold, feeling of fullness and irritation within the throat; moderate fever, chilliness and general lassitude; pain in back; although sometimes delayed a day or two, small whitish-gray spots appear on one or both tonsils which spread more or less rapidly, often involving the pharynx and nose and extending downward to the larynx. Color soon becomes dirty gray or yellowish, if membrane be removed new membrane quickly takes its place. Great prostration.</p>	<p>Diphtheria.</p>

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

TABLE OF SYMPTOMS FOR DIAGNOSIS.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated	For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.
Throat— Whispering voice.	<p>²¹⁷ Slight catarrh quickly followed by high fever; hoarseness of voice which soon becomes whispering; cough at first clear and shrill, then harsh and croupy, is also reduced to little more than a whisper, and a peculiar noise like a loud whisper accompanies both inspiration and expiration, which, from almost the beginning, are laborious and wheezing. Dropsical swelling soon comes on, narrowing the opening of the glottis, making it painful and difficult to breathe, and causing an expression of great anxiety on the patient's face.</p>	Inflammation of the Larynx. (Laryngitis).	
Throat— Difficulty in breathing.	<p>²¹⁸ Growth at the back part of the nose passages; difficult breathing with inclination to breathe through the mouth; snoring when asleep; chiefly prevalent in children.</p>	'Adenoids.	
Throat— Stricture of,	<p>²¹⁹ Spasmodic stricture of the gullet caused by simple contraction of its muscular fibres, —common in hysterical females; similar condition produced by the swallowing of scalding water or some corrosive substance, usually followed by ulceration. A cancerous growth in the gullet may produce same symptoms.</p>	Diseases, of the Aesophagus or Gullet.	
Urine— Frequent urination with burning at abdomen.	<p>²²⁰ Frequent desire to urinate; burning pain at bottom of abdomen; nausea and vomiting.</p>	Inflammation of Bladder.	

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Urine— High-colored; pain in right side.	<p>²²¹ Scanty, highly-colored urine; nausea; fur-red tongue; yellow skin and eyes; cough; pain in right side and shoulder.</p>	Liver Complaint.
Urine— Yellow, with yellow skin.	<p>²²² Peculiarly yellow urine, staining linen; yellow tinge to skin and whites of eyes.</p>	Jaundice.
Urine— Frequent passage with scalding sensation.	<p>²²³ Deep red urine; frequent desire to pass; scalding sensation; constipation; pain in lower part of back.</p>	Kidney Disease.
Urine— Albuminous.	<p>²²⁴ High-colored urine containing albumen causing a cloudy appearance; dropsy; headache; puffiness of eyelids; fever.</p>	Bright's Disease.
Urine— Excessive urination.	<p>²²⁵ Pale urine passed in excessive quantities; great thirst; marked loss of weight and strength; anæmia; sweetish breath.</p>	Diabetes.
Urine— Inability to retain.	<p>²²⁶ Frequent desire to urinate and inability to retain it after inclination comes, resulting oftentimes in wetting the bed.</p>	Incontinence of Urine. (Eneuriasis).

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
<p>Urine— Painful suppression of.</p>	<p>²²⁷ Constant desire to urinate; force of stream diminishes so that secretion dribbles or runs off in a very fine stream, not larger than a knitting needle or may spread or twist in cork-screw shape; more or less pain in urinating and considerable straining requisite to accomplish operation, which begins to be dreaded from day to day and even from hour to hour.</p>	<p>Stricture of the Urethra.</p>
<p>Vomiting—</p>	<p>²²⁸ Vomiting occurs in respect of so many slight ailments and is an accompaniment of so many different diseases that it becomes necessary to diagnose from other symptoms, not losing sight of the fact, however, that nausea is present.</p>	<p>For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.</p>
<p>Vulva— Itching of.</p>	<p>²²⁹ Intense itching causing such scratching that the parts bleed; itching usually aggravated by walking or becoming warm in bed; intense suffering causes loss of sleep, exhaustion, nervous depression and sometimes melancholia.</p>	<p>Itching of the Vulva. (Pruritis).</p>
<p>Vulva— Bleeding of.</p>	<p>²³⁰ Symptoms are practically those of injury to any other part of the body; bleeding may be profuse, especially if there is a cut; pain of a sharp or tearing nature; sometimes faintness; swelling which, if large, may cause difficulty in passing water.</p>	<p>Bleeding of the Vulva. (Hematoma).</p>

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Vagina— Contraction of.	²³¹ Painful, spasmodic contraction of the vagina which more or less prevents intercourse. May be due to sensitive remnant of hymen, fissure of the vagina, erosion of the parts, fissures of the anus or an urethral carbuncle.	Contraction of Vagina. (Vaginismus).
Vagina— Discharge from.	²³² Thick, whitish and gelatinous, or thin and milky discharge.	Leucorrhœa. (The Whites).
Vagina— Severe pain during urination.	²³³ Small raspberry-like growth at the mouth of the urethra giving rise to severe itching and pain; during urination, the water running over the growth, the pain is so excruciating that women oftentimes will withhold from passing water until they can no longer withstand the call of nature.	Urethral Carbuncle.
Vagina— Itching and burning of.	²³⁴ Feeling of heat in the vagina; pain in the pelvis; itching and burning of the part; backache; usually frequent desire to urinate; loss of appetite and at times nausea.	Vaginitis.
Vagina— Hemorrhage of.	²³⁵ Hemorrhage of the vagina following either straining at stool or coition; a foul discharge which is very repulsive; discharge may be thick, but as a rule is watery; pain is not marked at beginning, but becomes so as the disease develops.	Malignant Tumor of the Vagina.

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
Vagina— Laceration of;	<p>²³⁶ Lacerations of the walls of the vagina during childbirth cause a disturbed condition of the bladder which results in more or less trouble in voiding urine and an inability to completely empty the bladder each time, resulting commonly in an inflammation of the bladder.</p>	Laceration of the Perineum.
Womb— Weight in Pelvis,	<p>²³⁷ Sensation of weight in the pelvis and slight pain; profuse, thin and watery discharge which later becomes thick and tenacious, like the white of an egg; menstruation may or may not be painful.</p>	Inflammation of Lining Membrane of Womb (Endometritis);
Womb— Pain on left side of abdomen,	<p>²³⁸ Chill, generally followed by fever; pain more or less marked and may extend down in the legs, and is generally especially troublesome on the left side of the abdomen over the ovary. Menstruation is apt to be accompanied by great pain.</p>	Inflammation of Walls of Womb. (Metritis).
Womb— Severe pain and hemorrhages.	<p>²³⁹ Severe pain and hemorrhages; pain especially severe during menstrual period; hemorrhages may occur several times between monthly periods, or monthly period itself may last for a week to ten days.</p>	Fibrous Tumors of the Womb.

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

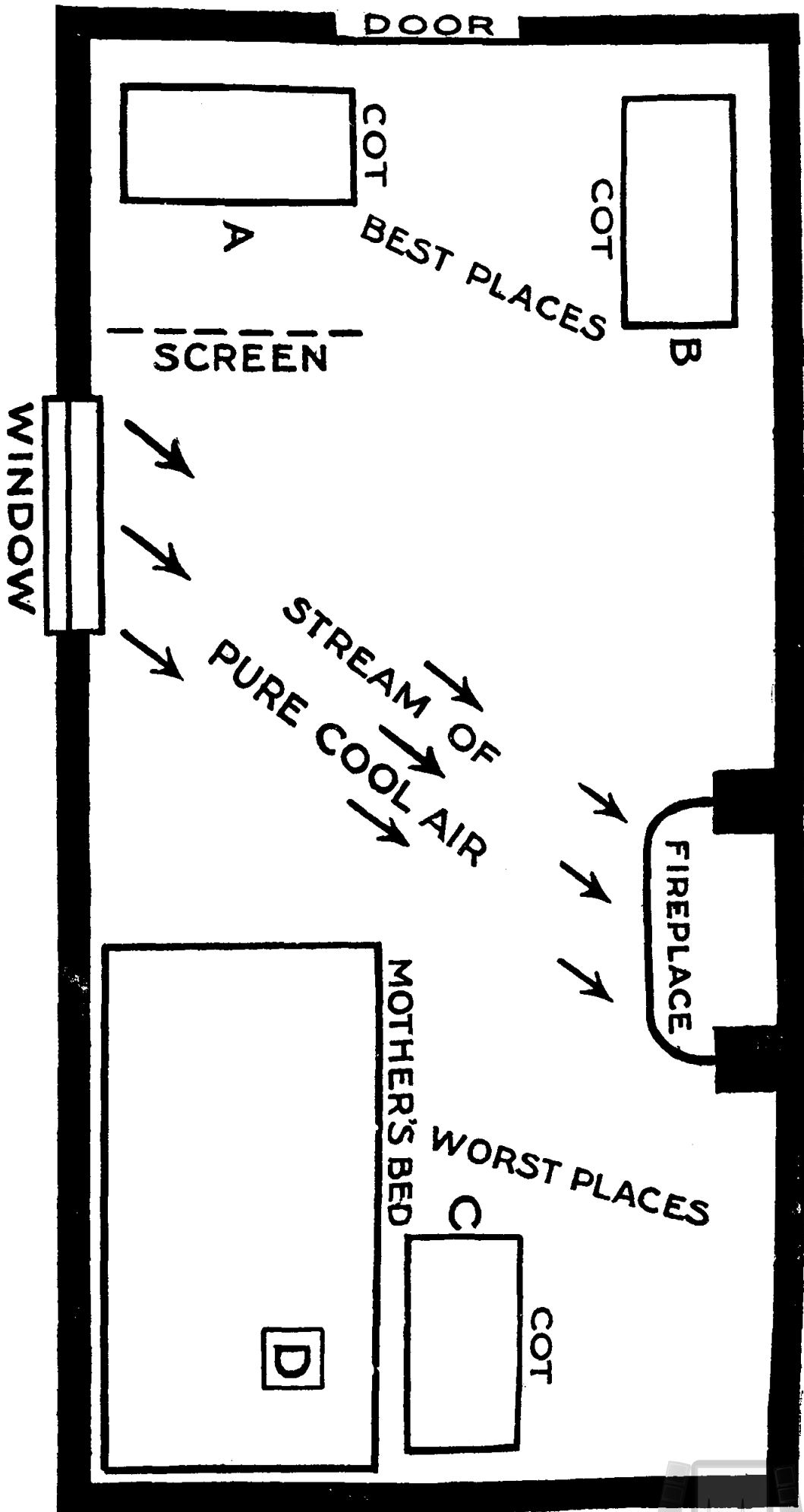
Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated
<p>Womb— Profuse menstruation.</p>	<p>²⁴⁰ Profuse menstruation and as disease progresses, frequent discharges of blood between the periods, often amounting to attacks of flooding; leucorrhœal discharge which may be tinged with blood; occasional paroxysms of pain.</p>	<p>Polypus Tumor of the Womb.</p>
<p>Womb— Inflammation at neck of.</p>	<p>²⁴¹ Inflammations and ulcerations of the womb mix and run into each other, resulting in raw places, forming granulations or pimply surfaces and hardened spots; sometimes the pimply patches become red and hard, the whole surface spongy; pus flows freely at times and at others scantily, may be thick and yellow or thin and lighter color; sensation of heat and smarting; sometimes severe pain in right side of abdomen and back part of head; menstruation varying in character, sometimes profuse and painful, at others scanty.</p>	<p>Ulceration of the Womb.</p>
<p>Womb— Cancerous.</p>	<p>²⁴² In very early stages there are no unusual symptoms, but as the disease progresses, the following will appear: 1. Hemorrhages; 2. Uterine discharges; 3. Pain; 4. Visceral disorders; 5. Cachexia.</p>	<p>Cancer of the Womb.</p>
<p>Womb— Leucorrhœa and irritated bladder.</p>	<p>²⁴³ Dysmenorrhœa; leucorrhœa; irritation of bladder, causing frequent urination, and more or less constant distress in the lower part of the abdomen; sterility frequently exists.</p>	<p>Forward Displacement of the Womb.</p>

For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.

Most Noticeable Symptoms	Accompanying and Following Symptoms	Disease Indicated	
<p>Womb— Backache and dragging pains in abdomen.</p>	<p>244 Painful menstruation the first day or two of the flow; frequent miscarriages; leucorrhœa; constant, dull, aching pain in the small of the back; dragging pains in the lower part of the abdomen and thighs; headache; constipation; bowel movements at times painful; bladder may be irritable, and at times the urine may escape when the woman laughs heartily.</p>	<p>Backward Displacement of the Womb.</p>	<p>For the main article on the subject consult the general index. See chapter index, page 1257, for simple home remedies. Prescriptions and formulas for home preparation will be found at page 1231. For treatment by various schools of medicine see page 1491.</p>
<p>Womb— Backache and sensation of weight about the pelvis.</p>	<p>245 Sensation of fullness and weight about the pelvis; wearisome backache; leucorrhœa; obstinate constipation; as disease advances frequent desire to urinate and inability to completely empty each time, resulting in an inflammation of the mucous membrane.</p>	<p>Falling (Prolapsus) of the Womb.</p>	

TABLE OF INFECTIOUS AND CONTAGIOUS DISEASES

Disease	Period of Incubation	Symptoms Appear After Infection	Disease Disappears	Infection Ceases
Chicken-pox.	10 to 16 days.	1st day and 3 following days. 1st to 3d day. 1st to 3d day.	About 4th day.	When every scab has fallen off.
Cholera, Asiatic. Diphtheria.	1 to 7 days. 2 to 10 days.		1st to 4th day. From 12th to 16th day.	When disease disappears. In four weeks, if no discharges of albumen, and if bacteriological examination of nose and throat be negative.
Erysipelas.	2 to 8 days.	1st or 2d day.	3d to 14th day or longer.	In not less than 7 days and ranging to 14 days.
Influenza. Measles.	1 to 6 days. 10 to 14 days.	1st day. 4th day; highly infectious for 2 days before rash appears. 2d to 4th day.	2d to 21st day. 9th or 10th day.	When disease disappears. In not less than 2 weeks from appearance of rash.
Measles, (German).	7 to 18 days or longer.		4th to 7th day.	In not less than 10 days from appearance of rash.
Mumps.	10 to 22 days.		5th to 7th day.	In not less than 3 weeks, and only when 1 week has elapsed since subsidence of all swelling.
Ringworm.				When examination reveals no broken off, diseased hairs.
Scarlet Fever.	1 to 8 days, usually 3 to 5.	5th day.	5th day.	When scaling skin, sore throat and albuminous condition of the urine disappear, but never in less than 6 weeks.
Small-pox. Typhoid Fever.	12 to 14 days. 7 to 21 days, usually 10 to 14.	3d or 4th day. 8th or 9th day.	14th day. 21st day.	When every scab has disappeared. When disease disappears.
Typhus Fever.	5 to 14 days; very variable.	5th day.		After 4 weeks.
Whooping Cough.	7 to 14 days.	The whooping may not appear for 3 weeks, although infectious before then. 1st to 2d day.		In 5 weeks from commencement, provided all spasmodic cough and whooping have ceased for at least 2 weeks.
Yellow Fever.	1 day.		1st to 4th day.	When disease disappears. (Yellow Fever is indirectly contagious, the germ being transmitted by the Yellow Fever mosquito.)



SLEEPING ROOM FOR MOTHER AND CHILD
 (WHEN BOTH HAVE TO OCCUPY ONE BEDROOM)

PART I OF BOOK VII

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Book VII

THE SICK ROOM IN THE HOME

PART I.

NURSING

General Consideration — There is no room to doubt that faithful, intelligent and efficient care of the sick is often responsible in large measure for recovery from attacks of severe illness and that the ministrations of a well-qualified nurse are second only in importance to skillful medical attendance. In fact there are diseases in which good nursing is more essential to the welfare of the patient than medicines, and in which these would be of little avail, unless accompanied by conscientious services of this character. At best the physician can spend but a few moments each day in a single sick room, and the remaining hours must be given over to the care and superintendence of some other person.

The employment of a trained nurse is expensive. Moreover, it is not always easy to secure one that is satisfactory,—for many so-called “trained” nurses are incompetent. Not only this, but even when she is competent there is apt to be a certain mechanism about her work which comes from a lack of that personal regard for the patient which can only be bestowed where ties of blood or dearest friendship exist.

No one can or will care for the ill so well as the mother, if she be competent. But she is not competent if she has not the scientific knowledge of what is best to do in respect of each and every circumstance as it may arise. Every mother should have knowledge of the science of nursing if she would have her husband and her children receive the best care, for even where a nurse is employed it is of inestimable value that the mother should know whether the nurse is in every way doing her duty. Where there is a grown daughter in the family she, too, should be thoroughly informed in nursing that she may take the mother's place,

or in case of need be the mother's nurse. If accompanied by proper knowledge the care by loved ones brings a rest and comfort to the ill which cannot be brought about by the mere stranger who does her work for hire, no matter how competent she may be. But, without proper knowledge, with all the mother's love, sins of both omission and commission are sure to occur and there is danger of sympathy overriding judgment. Specific knowledge of the exact requirements in respect of each and every incident as it may occur is essential, and it is the purpose of this chapter not only to supply such knowledge but to present it in such shape as to make it a ready reference to which the mother may quickly turn in all matters that come within the scope of nursing. And, it is to be borne in mind that a competent nurse is the doctor's greatest friend, for the physician can treat his case with greater certainty and success if his aide-de-camp, the nurse, be efficient.

The Nurse is Doctor's Assistant.—The nurse is the physician's assistant, and he often depends, in forming his estimate of the condition and needs of his patient, largely upon the observation and judgment of the one who is in constant attendance on the case, who sees the changes which occur at different times of day or night, who notes the effect of this remedy or of that food, and who makes to him reports based upon what transpires during his absence.

What the Doctor Gains.—Thus he often gains valuable suggestions regarding the course and management of the case from what to the inexperienced and untrained might be considered a trivial symptom or a circumstance not worth repeating.

It is not the office of the nurse to discriminate between the important and unimportant features of a case, but to endeavor to give the medical attendant a faithful picture of the case as she has seen it, leaving it for him to weigh the evidence given, to form a just estimate of its value. On his departure the responsibility of the execution of his orders devolves upon her, and until his return it is she who assumes the control of the case and gives directions.

Technical Details.—These embrace information on such matters as the care of the patient, including moving, lifting, bathing, dressing, and attending to his wants and comfort; such details as relate particularly to the management of the case, as taking temperature, pulse and respiration, observing symptoms, administering medicines and applying external agents; the preparation and giving of food and drink; the care of the

room, attention to the room, including its general cleanliness, order, disinfection, heat and ventilation; and the care of the bed, etc.

But the true nurse does not confine herself to the mere mechanical carrying out of such details,—she brings to bear her best thought and all the kindness of her nature in endeavor to make the ill one happy and content in spite of suffering, and yet with a firmness that brooks not of over sympathy when this might interfere with duty. A brief consideration will here be given to some of these essential qualities.

QUALIFICATIONS OF THE NURSE.

Disposition.—Lamentable failure will inevitably attend the efforts of any one attempting to nurse, if she has not a suitable disposition. The qualities which constitute an ideal disposition for a nurse unfortunately are rarely all found in any one person. It will nevertheless be useful to consider some of the most important of them.

1. **Amiability.**—Essentially the product of a benevolent nature, this is a trait of prime importance. A spontaneous flow of kind acts and considerate attentions should characterize the nurse; whereas, irritability of temper and thoughtless and inconsiderate acts are so inexcusable as to at once disqualify her for her work. Therefore, she must naturally be *kind* in thought, word and deed.

2. **Sympathy.**—Sympathy with a patient's distress, without weak sentimentality is an outgrowth of this attitude of mind, which is of value to the nurse and of benefit to the patient, if not too freely exercised.

3. **Cheerfulness.**—A bright and sunny disposition not only brings life, hope and cheer into the sick room, and thus aids in the favorable progress of the case, but sheds its influence through the entire household, lightening the burden of trouble from those who are in distress. The sick room is not the place for a gloomy or morose person.

4. **Unselfishness.**—Disregard for personal comfort and convenience and untiring devotion to the interests of the patient are demanded of the nurse. Hers should be largely a labor of love, in conformity with which, she should be willing to sacrifice herself in behalf of her patient.

5. **Calmness.**—A nurse with an excitable temperament, who is upset by trivial circumstances, and who cannot even in an extremity exhibit composure, will not tend to tranquilize a patient who is already in a state of nervous irritability. Cool judgment, calm demeanor, and, when not accompanied by hesitancy, deliberate action, will tend to inspire confi-

dence in her intelligence and proficiency, a fact of no little importance in serious illness.

6. **Patience.**—The trying circumstances incident to the sick room and the exacting requirements of the patient, often call for the exercise of the most unbounded patience. Those who ordinarily are thoughtful and considerate are frequently, when sick, unreasonable in the extreme, and their demands for attentions, which are often unnecessary, become most exasperating.

7. **Firmness.**—It is desirable for the nurse to be sufficiently resolute to secure compliance with her instructions, but it is not needful to maintain, as is often done, a dogged and uncompromising attitude, and to be immovable to appeal in non-essentials. Arbitrary refusal in such matters creates antagonism on the part of the patient, which more than counterbalances what has been gained by the nurse and which materially lessens her influence and usefulness.

8. **Tact.**—Not only in these matters but in her general deportment in the sick room is there opportunity for the exercise of tact. To divert the patient from an undesirable train of thought without making it apparent; to be discreet about the subject of conversation, neither unbosoming all her family affairs nor detailing the histories of all her previous cases; to avoid either depressing, exciting, tiresome or otherwise objectionable topics when reading is permissible; to regulate the matter of visitors without giving offense; in these and in manifold ways are shown the importance of having good, sound common sense, a quality unfortunately far too rare among those who engage in this art.

9. **Observation.**—The nurse should be a careful observer, able to notice differences in the condition of the patient, and to recognize at least in a measure the meaning of symptoms which she sees. Frequently it is left to her judgment to give more or less of a medicine prescribed, or to change one remedy for another, according to the condition of the patient, and a failure to correctly observe and properly interpret what is seen will work to the detriment of the patient.

10. **Physical Soundness.**—The strain, physical and nervous, caused by untiring vigilance, loss of sleep, irregular meals, confinement to the sick room, and anxiety, are such as to make essential to the nurse an exceptionally sound, healthy body, endowed with the power of endurance. In addition there should be good vision, good hearing and good sense of smell, all of these faculties being called into frequent requisition.

THE NURSE AT WORK.

Personal Conduct.—Granted that a nurse has enough qualifications to make her an efficient nurse, there are still some details pertaining to her personal conduct in the sick room, and which are largely under her control, the observance or neglect of which will make the difference, often, between her being acceptable or not to her patients. Some of these are quite essential, while others may appear to be of little consequence, yet to those suffering from severe illness there are no trifles; mole-hills appear as mountains, and the insignificant become matters of great moment, and these very trifles often have much to do with the comfort and peace of mind of the one under the nurse's care.

Reference is had to such matters as dress, personal appearance and habits, movements, manner of speaking, touch, etc.

Clothing.—The outer clothing of the nurse should be of plain, modest color and preferably of wash material, an indispensable requirement in infectious cases. Starched clothing should not be so stiff as to make a constant rustling with every movement. The shoes should be noiseless.

Speech.—The nurse should endeavor to speak distinctly and evenly, though never abruptly nor in loud and rasping tones. Equally objectionable is it to whisper, as this almost invariably is annoying to the patient if he is awake. The voice should be cheerful and reassuring and calculated to inspire with hope and confidence. Very many questions of the patient must be answered adroitly, yet in such a manner as not to convey the impression that attempts are being made to conceal from him what he desires to know.

Touch.—The hands should be always warm, smooth and scrupulously clean and the nails well trimmed. A combination of gentleness and firmness is to be desired in handling and moving the patient, efforts of this sort being steady and deliberate, not sudden and jerking.

Appearance.—General neatness of the hair and person should be strictly regarded. She who is careless of her appearance and tidiness will presumably be equally so of the one under her charge.

Manner.—If nurse is lacking in the ability to make herself acceptable to her patient she is confronted by an insuperable obstacle to success. This will depend almost wholly on her deportment in the sick room. An awkward, boisterous, bustling nurse will not compare favorably with one who quietly and unobtrusively accomplishes her tasks without confusion

and noise. Nor, on the other hand, will the nurse who stealthily creeps around on tip-toe be likely to prove acceptable to her patient.

Study of Disposition.—A studious observance of the patient's disposition and a readily ascertainable knowledge of his likes and dislikes will soon enable the nurse to anticipate his wants, to scrupulously avoid that which is likely to annoy and to secure for him that which will give comfort and pleasure or bring repose of body or mind. It is this considerateness for the wishes and feelings of the patient which so often constitutes the difference between success and failure and the lack of which to a sensitive nature is a constant source of irritation and annoyance.

What a Nurse Should Avoid.—A nurse should not forget that a patient's progress toward recovery is retarded by such practices as the following: To rock incessantly in a squeaky chair; to sit and constantly tap with the foot or fingers; to noisily prepare for bed in the room after the patient is ready to sleep; to so time the administration of food and medicine, where this can be avoided, as to disturb the patient just as he has settled comfortably for a nap; to be continually asking whether he would like something done for him; to make unnecessary noise with dishes or papers; to allow the light to shine uncomfortably in his eyes; to hurry him with his meals; to shake his bed, and so forth.

THE SICK ROOM.

Location.—This is a matter of much importance and may vitally affect the patient's progress. The ideal sick room is one that is large and cheerful, having southern exposure, high ceilings and plenty of windows to admit sunshine and air. There should be a fireplace, more for ventilation and cheeriness than warmth, and the location of the room should be away from annoying noises and smells, such as from kitchen or stable. The furniture should be simple yet pleasing and the curtains of muslin, linen or other washable material. It is seldom that all these conditions may be had, but the more nearly they may be reached the better for the progress of the patient. In cases of contagious disease it is especially desirable to have the room isolated from other rooms.

Ventilation.—It is almost impossible to overestimate the importance of proper ventilation in the sick room. No matter how poorly their living-rooms may be ventilated, people who are well are usually part of the time out of doors and so get at least a certain amount of fresh air. But the patient who lies in an unventilated sick room breathes day and night over and over again an atmosphere poisoned by the breath of himself

and others, by exhalations from his skin and evacuation and perhaps from discharging of wounds. There should be a constant and uniform supply of fresh air and not only must fresh air be let in but the foul air must be let out. Nothing is better for getting out foul air than an open grate fire which causes a constant draught up chimney and carries the foul air up from below while fresh air may be brought in through open windows. But it is seldom that a sick room has the advantage of a fireplace and the next best thing is to open at the bottom a window farthest from the patient and lower the other windows of the room from the top, thus creating the necessary draught to drive out the foul air and replace it with fresh. If the air blows uncomfortably on the patient a screen can be arranged. Not only is pure air necessary but all sources of contamination must be cut off. If there is set bowl or anything else communicating with sewer all exit holes must be closed and everything possible done to keep the air of the room continuously pure and wholesome.

Temperature of Room.—The sick room should be kept at low rather than high temperature, especially in fever cases. Pneumonia is successfully treated even in the open air both day and night. The patient is protected from the cold by fever and bedclothes, but the attendants may find it necessary to wear heavy outer garments to keep warm. It is well to remember, however, that cold is greatest and the body least able to resist it at about three or four o'clock in the morning, and at these hours the covering of the patient should be given careful attention. Also at times of washing or dressing the patient, changing sheets, etc., the room should be comfortably warm. About 70° F. or a little over is a good temperature at such times.

Cleanliness.—Dirt in the sick room breeds disease. With cleanliness and proper care even the most virulent of contagious and infectious diseases may be confined to a single member of a household. Carelessness in respect of even the smallest detail, such as permitting a single article of soiled linen to stand without being disinfected, or allowing flies to enter and leave the room, may result not only in giving the disease to others of the household, but perhaps in spreading it throughout the entire neighborhood and in creating an epidemic.

The nurse should bathe frequently. Her own health demands it and not only so, but the patient is highly sensitive to and affected by the cleanliness or otherwise of the attendant. This cleanness should extend not only to the body, but the clothes as well. The "Sairey Gamp" of Charles Dickens' fame has passed, we hope, forever from the sick room.

The nurse should be dressed plainly in some wash material, the hair kept combed and in control and the hands and nails must be kept immaculately clean. An untidy, unkempt nurse has a reactionary and ill effect on the patient, while cleanly sweetness acts as a tonic.

The patient should be frequently bathed. The pores of the skin must be kept open and clean. The patient may object, but the patient must not be permitted to be the judge. Every morning, every noon and every evening the face and hands at least must be carefully sponged, the mouth and teeth carefully cleaned and the hair brushed, and this must be faithfully attended to even when the patient is unconscious. The effect is marvelous in refreshing and cheering the patient. Alcohol sponge bathing of the body is especially recommended in cases of fever.

In fever patients the care of the teeth, the tongue and the roof of the mouth is imperative. Without frequent and proper care they will become filled with sores and there will be hardening and cracking, the breath will become foul and the patient will needlessly suffer. The patient should rinse the mouth frequently with a boracic acid solution or a mild salt solution, and when the patient is too weak to do this the nurse should wash the patients' mouth frequently and carefully—always after eating. Do not use soda, as it dries the membrane and causes the tongue and lips to crack. In washing the mouth use antiseptic gauze or fine aseptic muslin, which can be done with a piece of gauze over the index finger or by winding the end of a stick with absorbent cotton or gauze. As preventive of cracking, oil the patient's lips with cold cream, cocoa butter or some similar non-irritating salve.

In all fever cases the nostrils of the patient should be carefully watched as excretions become hardened and soon obstruct the nasal passages. Hardening excretions should be gently removed and the nostrils from time to time gently bathed with olive oil, cold cream or the like, to prevent the formation of sores. Thoughtful, attentive watching in these little things is one of the great perquisites of the trained nurse and must be followed by the non-professional nurse if she would successfully attend her patient.

Dust in the sick room is dangerous. Keep everything clear of it by going over it frequently with a cloth well wrung out in a weak carbolic solution or other disinfectant. This should be done at least twice a day and its faithful observance will do much in preventing disease germs floating through the house.

All towels, linen, bedclothes, etc., used in the sick room should be

dipped in a carbolic or other antiseptic solution. A properly prepared carbolic solution has an advantage in that it does not stain or otherwise injure the linen, yet is an excellent germicide. After being wrung out in the solution they should be put in a boiler and boiled for an hour. Under no circumstances should they be allowed to stand without thorough disinfection.

The infection of typhoid fever is through the urine and stools, and the smallest indiscretion on the part of the nurse may result in the spread of the disease not only through the household, but possibly throughout the whole neighborhood. Watch the bed linens carefully and allow no spots to remain after the bedpan or urinal has been used. Small stains may be disinfected with a solution of bichloride without removing the sheets, but if large the sheets should be removed. Always bathe the hands of the patient after any action of either the bowels or kidneys. Typhoid germs come only in the discharge of typhoid patients, chiefly the stools and urine, and to give the disease to someone else they must be swallowed by such other person. Revolting as this may seem, it is the simple truth, and the only way in which typhoid may be conveyed from one person to another. These germs usually get into food and drink through careless personal habits of attendants upon the patient or of the patient himself when he has become convalescent or even apparently well. The amount of minute particles from body discharges need not be enough to be detected by our senses in order to pollute milk, drinking water or food whether cooked or to be eaten raw. Milk cans which have been washed in polluted water can spread typhoid through the milk put into them. The prevention of spread of typhoid is simply a matter of care that germ-laden discharges from the patient—the stools and urine—are so disposed of that not even the minutest particle can find its way through food or drink to the mouths of other persons. Those who have the care of typhoid patients, and the patients themselves as they grow better, must observe cleanliness of the most perfect kind. After the toilet they should thoroughly scrub their hands and finger-nails with soap and water and then wash them in a disinfectant solution. Ordinary washing of the hands with soap and water is not sufficient to cleanse or kill the germs on typhoid-polluted hands. A good disinfecting wash for the hands is a three per cent. solution of carbolic acid, creolin or lysol in water. Flies should not be allowed to come in contact with the discharges or soiled clothing of typhoid patients. They eat the discharges from the bowels and bladder and carry the germ-laden filth into the food and drink of other people.

OBSERVATION OF SYMPTOMS.

To intelligently observe the condition of the patient from time to time in order that she may make correct reports to the medical attendant is one of the most important duties of the nurse. Accordingly attention must be given to some of the symptoms which she will be expected to notice.

Temperature.—At stated times during the day, usually morning and night, it will be her duty in the large majority of cases to take and record the bodily temperature. A self-registering thermometer should be used, and after cleansing it the nurse should see that the column of mercury is as low as 96 degrees. If not, the thermometer should be firmly held by its upper end, with the arm raised and extended, and the thermometer swung downward with considerable force, care of course being taken to avoid striking it against anything. This process should be repeated as often as necessary, care being taken not to make the column of mercury go entirely into the bulb, or it will fail to be self-registering. The thermometer is usually held in the mouth, beneath the tongue, or in the armpit, five minutes being required to determine the temperature accurately in the latter place, while three minutes in the mouth is a sufficient time. If the armpit is selected it should be thoroughly dried and the thermometer held firmly in place by the arm being closely drawn to the side; if the mouth be chosen no cold drink should be given for at least ten minutes before and the lips should be kept tightly closed while the thermometer is in place. Care must also be exercised to prevent the thermometer being bitten, especially by children or by those who are at all irrational. With these the mouth had better not be chosen. The temperature normally is about 98½ degrees, although it is usually slightly lowered during the early morning hours and slightly raised in the early evening. In case of depression it may fall one or two degrees; in fever it rarely rises more than about seven degrees, and even at this height the patient is usually in a perilous condition. Between 100 degrees and 103 degrees the fever may be said to be moderate; above 103 degrees high. The gravity of high temperature varies in different diseases; in inflammatory rheumatism and in hysteria for instance the temperature may reach 108 degrees or more and recovery still take place, while a temperature of 105 degrees in inflammation of the bowels would indicate great danger. In very young children the best method is to take the temperature through the rectum. The child should

be laid face down on the lap and the thermometer gently inserted about an inch into the rectum and left there for five minutes. The temperature taken in the rectum registers about a degree higher than when taken in the mouth or armpit.

Pulse.—The pulse marks the movement of blood within the arteries, and the movement being caused by the contraction and expansion of the heart, there is variation in accord with the condition of the heart and the blood vessels. The pulse rate of the average adult is about 72 beats per minute, but varies greatly according to age, activity, position of the body and so forth. At birth the rate is 130 to 140; during first year 115 to 130; during second year 100 to 115; during third year 95 to 105; from seventh to fourteenth year 80 to 90; from fourteenth to twenty-first year 75 to 80. In old age the rate is from 80 to 85 per minute. The pulse of the female is more rapid than that of the male of the same age. Exertion, excitement and taking food quicken the pulse, and it is retarded by cold, rest and fatigue. The recumbent position causes a lowering of the pulse of about eight or more beats per minute. To count pulse place a finger (not thumb) over the artery at the wrist and count the beats for one minute. Full and frequent pulse (100 to 110) indicates fever; a bounding pulse (110 to 125) indicates high fever; a soft, frequent pulse (100 to 120) indicates advanced continued fever with debility; a wiry, frequent pulse, hard and not easily compressed, indicates fever with inflammation and that the disease is of serious character; a weak, intermitting pulse, or a thin, thread-like pulse, with or without short intermissions, indicates extreme prostration and may precede death or occur as result of hemorrhage or during a fainting fit. In such cases active stimulants must be promptly and energetically used. An intermitting pulse occurs in certain forms of heart disease, when the general health seems good.

Respiration (Breathing.)—Respiration is the alternate inspiration and expiration of atmospheric air. In drawing air into the lungs the ribs are raised and the diaphragm, or thin flat muscle which separates the cavity of the chest from that of the abdomen, is drawn down. The cavity of the chest is enlarged by this movement and simultaneously with the creation of vacuum the air rushes in as into a bellows. The movement of diaphragm and ribs which causes this inrush of air is caused by muscular contraction and the whole act is called inspiration, and the act of inspiration being completed the ribs return to their former position, the diaphragm rises, the lungs collapse and the air is forced out, and this act

of expulsion is called expiration. The successive movements of inspiration and expiration are known as respiration or breathing. In health the average adult breathes from 17 to 20 times a minute. Respiration in the female is usually a trifle faster than in the male, especially during pregnancy. The respiration should be regular and involve the muscles of both chest and abdomen. The following table indicates average respiration at various ages:

Two months to two years, 35 per minute.

Two years to six years, 23 per minute.

Six years to twelve years, 20 per minute.

Twelve years to fifteen years, 18 per minute.

Fifteen to twenty-one years, 16 to 18 per minute.

The number of respirations should be counted when the patient is unaware of it. This can be done by watching the rise and fall of the chest. The general nature of respiration varies in different diseases and should be carefully noted. In pneumonia and other pulmonary diseases there is a marked increase in respirations. In case of worms in children or any bowel trouble in infants, there is marked increase. Pleurisy, heart trouble causes shortness, gasping or catching of the breath. For record the respirations should be counted for a full minute and preferably when the patient is awake.

Cough.—If cough is present it should be noticed at what times it is worse, the frequency, duration and character of the paroxysms. If there is expectoration its features should be observed, its color, whether profuse or scanty, thick, tenacious, frothy, bloody, and so forth.

Discharges.—The discharges of the patient should be noticed and any departure from the normal reported. The frequency, color, consistence and general characteristics of the movements should be known. The color, odor and quantity of urine, the character of sediments, if any are present, the frequency with which it is voided, and so forth, should be ascertained. In saving a specimen for examination that which has collected during the night is to be preferred. Incontinence of urine, or the inability to retain it; and retention, in which it cannot be voided, sometimes occur. Occasionally in retention the bladder becomes overdistended and the urine dribbles away, this condition simulating incontinence. The use of the catheter will be necessary in this as in the ordinary form of retention.

Miscellaneous Symptoms.—The condition of the tongue, whether it is clean, furred, coated, flabby, indented, and so forth, and whether it is protruded slowly or quickly; the skin, as to moisture, warmth, color and gen-

eral appearance; the expression, whether wan, pinched, anxious, placid or otherwise; the eye, whether there is swelling of the lids, undue sensitiveness to light, alteration in color, or in the size of the pupils, and so forth; his general attitude and demeanor of the patient; the way he speaks, whether nervous, irritable, restless, rational; the amount and character of sleep; the extent and kind of delirium, if present; the sensations of the patient as described to the nurse; the location and character of pain—whether diminished or aggravated by pressure, whether constant or intermittent, stationary or movable.

UTENSILS OF THE SICK ROOM.

The following articles are practically indispensable in the sick room. They are not expensive and can be secured at almost all drug stores and of general dealers:

1. At least one, and if possible several, two-quart water bottles for purpose of either hot or cold applications as required. Cloth-covered water bottles are obtainable and to be recommended, as they prevent burning when hot water is used. If bag is not cloth covered a flannel cover-slip should be made and always put over the bottle prior to placing it with hot water against the patient. A bag that is wrapped in a loose flannel or towel may slip from its covering and burn the patient. Only fill bottle half full and then expel air before putting in the stopper. Where rubber bottles cannot be obtained or a greater number than on hand required, quart glass bottles wrapped in towels or flannels and securely fastened with safety pins may be used, but utmost care must be exercised that they do not break and scald the patient.

2. A good atomizer or sprayer for spraying the nose, throat, etc.

3. A graduated medicine glass for measuring liquids.

4. A glass tube for administering liquids to patients who cannot be raised and a special feeding cup for reclining patients.

5. Syringes and Douches: One bag or fountain syringe; one bulb syringe and one glass or hard rubber syringe.

6. Bedpan. There are several varieties, but the square, porcelain pan is especially to be recommended. The pan should always be warmed before using and the patient should be raised slightly at the hips when placing and removing the pan. It should be gently placed and gently removed. After using the pan should be immediately removed from the room, cleansed and kept in a convenient place outside the sick room.

In certain diseases, such as typhoid the evacuations should be thoroughly disinfected before emptying them. In all cases it is well to have a disinfectant solution at hand and keep some of it in bedpans and urinals when not in use. Two pounds of sulphate of iron and two ounces of carbolic acid dissolved in about five quarts of water is a good solution for such purposes and is so cheap that it may be used freely.

7. A bath towel; pure, moderately scented or unscented soap; a fine, medium-sized sponge; several rolls of antiseptic gauze bandage and a package of antiseptic gauze.

8. A slop jar with tightly fitting cover. Porcelain or china ones are good. They should be such as will stand the use of chloride of lime and other disinfectants.

9. A sputum cup. This may be of china or porcelain and must be covered. A small piece of chloride of lime or other disinfectant should be kept in the cup, which must be cleaned frequently. Gauze or old cloths should be used for sputum and these should be burned.

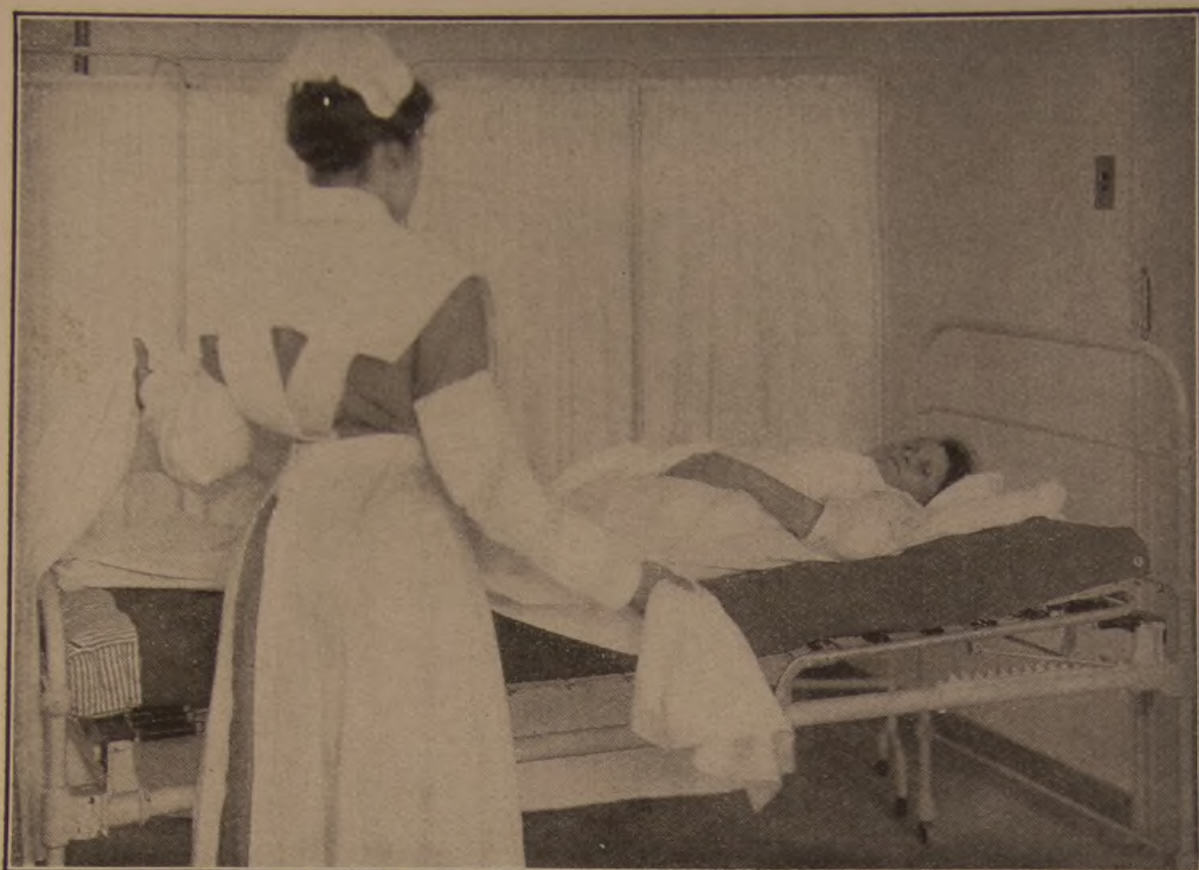
10. One clinical thermometer for taking the temperature of the patient and one ordinary thermometer for judging as to the temperature of the room. A third thermometer specially adapted to taking temperature of the bath may also be secured, but when this is not convenient the ordinary house thermometer answers the requirements.

11. One small and one large pair of scissors and a good knife. Also where possible a manicuring set is to be recommended as it is important that the hands and nails of both nurse and patient should be kept continuously clean. Such utensils should always be sterilized.

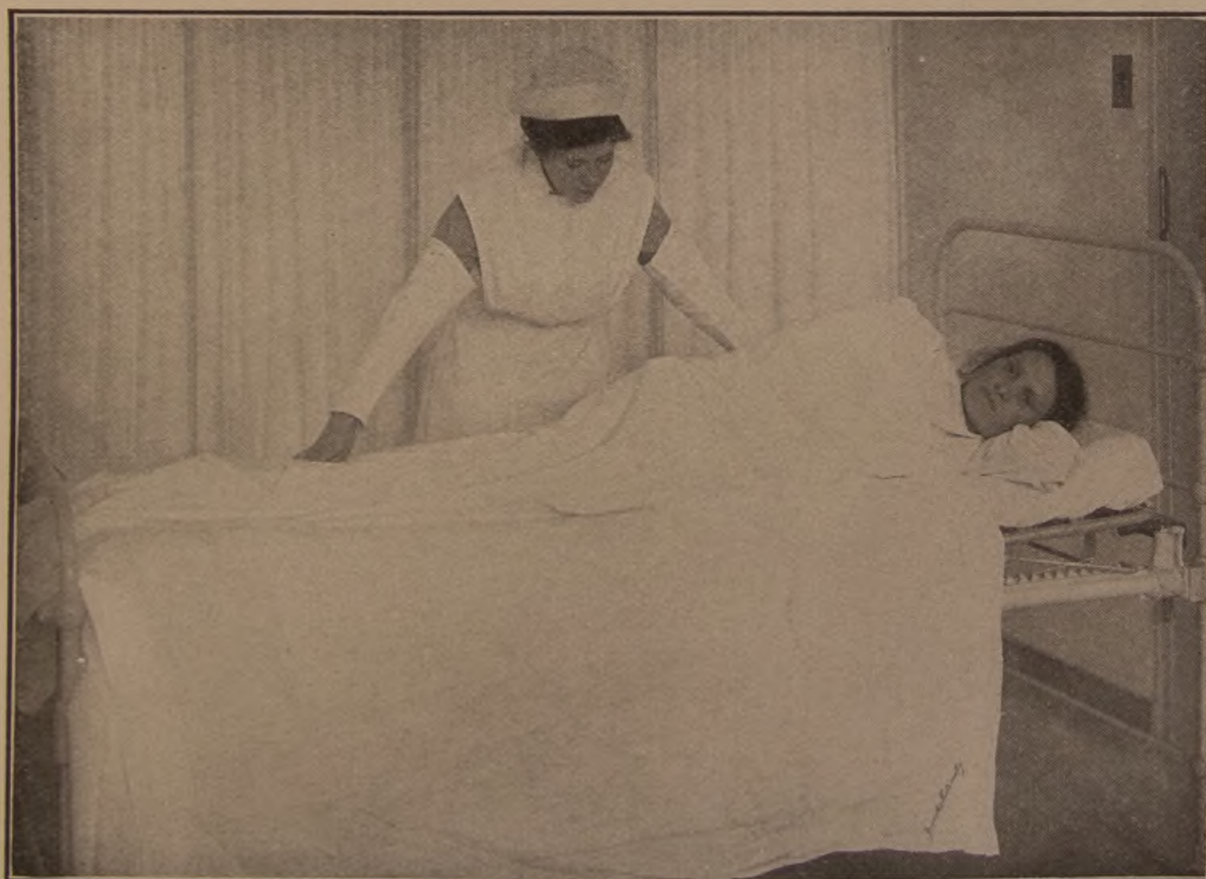
12. Ice bag. This is a rubber cap or bag so constructed as to be filled with chopped ice and placed over the patient's head, a sponge being placed properly within to catch leakage as ice melts. The head should first be well bound with a soft moist cloth which protects the head from direct contact with the rubber but together with the sponge prevents the ice from having undue effect, as, should the ice be in direct contact with the head there would be danger of freezing. In severe fever cases and skull trouble the ice cap is invaluable.

THE BED.

In ordinary illness the wide bed placed so that the nurse can go to both sides and having a spring mattress covered with one of horsehair or other such material, is fully adequate and has one advantage over a narrow bedstead in that the patient may be refreshed by moving him to a

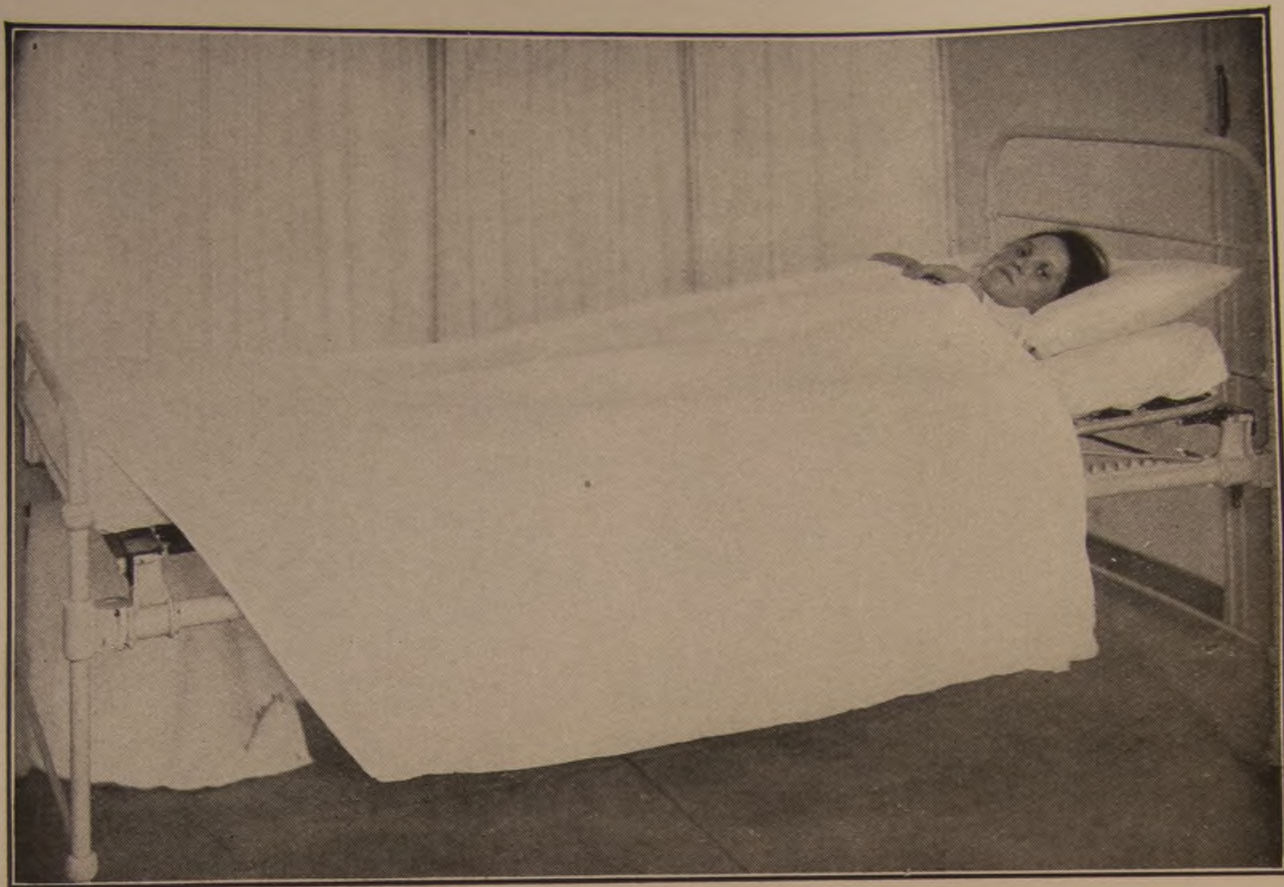


Changing Sheets—First.



Changing Sheets—Second.

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Properly Made Bed.



Ideal Sick Room.

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cool side of the bed. However, for most cases, and especially surgical cases, it is preferable to use a narrow iron bedstead about three feet wide, six feet three inches long and of a height to bring the patient two feet from the floor when the mattress is on. A good plan is to have two of these beds, one for the night and the other for the day, or for change at any time. By rolling the two beds close together the patient can be easily transferred.

Bedding.—Sheets, light blankets and hair mattress are proper. Blankets are usually better than coverlids, quilts and counterpanes because they are generally of lighter weight, and it is not well for the patient to be weighted down with heavy covering. A light counterpane, however, may be spread on top for sake of appearance.

Bed Making.—The careful making of the bed is not only important for the patient's comfort, but it is necessary as a preventive measure against bedsores. First lay a soft pad or blanket over the mattress to prevent irritation from mattress buttons. See that this pad or blanket is absolutely smooth and then pin it to the mattress at the corners with strong safety pins so that it may not become wrinkled. Cover the pad with a rubber sheet about three feet square which must be drawn smooth and pinned to the edge of the mattress. Over this place what is known as a "draw sheet" and which is made by folding an ordinary sheet lengthwise so as to make it half its original width. This is laid across the bed in such manner that the whole of the extra length will be on one side of the bed and so may be drawn to the other side to bring a fresh part under the patient. This draw sheet must be drawn tightly and smoothly across the bed and firmly fastened with safety pins. An upper sheet is smoothly laid and well tucked in under the foot of the mattress and the patient then covered with blanket and such light covering as deemed necessary.

Changing the Undersheet.—Commence on the opposite side from the patient and roll the sheet until it rests against him. A clean sheet should be previously folded in narrow, lengthwise pleats up to its middle and this pleated portion should now be placed against the roll of the old sheet, the remaining half covering the bare part of the bed, then push the two sheets well under the patient gently rolling him from you for the purpose. Going to the other side of the bed, roll the patient gently back over the sheets and pull them out. Then remove the soiled sheets and smooth out the fresh one. If desired the draw sheet and rubber sheet may be removed at the same time by rolling them all together. Another manner of changing the under sheet is to roll up the fresh sheet from the end, commencing

at the head of the bed, work the sheet toward the foot, the soiled sheet being pushed before it, the patient by himself or with assistance lifting successively the different parts of the body as the sheet is pushed down.

Changing Upper Sheet.—All the covering should be removed but the sheet and one blanket, on top of which lay a fresh sheet and blanket and then remove the soiled sheet and blanket from under the fresh ones. When sufficiently strong the patient may assist by holding on to the fresh sheet and blanket while the soiled ones are being removed.

Bed Sores.—It is not an uncommon thing for people who have been long confined to bed to die of bed sores caused by neglect and that oftentimes without either patient or nurse being aware of what is happening until the ill is done. They are to be especially watched for in emaciated persons. They form about the hips, down the spine, on the shoulder blades, the heels and other points where the tissues over the bones are so thin that constant pressure upon them stops circulation and a sore results. There is a noticeable redness first, and, if given attention at such time, the trouble may be stopped. The parts should be bathed frequently with warm water and castile soap and then rubbed well with alcohol and zinc stearate; the skin, too, may be toughened by using a solution of alum and alcoholic tannic acid powder. The most important thing, however, is that undue pressure shall not be permitted at any point. The patient should not be allowed to lie in one position hour after hour, but should be frequently though very gently moved. Turning the patient a little every three or four hours allows the blood to circulate through a part where it has become congested by the weight of the body or limb upon the bed. In some cases such as fracture of the hip it is not possible to frequently move the patient, but relief may be given by arranging small pillows in such manner as to support the body without the threatened part or parts coming in direct contact, or by placing an air pillow so that the affected parts comes over the opening. Care should be taken to use soft sheets and to see that they are always without wrinkles. A frequent massage of the back, hips and shoulders is helpful in preventing congestion of blood at any point. Wet beds are one of the most conducive things to bed sores and every effort must be made to keep both bed and patient clean and dry. When bed sores do appear everything possible must be done to heal them without delay as they may become a more serious matter than the original illness for which the patient is being treated. Cleanse with soap and water and solutions as has been directed, being careful to use only sterilized absorbent cotton, bandages, etc., and make every

effort to remove pressure on the afflicted part. If not carefully and properly attended to there is danger of blood poisoning.

EXTERNAL REMEDIES.

Poultices and Fomentations.—The effect of poultices is to soften and relax the tissues by the application of heat and moisture. In this way pain is relieved in many cases of inflammation, suppuration is prevented unless the process has gone too far, or if it is imminent or present it is hastened, and the healing of wounds and ulcerating surfaces promoted. If too long applied they do injury by lowering the tone of the parts.

Making and Applying Poultices.—Powdered slippery-elm bark, Indian meal or “mush,” flaxseed meal, bread, or any similar substance which will retain the heat and moisture well, are employed. Hot water is gradually added to the material selected, until it is thick enough to stick to the wall if thrown against it. It is then spread quickly on a piece of thin material as muslin, to a thickness of about three-quarters of an inch, leaving a margin twice that wide. It is then covered by a similar piece of muslin, or preferably of thinner material, as cheese cloth and the edges turned to the affected surface, over which a little glycerine has previously been rubbed to prevent sticking. The poultice should be covered by a piece of rubber or some water-proof material to aid in retaining the heat and moisture. A hot poultice should be ready to replace the one in use as soon as it begins to cool. If used on the trunk, care should be taken to prevent catching cold by permitting only the briefest possible exposure of the heated part while changing the poultices, and after they are discontinued a thin sheet of cotton or a light flannel cloth should be applied as a protective.

Medicated Poultices.—Both poultices and fomentations may be medicated by the additions of antiseptics, laudanum, turpentine, and so forth, and materials having medicinal qualities, such as hops, poppy and digitalis may be used in poultice form for the relief of certain conditions by placing them in a bag, preferably flannel, and dipping into hot water, hot vinegar or hot alcohol.

Spiced Poultices.—Spice poultices or plasters are made in this way for mild counter-irritation in colic, and so forth, equal quantities of ginger, cayenne pepper, cinnamon and cloves being mixed together.

Pepper Plasters.—Pepper plasters are made of cayenne pepper the same way as spice plasters; or flour, pepper and water may be mixed to-

gether as an ordinary poultice, or to the white of an egg the pepper may be gradually added until of the proper consistence. The latter plan is said to have the merit of efficacy without causing much irritation and is useful in neuralgic affections.

Mustard Poultices—These are made by mixing mustard flour with warm (not hot) water, and if desired adding a third or a half of wheat flour. The white of an egg may be advantageously added, or to relieve the burning the surface may be dusted after the poultice is removed, with a cooling powder, such as compound stearate of zinc with boric acid, or with menthol, or a soothing ointment such as cold cream, zinc ointment or vaseline. From fifteen to thirty minutes is a sufficient time to apply mustard poultices, the aim being merely to produce sufficient irritation to thoroughly redden the skin. Never should a blister be allowed to form, as the resulting sore is very painful and slow to heal.

Poke-Root Poultice.—Roast fresh poke-root until soft; pound it. Mix with cornmeal to consistency of poultice. Used on tumor to scatter them. Remove every four hours.

Charcoal Poultice.—Take bread and milk or Indian meal, make to consistency of poultice with water, stir in half a teacupful of pulverized charcoal. Good to clean ulcers and foul sores.

Slippery Elm Poultice.—Stir ground slippery elm bark in water to consistency of a thick paste. An excellent poultice for irritable sores.

Carrot Poultice.—Boil carrots until soft, mash them to a pulp, add lard or sweet oil sufficient to keep it from getting hard. Spread and apply. Excellent for offensive sores.

Onion Poultice.—Made the same way as carrot poultice. Excellent for slow boils and stimulating to indolent sores.

Bread Poultice.—Put needed quantity of boiling water in basin. Throw in bread or cracker. When these have soaked up all they will, pour off water. Spread half-inch thick on cloth and apply.

Lobelia Poultice.—Take one ounce each of powdered lobelia and ground slippery elm bark. Stir into hot weak lye to poultice consistency. Excellent when applied to wounds, fistula, felon, boils, erysipelas, insect stings.

Arrow-Root Poultice.—Mix two tablespoonfuls of arrow-root with as much cold water as it will unite with. Add boiling water and stir till a thick paste is formed.

Oatmeal Poultice.—Stir oatmeal slowly into hot water, boiling water

while stirring, till poultice thickness is reached—that is, till it will not run when spread on the rag.

Indian Meal Poultice.—Made same as oatmeal poultice.

Yeast Poultice.—Mix half pint yeast with one pound flaxseed meal to make thick paste. Stir constantly while heating.

Flaxseed Poultice.—Stir flaxseed into boiling water till thick paste is formed. Spread on linen and apply hot.

Compress.—Compresses are folded pieces of lint or rag so contrived as, by the aid of a bandage, to make due pressure upon any part, according to their shape, direction and use. Compresses have been called long, square, triangular, split, uniting, cubiform, and so forth. The compress of the hydropathists is a cloth well wetted with cold water, applied to the surface near the supposed seat of disease, securely covered with a dry cloth, and changed as often as it becomes dry. It is sometimes covered with a layer of oiled silk to prevent evaporation.

Fomentations (sometimes called “Stupes”).—A fomentation is the application of relief to any part of the body by means of hot, wet flannels, which may or may not be medicated. Two or three pieces of flannel should be placed in the middle of a towel, which is then folded once over them. Dip this into boiling water and wring out by twisting the ends of the towel in opposite directions. Carry it to the bedside, take the flannels out together and quickly shake to let in air, which will cause them to retain heat longer. Cover the flannels with thin, dry towel and apply to affected part of patient. A teaspoonful of laudanum or turpentine sprinkled over the hot flannels will increase effect. A mustard stupe or fomentation is made by making a paste of one tablespoonful of mustard and adding this to one pint of hot water (not boiling, as boiling water destroys action of the mustard); then proceed as with other fomentations. In order to keep the fomentations continuously hot two sets of fomentations should be kept going at the same time, changing them every few minutes, one remaining on the patient till the fresh one is ready to take its place. When the fomentations are finally discontinued the part should be dried and a dry flannel put in its place to prevent the patient from taking cold.

Counter Irritants.—These include poultices, fomentations, etc., and may be applied directly over the seat of trouble or may be placed on some remote part to obtain what is called revulsive action. Thus headache is sometimes relieved by mustard footbaths.

Fly Blisters.—This is a mode of producing counter irritation by means of Cantharides or Spanish Flies, which at one time was much resorted to,

but now seldom adopted, and as a rule is only advisable under direction of a physician. Cantharides should never be applied where the skin is broken or tender. Oiled tissue paper between the plaster and the skin acts as protection to the skin and at the same time hastens the action of the blister. The part to be blistered should be thoroughly washed with castile soap and water, then putting on a little vinegar and permitting evaporation to do the drying. Where there is growth of hair it is well to first shave this off. The cantharides should be held in place by bandage and not by adhesive plaster, as in the latter case there is danger of breaking the skin upon removal. From six to eight hours is the usual time for blistering, and if this has not occurred within twelve hours, the cantharides should be removed and a poultice applied, when desired results will generally be produced. Great care should be exercised not to tear the skin in removal. All particles of the cantharides must be carefully removed by using oil, after which if the blister is full of watery matter or serum a small incision should be made at the bottom of the blister to permit of its draining out. The after application is simply cold cream, olive oil or other soothing application.

The Telini Fly, of India, as also a number of other flies, possess this blistering quality, owing to the cantharidin they possess, but the Spanish Fly is the one most commonly known and used. Practically the same results are secured by moistening gauze or cotton with chloroform or ammonia and applying as a blister. If left long such applications are apt to burn deeply and it is seldom advisable to use them excepting under direction of physician.

Packs, Hot and Cold.—The Hot Pack is given to accelerate active circulation of the blood and produce warmth. The bed is covered with a rubber sheet or oilcloth, over which a dry blanket is placed. Then a blanket which has been wrung out in boiling water is placed over the first blanket. The patient is laid on this hot wet blanket naked and the blanket then wrapped quickly about him so that each and every part of the body's surface is in contact with the hot blanket, which must be well tucked in at the neck and feet. The under blanket is then folded over the patient and snugly tucked in. A cold, wet towel is laid over the patient's head. The pack should be continued ten or fifteen minutes, when the patient is dried and put back into a warm bed, great care being taken that cold is not caught in this latter operation.

The cold pack is given in a similar manner to the hot pack, only on top of the first blanket a cotton sheet wrung in ice-cold water is sub

stituted for the hot wet blanket. The cold pack is used to reduce temperature in many acute diseases, such as fevers, pneumonia, etc., but as a rule should only be given under direction of physician.

Dry Packs.—The dry pack is sometimes recommended as a means of producing perspiration. It is more particularly intended for full-blooded persons who would not be harmed by a reasonable depletion in *avoirdupois*. It is good for gout, rheumatism and some other chronic troubles, but must be avoided by those who are weak or anæmic, as it is very weakening in its effects. The patient is wrapped in a large, thick, woolen blanket in such thorough manner that no air can penetrate either at the neck, the feet nor elsewhere. Generally two or three blankets are used with a feather pillow at the feet, whilst an eiderdown quilt completes the wrappings, but still over this a further warm cover, which must be thoroughly tucked in. To avoid rush of blood to the head a cold compress is applied to the back of the head. The windows should be opened as soon as the patient is packed. The nurse must be in constant attendance and give the patient a glass of cold water every ten or fifteen minutes or oftener. After the dry pack the patient should be given a thorough alcohol sponge bath, and if sufficiently strong and the weather propitious will find it advantageous to take some outdoor exercise, or if condition does not permit of this should be put into a clean, dry bed.

Cupping.—Pain and congestion are sometimes relieved by what is known as “cupping.” It is an operation requiring skill and care and is seldom advisable excepting under direction of a physician, especially as respects what is known as wet cupping.

In dry cupping the most convenient form is a set of glasses of different sizes, provided with valves, and from which the air is exhausted after closely applying the cup to the surface of the body by means of a vacuum pump. Several of these may be placed in succession along side of each other. As the vacuum is produced the skin rises in the cup and the blood flows to the part. When it is desired to remove the cup, the skin may be pressed near the cup so as to admit the air beneath.

In the absence of this cupping apparatus, the operation may be performed with small tumblers or wine-glasses with smooth edges. There should be at hand a lighted taper or candle, some alcohol in a glass and a small swab or fine brush. The glasses must be clean and dry. The part of the patient to be cupped should be exposed so that no time may be lost at the moment for cupping. Rub the inside of the cupping glass with the swab which must have been made sufficiently wet with the alcohol

to moisten the inside of the glass, but not enough to trickle down the side of the glass when turned upside down as this would result in more or less seriously burning the patient. Pass the inverted glass over the taper or candle flame when a blue flame will appear within the glass, lasting 3 or 4 seconds, and before it disappears place it over and press it upon the part to be cupped. The oxygen having been burned out of the glass a vacuum will have formed which will have sufficient suction to draw the flesh well up. Another glass should be ready for use as soon as the first one is released which it will the least of air entering. The second or succeeding cups should not be placed in precisely the same place, that is one glass should not be placed within ring formed by a preceding one. Be careful that enough alcohol is not used to heat the edge of the glass or drop on the patient. Remove the glass before discoloration appears. The top of the glass should be taken in one hand while the other is employed in pressing away the flesh from the edge.

Wet cupping is used for purposes of local blood letting in which, after dry cupping, the part is scarified with superficial incisions; the cups are sometimes replaced in order to promote the flow of blood. It is a practice which belongs, however, more to the domain of surgery than of nursing.

Leeches.—The use of the leech is mainly for local blood-letting. At one time the medical profession used them by the millions, but in modern times the practice has greatly diminished, indeed the younger generation of American and European medical men seldom or never employ them. They are to be found in America and in Europe, the latter being considered the better for medicinal use because they are more voracious and will suck in four or five times their weight in blood.

It is possible for leeches to cause severe hemorrhage and for this reason they should not be applied over large blood-vessels, but instead should be placed upon a bony surface upon which pressure can be made in case it is necessary to check the hemorrhage, and not only should special attention be paid to this where leeches are applied to children, but as they are more easily acted upon by the leech than are adults, the less voracious or American leech is the preferable for use. The surface to which the leech is to be applied should first be well washed and dried and the leeches—which should also be washed and dried in a towel or the like—should not be handled. If to be used in the mouth or nose, run a silk thread through the tail to prevent swallowing. If swallowed a strong solution of salt and water will prevent any harm, or a glassful or two of wine may

be taken. Should hemorrhage be severe it may be stopped by application of vinegar or by touching with nitrate of silver. Simple hot or cold applications with pressure are usually sufficient. Do not attempt to pull a leech off by force as their teeth may be left in the wound and abscesses may result or erysipelas set in. The leech will drop off itself when it is full or if desired before he is full sprinkle some salt on the head of the leech, when it will immediately release itself and drop off. The bite of the leech leaves a small, permanent star-shaped scar.

Lotions, Ointments, Embrocations, Liniments.—Lotions are remedies applied to the exterior of the body by simply painting, washing or mopping the surface. If they are intended to reduce heat and inflammation by evaporation they should be left without covering or as little as possible. Ointments are fatty substances applied either with or without rubbing and are usually supposed to be of more or less healing nature. Embrocations and liniments are usually somewhat counter-irritant and are external applications in which rubbing is employed. Usually liniments contain ingredients that would be very poisonous if taken internally and so great caution should be taken that they are not left where someone may take them by mistake, or even as has sometimes happened, administer them by mistake.

Sulphur Ointment.—Melt half a pound of lard, and add one ounce sulphur, one drachm each of ammoniated mercury, benzoic acid, sulphuric acid and oil bergamot, and two drachms of nitrate of potassa. Stir constantly till cold. An excellent ointment for itch.

Pile Ointment.—Add to a quart of water three handfuls each of witch-hazel bark, oak bark and apple tree bark. Boil to a pint and strain. Add half a pound of lard, and simmer till water disappears. This forms an ointment valuable as a pile remedy.

Tar Ointment.—Melt a pound of suet. Add the tar. Stir till cold. Excellent ointment for scaly eruptions like scald head.

Spermaceti Ointment.—To a pint of olive oil add five ounces of spermaceti and fourteen of white wax. Melt together, stirring constantly. Good dressing for blisters and burns.

Simple Ointment.—Melt a pound of white wax with four pounds of lard. Let the heat be gentle, and stir till cold.

Poke Ointment.—Mix a drachm of extract of poke with one ounce of lard. Good for ulcers, itch, scald head, etc.

Oxide of Zinc Ointment.—Rub together half an ounce of oxide of

zinc and three ounces of lard. Good for eruptions of skin and sore nipples.

Ointment of Galls.—Rub together six ounces lard, six drachms powdered galls and a drachm and a half of pulverized opium. Good for piles.

Belladonna Ointment.—Mix an ounce of lard with a drachm of extract of belladonna. Affords relief in neuralgia and painful tumors.

Ointment of Bayberry.—To half a pound of tallow add half a pound each of turpentine and bayberry, and four ounces of olive oil. Good application for scrofulous sores and ulcers.

Lead Ointment.—Add two and a half drachms of powdered acetate of lead to two ounces of white wax and four ounces of lard. Melt together, stirring till cold. Good for burns, scalds, ulcers and cuts.

PLASTERS.

Spiced Plaster.—Mix an ounce each of powdered ginger, cloves, cinnamon and black pepper with one drachm pulverized cayenne. Add a fluid ounce tincture of ginger and enough honey to make stiff poultice. A plaster of this applied to stomach stops nausea and vomiting.

Lead Plaster.—Melt one pound lead plaster, add two ounces each of linseed oil and tincture of opium, six ounces of oil of turpentine and eight ounces of oil of organum. Stir together till cold. Good for burns, chilblains, scalds, etc.

Capsicum Plaster—Mix half pound resin and two ounces beeswax. Add a pint of spirit, in which two ounces of cayenne inclosed in bag has been steeped in gentle heat for two hours. Evaporate the spirit by gentle heat, add an ounce of powdered camphor. An excellent stimulating plaster.

Belladonna Plaster.—Melt three ounces of resin plaster and add an ounce and a half of extract of belladonna. An excellent application in neuralgia and rheumatism.

Dry Heat.—This is used to impart warmth, restore suspended animation, relieve pain, as in cases of neuralgia and muscular rheumatism and in other affections. Appliances are now procurable for use in the home in which the affected part may be treated by air heated to a temperature of several hundred degrees. Hot water bags and bottles, hot stove lids, irons, bricks and plates, bags of salt, sand and ashes are common examples of the modes of applying heat. All these should be properly wrapped to prevent burning the patient. Where bottles or rubber bags are used the stoppers

should be carefully fitted to prevent the possibility of leaking; the bag should be seamless lest the heat melt the cement and the patient be scalded, and it should only be half filled in order that it may conform more comfortably to the shape of the body.

Cold.—Cold is applied for the reduction of temperature, for the relief of inflammation and sometimes in the treatment of pain. Muslin cloths laid on ice, constantly renewed, cloths wrung out of ice water and rubber bags partially filled with small pieces of ice are the ordinary means of applying it. Coils of rubber tubing through which ice water is made to flow are also convenient. The same may be used for hot water. Ice bags should have between them and the surface of the skin a thin layer of flannel or other material. If folded in a napkin or other cloth they may be conveniently pinned to the clothing of the patient, or where applied to the head, to the pillow, to keep in position.

Miscellaneous Application of Remedies.—Remedies are also applied to the mucous surfaces by injection, suppositories, douches, inhalation, dusting, and so forth, by absorption through the skin into the general system; and by injection under the skin or into the deeper structures of the body. The utmost care should be observed to have all appliances used for these purposes scrupulously clean to avoid the danger of infection. Of these methods several must be more than mentioned.

BATHS.

The temperature of water in a bath in the sick room should always be tested with a thermometer. Never trust to impressions nor hand tests,—they are unreliable and may be sufficiently in error to cause grave consequences. A special bath thermometer may be obtained from any drug store, but the ordinary thermometer answers all requirements. For clinical consideration the temperatures of different kinds of baths may be classified thus:

Cold bath	50° to 70° F.
Tepid bath	80° to 92° F.
Warm bath	92° to 98° F.
Hot bath	98° to 110° F.

Cold baths induce capillary circulation and stimulate a healthy action of the skin, fortifying it against atmospheric changes. The cold

water drives the blood from the surface to the internal organs and this is followed by a reaction, and as the blood returns there is a feeling of warmth and a reddening of the skin. For those in health a cold plunge first thing in the morning is most exhilarating, but should not be taken for several hours after eating. With the sick the cold bath should only be given on physician's order, excepting in cases where his advice cannot be had and it is known that it is the proper treatment. It is sometimes indicated for heatstroke when the temperature reaches 104 degrees or more, but the patient should not be plunged into the extreme cold as a well person would do, but instead the water at the start should be at a temperature of from 70 to 90 degrees and gradually it should be reduced by adding cold water until the desired temperature is reached, say 65 degrees F. or at lowest 60 degrees. The patient according to circumstances may be kept in the bath for fifteen to thirty minutes, but if at any moment there be symptoms of faintness or of chills, he should be immediately taken out and hurried to a warm bed, where stimulants should be administered.

Hot baths and hot packs draw the blood to the surface and relieve congestion of the internal organs. They are of special worth in cases of shock, exposure to cold and like instances, where there is great depression and it is requisite to stimulate the nervous system. They are used to great advantage in cases of convulsions of children. On taking him from the bath the skin must be quickly but gently dried and the patient hastened into a warm bed, care being taken throughout that the temperature of the room is proper and that there are no draughts. Hot baths may produce faintness and the patient should be continuously watched, as if left alone even briefly there is danger of sudden collapse and possible drowning in the bath.

Warm and Tepid Baths.—These have a calming, soothing effect upon the nervous system. They are of especial value when there is excitement or irritability.

Hip Baths.—These are given with intent to act specially upon the abdominal organs. They may be hot or warm. They should be given in baths specially constructed for the purpose and which can be readily purchased, but in emergency an ordinary tub may be used. Care must be taken that the patient's shoulders and feet are warmly covered during the period of the bath.

Foot-baths.—These are often valuable in refreshing the patient and also in drawing cold from the system. For the former the water should be tepid and the duration from five to ten minutes. For the latter the

water should be as hot as the patient can bear and kept up for from ten to twenty minutes, hot water being added to keep up temperature of water. A tablespoonful of mustard should be stirred in the water, and it will aid if the patient's ankles and feet are gently rubbed downward.

For description, etc. of other kinds of baths read special articles.

ENEMATA, OR RECTAL INJECTIONS.

Liquids injected into the rectum are called enemata (plural of enema) and are given for various purposes, such as the relieving of constipation, the checking of diarrhœa, the relief of flatulence, etc., when they are called simple enemata, and also are given to administer nourishment which cannot be taken into the stomach, when they are called nutritive enemata. Simple enemata may be administered either with a bulb syringe or with a fountain syringe; that is, a water bottle hung at convenient height above patient and having connecting rubber tube with proper nozzle. Fluids as a rule should be warmed to a little above blood heat (98° to 100° F.), say from 105° to 108° F. The most enemata consist of warm water made soapy with any good soap and is simply for the purpose of evacuating the bowels. The tube should be oiled with vaseline or sweet oil and gently pushed into the rectum by an upward and slightly backward movement. The tube is held in place while the injection is slowly given. The following details as to different enemata will be found of value:

1.—Purgative Enemata:

(a) Olive oil or castor oil. Six ounces of warm oil should be injected slowly and as high as possible, its purpose being to soften the movement. About half an hour afterward follow with an enema of one quart of warm soap suds.

(b) Glycerine enemata. Half an ounce to two ounces of pure glycerine with an equal amount of warm soap suds should be injected.

(c) Turpentine enemata. Mix one-half ounce of turpentine with three ounces of warm water. Half an hour afterward follow by an enema of about one pint of soap suds.

(d) Rochelle salts and epsom salts. One ounce of either salt should be mixed with two teaspoonfuls of turpentine and one pint of warm soap suds.

(e) Molasses. Mix from two to ten ounces of molasses with one pint of warm soap suds.

2.—Astringent Enemata: These are oftentimes found very efficacious in cases of diarrhoea. They must be given very slowly, should be injected as high as possible and be retained by the patient as long as he is able to.

(a) Starch and laudanum. The starch is boiled as if for laundry purposes and then thinned with lukewarm water until it is thin enough to flow readily through the tube, and of this take three ounces. In mild cases this of itself is often sufficient, but where there is much pain, desire to move the bowels and straining, fifteen drops of laudanum or thirty drops of paregoric may be added, but this addition should not be made without permission of physician.

3.—Stimulating Enemata: These are sometimes found valuable in cases of shock following an accident or in cases of exhausting illness, where it is deemed wise to stimulate through the rectum.

(a) Salt Enema. A mildly stimulating enema may be made with two teaspoonfuls of salt dissolved in one quart of hot water. This may be strengthened in effect by addition of half an ounce to one ounce of whiskey.

(b) Black Coffee. An injection made of half a pint to one pint of black coffee makes a powerful stimulant. It should be first strained through a handkerchief or fine cloth and administered as hot as can be endured.

4.—Nutritive Enemata: In some cases it is necessary to feed the patient through the rectum. Naturally but a very limited variety of food can be thus administered. No one injection should consist of more than four to six ounces of fluid, and they should not be given oftener than at four hour intervals, as if more frequently administered the rectum will become so sore that they will have to be discontinued. In giving nutritive injections make sure that there is no air in the syringe, and to avoid their being expelled they must be administered very slowly. In case of being expelled decrease the dose. The smaller and more concentrated the dose the greater is the chance of its being retained. Where there is great difficulty of retention ten drops of laudanum or paregoric added to the enema will sometimes effect retention. The following are some of the most efficacious nutritive enemata:

(a) Four ounces of peptonized milk; white of one egg; a pinch of salt.

(b) Three ounces strong beef tea; one ounce cream; one ounce brandy.

(c) Two ounces each of beef blood and pure milk. The beef blood should be from very rare beef.

(d) One ounce each of yolk of egg, milk, brandy and beef-tea.

(e) Two ounces of egg-nogg (made as for drinking) with two ounces of codliver oil, or four ounces of the egg-nogg may be given without the oil.

When a patient is being fed by nutritive enemata the bowels should be washed out once a day by simple enema.

In giving an enema the patient should preferably lie on the left side. If impossible to lie on the left side then he should lie on his back or take it in the "knee-chest position"—that is, with the knees drawn up to the chest. The patient must never be given an enema while lying on the right side.

In giving enemata the bed of course should be protected with rubber sheet or with proper cloths.

EPIDERMIC MEDICATION.

Feeding the patient through the agency of the skin is known as epidermic medication. It is only used in rare cases, though some constitutional diseases are still treated with mercurial inunction and cod liver oil is sometimes applied to the skin of consumptives and rubbed in by massage. Epidermic medication should only be administered by direction of a physician.

HYPODERMIC INJECTIONS.

These should never be used excepting by direction of the physician, yet when he prescribes them they may be easily administered by the nurse and quick results in stimulants and other drugs are obtainable and sometimes advisable. Tablets and triturates are now obtainable which physicians feel safe in prescribing for hypodermic use. The operation is very simple. A proper hypodermic needle must be had and this must be carefully sterilized by boiling in hot water or by subjecting carbolic acid or alcohol, both before and after each injection. Make solution as directed by the doctor, then with a piece of gauze rub the part to be pierced with alcohol to bring the blood to the surface. With the thumb and index finger of the left hand pinch up a little piece of the flesh and with the right insert the needle with a quick, stab-like motion. Press the piston slowly, permitting the solution to diffuse, then quickly withdraw it and again rub the part with alcohol. The patient will feel almost no pain.

VAGINAL INJECTIONS AND DOUCHES.

These are necessary for cleanliness and as palliative in different diseases. Either bulb or fountain syringe may be used, but probably there is nothing more satisfactory than a good fountain syringe, which is simply a rubber bag or other vessel for holding one or two quarts of water, which can be hung on a hook or set on a shelf about six feet from the floor, or other height sufficient to give natural force to the flow of water. To this vessel a long rubber tube is attached with a nozzle at the end. There should be at least two interchangeable nozzles, one providing for a straight flow of water and the other for a spray. A snap spring about the tube near the nozzle may be used to start or shut off the flow of water. The patient should lie on her back with the hips raised on pillows and the knees drawn up, a bedpan being placed under the hips to catch the returning water. Where this is not possible the patient should lie at the edge of the bed with a vessel arranged to catch the overflow. The nozzle should be oiled and then gently introduced and held in place by the patient while the nurse gives the injection. An improvised fountain syringe can be made by placing a pitcher at a suitable height and using a piece of rubber tubing as a syphon. Of course with well persons and that especially with the fountain syringe, douches may be taken without assistance. The injections may consist of warm or hot water, to each pint of which, if desired, a teaspoonful of Oondy's fluid or of a five per cent. solution of carbolic acid may be added.

SUPPOSITORIES.

These are small masses, usually conical in shape, and composed of cocoa butter or some other material which will melt at the temperature of the body. These masses are medicated to suit requirements of different ills. They are used for introduction into the rectum, vagina or uterus, and, except in the case of the last named, readily slip into position if lubricated with a little oil or vaseline. They may be introduced by patient or nurse. If introduced by nurse the forefinger should be oiled. The suppository should be introduced gently, and when by rectum should be pushed up about one inch until it is seized by the muscles. The finger should be withdrawn very slowly so that the suppository may not be forced out. When patient has not been accustomed to introduction of supposi-

tories an evacuation may follow in a few minutes and a bedpan should therefore be in readiness. As suppositories melt at body heat they should be kept in a cool place.

INTERNAL REMEDIES.

Liquids, powders and pills and the modifications of the latter, tablets and capsules are the modes by which medicines are administered internally. As much as possible an array of medicines should not be on exhibition in the sick room. Any which in their administration require special care, such as poisons, should be kept in a place by themselves and some means adopted for distinguishing them by the sense of touch, such as a piece of ribbon tied about them.

Pills and Powders.—To give pills, powders, etc., they should be placed as far back on the tongue as possible and a large swallow of water taken. Some powders are quite readily taken by floating them on a teaspoonful of water, others by mixing them into a paste with a few drops of water and placing on the tongue, a drink being taken to wash it down. Medicines in liquid form, unless specific directions to the contrary are given, had usually better be freely diluted. The mere addition of water does not usually diminish the efficacy of a drug, whereas when undiluted remedies are often too strong.

Measuring of Medicines.—Since spoons vary in size and drops differ according to the consistence of the liquid, droppers and graduated medicine glasses are better for measuring liquids. One teaspoonful should equal a drachm, two teaspoonfuls a dessertspoonful, two dessertspoonfuls a tablespoonful, two tablespoonfuls an ounce, two ounces a wineglassful, two wineglassfuls a teacupful, two teacupfuls a coffeecupful, and two coffeecupfuls a pint. In measuring liquids, the glass should be held perfectly even, on a level with the eye, and the liquid slowly poured out from the bottle, on the side opposite the label, to prevent soiling the latter by drops rolling down the outside. If the medicine is measured by a spoon, it should be poured into a larger receptacle in order that it may not be spilled while administering it. In dropping from a bottle, the lip should be moistened in one spot with a drop of the liquid, and side of the cork held against the moistened edge at an angle of about 45 degrees; if the bottle is carefully tilted its contents may be accurately dropped out.

TINCTURES.

A tincture is a spirit containing medicinal substances in solution—that is to say, it is a spirituous solution of such of the active principles of vegetables and animals as are soluble in pure alcohol or proof spirit. They are made by grinding or bruising the substances of which tinctures are to be made, such as roots, leaves, barks, etc., and then placing them in the proper amount of either diluted or pure alcohol, letting them stand from seven to fourteen days (shaking thoroughly each day) and finally filtering through paper. Commonly one ounce of the medicinal substances is used to one pint of spirit, though there are some variations as to this. As a rule fluid extracts have the same strength ounce for ounce with the roots, barks, etc., of which they are made, so that they may generally be used instead of the actual substances and facilitate the making of a tincture quickly. Ether is sometimes used instead of alcohol, as is also ammonia. The following are a few of the tinctures most commonly used, together with description as to their making:

Tincture of Snakeroot.—Steep for two weeks three ounces of crushed Virginia snakeroot in a quart of diluted alcohol. Express and filter. Good for low states of the system, in teaspoonful doses, three times a day.

Tincture of Rhubarb.—Add to a quart of diluted alcohol three ounces of crushed rhubarb and one ounce of crushed cardamom. Steep two weeks; express, filter and bottle.

Tincture of Opium.—Add to two pints of diluted alcohol two and a half ounces of opium. Steep for a fortnight; express, filter and bottle. This is the preparation known as laudanum. The dose should not exceed ten to twenty drops.

Tincture of Lobelia.—Add to a pint each of vinegar and alcohol four ounces of lobelia. Steep two weeks; draw off and filter. Dose as a nauseant, thirty to fifty drops.

Tincture of Cinnamon.—Add to one pint of diluted alcohol two and a half ounces of powdered cinnamon. Steep for two weeks; express and filter. Dose, two to four teaspoonfuls.

Cayenne Pepper Tincture.—Steep for two weeks an ounce of powdered cayenne pepper in two pints of diluted alcohol. Express, filter and bottle for use.

Tincture of Orange Peel.—Add to one quart of diluted alcohol four

ounces of dried orange peel. Steep for a week; express, filter and bottle for use.

Tincture of Cantharides.—Steep for a fortnight an ounce of crushed Spanish flies in two pints of diluted alcohol. Dose, twenty drops, three times a day.

Tincture of Valerian.—Steep for a fortnight four ounces of crushed valerian in a quart of aromatic spirits of ammonia. Express and filter. Used in nervous diseases in one- or two-drachm doses in sweetened water.

Tincture of Myrrh.—Steep for two weeks four ounces of crushed myrrh and two ounces of capsicum in four pints of alcohol. Express and filter. Good externally and as an occasional remedy for flatulence.

Tincture of Peruvian Bark.—Steep for two weeks twenty ounces of diluted alcohol, to which has been added two ounces of red bark, an ounce and a half of crushed orange peel, three drachms of Virginia snakeroot and one drachm of saffron. Express and filter. A stomach cordial, and good in low fevers. Dose, two to four drachms three times a day.

Tincture of Aconite.—Mix eight ounces of powdered aconite root with one pint of alcohol. Express and filter. Same proportions of castor and leptandra to alcohol, make their respective tincture.

Camphor, oil of peppermint, oil of spearmint and asafetida, in proportions of two ounces each to a pint of alcohol and steeped and treated as in tincture of aconite, make their respective tinctures.

So cardamom, cochineal, colombo, ergot, galls, hemlock, cubebs, henbane, lobelia, poke, blood-root, squills, bittersweet and belladonna, in proportions of two ounces each to a pint of diluted alcohol, and steeped and treated as in cases of tincture of aconite, make their respective tinctures.

SYRUPS.

Syrups are frequently used in the sick room. A strong solution of sugar and water is a simple syrup and when some medicinal has first been put in the water it is a compound or medicated syrup. In making medicated syrups it is preferable to use refined sugar. The following recipes will be found useful in making syrups for the sick room:

Simple Syrup.—Dissolve two and a half pounds of sugar in a pint of water. Dissolve sugar by heating, removing any scum. Strain while hot. The addition of any medicinal substance to a simple syrup makes a compound syrup.

Syrup of Squills.—Add two pounds of refined sugar to one pint of vinegar of squills, and proceed as in simple syrup.

Syrup of Seneka.—Mix four ounces of fluid extract of seneka with one pint of water. Dissolve in the liquid one pound of refined sugar and proceed as in simple syrup. Useful in colds and coughs, in frequent doses of one or two teaspoonfuls.

Syrup of Rhubarb.—Add to six pints of simple syrup, two-and-a-half ounces of crushed rhubarb, half ounce each of crushed cloves and cinnamon, two drachms of bruised nutmeg, two pints diluted alcohol. Evaporate liquid by a gentle heat, to a pint. Excellent for bowel complaint, in drachm doses every two hours till it operates.

Syrup of Lemons.—Boil for ten minutes a pint of lemon juice, strain, add two pounds refined sugar and dissolve. When cold, add two-and-a-half fluid ounces of alcohol. A fine addition to drinks in fever cases and good to disguise the taste of medicines.

Syrup of Citric Acid.—Add one pint of simple syrup to two drachms of powdered citric acid and four minims oil of lemons; add another pint of simple syrup and dissolve by gentle heat. An agreeable cooling addition to fever drinks.

Syrup of Ginger.—To a quart of simple syrup add two ounces of tincture of ginger. Evaporate the alcohol by gentle heat. Added to other medicines to improve flavor. Excellent to remove wind from stomach and as a stimulant.

Syrup of Garlic.—Slice and crush six ounces of fresh garlic, add one pint of acetic acid and two pounds of sugar. Macerate four days in glass vessel. Express and filter the liquor, till a pint has passed. Bottle. A teaspoonful will relieve bronchial affections in children under one year old. Larger doses according to years.

Syrup of Wild Cherry.—Steep two and a half pounds coarsely powdered wild cherry bark in a gallon of water. Strain and dissolve in it by heat as much sugar as will make thick syrup. A good tonic and excellent to mix with medicines for dyspepsia, consumption, and so forth.

Emetics.—Emetics are medicines administered for the purpose of causing vomiting. Generally they are considered as being of two varieties, which may be classified as (a) those which produce their effect by being absorbed into the blood and thereby act upon the nerve centres, and (b) those which act directly on the mucous membranes of the stomach and cause vomiting by reflex action. The first class of emetics are slow in their operation and are attended by considerable depression of the system

and antecedent nausea, while the latter are prompt in action and their depressing effect much less. Formerly emetics were much used in medicine in the early stages of acute diseases, such as fevers and inflammations; with the object of cutting them short, but their use for such purposes has practically been discarded and they are seldom used excepting in specific cases, such as the following: to empty the stomach in certain cases of poisoning, such as narcotics, or where indigestible substances are giving rise to disturbances which call for their removal, and to clear the air passages of obstructions as in certain cases of bronchitis or croup, where the respiratory tubes become filled with morbid material which threatens death by asphyxia and which cannot be dislodged by coughing. For these purposes class (b) or stimulating emetics are preferable, such as sulphate of zinc, sulphate of copper, turpeth mineral, alum, ipecac, sanguinaria, mustard, salt, etc. A common household emetic is a teaspoonful of mustard stirred in a glass of lukewarm water. Sometimes a couple of tablespoonfuls of table salt in a glass of lukewarm water will give results. Emetics in class (a) are frequently administered by the rectum or hypodermically when the patient cannot swallow or for other reasons it is not desirable to disturb the stomach by direct action. Emetics are also sometimes given in class (a) to produce nausea, rather than actual vomiting, thereby causing a certain relaxation in the early stages of acute inflammation in strong persons, and for this purpose the more depressing emetics are used, such as antimony, ipecacuanha, apomorphia, etc. The latter are also employed in obstetric practice with view of producing relaxation in cases of protracted labor from uterine and muscular rigidity. Emetics should always be administered with great caution, since the act of vomiting may be attended with danger where there exists any tendency to brain disease such as apoplexy, congestion of the brain, etc., and also in cases of inflammation of the stomach, advanced pregnancy, hernia (rupture) and other diseases of the internal organs, emetics should be avoided.

KEEPING A CHART AND RECORD.

A proper sick room chart carefully and accurately kept is of great assistance to the physician. The doctor usually is able to spend but a few minutes with the patient each day, usually at about the same hour each morning or afternoon. He cannot tell just what has happened during the time he has been away excepting by report of someone who has watched the case during his absence, yet it is very important that he should

know just what has transpired each hour, what the temperature has been, what the pulse, what food has been partaken of, what bowel movements there have been, and many other things. The nurse cannot trust to her memory and, moreover, to recite all details would take up a lot of time. A carefully kept chart will tell the physician just what has happened while he has been away and will enable him to more ably decide as to what course should be pursued in treatment. Almost all drug stores have sick room or nursing charts for sale, and the purchase of same will well repay. Where these charts cannot be purchased the nurse can easily draw a necessary chart, taking as guide the specimen diagrams on the opposite page hereto. The date, name of patient and name of physician and when he has decided as to the disease write in the name of that also. Each time pulse, respiration and temperature are taken record them on the chart. The dotted line running across the page at 98.6 indicates the normal temperature line. Any variation from this line shows an irregularity in the system. After recording the figures (expressing fractions in decimals) make a dot on the chart showing the temperature. Then when the temperature next taken make another dot again showing the temperature and draw a straight line from the previous dot to the new one, and so on each time temperature is taken. By using black ink for day records and red ink for night records the physician is greatly assisted in quickly reading the chart. On separate sheet should be kept memoranda of everything occurring during each day and each night, including meals and what composed of, discharges and their nature, hours of sleep, etc., in short stating in fewest words possible everything as it occurs. Put it down at the time.

That the chart and record be absolutely correct is imperative, as an inaccurate report is not only useless, but may prove truly dangerous by giving the physician false impressions, while every physician is aided and every patient benefited by a true chart and record.

Moving a Patient.—No one should attempt to lift a sick room patient alone. There should at least be two. There are different methods. One good way is for the nurse to pass one arm under the patient's neck in such manner that the head will rest on her arm, the nurse's hand being passed under the arm of the patient on the other side; the nurse's other arm is passed over the patient, the hand reaching the middle of the patient's back. The assistant, standing on the opposite side from the nurse, passes one arm under the lower part of the back and the other under the knees, and the nurse and assistant operating in accord with

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Temperature Chart.



each other lift the patient. A patient also may be lifted by the nurse taking firm hold of the sheet at the head and the assistant in like manner at the foot. The sheet thus forms a sling, and if done carefully and with sufficient strength the patient may thus be safely carried. In moving a patient from one side of the bed to the other, the nurse may by herself safely undertake to do this by placing one arm and hand down the patient's back, thus supporting the head and shoulders, the other hand and arm being passed over the patient and slipped under the upper part of the back—and thus the upper part of the body is moved in the bed. Then one of the nurse's hands is placed under the lower part of the back and the other under the knees, and thus the lower part of the body is lifted over. The patient also may be moved from one side of the bed to the other by loosening the draw sheet and pulling it and the patient over together, then of course replacing the sheet.

FEVER NURSING.

By "fever," as here used, we do not mean merely a high temperature. One may have high temperature for a short time as the result of an attack of indigestion or other temporary disarrangement of the system, while in typhoid and other continued fevers to which we now refer, the temperature is not necessarily excessively high, though at times it may be, but it goes through a series of ups and downs, now rising, now falling, always above normal and probably the risings and fallings being at a little higher temperature each day during a certain period of the illness, according to the nature of the particular disease.

In these continued fevers the patient's recovery depends more on careful nursing than in probably any other sick-room illness, and that the nursing of it may be given all the faithful and untiring care that is essential, it is necessary that the nurse herself have very special regard to her own health, and that she herself has nourishing food, ample rest and sufficient outdoor air and exercise to keep her in good health and cheeriness. The nurse who neglects her own health is unable to give the best care to her patient, for if she be over-tired or ailing herself she cannot be as vigilant as she should with her patient nor can she lighten the sick room with that quiet, but contagious cheerfulness which is always a potent factor when caring for the sick. The nurse must have her hours of rest and recreation and these as far as possible must be away from the sick room and from thought of it. This is as much in the

interests of the patient as the nurse, oftentimes more so. Where it is possible to have two regular nurses, the matter is very simple by a division of hours, but where, as is generally the case, only one trained nurse may be had, or only one member of the family able to devote her entire attention to the patient, it is necessary that special arrangements be made for the regular relief of the nurse, whether she be a trained nurse from without or be one of the members of the family. Certain hours when the patient is least likely to need special care should be decided upon and someone regularly left in charge during those hours with full instructions what to do, and the nurse thus be given entire freedom that she may come back to her case refreshed and so physically capable of resuming untiring watch and care. There should be a free discussion of the matter with the attending physician in order that the best hours and best general arrangement may be had.

As illustrative of fever nursing we will take a case of typhoid fever. Typhoid fever is caused by poisons produced by myriads of microscopic germs in the bowels which live their lives in series of sevens of days. It is called an "expectant" fever because it is expected the germs will live out their lives in series of seven, fourteen, twenty-one or twenty-eight days. The fever seldom runs less than fourteen days; it rarely exceeds twenty-eight days. Once it has started it must run its course, and so once it has been fully established that the case is typhoid we must settle down to a watchful siege, hoping for the change to convalescence on the fourteenth day, and if this passes without crisis then on the twenty-first day, and in the meantime, by natural and artificial means, bend our energies to preventing the fire of fever from consuming the patient and in keeping up the strength and vitality which are essential to his recovery.

Strict rules apply to the management and care of these fevers (see article on typhoid fever and other fevers as per index) and no liberties can be taken. Where competent physician is in attendance, obey his instructions religiously. Diet, sponging, attention to urine and stools and all the many incidents of proper care should be given careful, incessant and unwavering attention. The keeping of exact charts and records is matter of especial importance in these fever cases, as they are an index to the patient's real condition and invaluable to the physician in his daily study of the case.

Delirium is almost always an accompaniment of continued or expectant fevers, especially during high fever and patients of nervous temperament. The patient is restless during sleep and usually keeps up

low mutterings, and on coming out of sleep, but still delirious, fancies all kinds of strange things and thinks he sees objects and people about that are not actually present. Delirious patients should never be left alone for even the shortest while, as they may jump from the bed and out of window in a moment's time, or otherwise do themselves harm. Stay close by the delirious patient, agree with him in his hallucinations when occasion demands, soothe him by bathing forehead and other kindly attention and strive to gain and retain his confidence in every way, notwithstanding that for the time he is demented.

Great care must be given to diet, though for many days this will probably be chiefly milk or some prepared liquid food. During the time of actual fever the patient will be indifferent to food, but once the crisis is over and convalescence commenced there is apt to be such craving for food that the patient's appeals may become almost heart rending. Here the nurse must be gentle but firm. In typhoid, for instance, five to seven days should usually elapse before the patient be given any solid food whatever, and then the quantity which may be safely given will be so small as to simply aggravate the patient's desire. However, to vary from the strict and known rules will be certain to do the patient harm and may cause death. Be guided by instructions of attending physician and do not permit your kindheartedness to interfere with your known duty. Consult diet requirements of different fevers in the special articles on these fevers (see index at end of book).

Complications of various kinds are apt to arise in continued fevers, such as hyperstatic pneumonia (caused by too long continued lying in one position); pleurisy (outcome of slight cold or perhaps some undue strain on the part of the patient); hiccough (a dangerous, but not a frequent complication); and most commonly of all perforation of the intestines and from peritonitis. The safeguard against these dangers is constant vigilance and a knowledge of what to do at the first symptoms.

In all continued fevers and especially typhoid it is imperative that great care and attention be given to the actions of the bowels and kidneys. They must be kept free. Inactivity or constipation means that the outlets for poisonous matter are clogged and there is grave danger of serious complications. The exact times and natures of stools and of urine should be most carefully recorded and the physician's attention especially drawn to any and every condition that seems unusual or contrary to natural expectation.

Too much attention cannot be paid to cleanliness and to proper bath-

ing (see section regarding cleanliness). During the time of high fever it will be found of great advantage and will greatly reduce the fire of fever, to give frequent sponge baths with alcohol, some doctors recommending an alcohol sponge bath every hour during the higher stages of fever. Great care must be taken in giving sponge baths, either of alcohol or water, that the patient is not exposed to cold or draught and only such part should be uncovered as is for the immediate moment being sponged. A frequent change of well-aired linen and constant attention that the sheets are always smooth and the pillows comfortably arranged are also matters of needful care, and all these matters are essential even in the care of the lesser fevers.

Rest and quiet are necessary for the patient. He is not benefited and may be harmed by visitors. Even members of the family should keep away except where assisting in the care of the sick one. A trained nurse from without is generally very careful and insistent in this regard, but where one of the family is the nurse there is a danger of leniency as to other members of the family; but whoever the nurse, the rules in this as in other matters should be strictly enforced.

It is impossible in this chapter to lay down a complete set of rules as to what the nurse should do on all occasions. Other chapters of this work should be carefully studied and then the nurse do that which under the circumstances she is satisfied is best to do and not in opposition to the physician's orders or general instructions of this book. Remember that at any and all times emergencies may occur and quick wit, keen observation and positive coolness will be requisite, and the greater the knowledge of nursing and of disease and its treatment, so much more availing will be the nurse's aid.

NURSING OF SURGICAL CASES.

Serious surgical cases are to-day almost invariably a matter of hospital work where nurses especially trained for the requirements are at hand. Minor operations, however, are frequently performed at home, and occasionally it is necessary to perform a more serious one without removing the patient to hospital. It is therefore well to here give a general idea as to special requirements of the nurse in attendance.

In the first place we would recommend the careful reading of the chapter on Surgical Diseases, and of the instructions as to treatment of wounds in the chapter on Accidents and Emergencies.

The acquisition and continuance of disease is dependent upon germs, and the curing of disease upon the elimination of germs. A surgically clean wound—that is, one into which disease germs have not entered—will cure by what is known as first intention, or in other words, by nature. But if disease germs have entered the wound then, unless they be killed or driven out, complications will soon arise in the form of pus, decomposition, or gangrene and blood poisoning. Germs cannot enter the unbroken skin, but may enter where there has been the slightest cut or breaking of the skin. Therefore all wounds where the skin has been cut or broken must be kept free from infection. A little scratch on the finger which is left untreated and unguarded, will place a person in greater danger of blood poisoning than the amputation of an arm or leg where surgically clean instruments and dressings have been used. In bathing cuts or wounds, however slight, the basin or bowl in or from which the part is to be bathed must be first thoroughly scalded with boiling water and then only water which has been previously boiled and kept free from germs used in bathing, and to this water should be added a small quantity of carbolic acid, creolin or other germicide. Where no germicide at hand a spoonful of salt is the best substitute. All bandages must be antiseptic or surgically clean. Antiseptic gauze bandages can now be so cheaply purchased at all drug stores that there should always be a good supply on hand, but in their absence clean linen or cotton should be boiled, baked or soaked in an antiseptic solution before using. It is true that cuts and wounds are sometimes dressed with bandages that are not surgically clean, even with soiled handkerchiefs and dirty linen, and yet do not become infected, for even where disease germs exist they may be destroyed by the healthy cells and fluids of the blood and tissues, for these always endeavor to overcome the intruders, but there always exists grave danger that they may not be strong enough and that they may be themselves overcome by the disease germs even in the case of the previously most healthy person. Surgical cleanliness therefore cannot be too strongly insisted upon.

The sick room patient who is the subject of wound, whether from surgical operation or otherwise requires not only all the care of ordinary nursing, but attention to the wound, the care of which should be studied in the chapters of this work relating especially thereto. Consult Index at the end of this book and read the articles there indicated.

THE CHILD PATIENT.

In the chapter of this work especially devoted to the care of children there will be found full discussion of the ills of infancy and childhood and their treatment, but in the present chapter on the science of caring for the sick, it is well to draw attention to the fact that the child requires just as careful nursing as the adult and sometimes even greater care. The little child or infant cannot tell his wants, yet his needs are just as great as those of the grown man or woman. The little child in burning fever needs a cooling drink as well as the older patient. We have spoken of the need of rest and quiet for the fevered patient, yet how often it happens that no thought to quiet is given for the sick baby. Doors are slammed, people talk in loud voices and generally there is a carelessness as to the making of noise—yet if the baby face be watched, indication may be observed that show that the noise and tumult are causing pain. Especial care, too, should be given to the temperature of the room and to the covering of the child. It must be kept sufficiently warm, yet must not be unduly covered. Heavy coverings over a little child may cause incalculable harm in different ways—such heavy covering as to prevent free movement of the limbs, for instance, may tend to cause deformity. Water bottles with properly heated water (not too hot) encased in slip covers, placed about the infant and then light covering over the child are more to purpose than heavy clothing, and there should be plenty of fresh air. Give all the care to a child that you would to a grown person and give especial thought to its needs, of which it cannot tell.

THINGS TO BE AVOIDED.

Undue Talking.—It is not well to indulge the patient in talking too much, and especially is this true of the night. The patient becomes excited and passes a restless night. Have it understood that the night is for rest, both with the patient and the household. If this be firmly adhered to it will redound to the good of both patient and nurse.

Visitors.—In the vast majority of cases visitors are detrimental to the patient's welfare. They mean well, but they almost always more or less excite the patient, whose greatest need is quiet and rest. A restless night is apt to follow with undue rise of temperature. There are some visitors who are exceptions and who have a soothing, calming effect, but

it is better to exclude all visitors than to run any chances in this regard, and under no circumstances should a number of different visitors be permitted.

Too Many Flowers.—There is nothing more cheering in a sick room than a few pretty flowers, and there are very few patients who are unable to enjoy them, but unless great good sense be exercised by the nurse there is a danger of more harm than good. Lilies of the valley, violets, roses and almost all flowers have more or less heavy odor, which is apt to become nauseating. Flowers in a sick room should be confined to a few simple flowers kept in a vase within sight of the patient, but at some distance from him, the water in the vase should be fresh and no one set of flowers kept unduly long in the room. It is usually well to leave them but for a short time and then take them away, perhaps bringing them in again after a reasonable interval. When flowers are sent to a patient they should, when his condition permits, be taken to him for a brief time, and then removed. But it is often well to keep even knowledge of their receipt from the patient until he is convalescent, when the cards which accompanied the flowers may be shown and there will be real pleasure in knowing of the friends who had remembrance.

Disturbing Influences.—Keep the sick room quiet and restful. Keep out all news of exciting nature, business matters and everything which may disturb. Even trivial matters may cause anxiety or excitement.

Unclean Articles.—Soiled linen, glasses or utensils of any kind must be immediately removed. Nothing but what is absolutely necessary is to remain in the sick room.

Appearance of Being on Guard.—The nurse must ever be on guard—always watchful, yet avoid the appearance of it. A patient is apt to become nervous if he feels he is being constantly watched. It is well much of the time to place yourself where the patient cannot see you and knows you cannot see him, yet where you can hear the lowest call and where the slightest movement will attract you.

Actions that May Worry.—The nerves of sick people are very sensitive. Singing, humming, rocking a chair, rattling a paper—a hundred and one little things if kept up for any length of time are apt to “get on the patient’s nerves,” and perhaps become almost unbearable, although he may try unmurmuringly to put up with them and by his very trying bring on exhaustion or other ill. All the actions of a nurse should be of a quieting and restful nature and all about the sick room should conform to this idea.

Impatience and Ill Temper.—The nurse's position is a very trying one at many times and requires the greatest patience. It may be almost impossible at times to retain one's good temper, yet remember that the slightest exhibition of ill temper or impatience may have serious effect upon the patient's condition. Retain your dignity and no matter what occurs be pleasant, sympathetic and resourceful, yet forceful and unswerving in your duty, and through it all bring a love and kindness to bear that will bring contentment to your patient. That the patient both like and respect the nurse are important factors in his progress toward recovery.

MASSAGE.

Massage is a method of treating certain conditions by scientific manipulation of muscles, nerves and blood vessels by means of systematic rubbing. It is a study by itself and it requires much practice to become properly efficient. It has been the subject of much controversy and has been so abused by unscrupulous impostors that with many there has grown up a prejudice against it. Notwithstanding this, the best physicians of the world recognize it as of vast benefit to many patients, and so it is mentioned in this article on nursing. But as it is a subject requiring special study and instruction, we would refer the nurse to a special chapter on this subject. When the physician advises massage for a sick room patient he generally advises the engagement of some one whom he names as proficient in the art, or he may give instructions to the nurse as to the way to massage the particular part he desires should be so treated. Frequently trained nurses have given special study to massage and are capable of executing any orders the physician may give in such regard.

DIET FOR THE SICK.

Service of Food.—There should be a special set of dishes for the patient's exclusive use. In contagious diseases this is imperative. The daintier and more attractive these dishes can be the better. Sick people are very sensitive to little things and a coarse dish or one that is chipped or cracked may take away the relish of a meal. The tray should be covered with a clean white traycloth, all linen should be immaculate, fresh napkins should be given at every meal if they show any soils, china must be spotless, glasses polished and silver shining. No dish should be so full that it may spill or slop over in carrying, moreover, the appearance of

much food often destroys appetite. Food that is intended to be hot should be served hot, and that which is intended to be cold should be served cold. Seasoning is an important detail. High seasoning is not to be recommended, but in so far as possible the likings of the patient should be considered. All food must be fresh. Great care must be taken in regard to such articles as eggs, if there is not the most absolute surety as to their freshness they must be opened before entering the sick room. Milk and cream must be sweet and should be tested before each serving. Do not serve any article about which there is one particle of doubt. Never taste foods in the sick room. That should be done outside and anything wrong corrected before the food comes to the patient.

Selecting Foods.—One of the important matters connected with nursing is the question of nourishment for the patient. While in most cases the physician will give directions in general as to the feeding, it will often devolve on the nurse to make selection for the patient of what she considers suitable, and not infrequently she will find it necessary to prepare the food herself. She must decide what combinations are appropriate, and what variety must be introduced, and when the patient tires of one food she must exercise her ingenuity often to the utmost to find a substitute. Food which is suitable in the morning, or at noon, is often improper to give at night, and what will agree under some circumstances will manifestly, under other conditions, be wholly inadmissible. As a usual thing it is better not to consult the patient about what his meal is to be, for if he is asked what he would like he will in all probability say that he would rather have nothing, and if told beforehand what he is to have, even if he has been wanting it, he will be apt to lose his desire for it.

The Patient Not to Judge.—Moreover a patient's inclinations are often not a safe guide, for he will be as likely as not to choose some article of diet altogether unsuitable. For instance, in convalescence from typhoid fever it is quite essential to exercise the utmost care in the matter of food for a considerable period of time, the ordinary diet being resumed only very gradually and tentatively, lest irritation and consequent relapse occur. But it is almost invariably the case that long before it would be permissible the patient has a strong desire for solid food, often of the kind which would not be proper, and an inordinate appetite, which, to gratify, would inevitably be detrimental.

How the Nurse Should Judge.—Accordingly it is better to ascertain quietly and gradually the likes and dislikes of a patient, and what ordi-

narily agrees with him best, and with this knowledge to use one's judgment as to what to provide.

There are certain articles of diet, however, which are pre-eminently suitable for the sick, some under one set of circumstances, some under another. Among these are:

Milk.—The bland, unirritating nature of milk and the fact that it furnishes all the elements necessary to sustain life make it ordinarily a suitable article of diet for the sick, and unless contra-indicated it is quite usual to have it form the basis for the construction of a dietary, and for it to enter largely into the composition of the food selected. It is not infrequent indeed that it is used alone for many weeks at a time.

Administration of Milk.—If the taste is objectionable to the patient it may be disguised by flavoring with coffee or caramel. By feeding through a tube or straw the action of the saliva is secured, and by giving it slowly the formation of large curds, impenetrable by the gastric juice, is prevented. To counteract the tendency to biliousness, which occurs in many people from its use, it is customary to add a small pinch of bicarbonate of soda, or from a third to a half of lime water, soda water, apollinaris or vichy. At times it is more easily digested if boiled or scalded and diluted; in diarrhoea boiled milk often has a salutary effect.

Steady Milk Diet.—An exclusive milk diet is often resorted to in cases of heart, kidney and stomach diseases, and under these circumstances it is generally first skimmed. Dr. Thomas G. Morton is accustomed to having it administered every hour and a half from 7 A. M. to 10 P. M., beginning with three ounces or six tablespoonfuls, and increasing the amount one-half ounce with each dose until from two to six quarts are taken daily. This diet is continued for a month or six weeks, when a few easily digested articles are allowed, and a suitable dietary is gradually constructed. On a milk diet the patient at first feels weak, and soon develops a disgust for the milk, but this is usually overcome before a great while, and a desire is often established for a continuance of the milk even after convalescence. It is usually necessary to administer suitable laxatives to overcome the constipation which the milk causes.

Whey.—This is a watery, somewhat turbid liquid resulting from the removal of the curd of milk after coagulation. It contains a fair proportion of the nutritive constituents of the milk, which may be increased by expressing as much of the fluid from the curd as possible. Sometimes it is used as a vehicle for the administration of other nutriment, as beef juice, yolk of egg, etc.

Preparation of Whey.—Whey may be prepared in several ways. To a pint of lukewarm whole milk is added a teaspoonful of essence of pepsin, or of liquid rennet, and stirred only long enough to mix. After cooling and coagulation, the product is stirred with a fork, and the whey strained off. Or to a pint of boiling milk add two teaspoonfuls of lemon juice and strain. Wine whey is made by bringing to the boiling point a pint of milk and adding two wineglassfuls of sherry wine. As it boils up again remove from the fire and strain.

Junket.—Make the same as the first formula for whey, with essence of pepsin or liquid rennet, but do not stir. Eat with sugar and cream. If desired, flavor with a little nutmeg and extract of vanilla. Tablets are furnished in the stores for the sake of convenience for making junket.

Buttermilk.—Fresh buttermilk can be used in many cases where milk disagrees, largely because of the formation of finely subdivided curds.

Koumiss.—For the same reason koumiss is often valuable under similar circumstances. Containing as it does carbonic acid gas it is grateful to the irritable stomach, while the small amount of alcohol present furnishes slight stimulation. To prepare it take an eighth of a cake of Fleishman's compressed yeast—fresh—and a tablespoonful of white sugar. Dissolve in a little warm water. Pour into a quart champagne bottle and fill to the base of the neck with fresh milk. Tie cork securely, lay on its side in a cool but not cold place for two or three days, shaking occasionally. If it is desired to hasten the process of fermentation, it may be kept for twelve hours at a temperature of about 70 degrees, although the slower method makes a smoother and pleasanter preparation. A champagne tap must be used to draw it off. Some prefer it when two days old, others when it is somewhat more acid in taste, at the age of three days. Kefyr and matzoon are similar to it.

Peptonized Milk.—To a pint of lukewarm milk diluted with one-fourth its bulk of water add fifteen grains of bicarbonate of soda and five grains of Fairchild's Extract of Pancreas. Keep in a warm place for twenty minutes. Then place against the ice to check further peptonization. This milk is partially predigested and can often be taken when milk cannot.

Sterilized Milk.—To sterilize milk without a special apparatus for the purpose it should be placed in infants' nursing bottles, which should be lightly corked with absorbent cotton. These should be placed in a kettle of cold water, with their bases kept from the bottom of the kettle by a folded towel or other contrivance. The water should be boiled for twenty

minutes, the cotton removed and replaced by tightly-fitting corks and the bottles be allowed to cool gradually. Strictly speaking, milk thus prepared is "Pasteurized," the process of sterilization being simply a prolongation of this, for about twice the length of time. Pasteurized milk is more easily digested than sterilized milk. Both are used for feeding invalids and especially infants.

Modified Milk.—This is a combination of milk, cream, water, lime-water and sugar of milk in such proportions as the age and strength of the infant for which it is prescribed seem to indicate. A useful and convenient way to employ this for home use is by means of the "materna" apparatus, which is a graduated glass presenting eight panels, each one being marked in such a way as to show how much of a particular constituent of the modified milk is to be used for a specified age.

There are also combinations of milk with other articles which will be considered among the miscellaneous formulæ given later on.

Animal Broths.—These often form a suitable means of giving nourishment to the sick. Unless prepared with great care they do not contain the amount of nutrition for which they ordinarily receive credit, for if too high a heat is used the albuminous principles are coagulated and the virtues of the preparation decreased.

Beef Essence.—A piece of lean, juicy beef is minced and placed in a wide-mouthed jar, which is tightly corked and set in a kettle of cold water. This is then allowed to boil moderately for three or four hours, when the essence is expressed and seasoned. A tablespoonful may be given every two hours.

Beef Tea.—Cut in small pieces a pound of lean, juicy beef. Cover with cold water for an hour or more. Simmer gently for three hours at a temperature not above 160 degrees; strain and season. The finished product should measure one pint; if less, sufficient water may be added to equal that amount.

Beef Juice.—Pieces of lean, juicy beef the size of a walnut are toasted for a moment over a hot fire and the juice expressed by means of a lemon squeezer or a specially-designed press. Season with salt and give a tablespoonful every two hours either warm or mixed with pounded ice.

Scraped Beef.—Lean, raw meat is scraped fine and the pulp pressed through a coarse sieve. This may advantageously be added to the beef tea or beef essence.

Mutton Broth.—Add two quarts of cold water to two pounds of lean mutton; boil very gently for two hours and season. A little barley or rice

may be added. The broth should be allowed to cool and all the fat skimmed off.

Chicken Broth.—A chicken, or, if large, a half chicken, after being skinned and cut up, is boiled gently in a quart of water for an hour, seasoned and strained through a colander.

In cases where solid nourishment is permissible the following kinds of animal food are suitable:

Beef Steak.—A piece of thick, lean sirloin or tenderloin steak should be broiled quickly over a clear coal fire, the exterior only being cooked, while the interior is kept rare and juicy.

Lamb Chops.—Lean rib or loin chops are suitable. They should be broiled until well done.

Chicken.—Tender chicken, carefully broiled, is a suitable food for the sick.

Squab.—Young pigeon or squab, broiled, is considered a delicacy and is nutritious and appetizing.

Sweet Breads.—In some cases these may be eaten and are highly appreciated. They should be parboiled and then carefully broiled, with a little butter rubbed over the surface.

Oysters.—When in season oysters taken raw are nourishing and easily digested. Cooked they are less digestible, though permissible in some cases.

Oyster Broth.—Slowly simmer for ten minutes a pint of oysters in a half pint each of water and milk; season to taste and strain.

Clam Broth.—Equal quantities of clam juice and boiling water are seasoned with salt. Clam juice and clam broth are often retained in great irritability of the stomach.

Eggs.—Beaten light these are most digestible. One of the most frequent ways of giving them is in the form of eggnog.

Eggnog.—The white and yolk of an egg are beaten separately, very light; they are now stirred together, sweetened and salted, and to these are added a small amount of brandy, sherry or port wine, a little nutmeg and an ounce of milk.

Boiled Eggs.—Cooked eggs should be soft, as the albumen or white is otherwise hard and indigestible. Boiled for three and a half minutes or less they are, however, suitable. It is still better to put them into boiling water, remove them from the stove and allow them to stand in the hot water for seven minutes.

Powdered Yolk.—If eggs are boiled for an hour or more and cooled

the yolks may be mashed into powder, which, with a little salt, is agreeable, nourishing and digestible. It may be taken plain or mixed with milk, whey or broth.

Egg Water.—In cases of extreme gastro-intestinal irritability the whites of two eggs stirred into a half pint of cold water, and sweetened or salted, may be given as a drink.

Vegetable Sick Foods.—Pre-eminent among the vegetable forms of aliment are the cereals, which in recent years have been so largely popularized by the introduction of scores of palatable, nutritious and digestible preparations. Many of these are already cooked, while others are pre-digested as well, so that they require little time or trouble in serving. A judicious selection from among these affords variety in taste and composition.

Wheat Foods.—These take the lead in nitrogenous constituents, followed closely by rye, barley, oats and corn; oats, corn and barley are richest in fats; rice contains chiefly starch; while oats contain the greatest amount of indigestible cellulose. This, however, in the finer preparations is largely removed. Of the wheat preparations, the following may be mentioned, rolled, cracked, crushed and granulated wheat, called by many names, according to where or by whom it is prepared, vitos, wheat germs, germea, wheatlet, wheatena, cream of wheat, shredded wheat, and so forth. Gluten flour is supplied for the use of diabetics and those who cannot well take starch; and farina, a material similar to cornstarch, for the use by itself or in combination with other substances.

From the other cereals similar preparations to those made from wheat are manufactured.

Following are the formulæ for preparing some of the foods in common use for the nourishment of the sick:

Milk Toast.—Remove the crust from two small slices of baker's bread, a day or two old; toast carefully, and cover with a half pint of scalded milk previously salted.

Boston Cream Toast.—Prepare as above, but thicken milk with a heaping teaspoonful of flour mixed with the same amount of butter; these are to be carefully stirred into the hot milk and brought to boil.

Toast Water.—Cover well toasted, not burned, bread, with boiling water; set aside till cool, strain and salt or sweeten to taste.

Panada.—Cover split crackers or slices of toast with boiling water, previously sprinkled with sugar, salt and, if desired, a little nutmeg. Simmer gently until the product is like jelly. Serve while warm.

Flour Gruel.—Mix a tablespoonful of flour with enough milk to make a smooth paste; add a quart of boiling milk; boil for a half hour in a double boiler; salt.

Flour Ball.—Make a ball of a pint of flour which has been moistened with four tablespoonfuls of water; tie tightly in a cloth; dampen the outside of the cloth and sprinkle with flour; boil hard for ten hours. Remove the cloth and dry the ball for ten hours in an oven. Grate two teaspoonfuls of flour from the ball, mix into a paste with cold water and stir into a cup of boiling milk.

Farina Gruel.—Stir two tablespoonfuls of farina into a quart of water; boil until thick; add a pint of milk, salt and boil fifteen minutes longer. Serve with sugar and cream.

Arrow-Root Gruel.—Mix into a paste two teaspoonfuls of arrow-root with a little water; stir into a pint of boiling water or milk. Sweeten and boil for three minutes.

Oatmeal Gruel.—Boil two tablespoonfuls of oatmeal in a pint of water until smooth. Salt and strain.

Wine Jelly.—Pour two ounces of cold water on one-half ounce of granulated gelatine, and six ounces of sugar. Soak for fifteen minutes and stir into ten ounces of boiling water until dissolved. Add four ounces of sherry wine, strain through a jelly bag or coarse toweling and cool.

Iceland or Irish-Moss Jelly.—Thoroughly wash a handful of the moss and soak for one hour in a very little water. Stir into a quart of boiling water and simmer until it is dissolved. Sweeten and flavor, strain and cool. Serve with cream.

Flaxseed Tea.—Pour a quart of boiling water onto four tablespoonfuls of whole flaxseed and steep for three or four hours. The juice of two lemons may be added, and sugar if desired.

Barley Water.—Wash two ounces of barley; boil for five minutes and pour off the water. Add two quarts of water and boil down to a quart. Salt or sugar may be added. This is often employed to dilute milk.

Puree of Celery.—Cut into small pieces enough of the stalks of celery to fill a pint measure. Stew in a quart of water until tender. Salt, thicken with a little arrow-root and add a cup of milk. Boil for two or three minutes, stirring constantly.

Puree of Asparagus.—Proceed as for puree of celery, reserving the tips and discarding the stalks, after they are cooked.

Puree of Tapioca.—To a half pint of boiling water or milk, gradually

stir in a tablespoonful of instantaneous tapioca. Add salt, and boil, with constant stirring until it begins to thicken.

Milk and Albumen.—Shake in a bottle for five minutes the whites of two eggs and two ounces of lime-water; add a pint of milk, sugar and sherry wine to taste, and shake five minutes more. Give a wineglassful every two hours.

Cocoa.—Dissolve a teaspoonful of Phillip's Digestible Cocoa in a little cold milk. Add to this a coffee cupful of hot milk.

Predigested Foods.—Attention has already been directed to the peptonizing of milk; the same process may be applied to gruels made from oatmeal, or other cereals, and to beef tea, thus artificially digesting them before they are taken. Peptonized meat preparations have the disadvantage of a disagreeable odor and taste, but they are highly nutritious.

Extracts of Malt.—These are also employed in predigesting cereals, Maltine, diastoid, diastase and extract of malt are some of the preparations which may be used in this connection. One of the successful applications of modern pharmaceutical skill is that exhibited in the manufacture of these artificially digested foods, many of which supply in concentrated form ready for absorption and assimilation the most important elements of nutrition.

PREVENTING THE SPREAD OF CONTAGIOUS DISEASES.

Diphtheria, scarlet fever, measles, typhoid fever, typhus fever, yellow fever, chicken-pox, small-pox, syphilis, cholera, erysipelas and mumps are the diseases which are usually recognized as being contagious, or capable of being transmitted from one person to another, either directly or indirectly, and to these may be added consumption in the sense that the expectorations of the consumptive are permitted to dry and become dust, such dust may communicate consumption to those who inhale it. It would be well to include epidemic influenza or "the grippe" in the list. On the occurrence of any of these diseases special care should be taken to prevent their spread. Select a room at the top of the house that is capable of the most perfect ventilation. There should be no carpets and nothing but the simplest and absolutely essential furniture. The room should be thoroughly cleaned before the patient enters and once he is placed in the room all others of the household excepting the nurse should be kept out. The nurse should have as little communication with the household as possible; her meals and everything to supply her needs and those of the

patient should be placed on a table outside the door. The door should be kept closed, and a sheet kept constantly wet with disinfectant should be hung over the doorway outside.

Contagious Diseases, Disinfection of.—This is a matter of vital importance. When inefficiently done it is a source of great danger in that it gives a false sense of safety. The purpose of course is to destroy germs. While occupied by the patient the most efficacious disinfectants for the sick room are fresh air and scrupulous cleanliness. In the matter of infected articles, such things as scraps of food and everything else that it is not necessary to keep should be immediately burned, while other things should be thoroughly disinfected by boiling for one hour in water. The disinfection may be made more rapid by the addition of a little washing soda to the water. Articles which for any reason cannot be boiled, and which are not greasy, may be disinfected by soaking for an hour in a solution made by dissolving three ounces of pure (not crude) carbolic acid in a gallon of water. In removing bedclothing, underclothing, handkerchiefs, etc., from the sick room they should be put in a soiled clothes bag, pillow case or sheet which has been previously soaked in the carbolic acid solution. Then without handling they should be dumped altogether into boiling water and boiled for an hour. They may then be washed in the ordinary way. Knives, forks, spoons and dishes should be washed with the carbolic solution and boiled half an hour. All discharges from the patient, including those from the mouth and nose, should either be destroyed by fire or subjected at once to the carbolic acid solution or other disinfectant. With consumptives, expectoration should be made into pasteboard boxes, which must be burned before the expectorations become dry. Bedpans and like utensils should be washed with the carbolic solution, and some of it left in the utensil.

Waterclosets, drains, cesspools, sewers, cellars, privies, yards and stables may be disinfected by a free use of chloride of lime, which should be used every day.

The New York City Board of Health prescribes the following rules for disinfecting a room after removal of a patient who has had a contagious disease:

“All cracks and crevices in room to be disinfected must be sealed or calked to prevent the escape of the gases and one of the following disinfectants used for the room disinfection in the quantities named:

“Sulphur, 4 pounds for every 1,000 cubic feet of air; eight hours’ exposure.

“Formalin, six ounces for every 1,000 cubic feet of air space; four hours’ exposure.

“Paraform, 1,000 grains for every 1,000 cubic feet of air space; six hours’ exposure.

“The following disinfecting solutions may be used for goods which are afterward to be washed:

“Carbolic acid, 2 to 5 per cent.

“Bichloride of mercury, 1-1,000. (This, however, causes a permanent discoloration.)

“After disinfection of rooms, the carpets, rugs, mattresses, pillows, etc., must be removed by the Department for disinfection by steam, and the rooms should then be thoroughly aired and cleaned with soap and water.”

Sulphur and paraform candles may be purchased at any drug store.

Blankets, bedding, clothes and other articles must be exposed to the fumes, and should be so hung as to be loose and free for circulation of the fumes. All closed doors, bureau drawers and the like must be open during fumigation.

After disinfection the room should be most thoroughly cleared, washing everything possible with hot soap and water or some standard disinfectant, and this should be followed by repainting and repapering or whitewashing.

CONVALESCENCE.

The care of the convalescent comes within the knowledge which all nurses should have, and is so important that we here follow with a special chapter devoted to the subject.

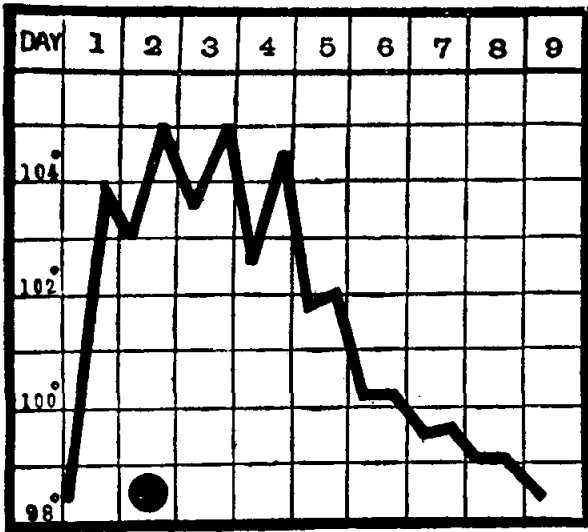
SPECIAL DIETS FOR THE SICK ROOM.

As this is matter of great importance a special chapter is devoted to the subject and immediately follows that on Convalescence.

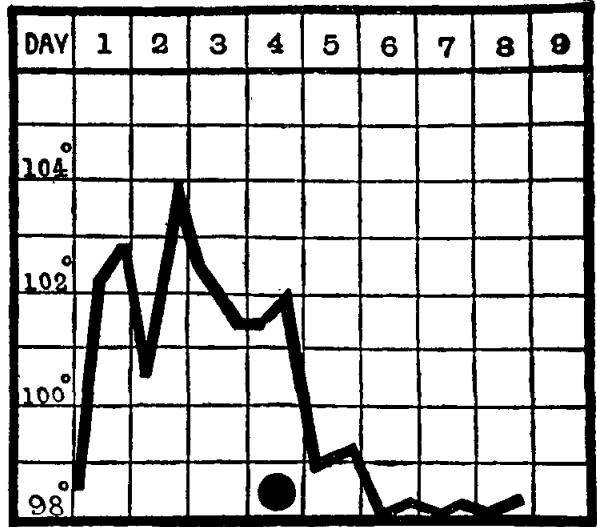
Temperature Charts for Various Diseases

The Time Eruption Appears is Shown by the Black Spots

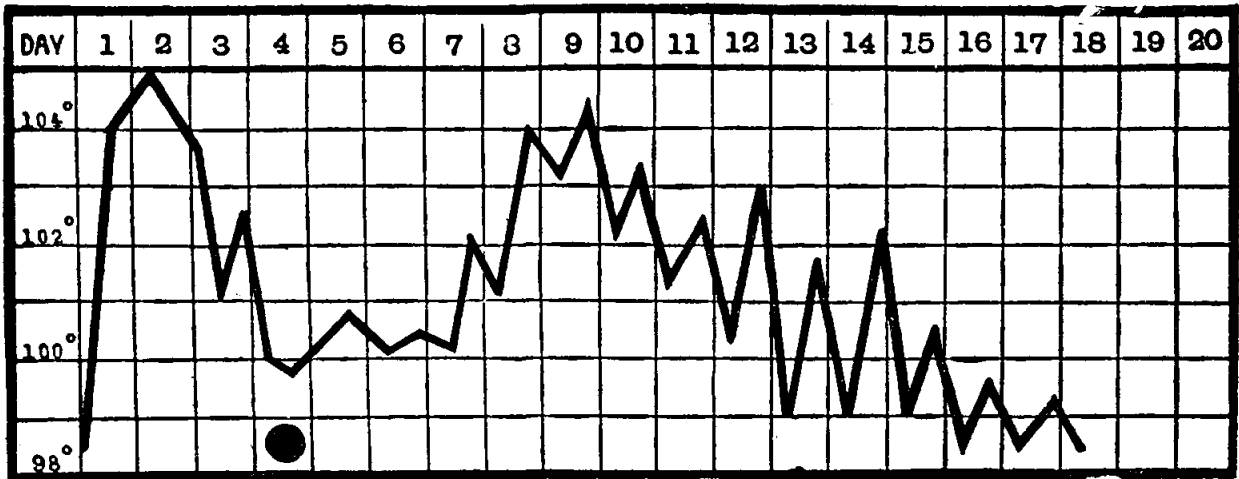
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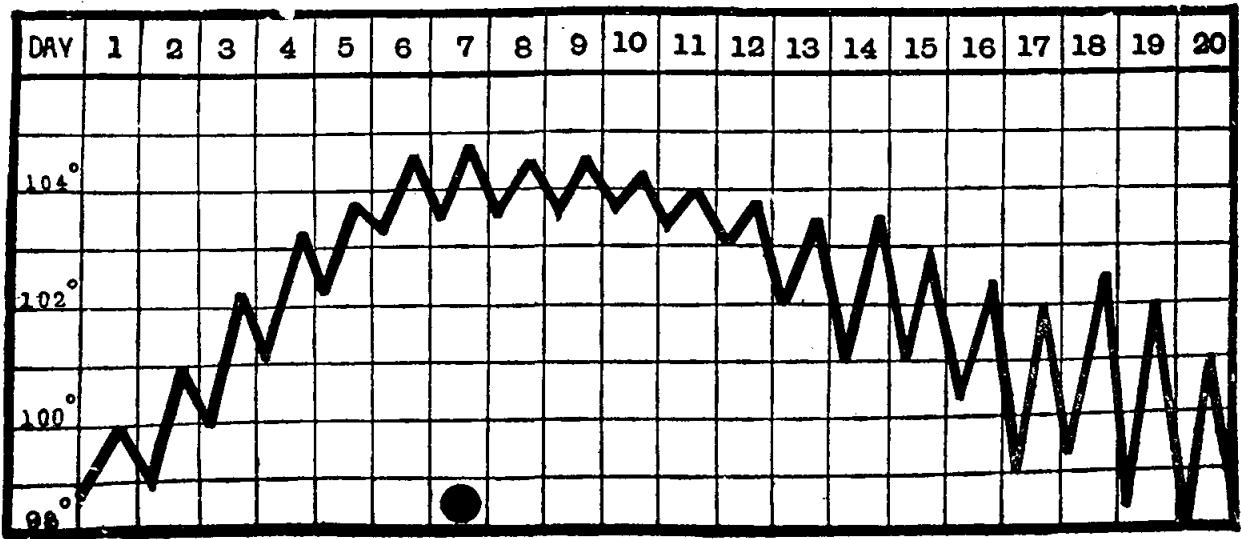
MEASLES



SMALL-POX



TYPHOID FEVER



FEVER TABLES

FEVER TABLE NO. 1.

Table showing (1) the period of incubation of the disease, and (2) the period during which infection is liable to occur from it.

The *period of incubation* is that between the time of infection and the first appearance of the active symptoms or signs of the disease.

The *period of infectivity* represents that during which the patient is liable to infect others and during which he should not be permitted to mix with healthy persons.

	PERIOD OF INCUBATION.	PERIOD OF INFECTIVITY.
Cholera	One to five days.	Three weeks.
Typhoid or Enteric Fever	Eight to fourteen days.	Six weeks.
Diarrhœa	One to four days.	One to two weeks.
Diphtheria	One to eight days.	Six weeks (probably longer).
Measles	Ten to fourteen days.	Four weeks.
German Measles	Six to fourteen days.	Three weeks.
Chicken-pox	Ten to fourteen days.	Three weeks.
Influenza	One to four days.	Three weeks.
Mumps	Fourteen to twenty-two days.	Three weeks.
Scarlet Fever	One to six days.	Six to eight weeks.
Typhus	One to fourteen days.	Four weeks.
Whooping-cough	Four to fourteen days.	Eight weeks.
Smallpox	Twelve to fourteen days.	Six weeks.
Erysipelas	One to five days.	One week or slightly longer.
Tuberculosis	Indefinite.	All through the treatment.
Relapsing Fever	Five to seven days.	Four to six weeks (owing to relapses).

FEVER TABLE NO. 2.

APPEARANCE OF ERUPTIONS IN FEVERS AND THEIR SITUATION IN

ERUPTION BEGINS TO FADE ON

Measles	Fourth day of fever, on the forehead.	Seventh day of fever.
Chicken-pox	First day of fever, on shoulders.	Fourth day the pustules scab over.
German Measles	First to fourth day, on the face.	From third to sixth day of fever.
Small-pox	Third day of fever, on face and forehead.	Probably scab on ninth or tenth day of fever, dropping off about the fourteenth day.
Scarlet Fever	Second day of fever, on the body.	Fifth day of fever.
Typhoid	Seventh or eighth day of fever, on the belly.	Twenty-first to thirtieth day of fever, after succession of crops of spots.
Typhus	Fifth day of fever, on sides and back.	Fourteenth day of fever.

PART II OF BOOK VII

Treats of the convalescent, giving diets and valuable tonics and instructions about the care necessary for a speedy return to health.

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THE SICK ROOM IN THE HOME

PART II.

CARE DURING CONVALESCENCE.

Definition.—The word convalescence is derived from the Latin *convalescere*, meaning “to grow strong.” It is the period of recovery after disease, the state midway between the final cessation of the disease and complete restoration to health. Although it is applicable to the periods of improvement in the course of chronic ailments, yet it is generally used in connection with the acute or self-limited diseases.

Importance of Obedience.—Since convalescence is the termination to which proper treatment, nursing and strict obedience to all the instructions contained thus far in this volume would naturally lead, except in cases of chronic, incurable diseases and old age, for which no cure has as yet been discovered, it may appropriately conclude the sections on preventive and curative medicine—substantiating the *prognosis*, or the predictions as previously set forth.

CAUSE.

Overbalancing Disease.—When disease fastens itself upon the human organism the outcome or result depends entirely upon the resisting power of the different tissues and organs. If tolerance is maintained and the several functions are not arrested, the diseases will be overbalanced by the vitality and resisting power of the body.

Failure of Response.—But if the different tissues and organs do not respond to the increased tax made upon them; if they grow progressively weaker, the disease will constantly find additional means of spreading and ultimately the forces of the body are arrested and death ensues.

The Causation.—The causation of convalescence is, therefore, the response of living tissue to injury, the rallying of the vital forces, which overpower the disease and its primary cause, whether it be due to the countless micro-organisms, to neglect, exposure, or the many unknown factors.

(1043)

Sign of Convalescence.—Just how convalescence is established we do not know, just how or when the resistance first exerts itself is a mystery, yet that it is a fact is evident, for in some diseases convalescence can be noticed almost from the moment it begins.

Termination by Lysis.—In certain diseases there is resolution by gradual subsidence, the fever growing less and less each day, until normal temperature is reached; while the strength increases and the faculties brighten. After the fever has entirely subsided the improvement is much faster and convalescence is rapid, although very often a long time is required to bring the patient back to his usual health. This is called *termination by lysis*.

Termination by Crisis.—In other affections, as pneumonia, the turning point to health is pronounced and plainly evident. Very often the change can be noticed inside of a very few moments, and within twenty-four hours convalescence is established; recovery following rapidly. This is styled *termination by crisis*.

Recuperative Force.—But in both cases the termination is due to the recuperative power being stronger and more vigorous than the cause of the disease—and it is therefore simply a question of the stronger overcoming the weaker.

Recovery in Certain Diseases.—As will be seen further on, under the paragraphs dealing with the convalescence of the special affections, there are many diseases which run a certain, definite course, both as to length, severity and convalescence. In these diseases, one familiar with the science of medicine can form a very accurate opinion as to the initiation of recovery, and foretell with a fair degree of accuracy the duration of the convalescence. This information is gained by comparing the records and statistics of many thousands of cases, using the average as a basis and applying the particular patient's symptoms and conditions with it.

SYMPTOMS OF CONVALESCENCE.

Convalescence presents some very different characters according as it succeeds to acute or chronic affections—in the former case it is clearly defined and noticeable, even to a superficial observer.

Its Commencement.—This is often marked by critical phenomena, and always by the cessation of local pain or general symptoms of the disease. To the patient himself it announces its welcome advent by a feeling of ease and comfort previously longed for in vain; whilst to the physician

it makes itself known by reliable characteristics—such as a natural and peaceful expression of the countenance, vivacity and clearness of the glance, susceptibility, and, as it were, curiosity of the senses, an agreeable change in the disposition, and a tendency to gaiety, a prolonged and refreshing sleep and a greater mobility of the circulation.

The Encouraging Signs.—These do not all make their appearance simultaneously, but generally follow each other in groups at short intervals, often merging together.

Almost always the first phenomena of returning health develop themselves amidst the fading evidences of illness, but occasionally we observe in individuals of vigorous constitution transitions from disease to convalescence occur with marvelous rapidity.

Recovery in Chronic Cases.—In recovery from chronic maladies the physician is not often called upon to assist at such kaleidoscopic changes from disease to health. The functions of the organism do not re-establish themselves with the same promptitude, nor in the same almost simultaneous manner. They become regulated, as it were, one by one, in consequence of careful and individual attention, and even when restored to their physiological type they are wanting for a long time in force and endurance.

After Chronic Illness.—The loss of adipose is often not repaired until after months or even years of convalescence, and the countenance frequently retains for a great while the imprint of the sufferings which have been endured, while after the acute diseases, such as the fevers, the acquirement of flesh is usually rapid, often increasing the weight above the normal limit.

Hunger.—If we consider the symptoms of convalescence a little more closely we will find that hunger is one of the first and most important manifestations of returning health after an acute disease. The appetite for food is sharp, and renews itself after a very brief period; sometimes it is even voracious.

Eating becomes in many cases the great, perhaps the sole, aim of the convalescent; and when he happens to be of an age when growth is not yet terminated, and when, consequently, assimilation is normally active, he is apt to seek the gratification of this voracity with arguments and supplications which render it very difficult for the physician or nurse to enforce a proper regulation of the diet.

In military hospitals it is often necessary to resist the tears and most

vehement prayers of convalescents in order to preserve them from dangerous and fatal consequences of their own excesses.

Heart and Circulation.—As hunger is the demand on the part of the attenuated tissues for more nourishment, so is the strengthened circulation due to the need of the body for more oxygen and less carbonic acid gas.

Circulation in Convalescence.—During convalescence the circulation presents a singular impressionability—the pulse is often slower than in health, falling sometimes as low as forty, or even thirty-five beats per minute; but it is very excitable and is accelerated by the slightest cause. The simple act of changing the position or attitude will increase its rate greatly, while the approach of a stranger, especially the physician, the slightest worry or mental excitement, will at once increase the pulse rate.

Pallor and Flushing.—The increased mobility of the circulation gives rise to ultimate pallor and flushing of the face upon the slightest cause. A delicate softening of the skin and transient perspiration are also due to the easily-influenced circulation and the low muscular power.

The Pallor.—The pallor of convalescence arises, not by the emptiness of the blood-vessels, as was formerly believed, but from the diminution in the quantity of red blood corpuscles; in consequence of the prolonged abstinence from the proper amount of food or its malassimilation.

Blood Corpuscles.—This diminution is determined by the ingenious hæmatimeter of Hayem and Nacet, by which the number of corpuscles in a given amount of blood are counted—from which it is easy to compute the percentage in the entire arterial system. A cubic millimeter of normal blood contains about five million red blood corpuscles, yet in convalescence we often find as low as two million corpuscles in the same quantity.

Red Blood Corpuscles.—These are the carriers of oxygen to the different organs and tissues of the body; consequently when we find the carrying power so greatly diminished we can readily understand the many symptoms of an impoverished circulation. One of the best examples seen of this is in the excessive sensitiveness to cold due to lessened oxidation. Again we find vertigo and dizziness due to anemia or imperfect blood supply of the brain, and palpitation of the heart.

Respiration is not affected during repose and quietude, but slight muscular effort causes fatigue and shortness of breath; this is especially

noticeable after ascending a short staircase, and is caused by impoverished blood, together with some slight febrile action.

Need of Oxygen.—For as muscular activity is destructive to the body it is necessary that carbonic acid gas ($C O_2$), the product of such destruction, be carried away, and that oxygen be returned to the tissues in order that they may recover from the loss. The convalescent's blood is not as able to perfectly carry out this function as the blood of a healthy individual, hence the lungs are required to put forth extra respiratory efforts, and shortness of breath results.

Digestion.—Constipation is the rule rather than the exception in convalescence, and is due to the enforced quietude, the diminished secretions from fever, the febrile reaction and the lessened food supply. The tongue which has been coated, or hard and baked, as the case may be, gradually clears off becoming soft and moist as the bowels are regulated. And disturbance of the stomach, as nausea and vomiting, discomfort after eating, and so forth, ceases under proper diet, and the extreme thirst disappears. The digestive symptoms will be mentioned more fully further on, under the special diseases.

Urine.—The urine during convalescence becomes more abundant (usually from forty to fifty ounces in twenty-four hours) and less fully charged with uric acid than in health. It ceases to present the dense, high-colored and strongly odorous character met with in disease, and if it has contained albumen or sugar this will disappear, unless the acute disease has developed into a chronic one.

If, during the course of the disease, there has been an involuntary voidance of the urine, the desire to urinate frequently and the inability to perfectly control the urine will be felt for some time during convalescence. This, however, will return to normal as the patient regains health and strength.

Sexual Powers.—In females the menstrual discharges are re-established during convalescence, and in many cases the genital organs show marked activity—married women becoming pregnant soon after convalescence. In the male convalescing from acute diseases, there is generally an energetic stimulation of the sexual functions. After convalescence from chronic diseases, middle-aged patients frequently suffer a loss of sexual appetite and emotions. Cases of sexual weakness, discharges, and so forth, following acute diseases, are generally transient and leave no untoward effects.

Skin and Hair.—The outer layer of the skin, or the epidermis, the

hair and the eyebrows, are frequently shed during convalescence; but this loss is as a rule only temporary.

Muscles.—The muscles after sickness are more or less emaciated and flabby; this varies greatly after different diseases; some acute diseases causing a very rapid loss of flesh, while others are more like chronic ailments, in that the emaciation is slow and progressive. The muscles of the abdomen are usually soft and flabby, while the long muscles of the legs and arms lose their firmness and are easily separated one from another. The muscular tissue of the several organs are also affected, being unfiltrated with fat, decidedly inactive and subject to tissue change.

Muscular Movement.—Muscular movement, for a long time, fails in that energy and precision which marks a state of complete health, and all the organs display an inability to react against, or to withstand, any of the innumerable outside influences with which mankind is surrounded, as they would normally do.

Sleep.—The sleep of convalescence is sound and refreshing, losing the disturbed character which it had during illness and becoming calm and tranquil. As there is perfect rest, both physically and mentally, during normal slumber, the convalescent should be allowed a large portion of the day in which to sleep undisturbed.

Mental Powers.—The mental powers, both of perception and reasoning, gradually return during convalescence, but for a long time patients have little endurance, becoming easily fatigued and exhausted after mental exercise. After a severe, acute malady, such as typhoid fever, the intellectual faculties are often very slow in returning to their original integrity, and months or even years may elapse before the patient enjoys his full mental vigor.

Mental Disturbance in Childhood.—In certain acute diseases peculiar to childhood, such as scarlet fever, meningitis and diphtheria, there is often mental disturbance, and while it takes a long time before the mind recovers its normal state, yet in such cases the outlook is generally favorable.

Loss of Mental Power in Adults.—In adult patients who are convalescing from nervous disorders, the loss of mental power is serious, and the full vigor of the mind is seldom acquired.

Convalescence of Old People.—In elderly people, a convalescence often hastens the physiological loss of mental power—the loss being especially appreciable to themselves and their associates, inasmuch, as it is sudden, instead of coming on gradually with each succeeding year.

COMPLICATIONS OF CONVALESCENCE.

How frequently we hear that a certain patient has "had a relapse." Yet in the majority of cases, such a relapse is due to some neglect or carelessness; and to impress upon the reader the danger of complication during convalescence, we take up a few of the most common points in connection with it. First, we will consider the causes which can be averted in most instances. They are improper feeding, exposure, over-exertion.

Improper Feeding.—If the desire for food returns slowly and is capricious in its choice for articles for diet; if the patient is quickly disgusted and wishes to change his bill of fare daily; if, in eating, he does not experience the pleasure which accompanies the satisfaction of a real want of the organism, and if, during digestion, acid eructations, flatulence, flushing of the face and distinct febrile movement occur, convalescence is not yet sufficiently advanced to permit gratification of the appetite and diarrhœa is apt to supervene on such indulgence. Should it do so, whatever progress toward health has been made by the organism is often more than obliterated.

The Complications which must be watched for in connection with the diet are, diarrhœa, vomiting or nausea, acid eructations, belching of wind, flushing of the face and fever. When any one of these symptoms are noticed, look to the food and see if a reason cannot be found.

Exposure due to cold draughts, cold moist air, an over-heated or ill-ventilated room, poor sanitary conditions, may complicate the disease. A patient convalescing from typhoid fever may contract bronchitis or pneumonia from atmospheric exposure, and in his weakened condition the result is to be feared. A pneumonia may be complicated by typhoid fever due to defective sanitation, filthy bed-linen or sick-room vessels. These are most important details which must not be overlooked, as proper attendance to hygiene and dietetics is the sheet-anchor during convalescence.

Over-Exertion.—A heart weakened by disease is not calculated to withstand the sudden demands made upon it by severe exercise. An intestine just healing after ulceration is not prepared to undergo the straining efforts made at stools while in the erect posture.

Gradual Exercise.—Consequently in allowing a convalescent to exercise it must always be remembered just how weak all the organs are, especially the one which has been the main seat of disease. It is better to keep a patient quiet in bed, in spite of his protestations, than to allow him

to over-exert. Moderate exercise, gradually increased, will be just as acceptable, and the termination is certainly more certain by success. The length of time that a patient must be kept in bed after sickness varies with the disease, its length and intensity. But generally speaking, a patient should not be allowed to get up until the fever and all other symptoms have been absent for at least ten days, and then the periods of exercise should be gradually increased as strength is regained.

Complications in Convalescence.—Certain diseases have a particular disposition toward complication during the convalescent period—while such conditions cannot always be prevented, they can at least be expected and preparation made to combat them. In the convalescence of diphtheria, for instance, one must constantly be watchful of any nervous symptoms which may arise; paralysis of different portions of the body, especially of the heart, is a very common complication and should be treated energetically. Scarlet fever is often complicated by acute Bright's disease, heart affections and disease of the middle ear. Pneumonia or influenza may insidiously lead into consumption, unnoticed, except for constant watchfulness. In fact, during convalescence, the patient should be kept under the closest supervision; the smallest details must be noticed and acted upon immediately. By so doing many secondary diseases, both chronic and acute, may be aborted in their infancy.

TREATMENT OF CONVALESCENCE.

When a malady is terminated, sanitary science, which had previously labored in conjunction with therapeutics to extinguish the morbid tendency, resumes sole charge of the patient and directs the convalescence, during which the individual, although no longer sick, is not yet in a state of perfect health. In convalescence the functions, although brought to an equilibrium, are still wanting in energy and in stability; the entire organism, more or less shaken by the attacks to which it has been subjected, re-establishes slowly, and, as it were, step by step, in its connections and its reactions with the external world.

Hygiene being the pre-eminently powerful agent in the management of convalescence the following sanitary rules are worthy of particular attention.

Protective Treatment.—The convalescent should be protected with special care against variations in temperature, from the baneful influence of cold air, of currents of air and from the effects of moisture. In the

condition of his system he is particularly apt to be affected by these agents, which may readily bring on a relapse, or some more or less serious complication.

Ventilation.—What has just been said does not mean that the patient is to be denied plenty of pure air; for as we have shown in preceding paragraphs, oxygen is as much a necessity to the human economy as is food. A patient should be allowed at least 1,500 cubic feet of air space and the air should be changed once in every two hours. To do this requires some ingenuity if the sick room is not supplied with special ventilating apparatus—for the first air should be warm and dry.

A Simple and Effective Method.—This is to admit the fresh, outside air into an adjoining hallway or room which can be heated. From this room the warm, fresh air may pass into the sick-chamber through an open door or window; the patient's bed being so placed as to be out of any direct draught or current of air.

Clothing.—In order to secure immunity from atmospheric exposure it is necessary that warm clothing should be worn—thicker and warmer than the clothing usually worn at the corresponding season of the year. Wool or silk under-garments are by far the best as they radiate the body heat and moisture gradually and are less apt to cause a feeling of chilliness after perspiration. If the weather is very warm, light-weight wool garments can be procured, which will be but little warmer than cotton or linen and at the same time preserve uniform body temperature.

Baths should be indulged in only near the end of convalescence, when health appears to be almost fully established. They should be very short and taken at least a half an hour before and two hours after a meal. It is well to employ those of a stimulating character, such as salt baths, bran baths, baths containing alcohol or whiskey, and so forth. Great precautions should be observed against the slightest exposure to draughts of air for some time after coming out of the water. After bathing the body should be well dried with rough bath-towels, rubbing the skin vigorously enough to bring a healthy glow to the surface. During convalescence from diseases of the respiratory apparatus baths should be strictly forbidden. (The previous remarks do not apply to baths administered during the active period of the disease, for the purpose of reducing fever, cleanliness, and so forth.)

Massage is beneficial in most cases of convalescence after they become strong enough to withstand the somewhat vigorous manipulations. The motions of massage differ in character; beginning with firm stroking with

the palms of both hands they gradually change to a kneading motion, and end with percussion or a rapid tapping of the muscles.

Massage is generally practiced upon the bared skin, using enough fresh cocoanut oil to enable the operators hand to glide easily over it and render the skin soft and pliable. The object is to bring fresh blood to the muscles and stimulate the tissues to greater activity, and consequently is of great value in convalescing cases in which the muscles are soft and flabby and the circulation sluggish.

Food of Convalescence.—The diet must be carefully regulated and the following rules rigidly adhered to: In the first place, proportion the amount and character of the nourishment, not to the hunger of the patient, but to the digestive power of his stomach. Instruct him to eat often and but little at a time, to chew the food very thoroughly, not only to secure its reduction to small particles, but also its complete admixture with the salivary fluids. And lastly, to choose those articles of diet which are adapted to the comparative feebleness and sensitiveness of the digestive organs and as far as possible, also, those which gratify the taste of the individual.

Generous Nourishment.—We must guard, however, against a disposition to restrain the patient too much in regard to nourishment, through an exaggerated fear of the effects which it may produce. It is essential to take into consideration the degree of appetite and the sensations which the convalescent experiences during the process of digestion. Also to consider how his illness has effected the several digestive organs, for, of course, the kind and quantity of nourishment must vary with the nature and duration of the illness from which recovery is taking place.

Examples.—For instance, a patient who is convalescing from typhoid fever, which has its seat in the intestine, should not be allowed to eat plentifully of foods which receive a large part of their digestion in that organ, as fats, starches, and so forth. Nor should a patient who has had a congested liver partake of fatty food to any great extent—simply because bile is required to digest fats and the disease has to do with a lessened supply of bile.

The Patient Must Diet.—Stimulating food given to an intensely nervous patient would only aggravate the condition, while a routine diet, without change or character, would be torture to one recovering from a long, chronic illness.

In other words the diet must suit the patient, not the patient the diet. There are many cases in which physicians and nurses gain more

credit with a patient and his friends by a very minute attention to the diet during convalescence than by the most skillful treatment of the disease throughout its course.

Diet.—As a general rule a patient may begin with weak chicken or mutton broth, free from fat, and boiled rice, which probably represent the two great classes of nitrogenied and amylaceous articles of food in their most easily assimilated form. Experiments have shown that rice is digested in less time than any other substance of the kind, only requiring one hour. The rice may be substituted by tapioca, sago, or cornstarch, made with milk, if these are more palatable, according to the directions on a previous page.

Progressive Diet.—After from two to four days, if improvement continues, administer stronger soups, eggs very slightly boiled, calf's-foot jelly, rice-pudding and toasted bread, or stale bread with very little butter. In the course of a week the patient may proceed to a mealy roasted white potato, a tender mutton chop, or tender loin of beef, and light bread not less than twelve hours old, with sweet butter in moderate quantity.

It is much better and saves time for the invalid to go up the inclined plane of diet (never to ascend this hill of difficulty by jumps) a little slower than is absolutely necessary, than to advance too rapidly and bring on a relapse.

A Correct Guide.—The surest guide is the condition of the tongue; should that unruly member have cleaned off, as it usually does when full, frank convalescence sets in, go on carefully and cautiously up the list given above to stronger and more nutritious articles of diet. But should the tongue put on a coat of fur again, remember it is a sign of repugnance to such rich food as it has to help to swallow, and quickly taking the hint, put the patient back on liquid diet for a few days longer.

Medical Treatment.—During convalescence the secretions and excretions must be carefully watched over and any excess or insufficiency be corrected as soon as practicable. The patient should be encouraged to drink a great deal of water (between meals, and not at meals—this also, applies to the healthy individual) for water is an absolute necessity to the secretions, which if right will bring health much closer to hand.

Copious Perspirations, which are very apt to occur from simple relaxation of the tissues and integument, may be checked by six or eight grains of quinine, or by one-hundredth of a grain of atropia, or by sponging with a solution of alum and whiskey before retiring.

The Urine.—If the urine is rather scanty the patient should drink

freely of water, or of some bland fluid, such as flaxseed tea, toast-water or gum-arabic water.

Constipation.—Constipation should be overcome by injections, or by tonic laxatives, such as rhubarb, in doses of five or ten grains daily. If convalescence is protracted and the patient does not regain strength as fast as should be expected a tonic containing iron and strychnia is indicated.

Surroundings of the Patient.—Those who have suffered from a protracted illness will remember how monotonous it became to lie in bed with your vision limited to one side of the room, or to a narrow strip of sky or landscape which could be seen through some particular window. You soon learned every detail of the room and its furniture; even the figures on the wall-paper took on grotesque forms and seemed perfectly hateful to you.

Chamber Arrangement.—Consequently the furnishing of the sick-chamber, the arrangement of the bed gives us another topic in connection with the treatment of convalescence. While the sick-room should have as little furniture in it as possible (especially if the disease be contagious or infectious), yet what there is should be arranged with a view to cheerfulness and brightness.

Flowers.—Flowers or potted plants, brought in from time to time, give the patient a change and brightens him up. If possible the position of the bed should be changed from one part of the room to another so as to give the enforced occupant a new field of vision, especially if it be so that he can look out of a window. All these little details make sickness more bearable; taking away the gloomy thought goes a very long way toward establishing a speedy convalescence.

Visiting.—During the tedious convalescence which we often watch so anxiously after prolonged chronic diseases, or after relapses from more acute attacks, visits are capable of accomplishing great good if properly managed. Every care should be taken not to depress a patient who is slowly recovering, by allusions to unfavorable terminations in cases similar to his own. A sick person does so enjoy hearing good news; for instance, of a love and courtship which has a happy ending. Sick persons also intensely enjoy hearing of any material good, such as a positive or practical success of the right in their own neighborhood or country, or, indeed, in any part of the world.

Books.—They have generally a surfeit of books, principles, precepts and theories; so, instead of advising them about their convalescence, with

advice which they have heard at least fifty times before, tell them of one benevolent act which has really succeeded practically—it will be like a day's health to them. It is hard for people to understand how intense is the craving of invalids, who, with reanimated powers of thinking, are still cut off from active participation in the world's work and progress, to hear of good, practical action even when they cannot yet partake of it.

Society.—In many instances there is no better society for a convalescent than that of babies, or of other invalids who are also convalescent; but, of course, this association must be carefully managed so that neither party will suffer from it, which is perfectly feasible as a rule. If you think the air of a sick-room is bad for an infant, of course it is injurious to the invalid also; and efforts should be made to remedy the aerial impurity without a moment's delay. It enlivens a sick person's whole mental atmosphere to see "the baby," and a very young child, if unspoiled, will generally adapt itself wonderfully to the ways of a sick person if the time they spend together is not too long. A small pet animal is often an excellent companion for a convalescent patient, especially if confinement to the house in consequence of unfavorable weather or complications of the original disease setting in, is unusually prolonged. A pet bird in a cage has sometimes proved the only pleasure, or, indeed, solace of an invalid shut up in the same room for weeks, or even months. If such a pet can be fed, cleaned and taken care of in every way, and perhaps taught some of the little tricks which birds, squirrels and even mice are capable of learning, and which prove such a source of pride to the trainer and entertainment to visitors, the patient should by all means be encouraged to undertake the task. By such devices many a weary hour has been whiled away, and the sick-chamber of lingering convalescence shorn of half its almost intolerable weariness.

First Walks.—The first walks or rides should receive special attention, the convalescent being warmly clothed, a warm sunshiny day being selected, in accordance with the rules given under meteorology, and the exposure being at first for only fifteen minutes, or half an hour at the furthest.

Change of Air and Scene.—After the invalid is strong enough to leave the house complete change of air and scene is one of the most potent contributors to an entire restoration to health. The patient, who has remained for three weeks in nearly the same state, growing neither better nor worse, will often wonderfully improve after a few days spent in the country or at the seashore. If the period of sickness has been passed in

a room where the only view was of the backs of houses or the fronts of those forming the opposite side of the street, how grateful and invigorating is the sight of green fields, shady groves and sparkling streams at some sylvan retreat. By the ocean, too, vitalizing sea breezes frequently exert an almost magical power over a frame enfeebled by disease and restore to the languid convalescent his wonted vigor with astonishing rapidity.

Avoid Excitement.—Lastly, try to secure the patient against any intense mental emotion or intellectual excitement, which will be almost sure to react with unfavorable effect upon his enfeebled physical powers.

Reconstructive Remedies.—These must be administered in a form ready to be taken up by the assimilative functions and transferred to the wasted tissues. Chemistry teaches us the exact nature of the elements destroyed by disease, and thus gives the clue to rational scientific treatment. There is need of food structure for muscle, blood, nerve, bone and the numerous other tissues. The need is a complex one, and the remedy must be, likewise, complex in its chemical nature. It is true that *all* the elements of the tissues have been wasted; but there is one element which, because of its vital importance and wide distribution throughout the economy, must be specially provided for—this element is phosphorus.

A Question.—The question naturally arises: Is it possible to obtain a remedy that will meet all the requirements for checking the ravages of disease and replacing the structures wasted by the pathologic processes, *i. e.*, for checking destructive metabolism and fostering constructive metabolism?

The Blood.—It is self-evident that before a patient can reach convalescence the germ or virus causing the disease must be removed from the system. How shall we combat these germs? We cannot rely on sterilization. Happily we have discovered that normal, healthy blood is antagonistic to germ life, while impoverished blood furnishes a favorable nidus for their development.

Hypophosphites —Experience has demonstrated that the remedy that fulfills all the indications for treatment is the *Compound Syrup of Hypophosphites*.

This remedy is based upon the broad philosophic basis of the exact needs of the system in diseases characterized by waste of tissue and loss of nervous force.

It should be used in teaspoonful doses, given in a wineglass of water before each meal and at bedtime.

PART III OF BOOK VII

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THE SICK ROOM IN THE HOME

PART III.

SPECIAL DIETS FOR VARIOUS DISEASES.

Mankind, whether well or ill, must eat to live. We must have food. But some foods are more nutritious than others,—some foods are good for one person and bad for another. It is important therefore for all people at all times to have careful regard to diet, but it is especially so in the case of those who are ill, for not only may certain things be taken with impunity when one is well, that would be injurious in illness, but different diseases need different diets, and oftentimes a diet that would be beneficial to a patient with one disease would prove dangerous, perhaps fatal, to the sufferer from some other disease.

Diet in Acute Diseases.—The proper diet in acute diseases varies somewhat according to the individual affection, but is subject to general principles which are sufficient guides for most cases.

When Food is Not Needed.—In acute febrile diseases which have a very short duration, from one to three days, it is not necessary that the patient take food, as his vitality is strong enough to tide him over. Again, during the first day or two of pneumonia, scarlet fever, or similar affections, there need be no alarm even if the patient take no food, as his strength is sufficient, and often he has absolutely no inclination for food.

When Food is Needed.—But after the fever has been prolonged more than one or two days, then, it becomes necessary to nourish the patient, even though it be against his will, for the tendency to fatal results in all such cases is through exhaustion, and much can be done toward preventing a failure of the vital power by proper feeding.

NOURISH THE PATIENT; DON'T STARVE A FEVER.

Food in Fevers.—The older writers upon dietetics taught that a fever patient was not to be fed, and some modern authors still follow the old teaching. However, fever is *not* a contra-indication to food—to be sure, if the stomach is overloaded with coarse food it will only augment the

condition, but if proper care is taken in selecting a diet there will be few bad results and many good ones.

LIQUID MEAT FOODS.

Fresh Meat Juices.—This is the most nutritious of this class, but as a rule it is not taken well by the average patient, owing to its insipid flavor. It may be added to the patient's milk, or used in making broth, about a tablespoonful being given at a time. Beef juice is made by cutting prime, lean beef into small pieces and pressing until all the juice is extracted from the meat. A little salt added to fresh beef juice makes it more palatable.

Beef Tea has an undeserved reputation, for it has but little nourishing property, and to have any effect it must be given in large quantities. It is, however, slightly stimulating.

Liquid Peptonoids are by far the best prepared meat food in typhoid fever, containing as they do the active and nourishing principles of beef, they are especially adapted to the conditions found in typhoid fever. This preparation of beef is manufactured by all reputable pharmaceutical firms, and can be procured from any drug store. It should be given in milk, or alternated with it, every two or three hours, a teaspoonful to a tablespoonful constituting the usual dose.

Soup and Broth resemble beef tea, in that they contain the extractives of meat, but they also contain nutritive substances, but vary greatly according to preparation, the lighter forms of soup being spoken of as broth.

Preparation of Broths.—To prepare broth, use young chicken, lean, fresh beef, or mutton, without fat, allowing the meat to boil slowly for four or five hours (until it falls to pieces), strain, cool and skim off what little fat appears. This liquid may then be seasoned and diluted to the strength required by the patient.

Administration of Broths.—As broths are stimulating as well as nutritious, they should not be administered to a typhoid patient until the third or fourth week, by which time the milk and peptonoid diet will have become exceedingly tiresome, and the new nourishment will be relished and at the same time adapted to the conditions of that period of the disease.

Eggs may be given cautiously throughout the disease in combination with milk as egg-nog, which is made by adding the yolk of an egg to half a pint of milk, with a tablespoonful of whiskey, wine or brandy, and then

beating in the white of the egg. This should be given sparingly in any delicacy of the stomach.

Stimulants are given by many physicians throughout the disease, but unless the individual case requires stimulation from the beginning it is best to defer the administration of alcoholics until the middle of the second week, or until the time when the organism requires energetic artificial stimulation.

What Stimulants to Use.—Whiskey, brandy and the light wines can all be used, either slightly diluted in doses from a teaspoonful to a table-spoonful, every two or three hours, or incorporated with the medicine or food. As mentioned above, whiskey or brandy can be given in the form of egg-nog, or milk-punch, thus exhibiting both the stimulating effects of the liquor and the nourishment of the milk and eggs. A light, powerfully stimulant beverage is made by the addition of champagne to milk, and is especially applicable to a weak stomach.

Feeding by Enema.—In extremely serious cases of typhoid fever, or when the stomach will not retain proper nourishment, it is often necessary to sustain strength by rectal feeding. For this purpose, strong, black coffee, solutions of beef peptonoids, beef tea, beaten eggs and milk, etc., are injected well up into the intestine by means of a long rectal tube. In this form of feeding a very much larger quantity of food should be used than by the mouth.

Diet of Convalescence.—After the acute symptoms have all subsided and the temperature has been normal for ten days or two weeks, the diet may gradually be increased. For the first few days boiled rice, corn-starch pudding, oat-meal porridge or sago porridge may be given in small quantities. This may be followed by a portion of a soft boiled or poached egg, or milk toast made from old bread. On the fifth or sixth day a little dry toast with a baked apple or potato may be eaten; this can be followed by finely chopped lean beef, broiled, and light bread which is a day or two old, with a little fresh butter.

Increase of Diet.—From this diet gradually increase to a tender piece of chop or steak, small quantities of well-cooked green vegetables, and so forth, always remembering that the seat of the disease is in the intestine, and standing ready to cut the diet down on the appearance of diarrhoea, a return of fever or other unfavorable symptom.

During convalescence it is not usually advisable to continue the use of stimulants, although the malt liquors, as ale, porter and malt extract are at times beneficial.

Full or Extra Diet.—Fourteen ounces of bread; one pint of porter for males, half a pint of porter for females; six ounces of dressed meat, roasted or boiled, alternately, with eight ounces of potatoes; half a pound of rice pudding three times a week; half a pint of mutton broth in addition on days when boiled meat is given (which is four times a week); or, occasionally, one pint of strong vegetable soup, with meat and rice pudding, twice a week; one ounce of butter each day; porridge, gruel and barley water as required.

Middle or Ordinary Diet.—Twelve ounces of bread; half a pint of porter; four ounces of dressed meat roasted and boiled, alternately, with eight ounces of potatoes; half a pound of rice pudding three times a week; half a pint of mutton broth in addition on days when boiled meat is given (which is four times a week); or, occasionally, one pint of strong vegetable soup with meat and rice pudding, twice a week; with the full diet allowance of bread; one ounce of butter each day; porridge, gruel and barley water as required.

Low Diet.—Ten ounces of bread; half a pint of beef tea, mutton broth, rice, arrowroot, or sago, when specially ordered; three-quarters of an ounce of butter; gruel and barley water as required. Wines and spirits, if used, must be mentioned each time the physician or surgeon attends.

It is to be observed that even with those who are well exact diet should vary with different people according to their temperament and occupation. A person of nervous temperament may not indulge in seasoned foods with the same impunity that one of phlegmatic temperament, and the diet of a person of sedentary habits is necessarily more restricted than that of one who is engaged in the open air or in manual work.

The following particulars as to foods and drinks that may and may not be taken during the period of certain different ills will be found of great value in the sick room and in the care and treatment of all who are ill. The importance of eating slowly and properly masticating all food cannot be too strongly urged, and it is particularly to be desired that care and worry should be banished at meal time and cheerfulness prevail. After eating, even with the well, it is of great benefit to lie down and rest for twenty or thirty minutes.

ASTHMA.

General Rules.—The diet should be normal and not stimulating.

BENEFICIAL.

Soups.—As desired, but in moderation.
Fish.—As desired.
Meats.—As desired. Preferably lean.
Vegetables.—All kinds.
Fruits.—All kinds.
Drinks.—Water, cocoa, milk, tea, coffee.

DETRIMENTAL.

Alcohol, irritating spices or sauces.

BRIGHT'S DISEASE.

General Rules.—When acute symptoms are present diet should be small in amount, very bland and preferably liquid, viz: milk. In the sub-acute or chronic form, a more liberal diet is needed to preserve proper nutrition and strength. Large amounts of liquids should not be taken continuously for more than a few days at a time, especially if the heart is weak or dropsy is present. Avoid all high seasoning.

BENEFICIAL.

Soups.—Weak broths with rice or barley, thin vegetable soups.
Fish.—Fresh fish, boiled or broiled, raw oysters, raw clams.
Meats.—Beef, mutton, lamb, poultry, all sparingly.
Farinaceous.—Hominy, oatmeal, wheaten grits, rice, with milk or cream sparingly, stale bread, whole wheat bread, toast, milk toast, biscuits, macaroni.
Vegetables.—Potatoes, peas, beans, spinach, cabbage, cauliflower, tomatoes, onions, lettuce, watercress, mushrooms.
Desserts.—Rice and milk puddings, stewed apples, stewed pears, berries.
Fruits.—Ripe apples, pears, grapes, berries.
Fluids.—Pure water (restricted) peptonised milk, fresh buttermilk, Bulgarian sour milk, milk with hot water, equal parts, whey, weak tea and weak coffee (restricted), toast water, unfermented grape juice and fruit juices (restricted).

DETRIMENTAL

Strong meat broths and extracts, fried fish, pork, corned beef, heavy bread, batter cakes, asparagus, celery, hashes, stews, gravies, strong condiments, such as curry, pepper, mustard, radish, etc., cakes, pastry, ice cream, malt or spirituous liquors, cranberries, fruits with kernels.

CONSTIPATION.

General Rules.—Diet should consist largely of easily digested fats and oils, green and fresh cooked vegetables, such as leave a large residue in the bowels. Moderate exercise and regularity in habits are important adjuncts to treatment. Active cathartic drugs should be avoided.

BENEFICIAL.

Soups.—Meat broths, oyster soup.

Fish.—Boiled fresh fish of all kinds, raw oysters.

Meats.—Almost any fresh tender meat, poultry, all in moderation.

Farinaceous.—Oatmeal, wheaten grits, mush, hominy, whole wheat bread, corn bread, graham bread, brown bread, rye bread, bran biscuit or muffins.

Vegetables.—Boiled onions, brussels sprouts, spinach, cauliflower, potato, asparagus, green corn, green peas, string beans, salads, with oil.

Desserts.—Stewed prunes, figs, baked apples with cream, ripe peaches, pears, oranges, apples, melons, grapes, huckleberries (the blue seedless kind), cherries, raisins, honey, plain puddings, fig-puddings, apple charlotte.

Fluids.—Plenty of pure water, cold or hot, black coffee, cocoa, new cider, buttermilk, Bulgarian sour milk, orange juice, unfermented grape juice.

DETRIMENTAL

Salt, smoked, potted or preserved fish or meats, liver, eggs, new bread, puddings of rice or sago, pastry, milk, sweets, tea, nuts, cheese, pineapple, spirituous liquors.

Above all other means for removing constipation are those hygienic applications derived from the natural stimulus of the intestinal movements—food. If there is no contra-indications, those foods which leave a considerable residuum—as Graham flour, bran, rye and corn bread, groats, oatmeal, cracked wheat and oats, and so forth—can be used with advantage; fresh vegetables as lettuce, spinach, celery, onions, the various vegetables known as greens, and so forth, and fruits as apples, dried peaches, figs, dates, tamarinds, prunes, and so forth.

A large draught of plain or carbonated water should be taken before breakfast. The alkaline mineral waters, as Saratoga, Pullna or Hunyadi,

taken in this way usually give excellent results. As a sedentary life induces constipation, it follows that sufficient exercise must be enjoined in all such cases.

Consumption.—See Phthisis.

DEBILITY.

General Rules.—

BENEFICIAL.

Soups.—Any broth thickened with farinaceous material, chicken or beef soup containing chopped meat, rich vegetable soups, whole beef tea.

Fish.—All fresh fish, boiled or broiled, raw oysters.

Meats.—Beef, mutton, chicken, boiled ham, lamb chops or cutlets, broiled bacon, tender juicy steak, hamburger steak.

Eggs.—Soft boiled, poached, scrambled, raw with sherry wine.

Farinaceous.—Cracked wheat, rolled oats, corn meal mush, sago, tapioca, hominy, barley, macaroni, vermicelli, rolls, biscuits, cakes, whole wheat bread, corn bread, milk toast, dry toast, brown bread.

Vegetables.—Nearly all, perfectly fresh and well cooked.

Desserts.—Custards, egg-and-milk, rice or apple puddings, baked apples, fruit-jams, jellies, cocoa-junket, marmalade, sweet fruits, calf's-foot jelly.

Fluids.—Cocoa, chocolate, milk—hot, cold, or peptonised, Laibose, Bulgarian sour milk, pure water, plain or aerated, Panopepton on cracked ice,

DETRIMENTAL

Hashes, stews, cooked oysters or clams, pork, veal, thin soups, turkey, salt meats except ham and bacon, cabbage, cucumbers, turnips, carrots, squash, spices, pickles, vinegar, pies, pastry, bananas, pineapples.

DIABETES.

General Rules.—Avoid all sugars and reduce starches to a minimum. Increase the amount of meats and especially oils and fats. Substitute saccharin for sugar.

BENEFICIAL.

Soups.—Soups or broths of beef, chicken, mutton, veal, oysters, clams, terrapin or turtle (not thickened with any farinaceous substances), beef tea.

Fish.—Shell fish and all kinds of fish, fresh, salted, dried, pickled, or otherwise preserved (no dressing containing flour).

Eggs.—In any way most acceptable.

Meats.—Fat beef, mutton, ham or bacon, poultry, sweetbreads, calf's head, sausage, kidneys, pig's feet, tongue, tripe, (all cooked free of flour, potatoes, bread, or crackers).

Farinaceous.—Gluten porridge, gluten bread, gluten gems, gluten biscuits, gluten wafers, gluten griddle cakes, almond bread or cakes, bran bread or cakes.

Vegetables.—String beans, spinach, beet-tops, chicory, kale, lettuce plain or dressed with oil and vinegar, cucumbers, onions, tomatoes, mushrooms, asparagus, oyster plant, celery, dandelions, cresses, radishes, pickles, olives.

Deserts.—Custards, jellies, creams (all without sugar); walnuts, almonds, filberts, Brazil nuts, cocoanuts, pecans.

Fluids.—Tea or coffee (without sugar), pure water, peptonised milk, Bulgarian sour milk, lemonade, seltzer water with lemon juice (no sugar).

DETRIMENTAL

Liver, sugars, sweets or starches of any kind, wheaten bread or biscuits, corn bread, oatmeal, barley, rice, rye bread, arrowroot, sago, macaroni, tapioca, vermicelli, potatoes, parsnips, beets, turnips, peas, carrots, melons, fruits, puddings, pastry, pies, ices, honey, jams, sweet or sparkling wines, cordials, cider, porter, lager, chestnuts, peanuts.

DIPHTHERIA.

Putrid Sore Throat. Malignant Quinsy.

Milk Diet Required.—The diet should be concentrated and highly nutritious from the onset, embracing the necessary variety of alimentary principles. Milk meets preëminently these requirements.

Difficulty of Nutrition.—A serious difficulty in the treatment often arises from the invincible repugnance to nutriment, and sometimes from the persistence of vomiting. Owing to the difficulty of alimentation in such cases, and sometimes a want of appreciation of its importance, death takes place from innutrition.

Items of Proper Diet.—Milk, eggs, broth, peptonoids, beef juice or essence, peptonized oysters, eggnog or milk-punch should be given at

intervals of every two or three hours. If swallowing is so difficult as to prevent the patient from taking a proper amount of food, resort must be had to nutritious enemata. The following is a suitable formula:

Milk1 ounce
 Whiskey $\frac{1}{2}$ ounce
 Egg1 ounce
 Add a little salt, beat up and warm.

Stimulants.—Stimulants should be used boldly from the start, guiding the dose by the effects. It is surprising to observe the large amount which can be taken even by the tenderest subject, without bad results. Usually a child of two years requires from thirty to sixty drops of whiskey or brandy every two or three hours; an adult, from two to three teaspoonfuls every three hours. However, this amount can be greatly increased if necessary. It is a mistaken idea to wait until symptoms of debility appear in diphtheria before using alcoholic stimulants.

DIARRHŒA.

General Rules.—Diet should be mainly liquids and during an acute attack all food should be stopped for about twelve hours. Avoid foods that ferment easily or that leave an undigested residue, thus causing intestinal irritation. Take food in small quantities at frequent intervals.

BENEFICIAL.

Soups.—Milk soup well boiled, clam juice, beef tea.

Meats.—Scraped fresh beef or mutton well broiled, sweetbread, beef juice from freshly broiled steak (all sparingly).

Eggs.—Lightly boiled or poached on dry toast, boiled white of egg.

Farinaceous.—Rice, sago, macaroni, tapioca, arrowroot, dry toast, milk toast, toasted crackers.

Desserts.—Milk-puddings, plain, with sago, rice, tapioca or arrowroot (no sugar).

Fluids.—Tea, toast water, boiled peptonised milk, Panopepton, Panopepton and whey.

DETRIMENTAL

Oatmeal, wheaten grits, fresh breads, rich soups, vegetables, fried foods, fish, salt meats, lamb, veal, pork, brown or graham bread, fruits, nuts, pies, pastry, ice cream, ice water, sugar, sweets, custards, malt liquors, sweet wines, iced drinks.

DYSENTERY.

As in this disease the nutrition suffers severely the correct diet is important from the beginning. If the stomach is irritable, milk, with one-fourth lime-water, is the best food. If there is but little nausea, and especially if the digestion remains good, the patient can take milk, eggs, beef juice (which is particularly adapted to this condition), ice cream, boiled custard, oyster soup, mutton, chicken and beef broth, and similar articles. But solids leaving much residuum, and especially coarse articles, are highly objectionable.

DYSPEPSIA.

General Rules.—Eat slowly and masticate thoroughly. Avoid all stimulants and culinary delicacies, iced or very hot drinks; no sweets and no acids.

BENEFICIAL.

Soups.—Clear thin soups of beef, mutton, or oysters.

Fish.—Oysters raw, fresh boiled or broiled bass, white fish, shad, cod, trout, no rich sauces.

Meats.—Broiled tender steak or chop, roasted or boiled beef, lamb, mutton, chicken, calf's head, sweetbread, broiled chopped meat.

Eggs.—Boiled, poached, raw, any way that agrees.

Farinaceous.—Cracked wheat, hominy, rolled oats, rice, sago, tapioca, crackers, dry toast, stale bread, corn bread, whole wheat bread, graham bread, unsweetened rusk or zwieback, macaroni.

Vegetables.—Potato (sparingly), spinach, sweet corn, green peas, string beans, asparagus, stewed celery, well-boiled onions, lettuce. Vegetables sometimes best made into purees, thoroughly cooked, then passed through colander or sieve. Cream, fresh butter, best olive oil, may be used with farinaceous or vegetable foods, if agreeable.

Desserts.—Rice, tapioca, or farina pudding, junket (directions on back of

DETRIMENTAL

Rich soups or chowders, veal, pork hashes, stews, turkey, gravies, fried foods, liver, kidney; pickled, potted, corned or cured meats; salted, smoked or preserved fish; goose, duck, sausage, crabs, lobster, salmon, pies, pastry, candies, ice cream, cheese, nuts, ice water, strong condiments, pickles, malt or spirituous liquors.

BENEFICIAL.

slip), custards, apple snow, baked and stewed apples and pears, ripe fruits. Fruits usually best taken in morning or early part of day, not after a full meal, oranges, grape fruit, etc.

Fluids.—Hot water before meals. At meals, one cup weak tea, coffee, cocoa, milk and hot water equal parts, one glass pure cool water, sipped toward end of meal. Milk, plain or peptonised, buttermilk, Bulgarian sour milk, whey, whey and unfermented grape juice, Panopepton and whey, Panopepton on cracked ice.

DETRIMENTAL

FEVERS.

General Rules.—A nourishing diet for the strength of the patient must be kept up, but solids are not permissible and in liquid and semi-liquid foods care is necessary that they are easy of digestion.

BENEFICIAL.

Foods.—Soups, clear, or thickened with some well cooked farinaceous substance, mutton, clam or chicken broth, beef tea, peptonised milk, Laibose, Bulgarian sour milk, Panopepton with cracked ice, Panopepton with whey.

Fluids.—Pure cold water, toast water, lemon or orange juice in cold water, jelly water, cold whey, all in small quantities, sipped slowly.

DETRIMENTAL

Any solid or vegetable food or fruit, until so directed by the physician in charge.

FEVER, CEREBRO-SPINAL.

Cerebro-Spinal Typhus, Meningitis, Spotted Fever.

Generous Diet Needed.—This disease may be very rapid in its course and terminate in from four to seven days, or again, it may continue for six or eight weeks, according to the length of its stages and their particular conduct. Consequently a generous and sustaining diet must be inaugurated from the onset.

Items of Diet.—Milk, eggs, beef juice, liquid peptonoids, mutton broth, and so forth, should be given every three hours, day and night, to avoid paroxysms of weakness in the early morning. Very often food can-

not be taken by the mouth, in such cases nutritious enemata should be used as in typhoid fever. The alcoholic stimulants: whiskey, brandy, wine, and so forth, should be given freely every few hours.

FEVER, PERNICIOUS.

Pernicious Malarial Fever. Congestive Fever.

Full Diet Needed.—The diet in pernicious malarial fever should be full; plenty of meat, milk and eggs. During the attacks it should be cut down to liquid food, often repeated. In the gastro-enteric variety of the disease the diet should be the same as in acute dysentery.

FEVER, SCARLET.

A Supporting Diet Needed.—As the disease runs a rapid, definite course, the diet must be supporting and nourishing from the start; milk, beef peptonoids and eggs fulfilling the indications. Alcoholic stimulants are indicated in proportion to the frequency and feebleness of the pulse, together with general prostration. Alcoholics are to be given with discrimination, however, their precise effects being noticed. The malignant type of the disease requires that stimulants should be used freely. In children, wine-whey, milk-punch and egg-nog are eligible forms for their administration.

Water Diet.—If the urine is scanty and high colored, the patient should be permitted to drink of water very freely, also milk and lime-water and cream-of-tartar lemonade, in order to promote proper renal secretions.

FEVER, TYPHOID.

General Rules.—All foods given in protracted febrile states should be in liquid form. This is especially true in typhoid fever, in which disease it should be continued until ten days or two weeks after the temperature has returned to normal.

Of all liquid foods, milk is by far the best and most serviceable in typhoid fever. It is taken, if not with relish, at least with less reluctance than other articles, and it has the great advantage of embracing in proper combination all the ailmentary principles required for nutrition.

Care should be taken that the milk is of a good quality and comes from healthy cows. In preparing it for the patient it is often necessary

that it be iced in order to make it more palatable, or, if it is thought to be questionable in quality, it should be sterilized or boiled.

Should the stomach reject milk when taken as it comes from the dairy it may be diluted with ice-water, lime-water or barley-water. Again, if the regurgitated milk shows signs of non-digestion, it should be artificially digested with peptonizing powder (which can be procured at any pharmacy) before administering to the patient.

One or two ounces of milk should be taken every three hours during the day, and at night not more than four hours should elapse without food and stimulants being administered. While sleep is essential, yet a patient is not harmed by the partial awakening which is sufficient for the administration of a milk-punch. Again, a careful nurse can give food at frequent intervals without awakening him.

During convalescence, commencing the third day after disappearance of all fever, the diet must become varied, utmost effort being made to build the patient up with most nourishing food. The first day or two give only milk and broths, with perhaps a little beef juice twice during day. The next day a little stale bread may be added to this and a cup of cocoa may be given. The third day custard may be given or a soft boiled egg and each day thereafter the diet may be slightly increased. By the seventh day breast of broiled chicken may be given and by the tenth day the diet may become general. Throughout convalescence peptonized milk should be given three or four times between meals and a glass of sherry or burgundy.

General Rules.—Avoid eating rich or highly seasoned foods, but take good nourishment to keep up the general strength. Avoid exercise and sexual excitement.

BENEFICIAL.

Soups.—Clear soups, oyster soup.

Fish.—All kinds, if boiled.

Meats.—Lamb, mutton, chicken. Meats should be either boiled or broiled and eaten sparingly.

Farinaceous.—Graham bread, brown bread, bran bread, corn bread, rye bread; whole wheat bread; oatmeal porridge, cereals.

Vegetables.—Spinach, brussels sprouts; asparagus, string beans, lettuce, celery.

Drinks.—Lemonade, milk, unfermented grape juice, pure water, one glass laxative early each morning.

DETRIMENTAL

Soups.—Clam chowder, nor rich meat soups.

Fish.—Smoked fish, lobster, crabs, clams.

Meats.—Pork, veal, beef, smoked meats, salt meats.

Farinaceous.—White bread; rolls, griddle cakes, cheese, custard pies, cakes, hot biscuits.

Vegetables.—Cabbage, tomatoes, turnips, carrots, baked beans.

Drinks.—Ales, porters, wines, tea, coffee, cocoa, ginger ale, nor any other alcoholic or stimulating beverages.



GOUT.

General Rules.—Restrict the use of starches and meat. Pure water should be taken freely, but not to excess. Alcohol and sweets should be entirely interdicted.

BENEFICIAL.

Soups.—Clear soups, vegetable soup, clam and oyster broths.

Fish.—Fresh fish, raw oysters.

Eggs.—In moderation, preferably soft boiled or poached.

Meats.—(Once a day only, principally white meat.) Chicken, ham, bacon, sweetbreads, mutton, lamb, very little beef.

Farinaceous.—Whole wheat, corn or brown bread, dry toast, milk toast, zweiback, rye (stale only), crackers, hominy, cereals without sugar.

Vegetables.—Potatoes (small quantities only), spinach, green peas, cabbage (well boiled), green vegetables, salads, string beans.

Desserts.—Fresh or cooked fruits, ices, rice pudding, baked apples (very little sugar), cheese, nuts or almonds.

Beverages.—Water plentifully, plain soda, milk, buttermilk, coffee, lemonade (no sugar).

DETRIMENTAL

Cakes, sweets, pork, veal, fried meats, cooked oysters, salted, dried, potted or preserved fish or meats (except fat bacon or ham), crabs, lobster, sweetbreads, kidneys, hard boiled eggs, rich made dishes, gravies, raw tomatoes, rhubarb, pies, pastry, tea.

Absolutely forbidden.—Malt liquors, sweet wines, champagne.

Gouty.—Gouty patients may, for the purpose of dietetic discussion, be arranged in three classes: first, those who are robust and vigorous; second, those who with a distinct feebleness of constitution and sluggishness of habit have a marked tendency to the accumulation of fat; third, those whose nutrition and general vital forces are habitually on a low level.

In robust gouty persons it is essential that the quantity of food be lessened; such persons should be taught to habitually rise from the table with the appetite not entirely satisfied. In the second class of patients some control over the appetite is not rarely imperative, while in the third class of patients it is often equally essential to administer food beyond the cravings of the stomach.

What to Avoid.—There are certain articles of food which should be denied to all gouty subjects. First of these is cane sugar, acid fruits, including the tomatoes and strawberries, are also to be avoided by all

gouty subjects, while non-acid fruits, if ripe, are almost invariably of great service and should be taken freely. The harm done by acid fruits is largely due to their irritating effects upon the organs of digestion.

HEART AND BLOOD VESSELS.—DISEASES OF.

General Rules.—Food should not be taken at short intervals as digestion is slow. Allow an interval of five hours between meals. All meals should be moderate in amount and sugars and starches restricted, especially if there is a tendency to flatulence.

BENEFICIAL.

Soups.—(In moderate amounts.) Clear vegetable soup, purees and milk soups.

Fish.—Fresh of all kinds, raw oysters and clams.

Meats.—Beef, mutton, chicken, quail, partridge, grouse, lamb.

Eggs.—Soft boiled or poached.

Farinaceous.—Toast, crust of bread, zweiback, crackers, beaten biscuits.

Vegetables.—Peas, string beans, spinach, lettuce, baked potatoes in small amounts.

Desserts.—Fresh fruits, baked apples, pineapple, custards, gelatines.

Beverages.—Milk, buttermilk, weak tea (with little sugar), coffee (small cup, clear), light dry wines.

DETRIMENTAL

Fried foods, candy, pastries, much coffee or tea, batter cakes, waffles, hot breads, sweet wines and much spirituous or malt liquors.

IMPOTENCY.

BENEFICIAL.

Soups.—Beef, mutton, oyster.

Fish.—Codfish, halibut, bass, blue, white, shad, shad roe, lobster and crab, sardines, trout, mackerel, caviar, salmon.

Meats.—Beef, lamb, mutton, chicken, turkey, game, fresh lean ham, bacon, tripe, sweetbreads.

Eggs.—Soft boiled, poached or raw.

Farinaceous.—Gluten, gocham, whole wheat and brown bread, oatmeal, barley, shredded wheat, peas, beans, hominy.

Vegetables.—Spinach, cauliflower, as-

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DETRIMENTAL

Soups.—Chowder, nor rich soups and spiced gravies.

Fish.—Eels, clams, all fried fish.

Meats.—Pork, veal, liver, goose, canned and potted meats, fried meats, sausages.

Eggs.—Fried nor hard boiled.

Farinaceous.—White bread, rolls, not biscuits, wheat griddle cakes.

Vegetables.—Cabbage, turnips, carrots, parsnips, melon, lettuce, pumpkins, mushrooms, rhubarb.

BENEFICIAL.

paragus, celery, potatoes (preferably baked), green peas, string beans, cucumbers, onions.

Desserts.—Rice puddings, cheese, oranges, olives, custards, figs, raisins, peanuts, walnuts, Brazil, pecan, hickory and other nuts.

Drinks.—Milk, cocoa, tea, coffee, malted milk.

DETRIMENTAL

Desserts.—Strawberries, blackberries, raspberries, currants, cherries, pies.

Drinks.—Beer, ale, porter, whiskey, gin, brandy, buttermilk, sour wines, vinegar, all alcoholic drinks.

INDIGESTION, GASTRIC (Chronic Gastritis).

General Rules. Small meals taken at regular intervals. Masticate thoroughly, eat slowly and avoid overloading the stomach. A limited amount of fluid with meals.

BENEFICIAL.

Soups.—Small quantity. Clear soups of beef, mutton, oysters. A little vermicelli, barley, rice or tapioca may be boiled with these.

Fish.—Raw oysters, weak fish, white fish, shad, perch, trout, smelt, fresh mackerel, whiting.

Meats.—Meat-juice, roasted or broiled beef (scraped or chopped), mutton, chicken, venison, fresh tongue, sweet-breads, lamb chops, squab, roast partridge, woodcock, plover, turkey (white meat).

Eggs.—Raw, soft boiled, baked, poached, plain omelette, or combined with chicken or oysters.

Farinaceous.—Bread at least one day old, brown bread, toast, rye, gluten and Graham bread, zweiback, crackers, cream crackers, cracked wheat, rice, sago, tapioca, arrowroot, corn meal, hominy, wheaten grits, Graham grits, vermicelli, rolled oats.

Vegetables.—Best made into puree by passing through a colander or mashing. Greens, spinach, French beans, green peas, asparagus, celery, potatoes (but little), preferably baked or mashed.

Dessert.—Cooked fruits, rice, tapioca, Indian and farina puddings, custards,

DETRIMENTAL

Rich soups and chowders, fried foods, hot or fresh bread, griddle cakes, doughnuts, veal, pork, liver, kidneys, hashes, stews, pickled and corned meats, preserved and potted meats, goose, duck, sausage, salmon, salt mackerel, bluefish, sturgeon, eels, shrimps, sardines, lobsters, crabs, cabbage, cauliflower, celery, radishes, cold slaw, cucumbers, parsnips, egg plant, turnips, carrots, squash, oyster plant, sweet potatoes, beets, tomatoes, corn, pastry, pies, made dishes, nuts, dates, jams, dried and candied fruits, candies, cheese, strong tea, ice water, malt liquors, sweet and effervescent wines and spirituous liquors.

BENEFICIAL.

rice, snow, rennet, gelatin creams, blanc mange, baked and stewed apples and pears, grapes and ripe fruits, if fresh. No rich sauces.

Beverages.—Drinks should mostly be taken near the end of and between meals. Hot water before meals, milk, lime-water, weak tea (one-half ounce to the pint), koumiss, weak cocoa, peptonized cocoa and milk, buttermilk, malted milk.

Mineral Waters.—French Lick (Pluto, Natural or Concentrated), Carlsbad, Vichy, Kissingen, Apollinaris, Poland Spring.

DETRIMENTAL

INDIGESTION, GASTRIC (With Diminished Secretion).

General Rules.—Food should be small in bulk; very little fluid with meals. Lie down and rest after each meal. Articles enumerated should be taken in small quantities at a time, at frequent intervals. The comparative digestibility of animal and vegetable foods must be determined by experience and the diet regulated accordingly.

BENEFICIAL.

Soups.—Between meals. Beef, chicken, *Fish.*—Fresh only, boiled, broiled or baked; oysters.

Eggs.—Raw, soft boiled or poached.

Fats.—Very little butter or cream. No cooked fats.

Meats.—Preferably scraped or chopped beef, mutton, lamb, broiled or roasted chicken, tongue, sweetbreads, thin crisp bacon, cold boiled ham.

Vegetables.—Spinach, carrots, soft boiled turnips, asparagus, rice.

Farinaceous.—Stale bread only, dry toast, zweiback, crackers. Cereals should be thoroughly cooked and eaten with salt and cream, no sugar.

Desserts.—Small quantities only. Boiled or baked custards, rice, tapioca and sago puddings, jellies, compotes of apples and pears.

Beverages.—Limited quantities between meals. Water (not iced), milk, cocoa, coffee, tea, light dry wines.

DETRIMENTAL

Soups and drinks, with meals. All articles of coarse texture that contain indigestible parts like tendons, skin, stems, husks, pips, seeds, etc. Carbonated and alcoholic beverages, very acid, very sweet or very salt foods, salads, freshly baked bread or cakes.

INDIGESTION, INTESTINAL.

General Rules.—Diet should contain a predominance of animal foods, *e. g.*, milk, eggs, fish, poultry, etc., avoiding especially sweets, insufficiently cooked starches, vegetables and fruits of the coarser varieties. Avoid all foods which occasion distress shortly after eating.

BENEFICIAL.

Soups.—Thin and containing little fat or vegetables.

Meats.—Lean meat of beef, mutton, lamb, also partridge, squab, chicken, turkey (white meat), calf's brains, sweet-breads (no sauces or dressings).

Fish.—Shell fish, trout, pike, sole, cod-fish, haddock, sardines, salmon.

Eggs.—Raw, soft boiled (up to three minutes).

Fats.—Good butter and cream in moderation.

Vegetables (very little).—Cauliflower, asparagus, baked or mashed potatoes, fresh green peas (if tender).

Farinaceous.—Toast, wheat bread, whole wheat, Graham, rye (stale only), cereals, as oatmeal, cream of wheat, Ralston's, Pettijohn's (thoroughly cooked), with salt and cream, very little sugar.

Dessert.—Oranges, grape fruit, baked apples, stewed prunes, wine jelly, puddings (small amounts).

Beverages.—Water (especially an hour or two after meals), milk, buttermilk, koumiss, light, white or red wines, cocoa, weak tea, very little coffee.

DETRIMENTAL

Fat meat or fish, sausage, meat sauces and dressings, boiled or fried meats, smoked meats, chipped beef, fritters, cakes, pan cakes, fresh bread, pastries, onions, carrots, turnips, tomatoes, cabbage, corn, salads, ice cream and water ices, cold drinks, whiskey and brandy, heavy wines, strong coffee or tea, strong condiments.

INFLUENZA.

La Grippe. Contagious Catarrh.

Diet Required.—Food consisting of milk and eggs should be administered at frequent intervals and in most cases, especially in elderly individuals, alcoholic stimulants should be given. When the pulse is soft and the stomach irritable, champagne will be found to be a most serviceable remedy.

Diet in Convalescence.—The prostration and loss of strength is very great after an attack of influenza, even though the duration has been short; and convalescence must be watched with much care. The diet should be increased as soon as possible to thick soups, rare beef and mutton and the easily digested vegetables. Malt liquors, porter, ale, stout, and so forth, are often indicated.

The rapid increase of consumption since the advent of influenza, a few years since, is very significant: convalescing patients should receive the most nourishing food, in order to fortify the organism against any tendency to chronic complications.

LIVER TROUBLE.

General Rules.—A bland mixed diet containing no alcoholic beverages, a minimum of fat, a small amount of animal food, plenty of fresh fruits, vegetables, milk, cereals, starches and a small amount of sweets. Spices and condiments should be excluded.

BENEFICIAL.

Soups.—Thin vegetable soups with a little bread or cracker, light broths, oyster broth.

Fish.—Boiled fresh cod, bass, sole or white fish, raw oysters, soft part.

Meats.—Tender lean mutton, lamb, chicken, sweetbread, all sparingly.

Farinaceous.—Oatmeal, hominy, tapioca, sago, arrowroot, all well-cooked, whole wheat bread, graham bread, dry toast, crackers, zweiback, all sparingly.

Vegetables.—Nearly all fresh vegetables, well-baked or boiled potato once a day, dandelions, green salads with French dressing.

Desserts.—Plain milk puddings of tapioca, sago, arrowroot, junket, custards, stewed fruits, baked apples, stewed prunes if constipation.

Fruits.—Fresh ripe oranges, grapefruit, peaches, pears, grapes, strawberries, if agreeable, ripe tender plums.

Fluids.—Weak tea or coffee (without sugar or cream), hot water, pure water, plain or aerated, lemonade (with little sugar), milk, diluted or peptonised, buttermilk, Bulgarian sour milk, whey, orange juice.

DETRIMENTAL

Strong soups, concentrated meat extracts, rich made dishes of any kind, hot breads, preserved fish or meats, curries, pies, pastry, cakes, peppers, spices, mustards radish, horse-radish, raw onions, fats, sugar, herrings, eels, salmon, mackerel, sweets, creams, dried fruits, nuts, watercress, celery, malt liquors, sweet wines, champagne.

MEASLES.

The diet needs nothing more than actual mention. Milk constitutes the chief article of diet, especially if there is a trace of albumen in the urine. Iced drinks, calf's-foot jelly, custards, rice and tapioca puddings are very acceptable to the little patient, and can be given in moderation. Stimulants are seldom required.

NERVOUS AFFECTIONS.

Nervous prostration; nervous exhaustion. The question of feeding is one of great importance, and requires the utmost care and attention; the end to attain is to feed the patient as much as can be digested, but not to overfeed and derange the digestion.

Food should be given at intervals of two or three hours, and must be both light and nutritious. It should, at least at first, consist largely of milk, except in those rare cases in which this fluid does really disagree with the stomach and is not merely thought to do so. The milk should be skimmed or given in the form of koumiss.

Beef juice, or other concentrated meat essences are valuable as stimulants, and may be used as the basis of soups. Various farinaceous articles of food may be added to them; if an egg be broken into the concentrated bouillon or beef essence just as it ceases boiling, a nutritious and palatable dish is obtained. When constipation exists, oatmeal porridge, Graham bread and fresh or dried fruits may be allowed if they are readily digested by the patient.

OBESITY.

General Rules.—Avoid starches, sugars and much fat. Reduce liquids to two or three pints daily and take very little with meals. The whole diet should be reduced to the minimum needed to maintain good nutrition and strength.

BENEFICIAL.

Soup.—Small cup bouillon or clea soup at dinner.

Fish.—Fresh fish except those containing much fatty matter, preferably boiled.

DETRIMENTAL

Soups, except as above, salmon, blue-fish, eels, salt fish, pork, veal, sausage, made dishes, fats, potatoes, macaroni, oatmeal, hominy, spices, rice, beets, carrots, turnips, parsnips, puddings, pies,

Meats.—Lean beef, mutton or lamb, chicken, all sparingly.

Eggs.—Boiled or poached on toast.

Farinaceous.—Stale bread, dry toast, sparingly.

Vegetables.—Spinach, asparagus, cauliflower, onions, white cabbage, celery, tomatoes, radishes, olives, lettuce, cresses.

Desserts.—Jellies made with gelatin.

Fruits.—Fresh ripe fruits—acid fruits preferable.

Fluids.—At meals one cup tea or coffee, without milk, cream or sugar, or one glass pure water sipped at end of meal. Hot water freely between meals.

pastry, cakes, sugars, sweets, milk, cream, malt or spirituous liquors, beers, sweet wines, champagne.

PHTHISIS (Consumption).

General Rules.—

BENEFICIAL.

Soups.—Turtle soup, oyster soup, clam or chicken broth, puree of barley, rice, peas, beans, cream of celery or tomato, whole beef tea, peptonised milk gruel.

Fish.—All kinds of fresh fish, boiled, broiled or baked, oysters and clams raw (soft portions), also roasted or steamed or broiled.

Meats.—Rare roast beef or mutton, lamb chops, tender steaks, hamburger steak (rare), ham, fat bacon, sweetbread, poultry, raw pulped mutton or beef (scraped, pounded, put through sieve), or meat juice from slightly broiled steak.

Eggs.—Raw, soft-boiled, poached, any way acceptable except fried or hard boiled.

Farinaceous.—Oatmeal, wheaten grits, cornmeal mush, hominy, rice, with milk or cream, whole wheat bread, corn bread, milk toast, biscuits, muffins, gems, etc.

Vegetables.—Nearly all if non-irritating, potatoes, baked, boiled, creamed, fresh green peas, beans, spinach, onions, asparagus, tomatoes, all well-cooked, preferably steamed to avoid loss of salts in boiling, lettuce, celery. Cream butter,

DETRIMENTAL

Fried foods, salt fish, hashes, gravies, highly seasoned dishes, veal, pork, carrots, parsnips, cabbage, beets, turnips, cucumbers, macaroni, spaghetti, sweets, pies, pastry, sweet wines.



best olive oil may be used freely if agreeable.

Desserts.—Farina, sago, tapioca, plain or as simple puddings, floating islands, custards, baked or stewed apples with fresh cream, rice with cream, cooked fruits.

Fruits.—Fresh ripe fruits as desserts, or taken in morning or early part of the day, oranges, grapes, peaches, pears, etc.

Fluids.—Fresh milk, freely, sipped slowly, taken plain, peptonised, with cream added, with carbonated water, buttermilk, Bulgarian sour milk, cocoa, tea, coffee, lemonade, orange juice, pure water, Panopepton, Panopepton and whey, Laibose.

PREGNANCY.

General Rules.—

BENEFICIAL.

Soups.—Broths of mutton, chicken, oysters and clams, fish, when it agrees, raw oysters, raw clams.

Meats.—Beef, mutton, chicken, game, eggs, butter, fat, sweetbreads, ham.

Breadstuffs, etc.—Good wheat bread, corn bread, oatmeal, wheaten grits, rice.

Vegetables and Fruits.—Baked potatoes, spinach, macaroni, greens, cresses, celery, green peas, lettuce, asparagus, green corn, oranges, grapes, stewed fruit.

Drinks.—Water freely, cocoa, milk, tea, coffee.

Desserts.—None but the plainest.

Nursing Women.—During the first three or four days after delivery the diet should consist of liquid food made of cereal grains, with a small allowance of animal broths. After the bowels have been thoroughly opened, begin to resume the normal diet. Allow tender beef, mutton, chicken or game once a day, with baked potatoes and green vegetables. Wine, jelly, blanc mange and simple custards should constitute the desserts. At the end of ten days the

DETRIMENTAL

Pork, veal, indigestible meats, stews, gravies, made dishes, rich desserts, pastries, etc., coffee, stimulants, acid fruits.



regular meals should be given, consisting of the most nutritious and digestible substances. Cocoa and chocolate may be used.

PNEUMONIA.

Food must be carefully administered from the beginning without waiting for depression to come on. Beef juice, milk, milk-punch, egg-nogg, wine-whey, mutton or chicken broth, liquid peptonoids should be given systematically every three hours. In weak subjects stimulants are necessary from the onset.

RICKETS.

Good cow's milk, diluted by one-third to one-fourth of lime-water is the most suitable food. In older children the food should contain an abundance of animal fat, nitrogenous principles, and salt. The quantity of animal fat should amount to at least one-fourth of all the solid food taken, the nitrogenous food to one-third, and the starches to one-third. The fat is best administered in the form of cream or rich milk, but if this cannot be obtained cod-liver oil may be substituted. Raw or beef cooked very rare is one of the best articles of food in this disease for older children.

RHEUMATISM.

General Rules.—Avoid eating much meat. Drink plenty of water.

BENEFICIAL.

Soups.—Light broths in small quantities, of mutton, chicken, beef, oyster or clam broth, preferably without the oysters or clams.

Fish.—Fresh fish (whiter kinds), boiled, raw oysters, clams.

Eggs.—Soft-boiled, poached.

Meats.—The lighter kinds, chicken, sweetbread, calf's head, tripe, fat bacon, boiled ham, all sparingly.

Farinaceous.—Whole wheat, corn or brown bread, arrowroot, rice, dry toast, milk toast.

Vegetables.—The more digestible kinds, well-baked potato, well-cooked spinach, stewed celery, green peas, cabbage (well-boiled), lettuce.

DETRIMENTAL

Pork, veal, turkey, goose, duck, fried fish or meats, cooked oysters or clams, salted, dried, potted or preserved fish or meats (except fat bacon or ham), crabs, salmon, lobster, rich made dishes, gravies, meat extracts, tomatoes, beans, asparagus, mushrooms, candies, rich puddings, pies, pastry, nuts, cheese, coffee, cider, malt liquors, wines.

Desserts.—Simple puddings of rice or arrowroot with milk (no sugar), junket.

Fruits.—Fresh ripe fruits, stewed fruits without sugar.

Fluids.—Tea (without sugar), buttermilk, pure water, plain, or with lemon or lime juice, milk between meals, plain or peptonised, Bulgarian sour milk.

URIC ACID DIATHESIS.

Lithemia, Reno-Vesical Calculi.

General Rules.—

BENEFICIAL.

Soups.—Light soups from bone or bone marrow, clear vegetable broths.

Fish.—The whiter kinds of fresh fish, boiled, broiled, baked, soft portions of oysters and clams, *all restricted*.

Meats.—Beef steak freed from fat and connective tissue, fresh beef, lamb, mutton, chicken, boiled, broiled, roasted, bacon, *all restricted*.

Eggs.—Soft boiled, poached, prepared with milk, cream, butter or with cheese.

Farinaceous.—Cracked wheat, oatmeal, hominy, rice, sago, with milk or cream, macaroni, whole wheat, rye or graham bread, crackers, dry toast, butter sparingly.

Vegetables.—Nearly all fresh vegetables, peas, beans, spinach, cabbage, cauliflower, onion thoroughly boiled, asparagus, potato, celery, lettuce, light salads with oil and vinegar or lemon juice.

Desserts.—Light plain puddings, light fruit puddings, or with sauces of fruit juice, rice, sago and milk, junket, stewed fruits, baked apples, fresh ripe fruits (sometimes better taken in early part of day), nuts, almonds, figs, dates, honey, jelly, fresh cheese.

Fluids.—Tea, coffee, cocoa, *all restricted*, milk, plain, peptonised, skimmed, or with carbonic waters, buttermilk, Bulgarian sour milk, cream, toast water, pure water, cold or hot, fruit juices (unfermented), from grapes, apples, raspberries. Alkaline mineral waters, waters containing potassium or lithium salts, calcium carbonate, etc., as directed by physicians.

DETRIMENTAL.

Liver, sweetbread, veal, pork, goose, duck, turkey, dried, potted or preserved fish or meat, crabs, lobster, salmon, rich soups, meat broths, meat extracts, meat gravies, fried food, pastry, hot breads, confectionery, sweet potatoes, mushrooms, pickles, mustard, pepper, paprika, curry, horse-radish, parsley, rich puddings, heavy cheese, malt liquors, sweet wines, champagne.



VEGETABLE DIET

A vegetable diet, or vegetarian diet, in the the true sense of the word, is one that not only does not include meat, but does not even include such animal products as milk, butter, cheese and eggs. Even in the strict application of the term, such a diet commonly includes not only vegetables but all cereals, fruits, nuts and green food. As a matter of actual practice, however, such restrictions in diet are seldom observed and the "vegetarians" usually restrict themselves only in avoiding flesh, fish and fowl. In many instances they really depend very largely upon the use of eggs, milk and milk products to take the place of meat, and especially to supply the protein which gives meat its chief value.

There is no question that life, health and strength can be maintained on a meatless diet, and it is interesting to note that millions of people, especially in Asia, actually do live on a vegetarian diet, either exclusively or nearly so. The vegetarian diet is naturally a clean diet, and when satisfactorily balanced so as to supply all of the food elements required by the body is frequently found to be conducive to endurance. Many athletes have shown superior powers of endurance when on this diet, including Marathon runners, professional boxers and wrestlers, but at the same time it cannot be said that a vegetarian diet is always to be advised for the average man, inasmuch as it is most important that one should have a thorough knowledge of food values in order to make such a selection of foods as will provide perfect nutrition. Those who lose strength or weight on a vegetarian diet usually do so because they do not know how to find substitutes for meat.

The chief defect of a strict vegetable or vegetarian diet is its comparative lack of protein, which, of course, is supplied liberally by the meat and fish in the ordinary diet. (See Table of Food Values, page 1215.) Most vegetables contain a large percentage of water and considerable starch, but very little or no protein. They are valuable, however, for the ash or organic mineral salts which they contain. Fruits also contain very little protein. A diet of vegetables and fruits alone, therefore, would be inadequate to sustain life and energy for any length of time. The grains, however, especially wheat, rye and oats, contain a fair percentage of protein, and one can practically live on these alone, if necessary, though such a diet would be monotonous and probably less conducive to energy than a mixed diet that includes a good variety. Cereals, however, naturally form an important part of a vegetarian diet, although it appears that in the case of white flour a considerable part of the protein of the wheat has been lost in the process of milling.

Nuts are rich in both protein and fats and therefore make a splendid substitute for meat. Like fruits, they are eaten uncooked or in their "natural" state. Some vegetarian theorists even advocate a "back to nature" life, in which one would be supposed to live on an exclusive diet of nuts and fruits. In some cases, however, nuts are found hard to digest, especially if the digestion is weak.

Among the vegetables an exception to the rule is found in the legumes,

including peas, beans and lentils. These have a high percentage of protein, especially in their ripened or dried condition, and make a very good substitute for meat. The familiar baked beans, therefore, have a real strength building value. Peanuts should properly be classed with the legumes, for they do not strictly belong to the family of nuts.

It will be seen from the above that a strict vegetarian diet offers a comparatively limited supply of protein, which may be regarded as the building material for the muscles and various other tissues of the body, but does supply freely the energy and heat-producing elements, particularly the carbohydrates, starch and sugar. Most vegetarians, therefore, use eggs, milk and cheese to a considerable extent to supply the protein. If properly balanced in this way this diet is usually satisfactory. One may, of course, secure sufficient protein on a strict vegetarian diet by using plenty of nuts, beans, peas and lentils and the products of whole wheat, rye and oats. According to the best opinion on the subject, however, the animal proteins are more easily digested and assimilated. One secures energy from the animal foods with less expenditure of energy in the process of digestion.

There are certain conditions in which a vegetarian diet is especially valuable, though it is usually best to follow any strict diet of this kind for only a limited time. Where there is rheumatism, disease of the thyroid gland, Bright's disease, or any other disorder due to excessive accumulations of uric acid or difficulty in the assimilation of protein it is well to use very little or no meat. A strict diet of fruit or of vegetables in such cases may frequently be found to have good results.

Vegetables and fruits are especially valuable for their supply of the mineral salts. These are needed only in small quantities, but in these quantities they are absolutely essential and when the diet is deficient in this respect serious conditions arise. It is now held by many investigators that such diseases as scurvy, beri-beri and pellagra are chiefly due to starvation in respect to these particular elements, and are curable by the free use of fresh vegetables and fruits containing these organic salts in abundance. Green salads are extremely valuable on this account. In order to preserve the mineral salts in the cooking of vegetables it is important that the water should not be thrown away, for the salts are largely dissolved in the boiling water and then lost in the process of draining. Very little water should be used in cooking, boiling slowly or steaming, and this liquid should be served with the vegetables.

All foods should be used, as nearly as possible, in their natural form in order to secure these organic salts. Whole wheat flour should be used instead of white flour; unpolished, natural rice instead of polished rice; brown sugar in place of white sugar. The refinement of food, while making it more attractive in appearance, invariably robs it of much of its nutritious character. When using a vegetarian diet it is especially important to consider these requirements.

PART IV OF BOOK VII

Tells how to care for the aged, giving diets, exercises and palliative remedies for many minor ills to which they are peculiarly subject.

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THE SICK ROOM IN THE HOME

PART IV.

HEALTH AND CARE OF THE MATURE AND AGED.

Preservation of Health.—The preservation of health is sought by all wise persons, and the sweeping advances made by medicine in the past century, together with the better understanding of the masses, makes it possible to lessen disease, to minimize its evil effects, and to preserve the separate organs from involvement.

Patients Must Assist.—An educated physician has wonderful powers, but he can use but half his knowledge if he has no assistance from the patient or the patient's family. The physician recommends certain foods and advises against certain habits. An intelligent man will follow this advice to the letter. As regards many conditions, the reader can find ample advice in these pages.

Moderation.—All through life one word sums up the rule which all should heed. That word is moderation.

Temperance is almost a synonym.

Be temperate in food as well as in drink; in exercise and in work; even in sleep and rest, moderation is the word.

Effects of Immoderation.—Too much meat, too much pastry, too much tea or coffee, too little sleep, too heavy work and the blood is surcharged with deleterious material which is deposited in the various organs and tissues of the body and premature old age comes on, or the organs fail to functionate, and death comes years ahead of its time. Even in acute illnesses which are determined in their course in the first few days of the disease, constitution plays a most important part. This constitution may be inherited—a cause for congratulation—or it may be acquired.

Healthy Ancestry.—To obtain a good physique one should have healthy ancestors. For this purpose—to insure as healthy an ancestry as possible to coming generations—the most intelligent men of our times are agitating the passage and enforcement of laws prohibiting the marriage of the physically or mentally unsound.

Inherited Consumption.—Consumptives should not marry, or if they marry, should not create or bear children to inherit the weakened constitutions and to look forward to the same early and revolting death that their parents have had.

Care in Inherited Consumption.—If, on the other hand, such a family

history has preceded one's advent into this world, attention to every detail in the development of the body and to maintaining that condition of health which results, will usually lengthen the days and the reward will be worth all the struggle and effort. Climate, an outside life, temperance in all things, and the careful trial and development of the weakened parts of the body are essential to improvement.

Criminals Should not Have Children.—That criminals should not create offspring is most widely accepted. How to prevent this is the question that has excited discussion for several decades among learned men. That the vast majority of our criminals are the children of other criminals is acknowledged.

Children of Criminals.—A large number of their children are epileptics or idiots. With this horde of "misfits" in the community, there is a constant drag backward on the wheels of progress. Emasculation is the remedy most certain, and is offered by the most enlightened and advanced men in the world, but few among the masses are prepared to accept so severe a measure. Many people fail even in this day to realize that duty to mankind is above duty to individual man.

Cleansing the World of Disease.—The above paragraphs—on consumption and on criminals—are but hints to the thinking, and if followed to their natural conclusion will demonstrate the necessity of cleansing the world of disease by allowing those who are afflicted to live out their lives as comfortably and as happily as they can, only prohibiting them from perpetuating their kind, which they should have no desire to do anyway if they realize the sort of offspring that will surely be given them.

Care in Different Stages of Life.—In the third decade of life many excesses in work or in dissipation may be indulged in without any immediate ill resulting, but the fourth or at latest the fifth decade will show that all excesses must be paid for to the full. I do not mean to encourage laziness, for activity in business and in pleasure are as useful as can be.

Value of Recreation.—Vacations are a help and should be spent away from one's work and among new and novel scenes. Recreation from work and worry helps to lengthen one's days. Brain workers especially must throw off completely all thoughts of their work at frequent intervals and refresh their minds, and thus their bodies, with new or entirely different occupations. The return to work will reveal an increased power and interest.

Value of Sports.—Golf, hunting, fishing, and the various simpler sports are of value to a mature man or woman, acting both mentally and physi-

cally toward the well-being of the individual. No one should consider themselves old so long as they can possibly enjoy the milder sports of life. Some men are young at seventy—yes, even at eighty—while some are old at sixty. “A man is as old as his arteries,” says someone, and it is true that some men are older at thirty than others are at fifty.

Avoid Worrying.—Don't worry. It ages yourself and all your friends. A woman who thinks herself a compact bundle of symptoms looks old, is old, but unfortunately does not die soon enough to allow her friends to enjoy a little youth.

THE AGED.

Prolonging Life.—In older times the alchemists claimed to have discovered the elixir of life. They said that old age might be retarded and life greatly prolonged by means of an elixir having the power of preventing or suspending physical decay.

The possibility of prolonging life has in all ages been noticed by great thinkers.

The Organs in Old Age.—The latest scientific knowledge in regard to this subject may be stated as follows: The principal characteristics of old age, as demonstrated by anatomical research, are a deposition of fibrinous, gelatinous, and earthy material in the system. Every organ of the body, during old age, is especially prone to ossific deposits. The earthy deposits have been found to consist primarily of phosphates and carbonates of lime combined with other calcareous salts.

Bone Hardening in Old Age.—Man begins in a gelatinous and ends in an osseous or bony condition. From the cradle to the grave a gradual process of ossification is undoubtedly present; but after passing middle age the ossific tendency becomes more markedly developed until it finally ushers in senile decrepitude. These earthy deposits during old age materially interfere with the due performance of function by the organs; hence we find imperfect circulation in the aged; the heart gradually becomes ossified; the large blood-vessels blocked up with calcareous matter, and nutrition hindered.

Changes Which Produce Old Age.—“If repair was always equal to waste, life would only terminate by accident.” It is the opinion of eminent scientists that the majority of all who pass sixty-five years suffer more or less from these ossific deposits. Therefore, bearing these facts in mind, it is plain that the real change which produces old age is, in truth, nothing more nor less than a slow but steady accumulation of calcareous matter

throughout the system; and it is owing to these deposits that the structure of every organ is altered, elasticity thus giving way to senile rigidity. Blockage of various organs is thus commenced, and sooner or later a vital part becomes involved, and death of necessity follows. The idea that old age was brought about simply, or at all, by a decline of the vital principle, has long since been discarded by scientists, and the true cause found to be that of gradual disintegration of the tissues because of the inadequate supply of blood.

The feebleness of old age, therefore, being due to nothing more nor less than ossific deposits, it is well for a moment to look for the causes and influences leading to the condition described.

THE CAUSES OF OLD AGE AND THEIR AVOIDANCE.

The two principal causes of old age are, first, fibrinous and gelatinous substances; and second, calcareous deposits. According to recent researches, the origin of the first, the fibrinous and gelatinous, may undoubtedly be traced to the destruction of atmospheric oxygen.

Fibrin Blockades Life.—Although unquestionably fibrin nourishes the organs of our body, yet it becomes at times, as we reach the cool and shady walks in the evening of life, accumulated in redundant quantity, blockading the streams of life as do the chilling winds of winter the mountain rivulets.

Proportion of Chalky Matter—The calcareous deposits are proved to be caused by gradual deposition from the water which forms so large a part (70 per cent.) of the human system, and to be introduced by means of food.

Foods and Chalky Matter.—As a matter of fact, everything we eat does contain these calcareous matters to a greater or less degree. The cereals are found most rich in them; so bread itself, the so-called staff of life, except in great moderation, most assuredly favors the deposition of these salts in the system. The more nitrogenous our food, the greater its percentage of calcareous matter; thus a diet composed principally of fruit, from its lack of nitrogen, is best adapted for preventing or suspending ossification.

Effects of Overeating.—Moderation in eating, then, must ever be of great value as an agent for retarding the advent of senile decay. Large eaters more rapidly bring on ossific deposits by taking in more than is

utilized or excreted, naturally resulting in blockading the vessels and destroying their normal functions.

Best Foods for the Aged.—According to the best authorities, the following seem to be the best articles of food as containing the least of earthy salts: Fruit, fish, poultry, flesh of young mutton and beef; because, as before stated, they are much less nitrogenous. Fluids, as part of the diet, are of special import. All well and spring water contains considerable of the earthy salts, and should therefore be avoided and cistern water used in its stead, because water is the most universal solvent known.

How to Dissolve Salts.—Therefore, if when taken into the system clear of foreign matter, it is to that extent the better prepared to dissolve and take up those earthy salts and convey them out of the system. The addition of fifteen or twenty drops of dilute phosphoric acid to the glass of water, and drunk three times a day, will add to the solubility of these earthy salts.

RULES FOR THE CARE OF THE AGED.

1. The aged should not endeavor to perform the feats of agility, strength, endurance, and “of digestion,” which were once their pride, especially during the extreme heat of summer.

2. The aged should avoid torpor of the bowels and constipation. Straining at stool may cause apoplexy.

3. Do not give up all mental and bodily work.

4. In the chill of any evening, or of early autumn, the aged need fire. Many an otherwise long life is cut short from neglect of this rule, by an attack of some form of lung inflammation.

5. Life can be prolonged, without a doubt, by a proper change of climate and of scene. The flickering flame of life can be protected from going out by a careful hand.

6. All warnings of weakness, or oncoming sickness, or decay, should at once be noticed by the aged, and due precaution and proper treatment instituted at once.

FOOD IN OLD AGE.

What Food to Avoid.—We eat to live or should eat to that purpose, and as one grows old there is all the greater demand from Mother Nature that we adhere to this rule. Sir H. Thompson, in his book on Diet in Relation to Age and Activity, says that if a man past his half century of life “continues to consume the same abundant breakfasts, substantial lunches and heavy dinners which at the summit of his power he could dispose of

almost with impunity, he will in time either accumulate fat or become acquainted with gout or rheumatism, or show signs of unhealthy deposit of some kind in some part of the body-processes which must inevitably empoison, undermine, or shorten his remaining term of life. . . . The typical man of eighty or ninety years is lean and spare and lives on slender rations."

Three Diet Rules.—Prof. W. Gilman Thompson, M.D., of New York, in his classic work on dietetics gives three rules to be observed in the dietetic treatment of old age. These are:

"1. To diminish the total quantity of food ingested.

"2. To give food at frequent intervals in small amounts.

"3. To give only digestible food, which does not produce too large a residue of waste mater, either in the intestinal canal or in the form of excrementitious material in the blood."

A Nature Hint.—Meats and tough vegetables are to be avoided and Mother Nature gives us a hint of this by taking away our teeth. This does not mean that the aged are to be kept on a fluid diet, for mastication is of use in promoting the salivary flow.

Liquid Tonic.—"Malt liquors are very good for the aged, and a moderate amount of alcohol acts as a tonic and supplies them with needed energy for digestion and other functions."

Minced Foods.—Yeo's suggestions as to diet in the aged are worthy of quoting in full:

"Of animal foods best suited for this time of life the following may be mentioned. When the organs of mastication are altogether inefficient these foods should be minced or pounded into a paste or otherwise finely subdivided:

List of Foods for the Aged.—"1. Young and tender chicken and game and other meats.

"2. Potted chicken, game and other meats, sweetbread.

"3. White fish, as soles, whiting, smelts, flounders, and so forth. Best when broiled.

"4. Bacon, grilled; eggs lightly cooked or beaten up with milk, and so forth.

"5. Nutritious soups, such as chicken purees, or fish purees, beef tea, mutton and chicken broths.

"6. Milk in all forms, when easily digested.

"7. Beef tea and milk supply the needed mineral substances, and the former is an excellent stimulant.

"8. The addition to milk of an equal quantity of Vichy water, warm, or of warm water, will often help to make it agree.

Vegetable Food.—"1. Of vegetable foods the following are all suitable.

"2. Bread and milk made with the crumbs of stale bread and without any lumps.

"3. Porridge and oatmeal gruel.

"4. Puddings of ground rice, tapioca, arrow-root, sago macaroni with milk or eggs and flavored with some warm spices, or served with fruit juice or jelly; bread and butter, at least a day old; rusks for soaking in tea, or milk, or water.

Artificial Foods.—"1. Artificial foods, consisting of predigested starches. The digestive ferments are scantily provided by the digestive organs at this age, and soluble carbohydrates are valuable for maintaining the body heat.

"2. All farinaceous foods should be submitted to a high temperature for some time so as to render the starch granules more easy of digestion.

"3. Vegetable purees of all kinds may be taken in moderation—*e. g.*, potatoes, carrots, spinach and other succulent vegetables.

"4. It is important that the use of potatoes and fresh vegetables should not be neglected; otherwise a scorbutic state of the body may be engendered.

"5. Stewed celery and stewed Spanish or Portugal onions.

"6. Stewed or baked fruits and fruit jellies and the pulp of perfectly ripe raw fruits in small quantity.

Counteracting Acidity.—"The acidity of certain stewed fruits may be advantageously neutralized by the addition of a little bicarbonate of soda so as to avoid the use of a large quantity of cane sugar to sweeten it, as this is apt to cause gastric fermentation and acidity. In stewing fruit about as much soda as will cover a shilling should be added to each pound of fruit.

Use of Condiments.—"Aged persons often require their foods to be accompanied with some kind of condiment, which promotes their digestion and prevents flatulence.

"Caviare and the roes of smoked and salted herrings are of this nature.

Sweetenings.—"For sweetening food milk sugar is much less prone to excite acid fermentation than cane sugar.

Digestible Form of Fat.—"A very digestible form of fat, when it is

needed, is cream mixed with an equal quantity of hot water and about ten drops of sal volatile to each fluid ounce."

General Diet Required.—It is but fair to all concerned that I submit the teachings of Dr. J. Boy-Teissier, of Marseilles, who, in the most recent and complete work on this subject, handles the theme and the patient in a different manner entirely. As to diet, he says: "I do not think that a special diet is necessary. We must not forget that the normal old man is not a patient; all the functions of the adult exist also in the old man, only in a diminished degree; the functions are the same, but their activity only is lessened. . . . We must regulate the quantity of food and adapt it to the degree of senilization. . . . It is useless and even dangerous in the case of old people to try to maintain the strength at high point by means of alimentation.

A Diet of Maintenance.—"In a general way, having no longer an active life to lead, the old man has need merely of a diet of maintenance . . . watch . . . over the performance of the excretory functions; as long as the weight does not vary, and as long as the urea represents the quantity of nitrogen contained in the food we may regard it as certain that there is a perfect equilibrium and that the alimentation of the old man is sufficient."

Cautious Use of Wines.—Boy-Teissier does not subscribe to the saying that wine is the milk of the aged, but advises great caution in its use.

The Aged Should not House Themselves.—This same author advocates plenty of fresh air for the normal old man. So many old people house themselves up and shut out from their blood the pure air which they need even more in their old age than when younger. If diseases of the lungs forbid exposure, heed should be given, but the normal old person should have fresh air, and also all the sunshine he can get.

Clothing of the Aged.—The clothing should not be heavy, but rather light. It should, however, be warm and comfortable. Bundling should be avoided in the latter days as in all the other days of life. The warmest place in the chimney has always been reserved for the grandparent, but this is a mistaken kindness, for it only increases his tendency to inaction.

Muscular Exercise.—To counterbalance this tendency to inaction, which means a retarding of the combustion of the products of nutrition, muscular exercise should be insisted upon. Care should be had lest this be overdone, but the old man should be forced to exercise.

Medical Care.—I have written here of normal old age, and it is the

old age we all look forward to. Few attain it and those who grow old with some organs of the body more advanced in the aging process than others, find that they need almost constant medical supervision to help them live longer and to be more comfortable while they live.

Natural Death.—"Above all modes of dying is that which we must call natural death, physiological death, that which necessarily and happily terminates existence. This death is gentle and calm, for it is free from all painful manifestations; it is, therefore, desirable, and all our efforts ought to be directed to its attainment. We should try to have it accepted as a happy event. . . . I have not to occupy myself with the value of life. Most commonly, I believe, it is worth only what we make it worth.

When Death is Welcome.—"But after having seen that all the vital phenomena have fulfilled their evolution, we may justly believe that this final act, that which is accomplished naturally, without our having had any responsibility in its hastening or retardation, that which terminates the series of organic acts, ought to be regarded as welcome."—*Boy-Teissier*.

CARE OF THE EYES.

To take proper care of the eyes is to do all we can to avoid such diseases as are avoidable. To do this we should know something about the eye and its diseases, descriptions of which have been given in Book IV—Part IV.

Near-Sightedness.—Boys often discover their near-sightedness by finding that their playmates can read signs and see clocks and faces at much greater distances than they can. Near-sightedness is a growing defect among young people and may be corrected in part by looking at distant objects in the heaven or on the ocean.

Weak Sight.—Fatigue of the eyes during or after the use of them is the first symptom of weak sight. This is more noticeable at first after reading, writing or sewing in the evening; soon the same fatigue is noticed after similar occupation in daytime. In time this fatigue comes on immediately after attempting to read or sew, and, if work is continued, pain and confusion of vision follow; letters run together, lines are blurred and indistinct. Weak sight is simply a disorder of the muscular apparatus of the eyes.

There are four striking symptoms by which we may judge that the eyes are being injured:

1. Redness of the eyelids and eyeballs.

2. Pain in the eyes.
3. Indistinct or imperfect vision.
4. Frontal or other headaches.

In health the muscles act in perfect harmony, but if these muscles are overworked, fatigued or sensitive they do not act harmoniously, and weak sight is the result.

Never Use Imperfect Light.—Never use an imperfect light. What is an imperfect light?

1. Deficient amount of light, as in the early morning or twilight, or an artificial light far distant, or a very small artificial light, or light far from a window which is too small for the room and for a dark day. When the light is such as to render it difficult to see the work or print before us a proper regard for the preservation of vision will compel the immediate stopping of the work.

2. Light may be imperfect from its unsteadiness. It is this quality that renders the electric light harmful to vision. Gas light often exhibits a degree of flickering very trying to the eyes.

3. The light may be steady but the car or carriage in which we are seated may move. The attempt to read in the cars is a fruitful source of injury to the eyes.

4. The practice of reading while in a reclining position upon a lounge or in a bed causes the light to enter the eye at such an angle as to require an undue amount of effort in order to see distinctly for a long time. Such a position should always be avoided.

When possible the light should fall upon the printed page or upon our work from the left side of the body and from behind the shoulders.

How to Preserve Good Sight.—1. Act as if the eyesight were of more importance than any other thing on earth.

2. Have your child's eyes carefully examined by an expert before it is given specific tasks to perform calling for the full exercise of healthy eyes. If the eyes are found defective then grade the tasks according to the nature of the defect.

3. Never use the eyes when such use causes pain in these organs or in the head.

4. Never use the eyes when imperfectly supplied with blood, as before breakfast, when exhausted after a severe illness, and so forth.

5. Never use the eyes for close work in an imperfect light.

6. Avoid the excessive use of alcohol and tobacco.

7. Heed the warning given by redness of the eyelids and of the whites

of the eyes; by pain in or about the eye; by the continuance of indistinct vision for any considerable time.

8. Regard the eyes as part of a very complex system of apparatuses, the best health of all being absolutely needful for the best health of each.

9. Remember that we do not see with the eye, but with the brain. Hence after the brain is exhausted it is impossible to really see.

Use of Spectacles and Eye-Glasses.—Weak sight is very often due to defective form of the eyeball itself, it being too flat, too full, or of irregular form. In cases of defective eyeballs, beside following the advice given above, the imperfect shape must be neutralized by the scientific adaptation of spectacles. It is quite wrong to depend upon your own judgment in this matter or to procure your glasses from a traveling peddler of spectacles. For elderly people, spectacles are usually preferred to eyeglasses, except for occasional use. For long use spectacles are more comfortable.

Blue or smoked glasses in weak sight, when there is much dread of light. Their use should be confined chiefly to wear in bright sunlight on the snow, sand or water. For reading, colored glasses should not be too dark in tint, as too much exertion is required to see clearly through them.

Contagious Eye Diseases.—It should be borne in mind that diseases of the lids or eyes attended with a pus discharge are contagious. Those suffering with such a disease should be kept apart from others and great attention should be paid to cleanliness. Towels and washing material should not be used in common.

Common Eye Accidents.—Those who work where splinters of metal or stone are liable to strike the eye should wear spectacles at their work. Spectacles of ordinary glass are a good protection against cinders in traveling. Eye-stones are nothing but smoothly-worn pebbles. It is not best to use them. It is not common-sense treatment to cure an irritable eye, suffering from a foreign body, by placing another foreign body therein.

Removing Cinders.—A cinder or other foreign body may often be displaced by quietly and steadily looking downward at your feet, letting the tears that form wash out the irritating substance. If the foreign body sticks on the ball it sometimes can be readily wiped off with a piece of paper twisted to a lamp-lighter shape or the free end of a common match. If it does not come off easily professional aid must be secured as great harm may be done the beautiful, transparent front of the eye by the use of sharp instruments in unskilled hands.

If quick-lime or mortar has fallen into the eyes, the best plan is to

drop in some olive oil at once. The eye then may be washed out with warm water to wash away all the particles of lime. This can be best done with a small syringe. If acid has gotten into the eyes use milk and water at once and in the same manner.

CARE OF THE EAR.

Prime Rules.—1. Act as if hearing were of more importance than any other thing on earth.

2. Refrain from use of the ear when it causes pain, choosing quiet places and deadening sound by the use of cotton plugs.

3. Avoid all such injuries to the ears as result from slapping, pulling, and very loud and sudden noises.

4. Keep out of the external ear all things smaller than the forefinger, or stiffer than a towel or handkerchief.

5. Keep out of the ear all oils, all soaps, all cold water and everything else recommended by kind but mistaken friends; especially never apply a poultice to the ear for the relief of pain. Dry heat will do all that moist heat can do to relieve and be free from the danger of absolutely destroying the drum of the ear.

Cleansing the Ear.—In health, the deeper parts of the ear can be left to take care of themselves. The orifice of the canal is to be cleansed in precisely the same manner as any other depressed portion of the surface of the body—that is, with a wet sponge or cloth.

CARE OF THE SKIN.

Every-day Washing.—Every-day washing should be the rule the year round, but particularly so in summer. Ablution of the person sufficient for cleanliness may easily be made to act also as a proper stimulant by using a rapid sponge bath, followed by quick rubbing for a few moments with a towel of such texture as can be borne without irritation. The skin will not bear the frictions of a lintish towel so well in summer as in winter. Invalids should avoid chilling the body; simple and generally healthful as bathing is, it cannot be trifled with. Many a good man or woman has unwittingly committed suicide with water.

Daily Attention to Feet.—If the person is very feeble and very sensitive to the application of water such an one can attend to one part of the body one day and another the next. It is well, however, to give daily attention to the feet. The feet perform a large part of our bodily labor, and

the excretion from them is so great that particular care should be taken to keep them clean. Warm sponging followed by friction is more suitable for cleansing the skin of dirt and for the delicate invalid and child.

Use of Soap.—The amount of soap used in the toilet depends upon the delicacy of the skin and the exposure to which it has been subjected. Those who have oily skins depending upon well-developed and active oil-glands require much more soap than those having harsh and dry skins lacking in oily secretion.

Cautious Use of Soap.—Daily application of soap to the face is not necessary unless one is exposed to considerable dust and dirt. Hot water and a coarse washrag with thorough rubbing and followed by cold water and more thorough rubbing will stimulate the skin and make it healthier than the excessive use of soap to remove invisible dirt. Many cases of “black-heads” and postular eruptions of the face have been benefited by stopping the use of soap on the face.

Removing Face-Shine.—Clean fine white velvet is an elegant substitute for powders to remove the shine on the face. Chamois skin is used for the same purpose.

Cosmetics.—Cosmetics are substances applied to the skin, hair, teeth, nails, and so forth, to improve their appearance. None of them are essential to health; the great majority are positively harmful. Health and strength give the beauty that is appreciated by all men and women of refinement.

CARE OF THE HAIR.

Attention to the Scalp.—The preservation of the hair depends upon a number of things, and chief of these is the condition of the scalp which is the soil in this case. The scalp should be thick and movable and massage will help to develop this part of the body as it does other parts. So shampooing does double duty, cleansing and massaging. The brush does the same work in a different way and neither should be neglected.

Cleansing the Hair.—Cleanliness is the first requisite in the management of the hair. There is no danger that the scalp will be washed too often. Shampooing should be done as often as the hair is dirty. At least once a month the head should be thoroughly washed and the hairs cleaned down to their roots. Any good soap may be used, but there is not one that is purer than the white castile. Tincture of green soap is a reliable and satisfactory soap.

Brushing the Hair.—The hair should be brushed several times a day,

at least in the morning and evening, and for several minutes at each time, until there is a feeling of warmth in the scalp. Adults should use a stiff brush and children or those with thin hair or a tender scalp a soft brush. Never brush hard enough to make the head sore.

Good Combs.—Combs should be preferably coarse and used to disentangle the hair, not to cleanse it. The teeth should be well made and not ragged, as they will then tear and pull out the hair. Never try to comb dandruff out of the hair. It should be brushed out or washed out.

Crimping.—Crimping the hair causes it to break and crack. This may be a matter of considerable importance in elderly women in whom the hair is beginning to fall and thin out, for this will hasten the fall and cause more or less baldness.

Grayness.—Women usually preserve the color of the hair longer than men. Fair hair falls out sooner than black, but does not become gray so soon. Premature grayness of the hair is often produced by debility, anxiety or severe illness.

Baldness.—If from any cause the hair papilla becomes diseased or debilitated it either ceases to produce the hair or each successive hair becomes shorter, finer and more brief in its life, until, finally, atrophy of the hair follicles occurs and the hair is dead. Under ordinary circumstances the hair of the head begins to thin out between the ages of thirty and forty and this thinning proceeds slowly but steadily during the rest of the individual's life. Those who are affected with dandruff should pay immediate attention to the condition, otherwise the hair will begin to fall out and baldness result. Baldness can occur without the occurrence of dandruff, and, again, the hair remains thick and strong in some persons whose heads are full of dandruff. The baldness occurring in connection with fevers, skin diseases of the scalp, and so forth, is only temporary; the bulbs are not destroyed and the hair is again reproduced. In elderly persons, after sickness, the hair may not return to its full former condition.

Hair Invigorators.—When the falling of the hair has been caused by some fever or other illness the remedies used for relief are stimulants—something to increase the blood supply to the scalp. These are called hair invigorators. We would caution the reader against the use of all patent, advertised hair remedies. A simple and harmless “invigorator” is as follows:

Formula for a Good Hair Invigorator.—

Cologne water	2 ounces
Tincture of cantharides	2 drachms
Oil of lavender	10 drops
Oil of rosemary	10 drops

Use once or twice a day. If it makes the scalp a little sore, discontinue its use for a short time.

To Cleanse Hair of Dandruff.—Rub in well the yolk of an egg. Wash out with castile soap, rinse with cold water and dry well. The egg combines with the grease and dirt and gives the scalp a thorough cleansing.

A Good Wash for the Hair.—

Vinegar	2 ounces
Salt of tartar	2 drachms
Spirits of lavender	½ ounce
Spirits of rosemary	1 ounce
Spirits of nutmeg	½ ounce
Essence of almonds	1 drachm
Essence of violets	1 drachm
Pure spring water	20 ounces

Mix and bottle for use. This makes, as well, a cool and refreshing perfume.

CARE OF THE TEETH.

Attention to the teeth should begin early in life, even during the period of first teeth. Decay of the “milk” teeth should be prevented and filling is just as important as with the permanent set. The temporary teeth must be removed in due time if they do not fall out themselves, and the permanent ones must be trained to fill their places. The teeth should be cleansed five times a day—morning, bedtime and after each meal. A soft brush is better than a stiff one so as not to wound the gums. The best dentrifice is water; sometimes a little prepared chalk or white castile soap may be used. The too frequent use of powders containing cuttlefish bone or charcoal will injure the enamel of the teeth. When the gums are tender and tend to bleed add a few drops of tincture of myrrh to the water. Avoid all patent tooth powders and washes. It is a good rule to visit the dentist once each season to find out the exact condition of these important organs. Never lose a tooth if art can save it. The shape of the jaw and face is altered by the removal of teeth. When, by reason of a collection of tartar on the teeth a powder is desired for its removal, the following will be found useful and agreeable:

Tooth Powder.—

Powdered sugar	2 drachms
Precipitate of chalk	2 ounces
Orris root	2 drachms
Bicarbonate soda	1 drachm

Mix and flavor with oil of rose or oil of teaberry.

Care of the Mouth.—After the teeth have been cleansed, a valuable addition to the toilet is a mild and pleasant antiseptic mouth wash, which sweetens the mouth and by its action on disease-producing organisms purifies the mucous lining and acts against the decomposition of the food debris which the most careful attention to the teeth cannot completely remove.

Antiseptic Mouth Wash.—

R.—Boric acid	10 grains
Resorcin	4 grains
Salol	2 grains
Thymol	$\frac{1}{2}$ grain
Glycerine	$\frac{1}{2}$ drachm
Pure water	2 ounces

Care of the Feet.—The feet are subject to many diseases, but the most common ones—ingrowing nails, corns and bunions—are due to neglect of a few simple rules which nearly all adults know. Fashion decrees that certain shapes must be worn, and the poor foot, willing to toil and bear, is pressed and pulled out of shape by misshaped shoes.

Shoes.—1. Should be neither too large nor too small. They should fit snugly but comfortably all parts of the foot.

2. The heels should be placed well back under the human heel.

3. The soles should be reasonably thick. In winter heavy soles have many advantages that are apparent.

4. Patent leather and other forms of non-porous leather are injurious as they prevent the dissipation of natural sweat. The retention of this sweat increases the tendency to soft corns and to sore feet.

5. Slippers and low shoes are to be worn only in warm weather. They expose the blood at the ankles and so encourage colds.

The toe-nails should be cut regularly and carefully. Overshoes should always be worn in wet weather. Ladies often go without them in damp weather, relying upon the thickness of the soles of their shoes, and thus expose themselves to risks. A sheet of India-rubber is sometimes placed between the layers of leather in the soles of shoes, or felt or

cork soles are placed within the shoe. There is no objection to these, providing they do not supplant the rubber overshoes.

Ingrowing Toe-Nails—Causes.—Tight shoes and the cutting of the nails square are the causes. A tight sock may also be at fault. The skin is pressed over the sharp edge of the nail and ulceration results. The edge of the nail may become thickened or proud flesh may spring up at the point of ulceration.

Treatment.—“In mild or trivial cases the trimming or clipping of the free margin of the nail, scraping of the dorsal surface with a bit of glass or with a knife, so as to reduce its thickness and to produce a tendency to curling upward and backward of its lateral margins and the removal of any cuticle accumulated under the ingrowing edges of the nail are all that is required to give relief and prevent further progress. Pressure must be avoided. When ulceration has occurred a minute roll of lint shreadings should be neatly packed beneath the tender overhanging skin and ingrowing edge. Strapping is then applied so as to retain the lint and drag upon the overhanging integument and keep it pulled away from contact with the ingrowing edge. The lint may be removed in a few days and the space filled with boric acid, iodoform, lead nitrate, alum or zinc oxide.”

In severe cases avulsion of half or all the nail is required. This is a sure cure and a favorite with many physicians.

Corns.—A common corn is caused by friction or irritation of the skin from tight, loose or otherwise ill-fitting shoes, hard, stiff leather, large wrinkles over the joints, high heels that pitch the foot forward and keep it constantly bearing against the leather over the toes, and shoes narrow at the toes. In such cases the skin thickens and hardens to protect itself from injury in just the same way that it does upon the hands or other parts of the body exposed to rough contact.

Treatment.—Ordinary hard corns, when young, may be removed by scraping up the callous skin about the borders and prying out carefully with a penknife. It must be remembered for the successful treatment of corns proper foot covering must be worn. The shoes must be soft and of proper fit. Only such means can effect a radical cure. Corn cures and plasters are but a vexation if the laws of hygiene are not obeyed. The important part of treating corns is to relieve the pressure. Persons ill with a long fever, confined to their beds, have found their corns gone on getting from bed.

If the corn is between the toes the sole should be extra wide so that cotton may be put between the toes to keep them apart. Dr. Keller

(quoted in the *Therapeutic Gazette*) advises that the foot be soaked in hot water for fifteen minutes before bedtime, this followed by an application of salicylic acid in collodion, one part to three. This is repeated for five or six nights, each time removing all dead tissues with a knife after bathing. A drop of castor oil well rubbed in every night helps greatly.

Bunions.—**Cause.**—The great cause of bunions is the wearing of short and narrow-toed shoes, making a constant tendency to enlarge, widen and project the joint of the great toe. Bunions may prove a menace to life, especially in those past middle life. Repeated inflammations may finally go on to suppuration and this leave an ulcer which is most tedious to heal. This ulcer in those past middle age is liable to lead to erysipelas and senile gangrene. Amputation of this part of the foot has been necessary in some cases.

Treatment.—This is usually soothing. The deformity can seldom be overcome. Comfortable shoes are the things to be considered. When the bunion first appears and is characterized by simple thickening and a sensation to the examining finger as of fluid in a sack (which is just what is present), the bunion may be treated with flying blisters, tincture of iodine or strapping with mercurial ointment. If inflammation exists it should be treated as inflammation is treated elsewhere.

Chilblain or Frost-Bite.—Chilblains may be defined as an inflammation of the skin and underlying tissues due to cold. Anemic persons and those who are weakened from hunger or fatigue are more liable than their more fortunate fellows.

Symptoms.—First, redness accompanied by hypersensitiveness of the parts and tingling. This is soon followed by purplish lividity and diminished sensibility. Blanching with numbness supervenes. Next coagulation takes place and is characterized by the parts becoming hard, white, absolutely insensible. In very severe cases gangrene follows. The parts shrivel up and blacken. An inflammatory line of demarcation shows itself later.

Treatment.—In the stage of redness friction with a towel soaked in ice-water or with ice or snow should be resorted to until the congestion disappears, when the parts should be wrapped in cotton wool. The patient should not be taken into a warm room until after reaction has taken place.

Tonic treatment is indicated in nearly all cases and should consist of cod-liver oil, quinine or some such general tonic.

For the itching the following have been recommended:

Tincture of iodine; soap liniment or diluted turpentine.



PART I OF BOOK VIII

Treats of Sexology, giving much information which is valuable to young men and women entering upon or contemplating marriage.

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“TWILIGHT SLEEP”

OR, THE SCOPOLAMIN TREATMENT IN CHILDBIRTH

“Dämmerschlaf” or “Twilight Sleep” is the term given to a method of painless childbirth, discovered and perfected at the Frauenklinik at Freiburg, Germany, by Drs. Bernhard Krönig and Carl J. Gause, and accomplished through the use of scopolamin and morphine.

Credit for pioneer work along this line must be given to Sir James Young Simpson, a London physician, who in 1847 brought about the first spontaneous birth under artificial painlessness through the inhalation of sulphuric ether. Later he used chloroform, confining Queen Victoria in this manner in 1853. While chloroform is now extensively used in obstetrics where instruments are required, it is used only by a limited number of physicians to produce a partial anæsthesia, and thus give a measure of relief from pain, but without entirely preventing a natural childbirth.

Various other experiments have been made for producing a limited degree of narcosis in order to secure painlessness in confinement, though the Freiburg method, or “Dämmerschlaf,” seems to have been most successful. In France a new method was brought to light in 1914, about the time the great war broke out, in which *antalgésine* is used, discovered by a chemist, Georges Paulin, and later taken up by Ribemont-Dessaignes, head of Beaujon Maternity. In America the so-called “laughing-gas,” or nitrous oxide and oxygen, has been used with some success in various experiments, together with a dozen other anæsthetics.

The scopolamin-morphine method was first used at Freiburg in 1903. Later scopolamin was combined with nacrophin, another opium derivation. The result is a condition of semi-narcosis, sufficient to obliterate or ease the pain, but without producing complete insensibility, and without preventing the muscular contractions that are essential in natural childbirth. In other words, the condition induced is aptly expressed by the term “twilight sleep.” The chief characteristic is the loss of memory, even though the patient is conscious. The success of the treatment depends very largely upon the technique employed and upon the skillful adjustment or regulation of the successive doses of the drug. Many physicians have severely condemned the “twilight sleep,” but those who defend its use claim that unsatisfactory results are due entirely to faulty technique.

The most serious criticism bears on the alleged tendency of the treatment to affect the child injuriously, possibly causing asphyxiation, even though favorable to the mother. It is said that “blue babies” are likely to result, through the failure of the foramen ovale in the walls of the heart to close properly with the change in the child’s circulation, which normally takes place when respiration begins. In Freiburg, however, little trouble of this kind seems to have been encountered, and after a number of years the death rate of babies born at the Frauenklinik was cut from 3.4% to 1.3%. Success is achieved in about 80% of all cases.

Two special advantages are claimed for the “twilight sleep,” namely, the avoidance of the use of instruments in a majority of cases and the rapid recovery which seems to be made possible through the lack of the nervous shock and mental strain which ordinarily attends natural childbirth. It is claimed that painless childbirth will mean an increase in the birth rate, inasmuch as women will no longer dread the ordeal. The “twilight sleep” treatment seems especially suited to the requirements of nervous women.

Book VIII

SEXOLOGY

PART I.

COURTSHIP AND MATRIMONY.

Courtship.—The object of courtship should be to study dispositions and affinities, also mental and physical conditions. Falling in love first and then courting is substituting blindness for sight, folly for discretion.

Association.—Both young men and women should mingle freely in a social way before entering on courtship, for genuine courtship implies more or less direction of attention to a single person, and therefore a measure of social exclusion.

Length of Courtship.—Courtship should never be hasty. It should be prolonged until both parties are satisfied of the mutual existence of the qualities which will conduce to conjugal happiness.

Engagement.—Engagements should, as a rule, be brief. The spectacle of engaged couples trying each other's patience for years by delaying marriage is a pitiable one. The contract entered into becomes a mortgage without interest.

Affinity.—Affinity differs from love. It may exist in the marriage estate, and be productive of comfort and happiness in the absence of the sentiment of love. Yet it cannot be said that the converse of this ever, or, at least, frequently is true. Affinity rests on a variety of causes.

Mental Condition.—Mental affinity is necessary to married happiness. An ignorant man or woman should not mate with one of education, or vice versa. It cannot be said that such a union is devoid of all certainty as to happiness, but the chances for unhappiness are too great to risk.

Marriageable Age.—In temperate climates the proper marriageable age is not reached before maturity, when nature has completed and perfected the organic structure; that is to say, marriage may be entered

upon with propriety at from twenty to twenty-five years of age. Earlier marriage is likely to entail injury to health and comfort upon the wife; while marriage at a late period in life is apt to lead to puny and sickly children. Any material disproportion in the ages of man and wife should be avoided.

Marriage and Longevity.—It is a definitely ascertained result of marriage that it lengthens life, where the estate is entered upon with discretion, and conducted in a proper manner.

Ill Health and Marriage.—The marriage of unhealthy persons is liable to lead to distressing consequences. Hereditary transmission of diseases enters into the moral as well as physical order of things. This is especially true of consumptives and scrofulous people, who, as a rule, are prolific. Even if the exact hereditary taint does not pass to the offspring, there is liability to a train of the common diseases which mar comfort and destroy life.

Money and Marriage.—Marriages of convenience, that is, for money, ease or distinction, are to be deprecated. The fortune-hunter, pure and simple, is never a disinterested lover, nor a considerate life partner. The spirit of mercenariness, which prompts an alliance for convenience, grows by what it feeds upon, and is an enemy to conjugal harmony and happiness.

Religion.—Likeness in religious sentiment is necessary to conjugal happiness. It is not necessary that the man and wife should belong to the same church. What is meant is that there should be tolerance of the religious views and pious sentiments of each other. The indifferent man or woman, the intolerant, the mocking, the profane may speedily wreck the happiness, and even health, of a partner, for there is no sentiment that lies deeper, or is more sensitive, than that of piety and religion.

Tastes.—These should be so nearly akin in man and wife as to assure adaptability and accord. When a wife sees beauty in an object and a husband only ugliness, or when one is tidy and the other careless, there are constant grounds for reproachful differences, ending in unhappiness.

Mutuality.—In general, mutuality in the conjugal estate is a sharpener of love and respect, a helper to the further and fuller exercise of whatever ripens and completes manhood and womanhood, and conduces to the perfection of the estate.

Physical Characteristics.—Affinity, adaptability and all characteristics of a mental, moral and sentimental nature, which are generally recognized as essential to married happiness, do not necessarily include

physical likenesses. While two unhealthy people may not marry for fear of perpetuating disease in their offspring, such fear may not prevent the alliance of a sturdy constitution with a delicate one. Oftentimes marriage improves a delicate organization; at least, there is a possibility of the robust man or woman so modifying the condition of offspring as to eliminate hereditary disease tendencies, and produce a healthy generation.

Physical Forms.—Intercourse in the lower animals and in plants is so regulated by experts as to lead to great improvements in the species. This is equally possible in mankind. The tendency to over-proportion in male or female lines may be corrected by marriage of a large partner with one of small size. The same is true of complexions. The brunette may well marry with the blonde, with the hope of modifying parental complexions in offsprings. Some theorists carry this matter much further, and say that those having the same color of eyes should not marry; and they say the same of the hair. So large-boned people should marry those of small bones; beauty should marry homeliness; nervous people should marry their opposites; those of strong facial contour should marry those with less decided physiognomies; and so on; all, of course, with the hope of curing in their posterity what may pass for defects in the parents; or, if not defects, at least so modifying physical forms as to produce a more satisfactory form.

The Final Resolve.—Courtship has made the contemplated partners acquainted with one another. They have talked over their aims and ambitions. They have plighted troths and sealed a contract. Among the Hebrews this was the equivalent of marriage. The final resolve should, therefore, be to carry into and through the marriage estate all those high agreements which love prompted, hope cherished, and thoughtful consideration of the future suggested.

THE PERIOD OF CONCEPTION.

Woman's Courage.—Courage is assigned to man—to woman it is due. Follow her steps from the time she enters the arena of married life, study each line—each shading and its effect—as though an artist with magic brush had depicted on canvas the hidden mysteries of life's various phases, and the result will be startling to those who have been but casual observers in the past. The courage and sublimity of woman's nature is in-

herent, descending through ages, thus becoming a fixed moral quantity of woman in her kind.

Courage Illustrated.—Courage in woman is illustrated by the fortitude with which she bears her children, the cheerfulness with which she undertakes their moral and physical training, and the patience and perseverance she shows when called to tend by their sick-bed through the long, weary hours, days or weeks of their illness. All parents desire to bring into the world good, bright and healthy offspring without pain. Can it be accomplished?

Propagating Likes.—Sexual emotion is absolutely necessary to conception. The impress is made at the moment. Every quality of mind or body which is dominant then will undoubtedly determine the fate of the offspring. How imperatively necessary it is, then, at that moment, to permit nothing but the most pleasant fancies to occupy the mind, namely, the thought of those actions and things which are most desirable to reappear in children.

Natural Harmony.—Life itself should be a sober hilarity; all the senses should be in harmony with nature, and the heart should be ready to respond at the right period with a holy fidelity to the mysterious demands of the love which unites existences, and in the homes of earth educate beings to dwell in heaven.

WILL THE BABE BE BOY OR GIRL?

Function of the Ovary.—The ovary is undoubtedly the predominant factor in this respect. The only means by which the determination of sex can be influenced is by the nutritional processes in the ovary. Disturbances in the ovary in this line, dating from foetal life, seem to determine a preponderance of male ova, while abundant normal nutritional processes favor the production of females.

We have observed, in our experience, the evidence of nutritional disturbances, as a number of mothers of boys gave birth to girls after symptoms of diabetes were first noticed.

Emotion and Secretion.—Cases of this kind might be multiplied *ad libitum*, but such instances are not needed to demonstrate that the feelings influence every fibre of our frame. The soul pervades every element of our bodies, and "in every nerve it thrills with pleasure, or grows mad with pain." The direct influence of the immortal agent over the mortal

organism is beautifully demonstrated by the effects of emotion on secretion.

Mental Association.—Hence, at such a time, how important that only the most pleasant and calming recollections should pervade the mind. This appetite, which is not essential to the life of the individual, is mainly dependent on mental associations for its activity, and should be controlled by moral principle.

CAN PARENTS CONTROL THE SEX OF THE CHILD?

Interest in the Subject.—The above subject has for a long time deeply interested the scientists, not only of Europe, but also our own country, and various experiments have been made to endeavor to found the same upon fact instead of theory.

Results of Investigation.—These experiments were at first made in the interest of science alone, but the raisers of cattle and horses, seeing an increase of gain to themselves, quickly took hold of the subject, and have endeavored to reap the advantages therefrom.

The following results, which have been carefully kept record of, elucidate the following:

1st. That the offspring of a cow or mare, if young, and the male older and in good health, was a male.

2d. If the female is mature in age, healthy and strong, the male younger and deficient in copulative strength, the offspring was a female.

3d. That when both male and female were of mature age and healthy, the offspring was about equal, male or female.

4th. If the female is old and the male young, the offspring will be male.

5th. If the male is old, with the female younger, the offspring will be female.

6th. If female was ill fed or run down by labor, the male well fed and in vigor; offspring, male.

7th. If the female was well fed and rested, and male ill fed and worked; offspring, female.

8th. That the offspring would be male or female as regards the manner in which they were treated, fed, etc.

Conclusions.—From the above we would draw the following conclusions: Men having physical and procreative propensities similar to animals, the genital function is first to feel disturbance of the nervous sys-

tem, as the top of the tree first shows that the roots are not properly nourished. The function of generation being the last to be developed has nothing directly depending on or issuing from it, it is a twig and not a main branch, like the stomach and brain; it is a periodic function, capable of long intervals of inactivity, and the rest of the body cannot only survive, but be in good condition for a time at least when this function is absolutely dead.

When a Male Child is Desired.—The husband should partake of good substantial food. Exercise in open air; indulge in light literature; keep up a glow of spirits; abstain from indulgence for a short time previous to the procreative period. During this period the wife should abstain from animal foods, living mostly on vegetables and farinaceous articles of diet; exercise daily to almost fatigue, take the following treatment and pass a portion of her time with females older than herself. The following pill should be taken, one three times daily for several weeks:

Extract Hyoscyamus	½ grain
Extract Valerian	1 grain
Extract Sumbul	1 grain
Extract Asafetida	1 grain

When a Female Child is Desired.—Exactly the opposite course should be pursued—the woman should indulge in the most stimulating food—but should not indulge her passions, reserving her whole vigor for the desired time. The male should indulge in violent physical exercise to fatigue, and morning and night take sitz baths of cold rock-salt water.

Care of the Passions.—Abuse of the passions disturbs all the processes of life; a brutal kind of vigor in those who are reckless, but a soul that condemns its own conduct, is sure to produce disorders of the nervous system; the family of reflex centers, the brain, the stomach, the genital system; between these, messengers of evil or of good are ever passing in sleeping and in working hours; to touch one is to touch all.

TABLE OF CONCEPTION AND BARREN PERIODS.

The following table will show the possible periods of conception and barrenness after the recurrence of each menses. B stands for beginning of each period—monthly, conceptional and barren—and E for the ending of the same,

MONTHLIES.		Period of Probable Conception.		Probable Barren Period.		Period of Probable Conception.	
B.	E.	B.	E.	B.	E.	B.	E.
Jan 1—	3	Jan 4—	16	Jan 17—	22	Jan 23—	at next monthly
" 2—	4	" 5—	17	" 18—	23	" 24—	" " "
" 3—	5	" 6—	18	" 19—	24	" 25—	" " "
" 4—	6	" 7—	19	" 20—	25	" 26—	" " "
" 5—	7	" 8—	20	" 21—	26	" 27—	" " "
" 6—	8	" 9—	21	" 22—	27	" 28—	" " "
" 7—	9	" 10—	22	" 23—	28	" 29—	" " "
" 8—	10	" 11—	23	" 24—	29	" 30—	" " "
" 9—	11	" 12—	24	" 25—	30	" 31—	" " "
" 10—	12	" 13—	25	" 26—	31	Feb 1—	" " "
" 11—	13	" 14—	26	" 27—	Feb. 1	" 2—	" " "
" 12—	14	" 15—	27	" 28—	" 2	" 3—	" " "
" 13—	15	" 16—	28	" 29—	" 3	" 4—	" " "
" 14—	16	" 17—	29	" 30—	" 4	" 5—	" " "
" 15—	17	" 18—	30	" 31—	" 5	" 6—	" " "
" 16—	18	" 19—	31	Feb 1—	6	" 7—	" " "
" 17—	19	" 20—	Feb. 1	" 2—	7	" 8—	" " "
" 18—	20	" 21—	" 2	" 3—	8	" 9—	" " "
" 19—	21	" 22—	" 3	" 4—	9	" 10—	" " "
" 20—	22	" 23—	" 4	" 5—	10	" 11—	" " "
" 21—	23	" 24—	" 5	" 6—	11	" 12—	" " "
" 22—	24	" 25—	" 6	" 7—	12	" 13—	" " "
" 23—	25	" 26—	" 7	" 8—	13	" 14—	" " "
" 24—	26	" 27—	" 8	" 9—	14	" 15—	" " "
" 25—	27	" 28—	" 9	" 10—	15	" 16—	" " "
" 26—	28	" 29—	" 10	" 11—	16	" 17—	" " "
" 27—	29	" 30—	" 11	" 12—	17	" 18—	" " "
" 28—	30	" 31—	" 12	" 13—	18	" 19—	" " "
" 29—	31	Feb 1—	13	" 14—	19	" 20—	" " "
" 30—	Feb. 1	" 2—	14	" 15—	20	" 21—	" " "
" 31—	" 2	" 3—	15	" 16—	21	" 22—	" " "
Feb 1—	3	" 4—	16	" 17—	22	" 23—	" " "
" 2—	4	" 5—	17	" 18—	23	" 24—	" " "
" 3—	5	" 6—	18	" 19—	24	" 25—	" " "
" 4—	6	" 7—	19	" 20—	25	" 26—	" " "
" 5—	7	" 8—	20	" 21—	26	" 27—	" " "
" 6—	8	" 9—	21	" 22—	27	" 28—	" " "
" 7—	9	" 10—	22	" 23—	28	Mar 1—	" " "
" 8—	10	" 11—	23	" 24—	Mar. 1	" 2—	" " "
" 9—	11	" 12—	24	" 25—	" 2	" 3—	" " "
" 10—	12	" 13—	25	" 26—	" 3	" 4—	" " "
" 11—	13	" 14—	26	" 27—	" 4	" 5—	" " "
" 12—	14	" 15—	27	" 28—	" 5	" 6—	" " "
" 13—	15	" 16—	28	Mar 1—	6	" 7—	" " "
" 14—	16	" 17—	Mar. 1	" 2—	7	" 8—	" " "
" 15—	17	" 18—	" 2	" 3—	8	" 9—	" " "
" 16—	18	" 19—	" 3	" 4—	9	" 10—	" " "
" 17—	19	" 20—	" 4	" 5—	10	" 11—	" " "

MONTHLIES.		Period of Probable Conception.		Probable Barren Period.		Period of Probable Conception.	
B.	E.	B.	E.	B.	E.	B.	E.
Feb. 18—	20	Feb. 21—	Mar. 5	Mar. 6—	11	Mar. 12—	at next monthly
" 19—	21	" 22—	" 6	" 7—	12	Mar. 13—	" " "
" 20—	22	" 23—	" 7	" 8—	13	" 14—	" " "
" 21—	23	" 24—	" 8	" 9—	14	" 15—	" " "
" 22—	24	" 25—	" 9	" 10—	15	" 16—	" " "
" 23—	25	" 26—	" 10	" 11—	16	" 17—	" " "
" 24—	26	" 27—	" 11	" 12—	17	" 18—	" " "
" 25—	27	" 28—	" 12	" 13—	18	" 19—	" " "
" 26—	28	Mar. 1—	13	" 14—	19	" 20—	" " "
" 27—	Mar. 1	" 2—	14	" 15—	20	" 21—	" " "
" 28—	" 2	" 3—	15	" 16—	21	" 22—	" " "
Mar. 1—	3	" 4—	16	" 17—	22	" 23—	" " "
" 2—	4	" 5—	17	" 18—	23	" 24—	" " "
" 3—	5	" 6—	18	" 19—	24	" 25—	" " "
" 4—	6	" 7—	19	" 20—	25	" 26—	" " "
" 5—	7	" 8—	20	" 21—	26	" 27—	" " "
" 6—	8	" 9—	21	" 22—	27	" 28—	" " "
" 7—	9	" 10—	22	" 23—	28	" 29—	" " "
" 8—	10	" 11—	23	" 24—	29	" 30—	" " "
" 9—	11	" 12—	24	" 25—	30	" 31—	" " "
" 10—	12	" 13—	25	" 26—	31	Apr. 1—	" " "
" 11—	13	" 14—	26	" 27—	Apr. 1	" 2—	" " "
" 12—	14	" 15—	27	" 28—	" 2	" 3—	" " "
" 13—	15	" 16—	28	" 29—	" 3	" 4—	" " "
" 14—	16	" 17—	29	" 30—	" 4	" 5—	" " "
" 15—	17	" 18—	30	" 31—	" 5	" 6—	" " "
" 16—	18	" 19—	31	Apr. 1—	6	" 7—	" " "
" 17—	19	" 20—	Apr. 1	" 2—	7	" 8—	" " "
" 18—	20	" 21—	" 2	" 3—	8	" 9—	" " "
" 19—	21	" 22—	" 3	" 4—	9	" 10—	" " "
" 20—	22	" 23—	" 4	" 5—	10	" 11—	" " "
" 21—	23	" 24—	" 5	" 6—	11	" 12—	" " "
" 22—	24	" 25—	" 6	" 7—	12	" 13—	" " "
" 23—	25	" 26—	" 7	" 8—	13	" 14—	" " "
" 24—	26	" 27—	" 8	" 9—	14	" 15—	" " "
" 25—	27	" 28—	" 9	" 10—	15	" 16—	" " "
" 26—	28	" 29—	" 10	" 11—	16	" 17—	" " "
" 27—	29	" 30—	" 11	" 12—	17	" 18—	" " "
" 28—	30	" 31—	" 12	" 13—	18	" 19—	" " "
" 29—	31	Apr. 1—	13	" 14—	19	" 20—	" " "
" 30—	Apr. 1	" 2—	14	" 15—	20	" 21—	" " "
" 31—	" 2	" 3—	15	" 16—	21	" 22—	" " "
Apr. 1—	3	" 4—	16	" 17—	22	" 23—	" " "
" 2—	4	" 5—	17	" 18—	23	" 24—	" " "
" 3—	5	" 6—	18	" 19—	24	" 25—	" " "
" 4—	6	" 7—	19	" 20—	25	" 26—	" " "
" 5—	7	" 8—	20	" 21—	26	" 27—	" " "
" 6—	8	" 9—	21	" 22—	27	" 28—	" " "

MONTHLIES.		Period of Probable Conception.		Probable Barren Period.		Period of Probable Conception.	
B.	E.	B.	E.	B.	E.	B.	E.
Apr.....	7— 9	Apr.....	10— 22	Apr.....	23— 28	Apr.....	29— at next monthly
"	8— 10	"	11— 23	"	24— 29	"	30— " " "
"	9— 11	"	12— 24	"	25— 30	May	1— " " "
"	10— 12	"	13— 25	"	26— May 1	"	2— " " "
"	11— 13	"	14— 26	"	27— " 2	"	3— " " "
"	12— 14	"	15— 27	"	28— " 3	"	4— " " "
"	13— 15	"	16— 28	"	29— " 4	"	5— " " "
"	14— 16	"	17— 29	"	30— " 5	"	6— " " "
"	15— 17	"	18— 30	May	1— 6	"	7— " " "
"	16— 18	"	19— May 1	"	2— 7	"	8— " " "
"	17— 19	"	20— " 2	"	3— 8	"	9— " " "
"	18— 20	"	21— " 3	"	4— 9	"	10— " " "
"	19— 21	"	22— " 4	"	5— 10	"	11— " " "
"	20— 22	"	23— " 5	"	6— 11	"	12— " " "
"	21— 23	"	24— " 6	"	7— 12	"	13— " " "
"	22— 24	"	25— " 7	"	8— 13	"	14— " " "
"	23— 25	"	26— " 8	"	9— 14	"	15— " " "
"	24— 26	"	27— " 9	"	10— 15	"	16— " " "
"	25— 27	"	28— " 10	"	11— 16	"	17— " " "
"	26— 28	"	29— " 11	"	12— 17	"	18— " " "
"	27— 29	"	30— " 12	"	13— 18	"	19— " " "
"	28— 30	May	1— 13	"	14— 19	"	20— " " "
"	29— May 1	"	2— 14	"	15— 20	"	21— " " "
"	30— " 2	"	3— 15	"	16— 21	"	22— " " "
May	1— 3	"	4— 16	"	17— 22	"	23— " " "
"	2— 4	"	5— 17	"	18— 23	"	24— " " "
"	3— 5	"	6— 18	"	19— 24	"	25— " " "
"	4— 6	"	7— 19	"	20— 25	"	26— " " "
"	5— 7	"	8— 20	"	21— 26	"	27— " " "
"	6— 8	"	9— 21	"	22— 27	"	28— " " "
"	7— 9	"	10— 22	"	23— 28	"	29— " " "
"	8— 10	"	11— 23	"	24— 29	"	30— " " "
"	9— 11	"	12— 24	"	25— 30	"	31— " " "
"	10— 12	"	13— 25	"	26— 31	June	1— " " "
"	11— 13	"	14— 26	"	27— June 1	"	2— " " "
"	12— 14	"	15— 27	"	28— " 2	"	3— " " "
"	13— 15	"	16— 28	"	29— " 3	"	4— " " "
"	14— 16	"	17— 29	"	30— " 4	"	5— " " "
"	15— 17	"	18— 30	"	31— " 5	"	6— " " "
"	16— 18	"	19— 31	June	1— 6	"	7— " " "
"	17— 19	"	20— June 1	"	2— 7	"	8— " " "
"	18— 20	"	21— " 2	"	3— 8	"	9— " " "
"	19— 21	"	22— " 3	"	4— 9	"	10— " " "
"	20— 22	"	23— " 4	"	5— 10	"	11— " " "
"	21— 23	"	24— " 5	"	6— 11	"	12— " " "
"	22— 24	"	25— " 6	"	7— 12	"	13— " " "
"	23— 25	"	26— " 7	"	8— 13	"	14— " " "
"	24— 26	"	27— " 8	"	9— 14	"	15— " " "

MONTHLIES.		Period of Probable Conception.		Probable Barren Period.		Period of Probable Conception.	
B.	E.	B.	E.	B.	E.	B.	E.
May....25—	27	May....28—June 9		June ...10—	15	June16—	at next monthly
"26—	28	"29—	10	"11—	16	"17—	" " "
"27—	29	"30—	11	"12—	17	"18—	" " "
"28—	30	"31—	12	"13—	18	"19—	" " "
"29—	31	June.... 1—	13	"14—	19	"20—	" " "
"30—June 1		" 2—	14	"15—	20	"21—	" " "
"31—" 2		" 3—	15	"16—	21	"22—	" " "
June 1—	3	" 4—	16	"17—	22	"23—	" " "
" 2—	4	" 5—	17	"18—	23	"24—	" " "
" 3—	5	" 6—	18	"19—	24	"25—	" " "
" 4—	6	" 7—	19	"20—	25	"26—	" " "
" 5—	7	" 8—	20	"21—	26	"27—	" " "
" 6—	8	" 9—	21	"22—	27	"28—	" " "
" 7—	9	"10—	22	"23—	28	"29—	" " "
" 8—	10	"11—	23	"24—	29	"30—	" " "
" 9—	11	"12—	24	"25—	30	July 1—	" " "
"10—	12	"13—	25	"26—July 1		" 2—	" " "
"11—	13	"14—	26	"27—" 2		" 3—	" " "
"12—	14	"15—	27	"28—" 3		" 4—	" " "
"13—	15	"16—	28	"29—" 4		" 5—	" " "
"14—	16	"17—	29	"30—" 5		" 6—	" " "
"15—	17	"18—	30	July.... 1—	6	" 7—	" " "
"16—	18	"19—July 1		" 2—	7	" 8—	" " "
"17—	19	"20—" 2		" 3—	8	" 9—	" " "
"18—	20	"21—" 3		" 4—	9	"10—	" " "
"19—	21	"22—" 4		" 5—	10	"11—	" " "
"20—	22	"23—" 5		" 6—	11	"12—	" " "
"21—	23	"24—" 6		" 7—	12	"13—	" " "
"22—	24	"25—" 7		" 8—	13	"14—	" " "
"23—	25	"26—" 8		" 9—	14	"15—	" " "
"24—	26	"27—" 9		"10—	15	"16—	" " "
"25—	27	"28—" 10		"11—	16	"17—	" " "
"26—	28	"29—" 11		"12—	17	"18—	" " "
"27—	29	"30—" 12		"13—	18	"19—	" " "
"28—	30	July.... 1—	13	"14—	19	"20—	" " "
"29—July 1		" 2—	14	"15—	20	"21—	" " "
"30—" 2		" 3—	15	"16—	21	"22—	" " "
July.... 1—	3	" 4—	16	"17—	22	"23—	" " "
" 2—	4	" 5—	17	"18—	23	"24—	" " "
" 3—	5	" 6—	18	"19—	24	"25—	" " "
" 4—	6	" 7—	19	"20—	25	"26—	" " "
" 5—	7	" 8—	20	"21—	26	"27—	" " "
" 6—	8	" 9—	21	"22—	27	"28—	" " "
" 7—	9	"10—	22	"23—	28	"29—	" " "
" 8—	10	"11—	23	"24—	29	"30—	" " "
" 9—	11	"12—	24	"25—	30	"31—	" " "
"10—	12	"13—	25	"26—	31	Aug..... 1—	" " "
"11—	13	"14—	26	"27—Aug. 1		" 2—	" " "

MONTHLIES.		Period of Probable Conception.		Probable Barren Period.		Period of Probable Conception.	
B.	E.	B.	E.	B.	E.	B.	E.
July....12—	14	July....15—	27	July....28—Aug. 2	2	Aug..... 3—at next monthly	
".....13—	15	".....16—	28	".....29—" 3	3	"..... 4—" " "	
".....14—	16	".....17—	29	".....30—" 4	4	"..... 5—" " "	
".....15—	17	".....18—	30	".....31—" 5	5	"..... 6—" " "	
".....16—	18	".....19—	31	Aug.... 1—	6	"..... 7—" " "	
".....17—	19	".....20—Aug. 1	1	"..... 2—	7	"..... 8—" " "	
".....18—	20	".....21—" 2	2	"..... 3—	8	"..... 9—" " "	
".....19—	21	".....22—" 3	3	"..... 4—	9	".....10—" " "	
".....20—	22	".....23—" 4	4	"..... 5—	10	".....11—" " "	
".....21—	23	".....24—" 5	5	"..... 6—	11	".....12—" " "	
".....22—	24	".....25—" 6	6	"..... 7—	12	".....13—" " "	
".....23—	25	".....26—" 7	7	"..... 8—	13	".....14—" " "	
".....24—	26	".....27—" 8	8	"..... 9—	14	".....15—" " "	
".....25—	27	".....28—" 9	9	".....10—	15	".....16—" " "	
".....26—	28	".....29—" 10	10	".....11—	16	".....17—" " "	
".....27—	29	".....30—" 11	11	".....12—	17	".....18—" " "	
".....28—	30	".....31—" 12	12	".....13—	18	".....19—" " "	
".....29—	31	Aug.... 1—	13	".....14—	19	".....20—" " "	
".....30—Aug. 1	1	"..... 2—	14	".....15—	20	".....21—" " "	
".....31—" 2	2	"..... 3—	15	".....16—	21	".....22—" " "	
Aug.... 1—	3	"..... 4—	16	".....17—	22	".....23—" " "	
"..... 2—	4	"..... 5—	17	".....18—	23	".....24—" " "	
"..... 3—	5	"..... 6—	18	".....19—	24	".....25—" " "	
"..... 4—	6	"..... 7—	19	".....20—	25	".....26—" " "	
"..... 5—	7	"..... 8—	20	".....21—	26	".....27—" " "	
"..... 6—	8	"..... 9—	21	".....22—	27	".....28—" " "	
"..... 7—	9	".....10—	22	".....23—	28	".....29—" " "	
"..... 8—	10	".....11—	23	".....24—	29	".....30—" " "	
"..... 9—	11	".....12—	24	".....25—	30	".....31—" " "	
".....10—	12	".....13—	25	".....26—	31	Sept..... 1—" " "	
".....11—	13	".....14—	26	".....27—Sept. 1	1	"..... 2—" " "	
".....12—	14	".....15—	27	".....28—" 2	2	"..... 3—" " "	
".....13—	15	".....16—	28	".....29—" 3	3	"..... 4—" " "	
".....14—	16	".....17—	29	".....30—" 4	4	"..... 5—" " "	
".....15—	17	".....18—	30	".....31—" 5	5	"..... 6—" " "	
".....16—	18	".....19—	31	Sept.... 1—	6	"..... 7—" " "	
".....17—	19	".....20—Sept. 1	1	"..... 2—	7	"..... 8—" " "	
".....18—	20	".....21—" 2	2	"..... 3—	8	"..... 9—" " "	
".....19—	21	".....22—" 3	3	"..... 4—	9	".....10—" " "	
".....20—	22	".....23—" 4	4	"..... 5—	10	".....11—" " "	
".....21—	23	".....24—" 5	5	"..... 6—	11	".....12—" " "	
".....22—	24	".....25—" 6	6	"..... 7—	12	".....13—" " "	
".....23—	25	".....26—" 7	7	"..... 8—	13	".....14—" " "	
".....24—	26	".....27—" 8	8	"..... 9—	14	".....15—" " "	
".....25—	27	".....28—" 9	9	".....10—	15	".....16—" " "	
".....26—	28	".....29—" 10	10	".....11—	16	".....17—" " "	
".....27—	29	".....30—" 11	11	".....12—	17	".....18—" " "	
".....28—	30	".....31—" 12	12	".....13—	18	".....19—" " "	

MONTHLIES.	Period of Probable Conception.		Probable Barren Period.		Period of Probable Conception.	
	B.	E.	B.	E.	B.	E.
Aug....29—	31	Sept....1—	13	Sept....14—	19	Sept.....20—at next monthly
".....30—	Sept. 1	".....2—	14	".....15—	20	".....21—" " "
".....31—" "	2	".....3—	15	".....16—	21	".....22—" " "
Sept....1—	3	".....4—	16	".....17—	22	".....23—" " "
".....2—	4	".....5—	17	".....18—	23	".....24—" " "
".....3—	5	".....6—	18	".....19—	24	".....25—" " "
".....4—	6	".....7—	19	".....20—	25	".....26—" " "
".....5—	7	".....8—	20	".....21—	26	".....27—" " "
".....6—	8	".....9—	21	".....22—	27	".....28—" " "
".....7—	9	".....10—	22	".....23—	28	".....29—" " "
".....8—	10	".....11—	23	".....24—	29	".....30—" " "
".....9—	11	".....12—	24	".....25—	30	Oct.....1—" " "
".....10—	12	".....13—	25	".....26—	Oct. 1	".....2—" " " "
".....11—	13	".....14—	26	".....27—" "	2	".....3—" " " "
".....12—	14	".....15—	27	".....28—" "	3	".....4—" " " "
".....13—	15	".....16—	28	".....29—" "	4	".....5—" " " "
".....14—	16	".....17—	29	".....30—" "	5	".....6—" " " "
".....15—	17	".....18—	30	Oct....1—	6	".....7—" " " "
".....16—	18	".....19—	Oct. 1	".....2—	7	".....8—" " " "
".....17—	19	".....20—" "	2	".....3—	8	".....9—" " " "
".....18—	20	".....21—" "	3	".....4—	9	".....10—" " " "
".....19—	21	".....22—" "	4	".....5—	10	".....11—" " " "
".....20—	22	".....23—" "	5	".....6—	11	".....12—" " " "
".....21—	23	".....24—" "	6	".....7—	12	".....13—" " " "
".....22—	24	".....25—" "	7	".....8—	13	".....14—" " " "
".....23—	25	".....26—" "	8	".....9—	14	".....15—" " " "
".....24—	26	".....27—" "	9	".....10—	15	".....16—" " " "
".....25—	27	".....28—" "	10	".....11—	16	".....17—" " " "
".....26—	28	".....29—" "	11	".....12—	17	".....18—" " " "
".....27—	29	".....30—" "	12	".....13—	18	".....19—" " " "
".....28—	30	Oct....1—	13	".....14—	19	".....20—" " " "
".....29—	Oct. 1	".....2—	14	".....15—	20	".....21—" " " "
".....30—" "	2	".....3—	15	".....16—	21	".....22—" " " "
Oct....1—	3	".....4—	16	".....17—	22	".....23—" " " "
".....2—	4	".....5—	17	".....18—	23	".....24—" " " "
".....3—	5	".....6—	18	".....19—	24	".....25—" " " "
".....4—	6	".....7—	19	".....20—	25	".....26—" " " "
".....5—	7	".....8—	20	".....21—	26	".....27—" " " "
".....6—	8	".....9—	21	".....22—	27	".....28—" " " "
".....7—	9	".....10—	22	".....23—	28	".....29—" " " "
".....8—	10	".....11—	23	".....24—	29	".....30—" " " "
".....9—	11	".....12—	24	".....25—	30	".....31—" " " "
".....10—	12	".....13—	25	".....26—	31	Nov....1—" " " "
".....11—	13	".....14—	26	".....27—	Nov. 1	".....2—" " " "
".....12—	14	".....15—	27	".....28—" "	2	".....3—" " " "
".....13—	15	".....16—	28	".....29—" "	3	".....4—" " " "
".....14—	16	".....17—	29	".....30—" "	4	".....5—" " " "
".....15—	17	".....18—	30	".....31—" "	5	".....6—" " " "

MONTHLIES.		Period of Probable Conception.		Probable Barren Period.		Period of Probable Conception.	
B.	E.	B.	E.	B.	E.	B.	E.
Oct16—	18	Oct19—	31	Nov.... 1—	6	Nov..... 7—	at next monthly
"17—	19	"20—	Nov. 1	" 2—	7	" 8—	" "
"18—	20	"21—	" 2	" 3—	8	" 9—	" "
"19—	21	"22—	" 3	" 4—	9	"10—	" "
"20—	22	"23—	" 4	" 5—	10	"11—	" "
"21—	23	"24—	" 5	" 6—	11	"12—	" "
"22—	24	"25—	" 6	" 7—	12	"13—	" "
"23—	25	"26—	" 7	" 8—	13	"14—	" "
"24—	26	"27—	" 8	" 9—	14	"15—	" "
"25—	27	"28—	" 9	"10—	15	"16—	" "
"26—	28	"29—	" 10	"11—	16	"17—	" "
"27—	29	"30—	" 11	"12—	17	"18—	" "
"28—	30	"31—	" 12	"13—	18	"19—	" "
"29—	31	Nov.... 1—	13	"14—	19	"20—	" "
"30—	Nov. 1	" 2—	14	"15—	20	"21—	" "
"31—	" 2	" 3—	15	"16—	21	"22—	" "
Nov.... 1—	3	" 4—	16	"17—	22	"23—	" "
" 2—	4	" 5—	17	"18—	23	"24—	" "
" 3—	5	" 6—	18	"19—	24	"25—	" "
" 4—	6	" 7—	19	"20—	25	"26—	" "
" 5—	7	" 8—	20	"21—	26	"27—	" "
" 6—	8	" 9—	21	"22—	27	"28—	" "
" 7—	9	"10—	22	"23—	28	"29—	" "
" 8—	10	"11—	23	"24—	29	"30—	" "
" 9—	11	"12—	24	"25—	30	Dec..... 1—	" "
"10—	12	"13—	25	"26—	Dec. 1	" 2—	" "
"11—	13	"14—	26	"27—	" 2	" 3—	" "
"12—	14	"15—	27	"28—	" 3	" 4—	" "
"13—	15	"16—	28	"29—	" 4	" 5—	" "
"14—	16	"17—	29	"30—	" 5	" 6—	" "
"15—	17	"18—	30	Dec.... 1—	6	" 7—	" "
"16—	18	"19—	Dec. 1	" 2—	7	" 8—	" "
"17—	19	"20—	" 2	" 3—	8	" 9—	" "
"18—	20	"21—	" 3	" 4—	9	"10—	" "
"19—	21	"22—	" 4	" 5—	10	"11—	" "
"20—	22	"23—	" 5	" 6—	11	"12—	" "
"21—	23	"24—	" 6	" 7—	12	"13—	" "
"22—	24	"25—	" 7	" 8—	13	"14—	" "
"23—	25	"26—	" 8	" 9—	14	"15—	" "
"24—	26	"27—	" 9	"10—	15	"16—	" "
"25—	27	"28—	" 10	"11—	16	"17—	" "
"26—	28	"29—	" 11	"12—	17	"18—	" "
"27—	29	"30—	" 12	"13—	18	"19—	" "
"28—	30	Dec.... 1—	13	"14—	19	"20—	" "
"29—	Dec. 1	" 2—	14	"15—	20	"21—	" "
"30—	" 2	" 3—	15	"16—	21	"22—	" "
Dec.... 1—	3	" 4—	16	"17—	22	"23—	" "
" 2—	4	" 5—	17	"18—	23	"24—	" "

MONTHLIES.		Period of Probable Conception.		Probable Barren Period.		Period of Probable Conception.	
B.	E.	B.	E.	B.	E.	B.	E.
Dec 3—	5	Dec 6—	18	Dec 19—	24	Dec.....25—	at next monthly
" 4—	6	" 7—	19	"20—	25	"26—	" " "
" 5—	7	" 8—	20	"21—	26	"27—	" " "
" 6—	8	" 9—	21	"22—	27	"28—	" " "
" 7—	9	"10—	22	"23—	28	"29—	" " "
" 8—	10	"11—	23	"24—	29	"30—	" " "
" 9—	11	"12—	24	"25—	30	"31—	" " "
"10—	12	"13—	25	"26—	31	Jan..... 1—	" " "
"11—	13	"14—	26	"27—	Jan. 1	" 2—	" " "
"12—	14	"15—	27	"28—	" 2	" 3—	" " "
"13—	15	"16—	28	"29—	" 3	" 4—	" " "
"14—	16	"17—	29	"30—	" 4	" 5—	" " "
"15—	17	"18—	30	"31—	" 5	" 6—	" " "
"16—	18	"19—	31	Jan 1—	6	" 7—	" " "
"17—	19	"20—	Jan. 1	" 2—	7	" 8—	" " "
"18—	20	"21—	" 2	" 3—	8	" 9—	" " "
"19—	21	"22—	" 3	" 4—	9	"10—	" " "
"20—	22	"23—	" 4	" 5—	10	"11—	" " "
"21—	23	"24—	" 5	" 6—	11	"12—	" " "
"22—	24	"25—	" 6	" 7—	12	"13—	" " "
"23—	25	"26—	" 7	" 8—	13	"14—	" " "
"24—	26	"27—	" 8	" 9—	14	"15—	" " "
"25—	27	"28—	" 9	"10—	15	"16—	" " "
"26—	28	"29—	" 10	"11—	16	"17—	" " "
"27—	29	"30—	" 11	"12—	17	"18—	" " "
"28—	30	"31—	" 12	"13—	18	"19—	" " "
"29—	31	Jan 1—	13	"14—	19	"20—	" " "
"30—	Jan. 1	" 2—	14	"15—	20	"21—	" " "
"31—	" 2	" 3—	15	"16—	21	"22—	" " "

PERIOD OF GESTATION.

Length of Period.—This interesting and anxious period in a young wife's life is usually reckoned at 280 days, or 40 weeks, or 9 calendar months. Dr. Reid, in his report upon 500 cases, found the following:

- 23 cases in the 37th week.
- 48 cases in the 38th week.
- 81 cases in the 39th week.
- 131 cases in the 40th week.
- 112 cases in the 41st week.
- 63 cases in the 42d week.
- 28 cases in the 43d week.
- 8 cases in the 44th week.
- 6 cases in the 45th week.

Reckoning the Count.—It would be well in reckoning the “count” to begin about three days after the last monthly period, the rule being that conception is more likely soon after menstruation than at any other time.

A Pregnancy Table.—The following table, showing the probable beginning, duration and completion of pregnancy, and indicating the date on or about which the date of labor may be expected, may be found both convenient and useful. It allows three days after the usual 280 days; that is, the “count” begins three days after the last monthly or menstrual period:

THE PREGNANCY TABLE.

Last Day of Monthlies.	Labor On or About.	Last Day of Monthlies.	Labor On or About.	Last Day of Monthlies.	Labor On or About.
Jan. 1.....	Oct. 11	Feb. 5.....	Nov. 15	Mar. 12.....	Dec. 20
“ 2.....	“ 12	“ 6.....	“ 16	“ 13.....	“ 21
“ 3.....	“ 13	“ 7.....	“ 17	“ 14.....	“ 22
“ 4.....	“ 14	“ 8.....	“ 18	“ 15.....	“ 23
“ 5.....	“ 15	“ 9.....	“ 19	“ 16.....	“ 24
“ 6.....	“ 16	“ 10.....	“ 20	“ 17.....	“ 25
“ 7.....	“ 17	“ 11.....	“ 21	“ 18.....	“ 26
“ 8.....	“ 18	“ 12.....	“ 22	“ 19.....	“ 27
“ 9.....	“ 19	“ 13.....	“ 23	“ 20.....	“ 28
“ 10.....	“ 20	“ 14.....	“ 24	“ 21.....	“ 29
“ 11.....	“ 21	“ 15.....	“ 25	“ 22.....	“ 30
“ 12.....	“ 22	“ 16.....	“ 26	“ 23.....	“ 31
“ 13.....	“ 23	“ 17.....	“ 27	“ 24.....	Jan. 1
“ 14.....	“ 24	“ 18.....	“ 28	“ 25.....	“ 2
“ 15.....	“ 25	“ 19.....	“ 29	“ 26.....	“ 3
“ 16.....	“ 26	“ 20.....	30	“ 27.....	“ 4
“ 17.....	“ 27	“ 21.....	Dec. 1	“ 28.....	“ 5
“ 18.....	“ 28	“ 22.....	2	“ 29.....	“ 6
“ 19.....	“ 29	“ 23.....	“ 3	“ 30.....	“ 7
“ 20.....	“ 30	“ 24.....	“ 4	“ 31.....	“ 8
“ 21.....	“ 31	“ 25.....	“ 5	April 1.....	“ 9
“ 22.....	Nov. 1	“ 26.....	“ 6	“ 2.....	“ 10
“ 23.....	“ 2	“ 27.....	“ 7	“ 3.....	“ 11
“ 24.....	“ 3	“ 28.....	“ 8	“ 4.....	“ 12
“ 25.....	“ 4	Mar. 1.....	“ 9	“ 5.....	“ 13
“ 26.....	“ 5	“ 2.....	10	“ 6.....	“ 14
“ 27.....	“ 6	“ 3.....	11	“ 7.....	“ 15
“ 28.....	“ 7	“ 4.....	12	“ 8.....	“ 16
“ 29.....	“ 8	“ 5.....	13	“ 9.....	“ 17
“ 30.....	“ 9	“ 6.....	14	“ 10.....	“ 18
“ 31.....	“ 10	“ 7.....	15	“ 11.....	“ 19
Feb. 1.....	“ 11	“ 8.....	16	“ 12.....	“ 20
“ 2.....	“ 12	“ 9.....	17	“ 13.....	“ 21
“ 3.....	“ 13	“ 10.....	18	“ 14.....	“ 22
“ 4.....	“ 14	“ 11.....	19	“ 15.....	“ 23



Last Day of Monthlies.	Labor On or About.	Last Day of Monthlies.	Labor On or About.	Last Day of Monthlies.	Labor On or About.
Apr. 16.....	Jan. 24	June 3.....	Mar. 13	July 21.....	Apr. 30
" 17.....	" 25	" 4.....	" 14	" 22.....	May 1
" 18.....	" 26	" 5.....	" 15	" 23.....	" 2
" 19.....	" 27	" 6.....	" 16	" 24.....	" 3
" 20.....	" 28	" 7.....	" 17	" 25.....	" 4
" 21.....	" 29	" 8.....	" 18	" 26.....	" 5
" 22.....	" 30	" 9.....	" 19	" 27.....	" 6
" 23.....	" 31	" 10.....	" 20	" 28.....	" 7
" 24.....	Feb. 1	" 11.....	" 21	" 29.....	" 8
" 25.....	" 2	" 12.....	" 22	" 30.....	" 9
" 26.....	" 3	" 13.....	" 23	" 31.....	" 10
" 27.....	" 4	" 14.....	" 24	Aug. 1.....	" 11
" 28.....	" 5	" 15.....	" 25	" 2.....	" 12
" 29.....	" 6	" 16.....	" 26	" 3.....	" 13
" 30.....	" 7	" 17.....	" 27	" 4.....	" 14
May 1.....	" 8	" 18.....	" 28	" 5.....	" 15
" 2.....	" 9	" 19.....	" 29	" 6.....	" 16
" 3.....	" 10	" 20.....	" 30	" 7.....	" 17
" 4.....	" 11	" 21.....	" 31	" 8.....	" 18
" 5.....	" 12	" 22.....	April 1	" 9.....	" 19
" 6.....	" 13	" 23.....	" 2	" 10.....	" 20
" 7.....	" 14	" 24.....	" 3	" 11.....	" 21
" 8.....	" 15	" 25.....	" 4	" 12.....	" 22
" 9.....	" 16	" 26.....	" 5	" 13.....	" 23
" 10.....	" 17	" 27.....	" 6	" 14.....	" 24
" 11.....	" 18	" 28.....	" 7	" 15.....	" 25
" 12.....	" 19	" 29.....	" 8	" 16.....	" 26
" 13.....	" 20	" 30.....	" 9	" 17.....	" 27
" 14.....	" 21	July 1.....	" 10	" 18.....	" 28
" 15.....	" 22	" 2.....	" 11	" 19.....	" 29
" 16.....	" 23	" 3.....	" 12	" 20.....	" 30
" 17.....	" 24	" 4.....	" 13	" 21.....	" 31
" 18.....	" 25	" 5.....	" 14	" 22.....	June 1
" 19.....	" 26	" 6.....	" 15	" 23.....	" 2
" 20.....	" 27	" 7.....	" 16	" 24.....	" 3
" 21.....	" 28	" 8.....	" 17	" 25.....	" 4
" 22.....	Mar. 1	" 9.....	" 18	" 26.....	" 5
" 23.....	" 2	" 10.....	" 19	" 27.....	" 6
" 24.....	" 3	" 11.....	" 20	" 28.....	" 7
" 25.....	" 4	" 12.....	" 21	" 29.....	" 8
" 26.....	" 5	" 13.....	" 22	" 30.....	" 9
" 27.....	" 6	" 14.....	" 23	" 31.....	" 10
" 28.....	" 7	" 15.....	" 24	Sept. 1.....	" 11
" 29.....	" 8	" 16.....	" 25	" 2.....	" 12
" 30.....	" 9	" 17.....	" 26	" 3.....	" 13
" 31.....	" 10	" 18.....	" 27	" 4.....	" 14
June 1.....	" 11	" 19.....	" 28	" 5.....	" 15
" 2.....	" 12	" 20.....	" 29	" 6.....	" 16

Last Day of Monthlies.	Labor On or About.	Last Day of Monthlies.	Labor On or About.	Last Day of Monthlies.	Labor On or About.
Sept. 7.....	June 17	Oct. 15.....	July 25	Nov. 22.....	Sept. 1
" 8.....	" 18	" 16.....	" 26	" 23.....	" 2
" 9.....	" 19	" 17.....	" 27	" 24.....	" 3
" 10.....	" 20	" 18.....	" 28	" 25.....	" 4
" 11.....	" 21	" 19.....	" 29	" 26.....	" 5
" 12.....	" 22	" 20.....	" 30	" 27.....	" 6
" 13.....	" 23	" 21.....	" 31	" 28.....	" 7
" 14.....	" 24	" 22.....	Aug. 1	" 29.....	" 8
" 15.....	" 25	" 23.....	" 2	" 30.....	" 9
" 16.....	" 26	" 24.....	" 3	Dec. 1.....	" 10
" 17.....	" 27	" 25.....	" 4	" 2.....	" 11
" 18.....	" 28	" 26.....	" 5	" 3.....	" 12
" 19.....	" 29	" 27.....	" 6	" 4.....	" 13
" 20.....	" 30	" 28.....	" 7	" 5.....	" 14
" 21.....	July 1	" 29.....	" 8	" 6.....	" 15
" 22.....	" 2	" 30.....	" 9	" 7.....	" 16
" 23.....	" 3	" 31.....	" 10	" 8.....	" 17
" 24.....	" 4	Nov. 1.....	" 11	" 9.....	" 18
" 25.....	" 5	" 2.....	" 12	" 10.....	" 19
" 26.....	" 6	" 3.....	" 13	" 11.....	" 20
" 27.....	" 7	" 4.....	" 14	" 12.....	" 21
" 28.....	" 8	" 5.....	" 15	" 13.....	" 22
" 29.....	" 9	" 6.....	" 16	" 14.....	" 23
" 30.....	" 10	" 7.....	" 17	" 15.....	" 24
Oct. 1.....	" 11	" 8.....	" 18	" 16.....	" 25
" 2.....	" 12	" 9.....	" 19	" 17.....	" 26
" 3.....	" 13	" 10.....	" 20	" 18.....	" 27
" 4.....	" 14	" 11.....	" 21	" 19.....	" 28
" 5.....	" 15	" 12.....	" 22	" 20.....	" 29
" 6.....	" 16	" 13.....	" 23	" 21.....	" 30
" 7.....	" 17	" 14.....	" 24	" 22.....	Oct. 1
" 8.....	" 18	" 15.....	" 25	" 23.....	" 2
" 9.....	" 19	" 16.....	" 26	" 24.....	" 3
" 10.....	" 20	" 17.....	" 27	" 25.....	" 4
" 11.....	" 21	" 18.....	" 28	" 26.....	" 5
" 12.....	" 22	" 19.....	" 29	" 27.....	" 6
" 13.....	" 23	" 20.....	" 30	" 28.....	" 7
" 14.....	" 24	" 21.....	" 31	" 29.....	" 8
				" 30.....	" 9
				" 31.....	" 10

LESSENING OF THE PAIN OF CHILDBIRTH.

Pain is Abnormal.—In the beginning of his career the obstetrician is confronted with the question as to whether pain during labor is a natural phenomenon or not. Looking over the animal kingdom in a general way we are obliged to admit that there is more or less natural pain at this time. The question thus resolves itself into what is normal and what is an abnormal amount of pain. Depending upon the individual, a normal amount of pain in one case would be abnormal in another, or *vice versa*. We must admit that pain at this period is of a much more abnormal character in the higher classes of human beings than in the lower. For instance, the active housewife is less apt to have the amount of pain during labor that the lady of leisure is prone to have. In both cases, however, in comparison with the lower orders of animal life, the amount of pain suffered appears to be abnormal.

Rules for Avoiding Pain.—The first duty of the obstetrician is, therefore, to lessen as much as possible the amount of pain suffered at this period. The measures to be taken must be primarily prophylactic in character, although much can be done at the period of confinement to relieve pain. During pregnancy the modern dress is to be condemned, if not at all times. The weight of both under and outer garments should fall upon the shoulders and not upon the hips and abdomen, and the waist should be left untrammelled. Corsets should not be worn at all, and, if needed, the bust should be supported by a band or girdle. Then, attention should be directed to the diet, which should be principally vegetable in character, the farinaceous foods and fruits being most freely used. Stewed and cooked fruits are especially to be recommended to the patient. Meat in small quantities should be allowed only once a day, and then well cooked.

An Easy Childbed.—There is always more or less congestion in the pelvic organs during pregnancy, which appears to increase as the time of confinement approaches. This is a natural accompaniment of the great changes which are taking place during this period, and is unquestionably the reason that in no animal life is birth unattended by pain. Here much can be done by the obstetrician to allay the possibility of pain, and, depending greatly upon his care and in the selection of his drugs, to allay this general inflammation, will be his principal success in insuring his patient a comparatively easy childbed.

Remedy Against Pain.—One of the best remedies is the *saw palmetto*. It has given excellent results in lessening pain. Its principal field of action is the pelvic organs, to which it is unquestionably an anti-phlogistic tonic and anodyne. It allays the inflammation of the membranes of these organs and appears to have a soothing action on the nerve supply of the womb, ovaries and bladder. Hence, the beneficial results to be obtained by its use—in teaspoonful doses four times a day for the last eight weeks of pregnancy—is to place the organs in such a condition that pain will be reduced to a minimum.

Auxiliary Remedies.—As a prophylactic measure we would suggest daily oil massage of the abdominal and perineal muscular walls from the fifth month on, and the administration of teaspoonful doses of sweet oil, with the saw palmetto, during the last two months. If the above instructions are implicitly carried out during labor, there will be little use for anything to relax the muscles and relieve pain. However, where pain to an excessive degree exists we administer chloroform in the second and sometimes in the third stage of labor. It should not be pushed to the full extent of unconsciousness. It is best administered by the patient herself. As soon as she begins to reach this stage the cone falls from her hand and is not used again until the patient fully recovers. In this way comparatively little chloroform is used and the best results obtained.

WHAT TO DO IF BIRTH OCCURS IN THE ABSENCE OF A PHYSICIAN.

In such an emergency and until a doctor arrives the midwife or attendant should know something of the nature of the presentation of the child. If a head presentation, and the birth be difficult by reason of a failure of the shoulders to pass, the forefinger may be inserted under the child's armpit, and gentle pulling exerted. This assistance overcomes the difficulty in most instances.

The Navel Cord.—Place the child to one side, beyond range of the mother's discharges, seeing, of course, that a possible wrapping of the navel cord about its neck does not interfere with its breathing, and that the mucus be removed from its mouth. As soon as the child has given signs of life by breathing and crying, and not before, tie a strong string tightly around the navel cord, some two inches from the belly, and knot it well. Do the same some four inches from the belly. Then cut the cord between the two tyings.

The Arterbirth.—Do not pull on the navel cord to help the expulsion

of the afterbirth (placenta). Give time for its natural expulsion. If it prove tardy the abdomen in the region of the womb should be subjected to gentle friction and pressure by the hand. This will stimulate the womb to expel the afterbirth. When the afterbirth has passed a stout, broad bandage should be drawn firmly around the abdomen and fastened. A doctor might not use such a bandage at all, but it is well for a nurse in his absence to do so as a precaution against hemorrhage. It should be worn for several weeks.

Necessity for Rest.—The mother should not be allowed to move from her position or to exert herself for several hours after delivery. Every hour spent in perfect quiet reduces the chances of flooding. After this rest, and perhaps a little sleep with it, if a cup of warm tea has been given, the bed may be dressed, the mother not, however, changing posture. Or she may be moved to a clean bed.

The Infant.—Meanwhile the infant should have been well greased all over with lard or oil, and dressed; the next day thoroughly bathed in warm water. After being dressed, it should be placed with its mother, both to nourish itself and to encourage the flow of milk. By this time a doctor should surely have arrived, and his business would naturally be to look after the further welfare of the mother and child.

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SEXOLOGY

PART. II.

THE MOTHER AND THE CHILD

The expectant mother should not be considered as an invalid. To be with child is a natural physiological process, the fulfilling of the Divine mandate, and the highest crowning act of womanhood, yet the state of pregnancy is one involving the most delicate and highly sensitive organism, and requires careful consideration both from the standpoint of the woman herself and the new life which she is bringing into being. Prenatal influences and education are of vast importance, yet they are greatly neglected and persistently misunderstood. Those who would have healthy children must be themselves healthy. They must obey the laws of nature and morality. They must not expect good fruit from poor soil. Physical strength, good organization, agreeable temper and nobleness of mind beget their like; drunkenness, debility, debasement of body and mind, yield similar characteristics in the progeny. Children who inherit the former start from the highest vantage ground; children with the latter start in the race of life handicapped and at great disadvantage.

PREGNANCY.

Signs of Pregnancy.—The natural question of the expectant mother is as to how pregnancy manifests itself. The following are usual and predominating signs:

1. **Cessation of Menstruation.**—Other causes may suspend the menstrual flow, and not only so, but in some cases the menstrual flow is not suspended during first month or so of pregnancy. But it is usually true that this is a reliable sign, especially if menstruation has previously been regular. The missing of two successive periods, however, may be taken as a sign.

2. **Changes in the Breasts.**—If the menstrual flow has been suspended and at the same time there are unusual sensations in the breasts, such as tenderness to pressure, stinging, prickling, and so forth, these may be accepted as further indication that pregnancy exists.

3. **Morning Sickness.**—This is especially noticeable in the first preg-

nancy. Usually on rising there is considerable nausea which may or may not be accompanied by vomiting. Occasionally this nausea occurs in the evening instead of the morning.

4. **Disturbances in Urination.**—In the early period of pregnancy there is often desire to frequently empty the bladder, and there are sometimes other annoying symptoms. These usually are due to pressure of the growing womb against the bladder and generally disappear after a few weeks.

5. **"Quickening."**—This is the movement of the child in the womb, and is usually felt about the sixteenth to the eighteenth week. This as a rule may be accepted as conclusive that pregnancy exists.

Duration of Pregnancy.—Countless cases of childbirth in many countries and under all conditions have fixed the duration of pregnancy at approximately 39 weeks or 273 days. Figuring thirty days to the month it will be seen that the commonly mentioned period of nine months is not far astray. To arrive at the date on which a given birth will occur there are many ways of reckoning. (Consult index for special table, which will be found interesting.) However, to roughly estimate, the simplest rule is to count forward 280 days from the beginning of the last menstrual flow, thus allowing seven days for the menstrual period, or what amounts to the same thing, count backward 85 days, or possibly still more easy, count back three months and add seven days. It will seldom occur that the exact date will be thus arrived at—some will occur a few days earlier and some a few days later, but it is nevertheless a good general rule. Example: If the last menstruation began on 30th September, count back three months to 30th June and add seven days, giving the date of expected birth as 7th of July.

By consulting the general index and looking under the respective sub-headings, there will be found full information in the matters of Conception, Pregnancy, Labor and other relevant subjects; but it is essential in this chapter to call attention to the special care which the condition of pregnancy demands. From the earliest moment after conception more than usual care should be taken as to general health, clothing, baths, diets and so forth, and therefore we shall here treat briefly as to such things as are most vitally exigent during pregnancy.

PERSONAL HYGIENE DURING PREGNANCY.

Clothing.—This should be loose and comfortable and adapted to the gradual development of the abdomen and the breasts. Tight lacing is

injurious to both mother and child and should be carefully avoided. It gives rise to disorders of the stomach and liver and may cause uterine hemorrhage and abortion. The clothing should be sufficiently warm to protect against cold and the feet should be especially guarded in such regard. In winter or in cold and damp seasons a flannel bandage or roller around the abdomen will prove a valuable protection. The ordinary corset should be discarded early in pregnancy. There are models which are intended for the woman during this period, and unless the expectant mother decides to do without wearing corsets at all, she will find it well for her own comfort and also for the welfare of the coming child, to provide herself with corsets especially adapted to the needs of pregnancy. Too much care cannot be taken not to let the feet become damp, and not only should the feet be properly protected in such regard, but special care should be exercised that the shoes worn are comfortable. Pregnancy demands that there shall not be unnecessary strain on the nervous system, and few things are harder on the nerves than painful feet. Comfortable shoes are an essential. Toward the end of pregnancy the feet sometimes swell, and it is then necessary to wear larger shoes and of more comfortable shape than may be necessary at other times. High heels should not be used for not only is there greater danger of falling, but the wearing of high heels unduly throws the weight of the body forward and brings undesirable pressure upon the lower part of the abdomen, already under strain.

Exercise.—All kinds of harsh or agitating exercise should be avoided, such as riding rapidly in a carriage over rough roads, horseback riding, lifting or carrying heavy loads, in short, anything that may jar or strain. But short, gentle and frequent walks should be taken throughout the whole period of pregnancy, and much of the time should be spent in the open air with mild exercise and occupation, and in this way the general health be kept in proper tone, the growing foetus be nourished and strengthened and foundation laid for an easy labor and a good getting up. It is the abundance of air and occupation that largely explains the rapid labors and speedy recoveries of poor women. They are obliged to work, but in their very toil they are favoring nature's operations and their compensation is an easy confinement, unattended by much inconvenience or anxiety. Indolence during pregnancy is enervating to mother and foetus.

Rest.—A pregnant woman should retire early to rest—at least by ten o'clock—and be up in good time in the morning for her ablution,

morning stroll in seasonable weather, and an early breakfast. She should use every means in her power to make and keep herself healthy, not only for the sake of herself and her husband, but also for the sake of the forming child within her and the welfare of humanity.

Fresh Air and Ventilation.—Fresh air is needed by everyone. It is indispensable to health. It is especially essential to the pregnant woman. Where circumstances and weather permit there is nothing better for her than to sleep out of doors. Where this is not possible she should sleep with windows and doors so arranged as to give the maximum of ventilation, having due regard that there shall be no draughts. Not only is this necessary as regards the sleeping room, but it is also just as essential that the living rooms of the home should be thoroughly and properly ventilated. The windows in all occupied rooms of the house should be thrown wide open at different times of the day even in cold weather, that fresh air may enter. Unchanged air is unfit for the human lungs, and it is especially harmful to the pregnant woman.

Baths and the Care of the Skin.—These are very important matters. While the skin should be kept in good condition at all times, it is especially necessary during pregnancy, as at this time the work of all the excretory organs is increased and the skin is one of the most important of these organs. It contains millions of pores which provide outlet for the waste material thrown off by the sweat glands. In a healthy person about a pint of water is each day eliminated through these pores, carrying with it various waste material. If the pores become clogged, the waste products are kept in the blood until they are disposed of by the lungs, bowels and kidneys, and this retarded elimination is injurious to the whole system. The pores must be kept open, the skin generally in healthy condition, and circulation stimulated, and this can be best attained by washing the entire body thoroughly every day, followed by good towel friction. Shower, tub or sponge bath may be used, and while the body is still wet should be briskly rubbed with a rough towel. A morning bath is recommended in most cases as it is usually more effective, and there is less danger of catching cold if the water is cool. Cold baths are not to be recommended as a rule, though if a woman has been accustomed to a cold morning plunge, it is sometimes permissible to continue it during pregnancy, provided she gets into a healthy glow by brisk rubbing immediately afterward, and that the shock is not too great. However, as a general rule it is recommended that at this time the chill should be taken from the water. In addition to this daily cool bath the pregnant woman should take either two or three

warm baths each week, using plenty of soap as these are necessary for the thorough cleansing of the skin. These warm baths should be taken at night just before retiring. Hot baths are sometimes beneficial and give rest, but the pregnant woman should avoid taking hot baths at the time of the normal menstrual flow and at no time during pregnancy should the hot bath be taken frequently. Both in respect of hot baths and very cold baths much discrimination is necessary during pregnancy, it being safer as a rule to confine the baths to the daily cool (not cold) bath and the bi-weekly warm bath.

Diet.—A due amount of care should be given to diet. Meat should be eaten but once a day; rich soups and highly-seasoned foods avoided, and all alcoholic stimulants strictly shunned. During the earlier stages of pregnancy rather less should be eaten than at ordinary times, for although it is true that two have to be nourished instead of one, yet there is less drain upon the system because the expectant mother is no longer unwell and the foetus up to the third month is not much larger than an egg. An overloaded stomach favors the distressing nausea and morning sickness of early pregnancy. During the latter months of pregnancy, however, the diet should be fuller, for if it be too light it is likely to make the mother a poor nurse for her child, both in the quantity and quality of her milk.

Condition of the Bowels.—Almost all women suffer from greater or less constipation during this period. This is largely due to increased pressure exerted by the enlarging womb upon the intestines and this becomes greater during the latter months. It is of the greatest importance throughout pregnancy that the bowels should move freely at least once a day. Whenever this can be accomplished by laxative foods resort should not be had to purgatives or enemas. A good laxative diet will include fresh fruits such as apples, peaches, pears, oranges, cherries, figs, pineapples, grapes, strawberries, raspberries, grapefruit, etc. Cooked fruits, such as prunes, apples, apricots, etc., are not so effective but are wholesome and may be eaten freely. The activity of the intestines is stimulated and increased by graham and whole-wheat bread, corn-meal and the bran foods. Ordinary bran, eaten raw with good cream is often successful in relieving constipation at this period when other things fail. Bran bread is often beneficial, and the following recipe is recommended: 1 cup of cooking molasses, 1 teaspoonful of soda, 1 small teaspoonful of salt, 1 pint of sour milk or buttermilk, 1 quart of bran, 1 pint of flour; stir well and bake for one hour in a very slow oven. It may be baked in

loaf form or as bran biscuits or "gems" as may be preferred. This bran bread may be eaten freely every day and if persisted in is almost certain to give favorable results. Do not bake too much at one time, as it becomes quickly hard, whereas it should be eaten moist and tender. Fresh vegetables are wholesome at this time, and if eaten with olive oil are laxative. Onions, asparagus, tomatoes, peas, spinach and practically all vegetables are recommended, but sometimes some of them, such as cabbages, radishes, etc., are not readily digested, and when this is found to be the case in respect of any vegetable or other article of food, the same should be eliminated from the diet. Different people are affected differently in this regard.

If constipation is not relieved by diet, the old and well-known remedy of senna may be tried. One good receipt is that for "Senna Prunes:" An ounce of senna leaves is put in a jar and a quart of boiling water poured over them; let them stand two hours, then strain, and to the liquid add a pound of well-washed prunes and let them soak over night; then cook in the same water until tender, sweetening with two tablespoonfuls of brown sugar. The syrup and the fruit are both laxative. Commence with half a dozen prunes with syrup at night and increase or decrease the quantity as may be found advisable. Another receipt is the following: Remove the stones from a pound of dried prunes and mix with them a pound of good dried figs, first having thoroughly washed the prunes; run the mixture through a meat chopper, adding two ounces of finely-powdered senna leaves. Stir this mixture with two tablespoonfuls of molasses. This makes a thick paste. Commence at bedtime by eating about three good tablespoonfuls and increase or decrease on following nights as may be deemed expedient. The paste should be kept covered in a glass jar and in a cool place. If the senna is unpalatable commence with a smaller quantity and gradually increase. If constipation continues in spite of these measures, it will be well to consult the family physician before resorting to purgatives. Enemas are sometimes helpful, but their regular employment is not advised.

Condition of the Breasts.—Every mother should have an inborn desire to nurse the coming baby. Breast-fed babies as a rule thrive better than bottle-fed babies. More bottle-fed babies die than breast-fed babies. It is estimated from carefully prepared statistics that the breast-fed baby has seven times as good a chance to live as a bottle-fed baby. Also it is better for the health and happiness of the mother if she be able to nurse her child. The healthful measures already set forth, if properly followed,

will greatly tend to make the mother competent to nurse her baby when it comes, but it is necessary to say a word in regard to the breasts during pregnancy that these may be found in proper condition when the time comes. The clothing of the expectant mother should be sufficiently loose to give ample room for development of the breasts. During the latter months of pregnancy special regard should be had to the nipples. They require toughening at this time, and every night at bed time should be washed with warm soap and water, then anointed with lanolin and covered with a piece of soft linen. They sometimes require special attention in addition to this, and it is therefore well to have the family physician observe the condition of the nipples about eight weeks before confinement that he may determine whether or not any special treatment is necessary.

Teeth and Bone.—In order that the child may have good teeth and good bone it is necessary to begin with the expectant mother. She must not only have plenty of good fresh air and good food, but the food must be of a nature to create bone in the forming child. Science has proven that the formation of various tissues in our bodies are influenced by the nature of our diet and that in order to meet the requirements of our systems our food must contain the elements which go to make up these tissues. So if we wish the baby's teeth and bones to be as they should be we must incorporate in the mother's food such elements as will make the right bone formation. This may be done by supplying the system with the required elements in a medicinal form, but if we can sufficiently supply these elements in the food itself, we will find our purpose better and more economically accomplished than by the administration of medicine. An analysis of bone shows it to be chiefly composed of the phosphate and carbonate of lime, with the chloride of sodium and phosphate of magnesia present in small quantities. Unless, then, the food taken by the mother contains an adequate proportion of these bone-forming elements, the child will either be lacking in such regard or the mother will be deprived of these elements for her own bones and so harmed. Teeth and bones owe their hardness to phosphate of lime, which is found in abundance in whole wheat bread and those cereals which consist of the whole kernel of wheat, oats or rye, but is absent in things made from white flour from which the gluten has been abstracted. The child that is deprived of lime phosphates in its food is likely to be subject of rickets, curvature of the spine and loss of teeth, and young or old people who live chiefly on white bread, pastry and the like are sure to have trouble with their teeth. Alkaline, phosphates, and other soluble salts are found in meat, eggs, milk and also in many articles of the vegetable kingdom. In the matter

of this creation of teeth and bone the use of lime water is strongly recommended. It may be purchased at any drug store or may be made at home by putting a piece of quick-lime the size of a hickory nut into an eight ounce bottle and fill with water, shaking to facilitate dissolution. After the lime settles the top is poured off. It is taken with milk in proportion of about one part of lime water to ten parts of milk. It is a well-known fact that no matter how good her teeth have previously been, when she begins to bear children every woman commences to suffer with her teeth. The cause lies partly in the fact that the woman lacks sufficient lime in her system to supply her own needs and those of the forming child, which in consequence absorbs the substance for its bones from the roots of the mother's teeth, and partly because the disturbance of nutrition during pregnancy is frequently the cause of an acid condition of the mouth with inflammation of the mucous membrane, accompanied by sore and bleeding gums. These sometimes become so sore as to makes it impossible to use a toothbrush and food lodging in and between the teeth ferments, makes a feeding ground for bacteria and causes further acidity. These conditions, acting through the fifth nerve, which supplies the teeth, not infrequently gives rise to a severe toothache that may continue some hours, notwithstanding that there may be no decayed teeth in the mouth. If the teeth are in good order, the saliva should be examined and kept in a neutral condition—that is, neither acid or alkaline in reaction. Tests can be regularly made with red and blue litmus paper which may be obtained at any drug store. Moisten the tongue with saliva and touch it to a piece of blue litmus paper, and if it be acid this blue paper will turn red—if it should be alkaline it will turn the red paper blue. By the use of alkaline mouth washes this condition of acidity may be relieved. Dentists commonly recommend what is called milk of magnesia (Phillips), but any good antiseptic mouth wash will be found serviceable, such as borolyptol, listerine, pasturine and glyco-thymoline. But where gums are very soft and spongy it may be found necessary to use a more astringent wash to harden and shrink the gums, and for such cases the following prescription is recommended:

R.—Tr. of myrrh	2 drachms
Tr. cinchona co.	6 drachms
Honey	1 ounce
Water	2 ounces

Rub on the gums several times a day.

Or tincture of myrrh in water as a gargle may be used, teaspoonful to a glass of water.

In such cases as this prescription fails it will be advisable to see a dentist, who will be able to undertake a thorough cleansing of the teeth in the recesses of the gums which cannot be reached with the toothbrush in the ordinary way. It is true that there is a very popular opinion prevalent that no woman should enter the dentist chair while in pregnancy, but the best authorities to-day are of opinion that if the dentist be properly qualified and the condition be made known to him, he will operate in such manner as to cause no harm, but on the contrary greatly benefit the patient. Brightness and cheerfulness during pregnancy is essential for the welfare of both mother and offspring, and it is not too much to say that there cannot be requisite cheerfulness where the expectant mother is a constant sufferer from toothache. It is then of vital importance that suffering from troubles of the teeth should be removed, and if ordinary means are not sufficient then that a competent dentist should be consulted, but he must be told of the condition of the patient.

Necessity of Comfort and Cheerful Surroundings.—It is of the utmost importance that the expectant mother be surrounded with comfort, cheer and happiness; that no unkindness be shown her by her husband or family; that she have all advantages of mental ease and comfort to implant in the miniature human being qualities good and noble. How readily mothers believe in birth-marks, yet how ignorant or negligent many of them are of prenatal impressions affecting health and morals. The pregnant woman, too, must be cheerful herself. It is a duty she owes the coming child.

Mutual Injuries.—It is to be remembered that during a prolonged period mother and child form together but one living existence, and whatever injures the mother's constitution also involves that of her progeny. A fall that in any way hurts the mother may equally harm the unborn child and oftentimes to even greater and fatal effect.

The Father.—It is not amiss here to say that the health of the father at the time of impregnation also influences very much the future child's welfare. He should be physically and morally sound.

SOME ILLS OF PREGNANCY AND HOW TO AVOID THEM.

Nausea and Vomiting.—The majority of pregnant women suffer from "morning sickness." It is a distressing but not an alarming ailment. A little dry food, such as toast or crackers, taken before rising and well chewed and then swallowed without liquid will sometimes relieve the

trouble. Some women find comfort and good results from taking a cup of tea or coffee, while with others they may have the reverse effect. A good preventive is to eat six small meals a day instead of three large ones, eating very lightly at the last meal of the day. The tendency to nausea is easily established and it is therefore important to ward off the initial attack. Keep the mind from dwelling on the subject of sickness and from anticipating the attack of nausea. A healthy mental attitude is of great advantage in this regard. Worry or any other morbid condition of mind exaggerates the ailment. Plenty of out-of-door life and a cheerful, happy mind will do much to counteract this illness. However, if there is much vomiting and this increases or persists in spite of precautionary measures, the family physician should be consulted, as medical skill is sometimes necessary to cope with it.

Heartburn.—This is a sensation of burning in the throat caused by an abnormal development of acid in the stomach. It has nothing whatever to do with the heart. The trouble may be overcome by taking a glass of rich milk or a tablespoonful of olive oil fifteen or twenty minutes before each meal, the idea being that the fat in the milk or oil will retard the secretion of acids. However, if an attack has begun it will only be aggravated by taking milk, oil or any other fat, and everything in the way of milk, oil or fat or greasy food must be avoided until the attack is over. This trouble is sometimes most successfully treated by means of alkaline drinks. A good prescription is the following: Bismuth subnit., 24 grains; magnesia powd., 1 drachm; sugar milk, 1 drachm. In 12 powders; one after feeding.

Cramps.—These sometimes occur during the later months of pregnancy owing to pressure on the nerves, the attacks frequently occurring during sleep or when the limbs are stretched upon waking. Relief may be obtained by rubbing and by application of hot cloths. To merely elevate the feet will sometimes be sufficient.

Kidney Complications.—If there be any tendency to kidney trouble it is more apt to manifest itself during pregnancy than at other time, and also during this period there may be discomfort from the kidneys without any real kidney trouble. The quantity of urine passed in 24 hours should be from time to time measured. If less than three pints be passed during that time it is evidence that not enough water is being taken. If also the urine is dark in color and shows sediment, it is evident that the pregnant woman must drink more water. The two dangerous elements in urine to be guarded against are sugar and albumen. Their

presence can only be told by specific chemical tests, and as the presence of either of these elements in the urine may be of serious import, every pregnant woman should have her urine frequently examined by the family physician, say not less than once a month during the earlier stages of pregnancy and twice a month during the latter half, or even more frequently if there be suspicion. Use a perfectly clean jar or vessel with a cover. This must be thoroughly scalded and kept in a cool place. Commencing at some convenient hour in the morning, the first urination should be into some other vessel and the urine thrown away, but on each subsequent occasion until the same hour next morning that there is inclination to make urine, empty the bladder into the special jar or vessel, keeping it tightly covered at all times between. From this vessel fill a perfectly clean six-ounce bottle, which should be corked tightly and a label put on it giving name, date and the total quantity passed in the twenty-four hours. Send this at once to the doctor. A teaspoonful of boracic acid will keep the contents of the jar from decomposing without affecting the urine from an examination standpoint.

Varicose Veins.—Owing to the unusual pressure on the blood vessels during pregnancy there is sometimes a swelling of the surface veins of the legs, which is known as “varicose veins.” When this trouble occurs the patient should sit or lie down frequently, and when sitting should rest the feet on a stool or chair in order to relieve the pressure. In severe cases it will assist relief to wear a thin flannel bandage about the calves of the legs, bias strips of flannel three inches wide being sewed together to a length of eight yards. Bind the legs before rising, commencing to wind at the toes, but leaving the heels uncovered. Wind the bandage round and round the leg and well over the knee or higher if the veins of the thigh are affected. Usually it is well to have the doctor or nurse attend to this bandaging, and where the trouble persists in spite of these precautions the doctor should in any case be called upon to direct treatment.

Piles (Hemorrhoids).—This ailment is of the same nature as varicose veins, only in different location, being in the rectum. The trouble is aggravated by constipation and is augmented by straining at stools. The call to the closet should always be immediately obeyed, but if the bowels do not move readily do not strain, but use some simple laxative such as licorice powder, though in so far as possible the bowels should be regulated by laxative diet rather than by direct medication. The patient should lie down frequently while the trouble is severe, and oftentimes a pillow under the hips will afford relief.

Leucorrhœa (the "whites").—This whitish discharge from the vagina is frequently due to the congestion of the vaginal walls resulting from pressure of the enlarging uterus on the blood vessels through which the blood is ordinarily returned to the general circulation. When this is the cause it is not usually serious though it may be very annoying. Douches sometimes relieve, but as a rule the doctor should be consulted before using this treatment.

Toxemia (Pregnancy Blood-Poisoning).—As pregnancy advances the mother is constantly receiving back into her blood an increasing quantity of waste matter from the growing child which must be eliminated as well as that which would naturally come from her own system. If the expectant mother's own nutritional processes are imperfect and she is unable to eliminate all these waste materials, a condition may result that may prove serious both for the mother and the child. This condition is called "Toxemia," and as its name implies, is a species of blood-poisoning. The following are some of the symptoms: Serious and persistent vomiting, repeated headaches, dizziness, puffiness about the face and hands, blurring of the vision or spots before the eyes, neuralgic pains, especially about the pit of the stomach, muscular twitching. It does not follow that any one of these symptoms nor all of them combined necessarily mean toxemia. They may be due to entirely different cause which may be removed without serious consequence of any kind. But when such symptoms appear they should be brought to the attention of the family physician, and it will be well to send him immediately a specimen of the urine, for the results of toxemia are so serious that they must not be overlooked, and if placed in the hands of competent physician at the beginning he will probably be able to remedy the ill before it gains undue headway. Many women are inclined to think that all such disturbances are a natural accompaniment of pregnancy and repeat the old adage that "a sick pregnancy is a safe one." There is no truth in this saying. If the pregnant woman is in healthy condition and carefully follows the rules for health laid down in this chapter, she will usually be free from most and sometimes all of the ills of pregnancy. Every pregnant woman should endeavor not only to be conversant with the necessary simple rules of health during pregnancy, but should strive to carry them out in every way. Guard unremittingly against continued constipation; avoid excessive quantities of meat; drink a liberal amount of water; take plenty of outdoor exercise and keep the house well ventilated day and night; bathe every day; wear loose, light, but suitably warm and com-

comfortable clothing; get plenty of rest and sleep at least eight hours out of the twenty-four, and do not become overtired at any time; have the urine examined frequently and at stated intervals; strive to be happy, seek self-control, and *do not worry*; consult the doctor when symptoms of illness persist in spite of all precautions. Pregnancy is natural and it should be healthy.

Miscarriage.—The placenta and the uterus do not become firmly united until the eighteenth week of pregnancy, and hence it is that miscarriage is most likely to occur during these early weeks. The possible causes of this mishap are many. Oftentimes it is impossible to discover the true cause. Once having had a miscarriage, no matter what the cause, there is greater danger of another, and women thus sometimes get into uncontrollable habit of miscarriage. Among common causes the following may be mentioned: washing, sweeping, lifting, moving heavy articles, running a sewing machine and so forth, or it may result from amusements that cause too great bodily strain, as dancing, tennis, golf, horseback riding, hill climbing, jolting over rough roads in carriage or automobile, etc. It may be due to some imperfect development of the child in embryo, to some constitutional disease of the mother, to some abnormality in the uterus or to its misplacement. In these latter cases it cannot usually be avoided. In perhaps the majority of cases prevention lies in guarding against over-exertion during the first few months. When there has been previous miscarriage and so a possible tendency for it to again occur, a stay of several weeks in bed will sometimes avail when nothing else would. Such women should go to bed immediately there is any indication of bleeding or of abdominal pain. If it persists it is wise to send for the doctor, especially if pregnancy has advanced beyond the sixth week. Whether doctor is obtainable or not she must remain absolutely at rest until all trouble is over. If the miscarriage occurs before the sixth week it may appear to be nothing more than a severe menstrual flow, but it must be remembered that no matter at what period it may occur a miscarriage is an entirely different happening from a menstrual flow and certain dangers are always present. A foetus, or in other words a child in embryo, has formed in the uterus and has come away in an unnatural way. Before a miscarriage can occur there must be a loosening of the foetus (or unformed child) from the uterus. If this loosening is so slight that the life of the foetus is not endangered, a miscarriage may oftentimes be averted by resting in bed. If in spite of this rest the bleeding continues it indicates that so much of the foetus has been detached from the walls of the

uterus that miscarriage is almost certain to result. In such cases the doctor should be at once summoned and anything that has come away before his arrival should be saved for his inspection, that he may judge as to just what has occurred. To neglect a miscarriage, even at the earliest stage, may mean complete loss of health and years of suffering, while in many cases if it have the proper care of a competent physician at the time it may be deprived of ill results. Never regard a miscarriage as something that should be concealed. If it has come about in a natural way or by accident it is a matter calling for sympathy, not condemnation, and it is unjust to oneself to permit it to pass without the proper medical treatment.

PREPARATIONS FOR CONFINEMENT.

Doctor and Nurse.—The family physician should be told of the existence of pregnancy at as early date as possible. It is not only advisable that he should regularly examine the urine from the beginning, but if he has had the case under observation from the start he will be in much better position to deal with any untoward symptoms that may develop than he would had the case not been under his previous observation. It is well also to engage the nurse some time before the expected event, and it will usually be found advantageous to consult the doctor as to the nurse. The nurse should visit the home a few weeks before the expected date and make herself thoroughly familiar with the house and see that all necessities for the occasion are in readiness. As to the time a nurse will be required, cases vary, but she should remain at very least two weeks, and if possible four and in some cases longer. Many a case of life-long invalidism has resulted from the lack of suitable and sufficient care from doctor or nurse or both at confinement, and a few extra dollars spent on nurse and doctor at this time may save much greater expenditure later and perhaps save years of suffering.

Place of Confinement.—It is becoming more and more common for women to go to hospital to be confined. It is to be recommended in many ways. If any emergency occurs there are not only all appliances which may be required ready for instant use, but doctors and nurses to assist in any way that may be desired. In the matter of cost the hospital confinement will usually be cheaper than one at home, not only because of the saving in the matter of the many things it is necessary to get for a home confinement, but in the matter of the nurse, as at home there is not

only the nurse's salary, but her laundry and board. At the hospital the weekly amount paid includes the board of the patient, the routine care and all appliances of every kind that may be used. At the hospital ward nurses will usually be sufficient, but it is a great comfort to the mother and a help to the doctor if a special nurse is also engaged for the first two weeks, and where expenditure for such special nurse can be afforded it is to be advised. Many of course prefer confinement at home, and in such case everything must be gotten ready for the event a very considerable time in advance, and the importance of engaging a competent nurse must not be overlooked, for the best nursing that can be had is desirable for the woman in childbirth.

Supplies Needed.—For a confinement at home the following supplies should be on hand: Two to four pounds of absorbent cotton; one large package of sterile gauze (25 yards); two yards of stout muslin for abdominal binders; twelve old towels or diapers; two old sheets; two yards of bobbin or very narrow tape, for tying the cord. With these supplies the mother or nurse may make the necessary pads and bandages, which must be sterilized in accordance with instructions hereinafter given. The following further supplies should also be in readiness: one hundred bichloride of mercury tablets; four ounces of powdered boric acid; one bottle of white vaseline; one pound of pure Castile soap; one quart of grain alcohol; one douche pan; one stiff hand brush; one slop jar or covered enamel bucket; three pottery or agateware basins, one 16 inches and two 11 inches in diameter; at least three pitchers, each capable of holding a quart and upward; one and one-half yards of rubber sheeting, at least thirty-six inches wide, or one and one-half yards of white table oilcloth, to protect the mattress; one two-quart fountain syringe; one medicine glass; one medicine dropper; one drinking tube.

Sanitary Pads.—These are for the purpose of absorbing the discharges after delivery. They should be ten inches long and four inches wide, and one inch thick. They may be made of absorbent cotton, or for economy may be largely made of batting, but there must be a layer of the absorbent cotton on one side. Cut the sterile gauze into pieces the right size to fold around the cotton and extend two or three inches beyond it at each end. At least five dozen of these pads will be needed. They are pinned front and back to the abdominal binder, which is simply a strip of cotton cloth 12 inches wide and long enough to be fastened comfortably around the abdomen.

Delivery Pads.—Make two pads, each a yard square and four inches

thick. Cotton batting may form the principal part of the thickness, but there must be at least one inch top layer of absorbent cotton. Cotton waste if boiled in washing soda and thoroughly dried in the sun makes a cheap and effective filling in place of the batting, but as the texture is loose a thicker layer must be used. If necessary newspapers may be used both to protect the mattress and for the delivery pads, but for the latter must be covered with old sheets which have been sterilized.

Gauze Sponges.—These are made by cutting sterile gauze into 15-inch lengths, the width of the gauze. One raw edge should be folded down about three inches, then double the strip by putting the selvage edges together, putting the raw edge of the fold on the outside. Fold this into thirds both ways and turn the sponge inside out so as to have all the raw edges inside. Two dozen of these pads will be required.

Cotton Pledgets.—These are wads of absorbent cotton about the size of an egg, having the ends of the cotton twisted into the roll. Make several dozen of these and keep them in a small pillowcase or cheesecloth bag.

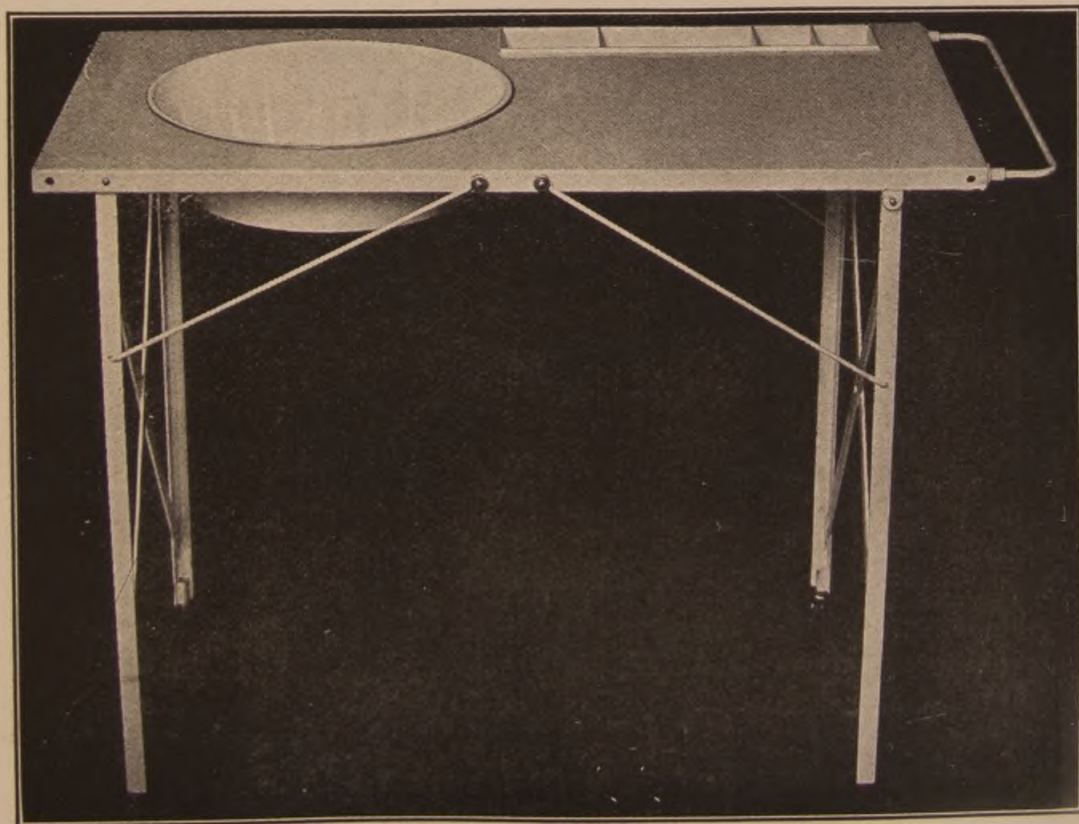
Gauze Squares.—These are needed to wash the baby's eyes and for other purposes. They should be cut out of the gauze in four-inch squares.

Bobbin.—Cut ordinary cotton bobbin into six 9-inch lengths for tying the cord.

Mode of Sterilizing.—Dressings may be sterilized in the oven, but there is danger of scorching, and, moreover, dry heat is less effective than moist heat, and it is therefore better to use steam. The smaller things may be sterilized in a large kettle or saucepan, and the larger ones in the wash boiler. For the first place a bowl upside down in the bottom of the kettle, using a bowl several inches high; put a plate on top of this bowl; put the dressings on the plate. For convenience in handling they may be placed in a cheesecloth bag. The water should just cover the bowl, but not the plate. Cover the kettle tightly. The articles should remain for a full hour after the water begins to boil. To sterilize in the boiler make a muslin hammock, somewhat longer than the length of the boiler, so that it will hang down about a third the depth of the boiler, and put the articles in this hammock, using great care in fastening the ends of the hammock to the boiler handles and making sure that it is so placed that the articles cannot tumble out. It will facilitate handling to first place the articles in a cheesecloth bag. The boiler should be filled about one-quarter full of water and after the water has come to the boil the articles should steam for a full hour, when they may be taken out and



Lying-in Room.



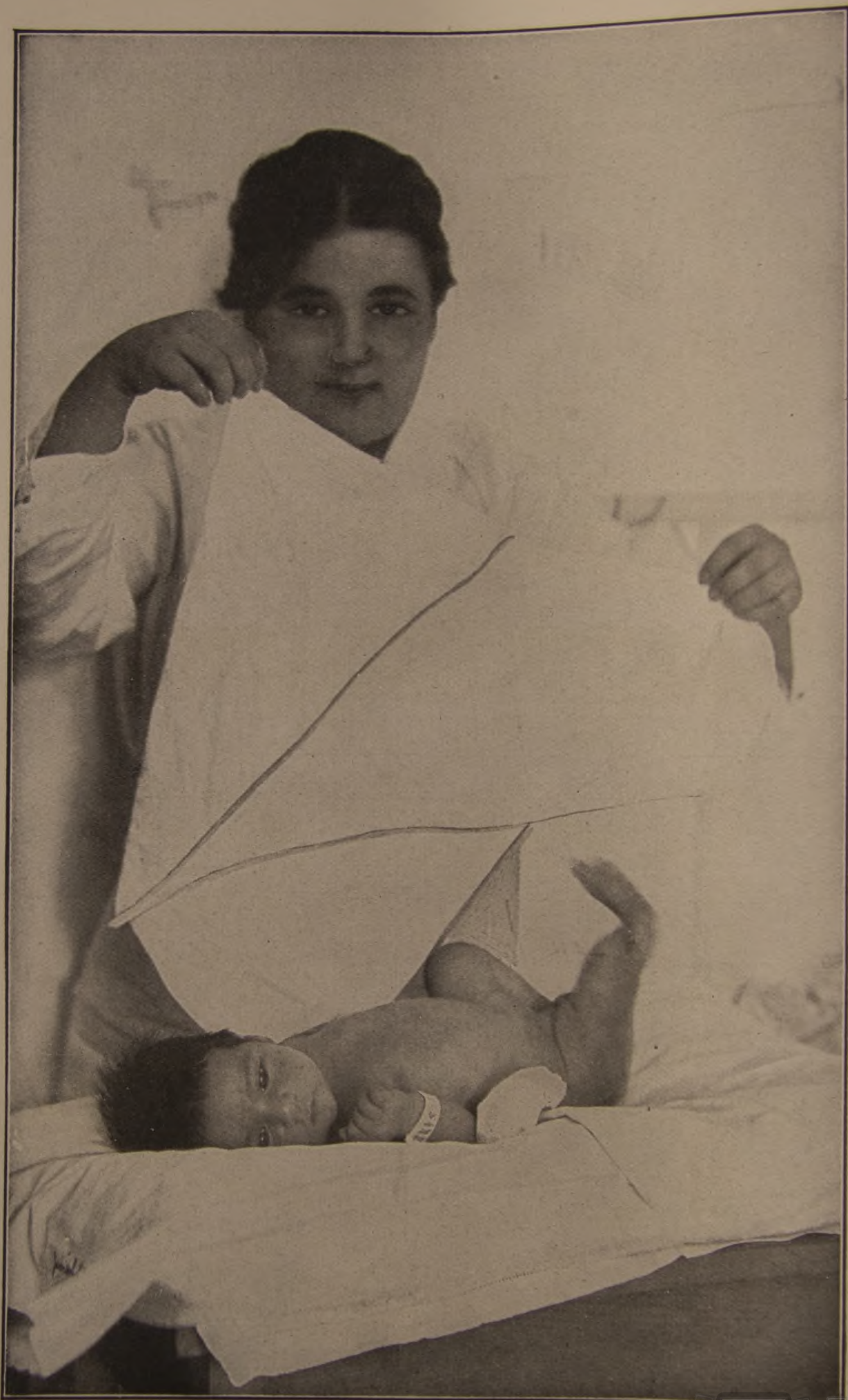
Bathing Table for Infants.

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Applying the Abdominal Binder.

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Applying the Diaper.

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Bottle-fed Infant, 4½ lbs.

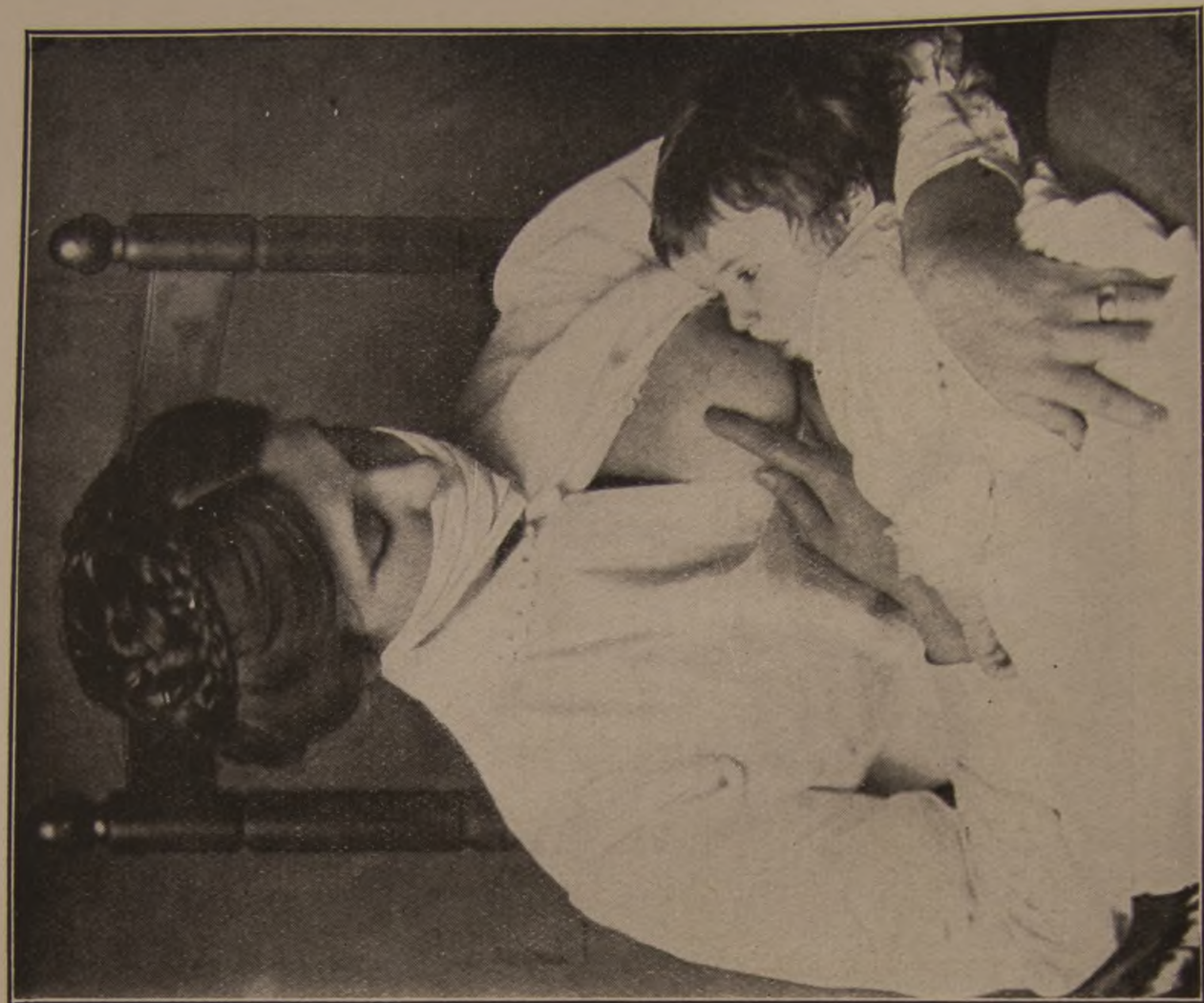


Same Infant three months after breast-feeding,
had been furnished—12 lbs.

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Proper position for breast-feeding.

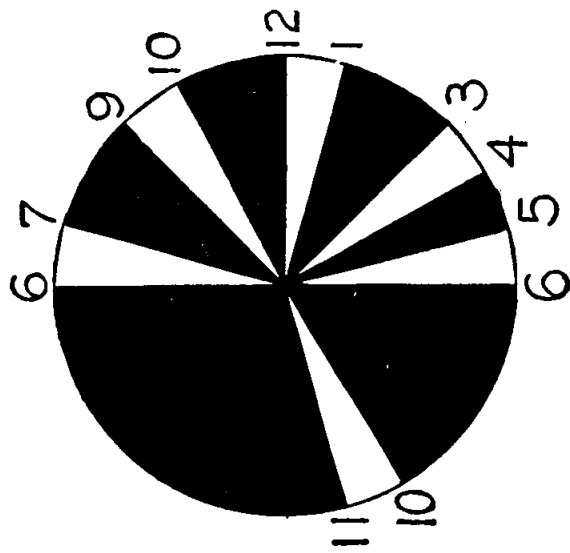


To prevent the baby from taking your cold.

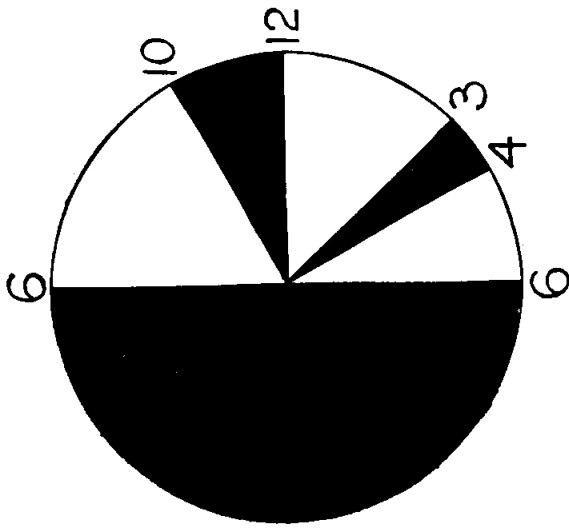
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HOURS OF SLEEP

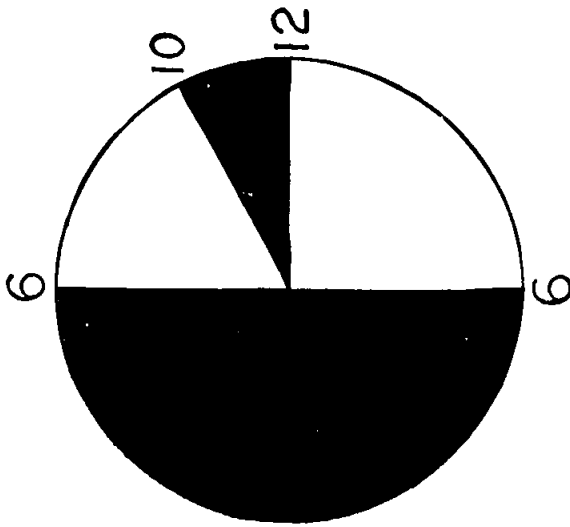
Black is time for sleep; white is time for baby to be awake to be washed, dressed and fed.



First six months.



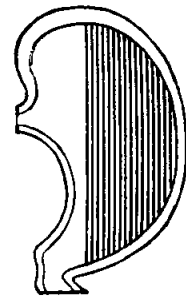
Six months to one year.



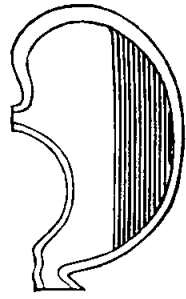
One year to two years.

HOURS OF FEEDING

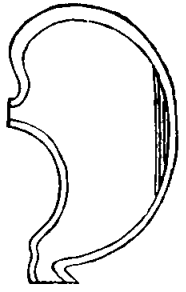
Stomach of Child after Feeding.



End of first hour.

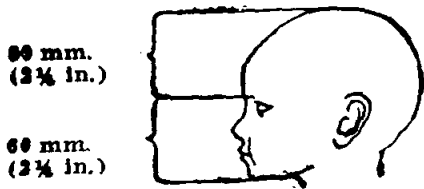


End of second hour.



End of third hour.

PROPORTIONS OF A HEALTHY CHILD'S BODY

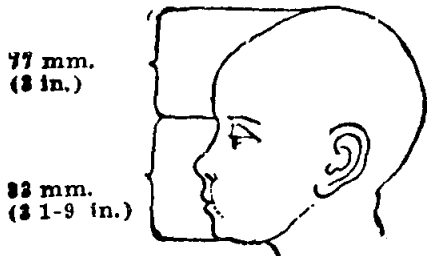


60 mm.
(2 3/8 in.)

60 mm.
(2 3/8 in.)

Fig. 437. At birth.

Length of head 12 cm. (4 1/2 in.)
Length of face about half the length of head.

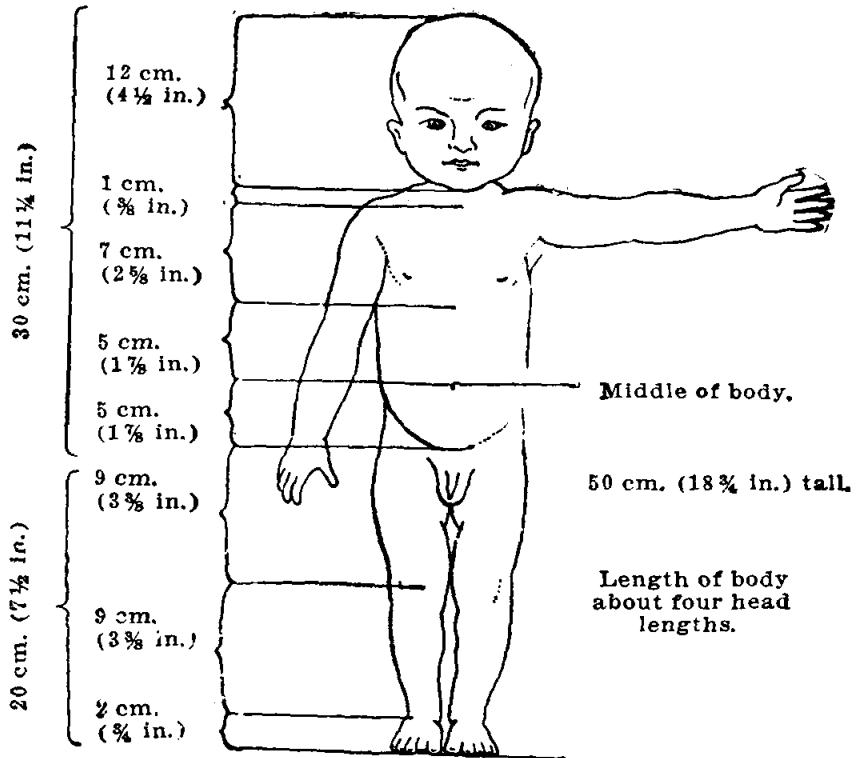


77 mm.
(3 in.)

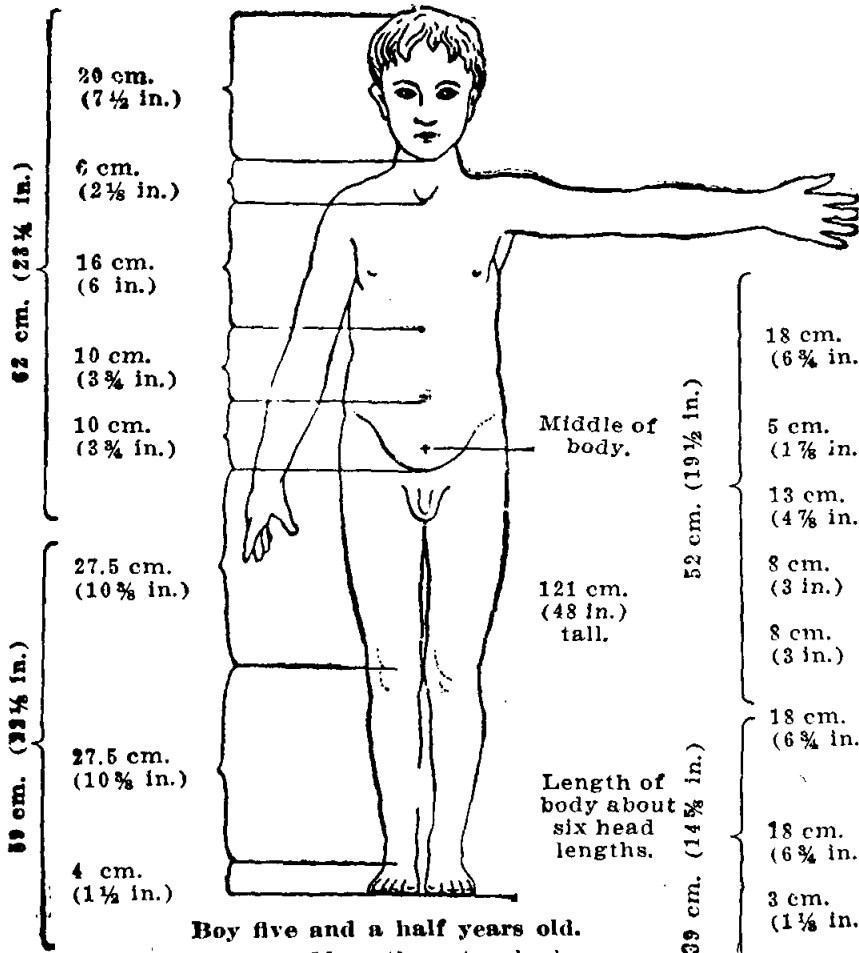
82 mm.
(3 1-9 in.)

At age of one year.

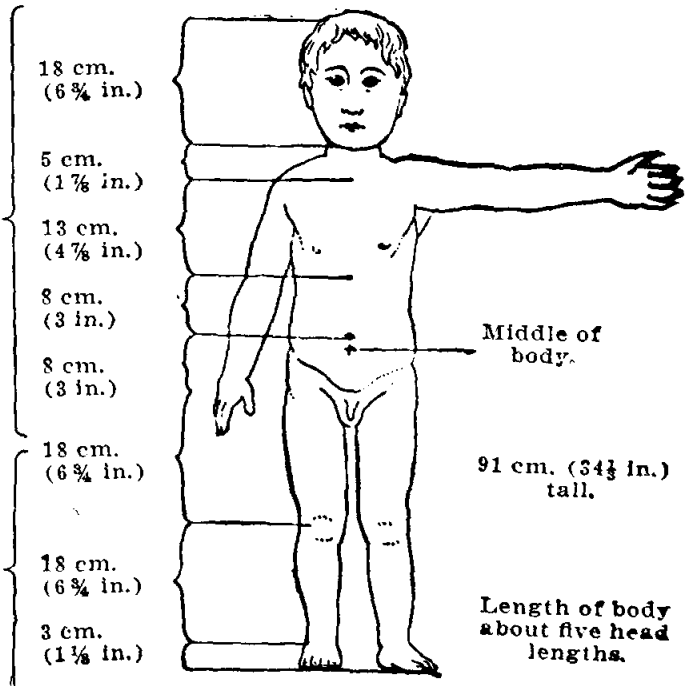
Length of head 16 cm. (6 in.)
Length of face from one-thirteenth to one-twelfth larger than top of head.



New-born boy.
About one-seventh natural size.



Boy five and a half years old.
About one-fifteenth natural size.



Two-year-old boy.
About one-fifteenth natural size.

dried. Sun-drying by hanging on clothes line is perhaps best way where possible, but they may be dried in the oven, great care being taken not to let them burn. They should then be put away in a perfectly clean drawer or other closed and suitable place, ready for use when required.

Confinement Room.—This should be the brightest and cheeriest room in the house. If possible it should be near a bath-room, and if there is a communicating room which can be used by the nurse and baby, it will greatly assist the mother in matter of rest. The room should be scrupulously clean and should be free from heavy draperies and upholstered furniture.

The Bed.—A single metal bed is to be preferred to the ordinary double bed, which is both too wide and too low. If low bed must be used, it will be well to raise it six or eight inches by putting strong, square blocks under the legs, first of course removing the castors so that there will be no danger of the bed slipping off the blocks. It is necessary that there shall be a good and comfortable mattress. If the mattress sags in the middle it should be remedied by placing three obstetrical boards—5 ft. by 12 in.—between the springs and mattress. The bed should be in such position that both the doctor and the nurse can get at it at the same time, and also it should be where the best possible light falls on it, especially at night, as light is of great importance in case stitching is necessary. A portable electric lamp is an excellent thing if it can be arranged.

CARE OF THE NEW-BORN INFANT.

While no one is herein advised to usurp the place of a physician or a skilled nurse in the lying-in room, yet, under peculiar circumstances, it may fall to the lot of some member of the family to act in an emergency as a nurse or even as a physician.

What to Do in Absence of Physician.—In such a case after the child has been born care should be exercised that no blood or fluid be drawn into the lungs during efforts to establish breathing. As soon as the child breathes well and cries lustily several times, the cord may be tied and cut in this fashion: Take a piece of strong heavy wrapping cord or a braided silk, a fishing line serves admirably, and tie the cord two fingers' breadth from the belly. Tie again further away and cut the cord between the two strings. Should the child not breathe well when born hold it up by the feet. This gives an opportunity for mucus and fluid to run out of its

mouth. Spank it gently. If the cord beats feebly cut it and remove the baby from the mother.

To Start Breathing.—If it has not yet begun to breathe souse its body quickly in cold or hot water. Immerse in hot and cold water alternately, frequently hang it head downward. Once the child breathes well or cries well roll it in a warm blanket or woolen shawl, lay it on its right side in a suitable place until the mother has been cared for as described in a previous chapter.

Bathing.—All strong, well-developed infants may be given a thorough cleansing bath soon after birth. If the child is covered by a white, cheesy substance it may be thoroughly greased with advantage. For this purpose pure olive oil is superior, although unsalted hog's lard or vaseline makes a good substitute. After rubbing this cheesy substance loose with the grease, give a soap and water bath. To give the bath the child should be laid across the lap on a blanket or large soft towel. The bather should wear a rubber apron and should have on a chair by her side a large basin of warm water and a bar of castile soap. A soft wash cloth or bath sponge may be used for the washing process. This completed, wrap the child in the towel and dry the skin by rubbing on the outside of the towel. Dry within all folds of skin very carefully. The entire body may now be dusted with baby powder: lycopodium, talcum or powdered starch.

Caring for the Eyes.—If the eyes are now properly cleansed that condition which mothers so dread, "sore eyes," may be avoided. They are best cleansed by dropping sterile boiled water in them by means of a new clean medicine dropper. A boric acid eye wash may be employed if the eyes seem to be inflamed at birth.

Boric acid	1 teaspoonful
Distilled water	5 ounces

Note.—Should the child be very weak or breathe feebly, it is well to postpone bathing or simply grease the child and wait until it is stronger before using soap and water.

Care of the Navel (*Umbilicus*).—Our grandmothers were wiser than they knew when they used singed linen to dress the umbilical cord and umbilicus (navel string and navel). We know that only sterilized dressings should be used about the navel. Among the best is sterile or borated cotton or sterilized gauze. If these cannot be had any piece of soft cloth or linen may be sterilized by baking in an oven for one-half hour and

handled only with clean hands. In dressing the cord it should first be washed clean with sterile or boiled water, then dusted with some antiseptic dusting powder. Boric acid is frequently used, although the following formula will be found more frequently used by physicians and obstetric nurses:

Salicylic acid 1 part
 Powdered starch 16 parts
 Mix well and use as a dusting powder.

Applying the Dressing.—Your cloth or gauze may now be applied. Take a piece about four inches square, cut a hole in its center, pass the cord through and lay it upward and toward the left, add more dusting powder and fold in the edges of the dressing. The bandage may now be applied.

Dropping of the Cord.—The stump of the cord usually separates within a week, although it may remain longer. The rule is to allow it to drop off of its own accord. At any time when adjusting the bandage if the dressing is blood-stained or if pus is seen about the navel call the physician's attention to it at once.

The Bandage.—The bandage is applied to the infant's body for two reasons: First, to keep in place and to keep clean the dressings on the cord; second, to furnish support to the abdomen, and protect the intestines. During infancy the child uses all of its abdominal muscles at each breath, hence it is important that the bandage be pinned just snugly. If too tight it will interfere with breathing. It may, too, cause greater than normal pressure in the groins and hernia may result. The bandage should either be knit or should consist of a strip of flannel six inches wide and eighteen inches long. The bandage should be worn from three to six months.

Baby Clothes Prepared Before Birth.—One dozen white gowns for day.

One-half dozen woolen gowns for night.

Six abdominal bandages.

Six woolen undershirts.

One-half dozen knit socks.

One dozen large safety pins.

One dozen small safety pins.

One-half dozen large, soft towels.

Three or four baby wash-cloths.

Powder, powder-box and puff.

Two light, soft shawls.

Two dozen diapers.

Two flannel bathing aprons.

One rubber apron.

The Crib.—A crib is better than a cradle. It should be provided with a cheap mattress and a mackintosh, two soft blankets, two pillows, a washable comforter and a counter-pane. A good-sized clothes-basket with a large hair pillow makes an excellent crib for early infant life. It is especially useful when the child is weak, and artificial heat must be supplied.

THE CARE OF PREMATURELY-BORN CHILDREN.

Premature Birth.—Fright, accident or disease may cause the pregnant woman to deliver herself of her infant before term. Physical deformity of the mother may make it necessary for the physician to bring on labor some weeks before term. The care of infants born under such circumstances causes parents and nurse great anxiety. The lives of many such infants are sacrificed yearly because the average nurse (untrained) knows nothing of their care.

Incubation.—Every effort must be made to conserve the heat of the prematurely-born infants. To do this successfully, an artificial media must be supplied to take the place of the mother's womb. To speak figuratively, the "hatching" must be completed. Incubators are made for this purpose, and are for sale or for rent in every large city in this country. These incubators are planned similarly to the incubator in which chicken eggs are hatched. The great advantage of this apparatus, if successfully conducted, is a uniform high temperature can be obtained, and the moisture of the atmosphere accurately regulated. Feeding can also be done without disturbing the infant or allowing much heat to escape. However, in hospitals and elsewhere difficulty has been found in properly conducting child incubators and preference is now given to the "Basket Heat" method described in the following paragraph.

Basket Heat.—Take a large clothes-basket, line it with a double blanket, place on its bottom and stand around its sides a row of hot water bottles (beer bottles filled with hot water serve admirably), reline with another blanket, and place a thin pillow over the bottom row of bottles, and you have an improvised incubator that has saved the lives of many infants and gives greater opportunity for safeguarding the infant at all points.

Bathing and Clothing.—Prematurely-born infants must not be given a general bath. The face, if soiled, may be cleansed. The entire body should be greased with olive oil, lard or vaseline. The cheesy substance wiped off with cotton. The entire body, except around the anus and face should then be sheathed in carded lamb's wool or raw cotton, and around the whole, a bandage. A bunch of cotton may be placed over the anus, to receive urine and feces.

Temperature.—The infant must now be provided with a high, even temperature, varying from 95 degrees to 85 degrees Fahrenheit, depending upon how weak it is when born. No other clothing is required, except a blanket cover. This temperature can be accurately maintained with the incubator, or approximately maintained with the basket properly and skillfully manipulated.

Feeding.—It is frequently impossible for the premature child to suckle at the mother's breast, but diligent effort should be made in this regard. If the act cannot be performed then the mother's breast should be pumped, and the milk thus gotten kept warm by placing in a cup standing in warm water. It should be given to the infant as soon as possible after being drawn. It is best given by means of a medicine dropper. Where the mother has no milk, milk may be prepared as per formula for modified milk, and then dilute it one-half with sterile water. Only a few teaspoonfuls can be given at a feeding, but the feeding should be more frequent than with the child born at regular time—say once an hour. The infant must be kept by its artificial heat, or in the incubator while this is being done. It may even be fed without waking.

General Directions.—Such infants sleep almost continuously, and cry usually when too cold. When too hot they will be seen to be restless, and to breathe rapidly. These observations must guide in regulating temperature. Should stimulants be required, the physician will direct the kind of stimulation and dose. The child must not be removed from its wool or cotton suit for a soap and water bath until such time as it would have been at term if unborn, and not then unless it appears to have gained strength.

To remove soiled cotton about anus, do so by turning child on its side; remove cotton, wipe off buttocks with moist cloth; replace fresh cotton, and turn child back as before. Do not drag a prematurely-born child out of the incubator or basket to nurse it or to show it to inquiring friends.

INFANTS OF NORMAL BIRTH.

Infant Bathing.—An infant should be regularly bathed from head to foot once a day. The outfit for the baby's bath should consist of an infant bath table, bath thermometer, washcloths, soap, oil, powder and towels. The tub and table should be of white enamelware.

A bath thermometer should be used to determine the temperature of the water. Squares of cheesecloth or soft turkish toweling should be prepared—a dozen each time—to be used as washcloths.

By no means use highly scented soaps, they contain chemicals that irritate the skin. Imported castile is the best. Wet the baby's head before putting into the bath. This is to guard against congestion. Burnt flour should be used in case of chafing. Be careful to guard against draughts and bathe the child near an open fire, if possible—if not, the bath should be given in a perfectly warm room. Have the clothing hanging at the fire, well warmed and ready to put on at once. The petticoats should be put one in the other, and the dress over them, so that all three may be slipped on at once. Every little waist should be furnished with buttons or button-holes and with drawing-strings at top and bottom for drawing to the proper size.

A large turkish towel should be laid upon the table and the baby wrapped in it as soon as removed from the tub. Two small linen towels are necessary—one for the face, the other for drying the creases between the thighs.

Care of the Mouth.—The mouth of the nursing child should be gently cleansed several times a day with a piece of soft linen dipped in boiled water or boric acid solution. The mother's or nurse's hands must be clean when washing the baby's mouth. It is particularly important to keep the breast-fed baby's mouth clean, lest the baby infect the mother's nipple, and sore nipples or even breast abscesses result. It is equally important during teething. It is to be remembered, however, that too frequent washing of the baby's mouth may rub off some of the natural mucous membrane and give opportunity for entrance of germs, and it is also to be kept in mind that it is equally important that the mother's nipples be kept constantly clean and that they be antiseptically washed just before each nursing, as otherwise the child's mouth may become diseased from the mother's nipples.

Care of the Genital Organs.—It is of the greatest importance to begin in early infancy an intelligent inspection and cleansing of the genital



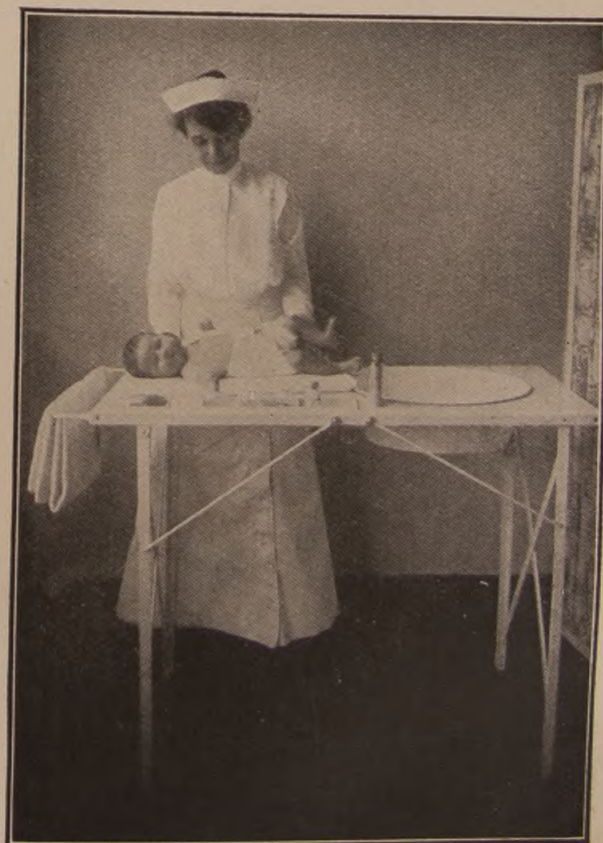
The Old Way.



The Infant Bath Table.



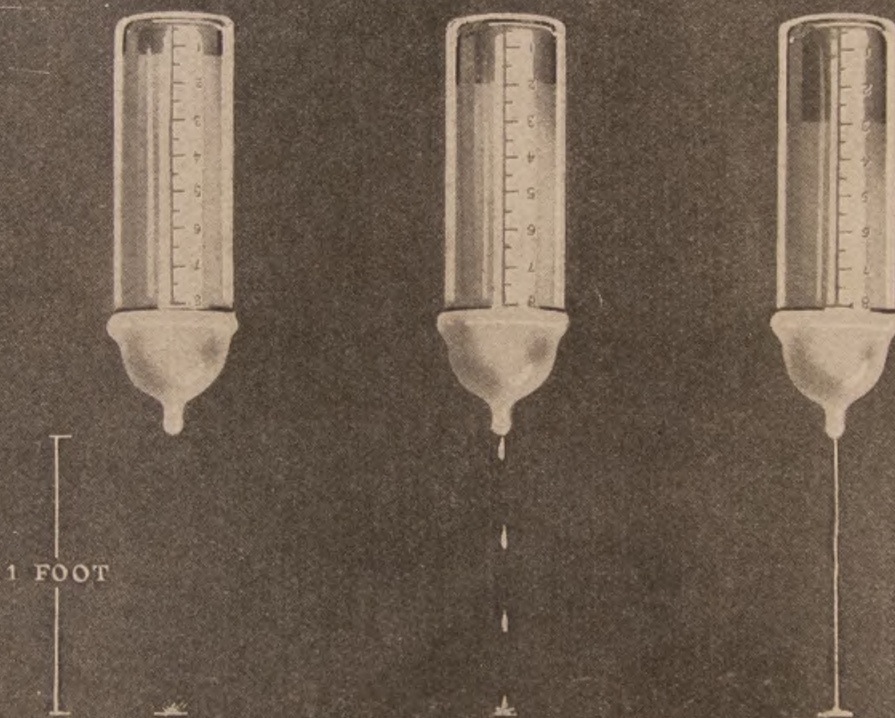
A turkish towel should be laid upon the table.



Applying the Diaper and Abdominal Bandage.

© E. J. S.

Look through each nipple before you buy it. You should barely be able to see light through the hole in the nipple. It is easy to make a hole larger with a red hot needle point, but you cannot make it smaller.



Very Slow Nipple

When bottle of milk is held upside down, one foot above table one drop will strike the table just as the next one leaves the nipple.

Too slow

Medium Slow Nipple

Under same conditions there will be 2 or 3 drops between nipple and table.

Just right

It should take from 10 to 20 minutes for emptying the bottle.

Fast Nipple

Milk flows from nipple in small but continuous stream.

Too fast

organs. With boys the penis should be examined; the foreskin drawn back over the shaft of the penis; any secretion beneath the skin should be removed with a soft cloth and warm water. The skin should then be drawn forward again as soon the the cleansing has been completed. If this precaution is not observed the penis may become swollen to such an extent that it may become impossible; if the foreskin cannot be withdrawn over the penis the boy should be circumcised. Proper cleansing beneath the foreskin will prevent, or often cure, bed-wetting; will prevent premature erections; playing with the penis, and masturbation.

Caring for the vulva and clitoris in girls is equally important, but much simpler to do. It prevents the formation of habits not alone loathsome and disgusting, but augurs for the future health of the child.

Care of the Eyes.—It is well to cleanse the eyes of the new-born infant as directed in giving its first bath. Its eyes may be advantageously cleansed with sterile water, or boric acid solution used from a dropper several times a day for some days after birth. It is not necessary to use medicine or eye washes in the baby's eyes to strengthen them; but during the first three months, when but few tears are secreted, the eyes may be cleansed as above, when dust or dirt of any sort gets into them.

The abominable custom of mothers and nurses taking babies out in carriages without sunshades, allowing the child to lie on its back with the sun beaming on the baby's face, cannot be too strongly condemned.

CLOTHING FOR THE INFANT.

Quality and Quantity.—The quality and quantity of the child's clothing must be regulated by the means of its parents. Every mother will probably have the best she can afford, but, whether rich or plain, it should be carefully made; all seams felled, and no rough edges left to chafe the tender skin. Six of every garment—three night flannels and three for day—constitute the minimum layette. Twelve diapers may answer, by careful management, but unless they can be washed every day at least eighteen will be required. A flannel cape or a woolen shawl is necessary to throw around the child in passing from one room to another during the first weeks of its existence. Summer and winter, until it is two years old, it should wear a flannel shirt long enough to cover the abdomen.

Warmth Required.—During the early months of the child's life, warmth is peculiarly needful for the infantile system, and where there is any tendency to weakness and imperfect development of animal tem-

perature, flannel clothing is particularly necessary to favor the accumulation of warmth in the infant's body. Benefit may also result from its gentle stimulating action upon the cutaneous surface. In hot weather muslin may be used instead of flannel, but even then a careful mother or nurse will change at once the clothing to suit the varying states of the weather. In summer infants are not infrequently kept too warm by too thick and warm coverlids while sleeping.

The Rubber Diaper.—The rubber diaper has many friends and many foes, and there is much to be said on both sides. If the nurse is careful it will be found a comfort, since it keeps the clothing dry and can do no harm except where it is made an excuse for not changing the child as frequently as is necessary. When it is used there should be two or three, and they should be frequently aired. Wash them always in cold water and wipe on a towel; then hang them in a cool place to dry. When the baby's skin is very delicate their use may cause chafing, unless great care is taken; this is the only valid objection urged against them.

Dress for an Airing.—When the child is sent out for an airing, which may be done in two weeks after birth in summer and in a month's time in winter if the weather is good, and in midday, be sure that it is well wrapped. A knitted worsted spencer, buttoned behind, for wear under the cloak, and a shawl over all if the weather is cool, will protect the little one from harm.

When to Shorten the Clothes.—The proper time for "shortening" the clothes is about the end of three months in summer, or six months in winter. This shortening should be only of the extra length, being still long enough to extend below the feet for nearly a year, to protect the lower parts of the body against changes in temperature. By the end of a year the feet should be entirely free, so as to allow free motion of the legs.

Danger of Wet Clothes.—The child should be kept dry as possible. Wet diapers or stockings, when permitted to remain on the child for some time, give rise to bowel and febrile complaints. They tend to cause excoriations and painful irritation of the skin about the groin and buttocks. Examine frequently the underclothing of a child, and if any part be found wet, immediately replace it with clothing that is dry and clean.

Abdominal Bandages.—Many advise the continuance of these throughout the first year and even longer. This, however, is not absolutely essential. In cold weather they should be retained for at least three months, but in hot weather may be abandoned at end of the first or second month.

INFANT FEEDING.

Obstacles to the Mother's Nursing.—Circumstances oftentimes arise when the mother cannot, or should not, nurse her infant. Disease of mother or child, a poor development of breasts or nipples and absence or lack of milk development, or even the premature birth of child may prevent breast feeding. It is always best for mother and child to continue breast feeding at least a few weeks unless forbidden by the physician.

Breast Feeding.—The infant should be applied to the breast six or eight hours after birth, and four or six times a day thereafter, until milk-formation is fully established. This accomplished the mother must establish regular hours for feeding. From 6 A. M. to 10 P. M. she should nurse it every two hours, and through the night period every three hours (see special table in regard to feeding). The nipples as well as the child's mouth should be cleansed carefully with a boric acid solution before nursing, and cleansed with pure water afterward. A scarcity of mother's milk must be met with tonics and nourishing food.

Wet-Nursing.—When a mother cannot nurse her child, a competent wet-nurse is most desirable. She should be known to be free from bad habits; to be moral; to be even tempered; to be clean and free from disease. There ought not to be a period of more than two or three months between the age of her babe and the one to be nursed. The same hours for feeding night and day should be exacted of her that the mother should give.

Mixed Feeding.—Where a mother's milk is not sufficient in quantity it is wise to continue nursing at night and several times during the day. At the other nursing periods give modified cow's milk, or some infant food prepared for a child of the same age, bottle-fed.

Artificial Feeding.—Artificial feeding of infants has undergone such complete changes in recent years that the advice of elderly mothers and grandmothers cannot be depended upon. Now that we know many kinds of germs infect milk as brought from the dairy, sterilization must be insisted upon. Now that many men in every large city devote their time exclusively to infant disease and infant feeding we have gotten out of the rut in which physicians, mothers and nurses formerly trod. Manufacturers of infant food found it necessary to so modify methods of preparation that their finished products would harmonize with proven ideas.

Modified Cow's Milk.—In the hands of an intelligent mother or nurse

the home modification of fresh cow's milk is, next to mother's milk, the best infant food.

The following comparative table will help the better to understand why the various dilutions of milk are made:

MILK FROM NURSING MOTHERS.

Fat	4	per cent.	}	Total solids	12.65 per cent.	
Sugar	7	"				
Proteid	1.5	"				
Ash15	"				
Water					87.35	"
Reaction						Persistently alkaline

MILK FROM A SOUND COW.

Fat	4.04	per cent.	}	Total solids	13.45 per cent.	
Sugar	4.55	"				
Proteid	4.15	"				
Ash71	"				
Water					86.55	"
Reaction						Feebly acid

What the Above Tables Tell.—From the above tables it will readily be seen why cow's milk alone is not a suitable food for infants. It will be seen that normal cow's milk has about the same proportion of fat as human milk; that it has much less sugar; that it has nearly three times as much proteid substance, and that the percentage of ash, or mineral matter, is far too high. Add to these facts the well-known truth that the proteid of cow's milk is more difficult to digest than that of human milk, and you have sound reasoning for modifying cow's milk, as shall be directed hereafter.

A perusal of the table analysis of colostrum, the first secretion in the human breast, should now be made.

ANALYSIS OF COLOSTRUM OR FIRST MILK.

(The breast secretion before milk is formed.)

Fat	1.71	per cent.	}	Total solids	9.12 per cent.
Sugar	4.90	"			
Proteid	1.72	"			
Ash79	"			
Water					90.88

Meaning of Above Table.—From this table the careful reader will see how little fat the infant gets during its first days after birth. The infant fed artificially should be given such a modified milk that its chemical analysis will approximate first colostrum, later human breast milk, and still later, human breast milk plus its enrichment by the mother eating large quantities of rich, highly nutritious food.

Medical Method.—In large cities, and where families can afford the expense, this is easily done by the physician. He just writes a prescription similar to the above table, adding the amount of food wanted at each feeding and the number of feedings per day. This prescription is then sent to the milk laboratory where it is accurately and scientifically prepared just as medicine is compounded in a pharmacy. This method is expensive and can only be used by those who need not consider cost.

Home Method.—This method may be closely approximated, however, at home by using a list of tables very carefully worked out experimentally. In these tables the cream used has been skimmed cream of a twelve hours rising. No ash or mineral matter allowed for except that in water.

FIRST AND SECOND WEEK.

<i>Chemical Formula.</i>		<i>Home Formula.</i>	
Fat	2 per cent.	Cream	4 ounces
Sugar	5 "	Milk	0 ounces
Proteid	75 "	Milk sugar	6 teaspoonfuls
Water	92.25 "	Lime-water	1 ounce
		Water	15 ounces

THIRD WEEK.

Fat	2.5 per cent.	Cream	5 ounces
Sugar	6 "	Milk	0 ounces
Proteid	1 "	Milk sugar	7½ teaspoonfuls
Water	90.5 "	Lime-water	1 ounce
		Water	14 ounces

FOURTH TO SIXTH WEEK.

Fat	3.5 per cent.	Cream	6 ounces
Sugar	6 "	Milk	1 ounce
Proteid	1 "	Milk sugar	7½ teaspoonfuls
Water	89.5 "	Lime-water	1 ounce
		Water	12 ounces

SIXTH TO EIGHTH WEEK.

Fat	3.5	per cent.	Cream	7	ounces
Sugar	6.5	"	Milk	1	ounce
Proteid	1.5	"	Milk sugar	8½	teaspoonfuls
Water	88.5	"	Lime-water	1	ounce
			Water	11	ounces

SECOND TO FOURTH MONTH.

Fat	4	per cent.	Cream	8	ounces
Sugar	7	"	Milk	1	ounce
Proteid	1.5	"	Milk sugar	9	teaspoonfuls
Water	87.5	"	Lime-water	1	ounce
			Water	11	ounces

FOURTH TO TENTH MONTH.

Fat	4	per cent.	Cream	8	ounces
Sugar	7	"	Milk	2½	ounces
Proteid	2	"	Milk sugar	8½	teaspoonfuls
Water	87	"	Lime-water	1	ounce
			Water	8½	ounces

TENTH TO TWELFTH MONTH.

Fat	4	per cent.	Cream	8	ounces
Sugar	7	"	Milk	5	ounces
Proteid	2.5	"	Milk sugar	7½	teaspoonfuls
Water	86.5	"	Lime-water	1	ounce
			Water	6	ounces

FOR WEANING.

Fat	4	per cent.	Cream	8	ounces
Sugar	5	"	Milk	7½	ounces
Proteid	3	"	Milk sugar	6	teaspoonfuls
Water	88	"	Lime-water	1	ounce
			Water	3½	ounces

Why Lime is Added.—In these mixtures the lime-water is added to preserve the alkalinity of the milk as well as to add lime salts for the food. Where the water used comes from lime rock beds it will not be necessary to add so much lime-water. In such cases, and, indeed, in many cases weak barley-water or arrow-root-water agrees better with the infant than plain water.

HOW TO PREPARE A DAY'S FOOD.

Consult the table for intervals of feeding and quantity to feed; for example: a four weeks old baby. It will be seen that nine feedings by day and one feeding by night is advised. Each feeding consists of one and a half to two ounces of food. A glance shows that from fifteen to twenty ounces are required for twenty-four hours. Make up the food as follows from table fourth to sixth week:

Cream	6	ounces
Milk	1	ounce
Milk sugar	7½	teaspoonfuls
Lime-water	1	ounce
Water	12	ounces

Dissolve the milk sugar in the water, add lime-water, milk and cream; mix thoroughly in vessel and divide in ten nursing bottles. Plug each bottle with clean cotton and stand in a kettle of warm water. Place the kettle over the fire, keeping the water boiling twelve to fifteen minutes. Do not allow the food to boil. Remove the nursing bottles and place in a cool place until ready for use. When ready to feed the baby take a bottle, stand in lukewarm water until heated, remove cotton, and place over the bottle a freshly scalded nipple and you have a sweet, clean, sterile infant food.

Nursing Bottles.—Bottles of medium size and round, with fiat bottom and small, short necks are best. Rubber nipples which slip over the neck of the bottle are the only safe nipples to use. All nursing bottles having rubber tubes and nipples are dangerous, dirty and should not be used. All bottles must be cleaned as soon as empty and again before refilling they must be cleansed with boiling water. The nipples must be turned, cleansed with soap and water and boiling water and may then be kept in boric acid solution until ready for use.

This cleansing of the nipples and bottles is very important and should be conscientiously attended to. Sometimes nurse maids, through carelessness, neglect to do this, and the so-called milk infection, which generally results from unwashed bottles and dirty nipples is likely to follow.

TABLE SHOWING FEEDING HOURS AND QUANTITIES.

Age.	Interval hours by day.	Interval hours by night.	Number of day feedings, 6 A. M. 10 P. M.	Number of night feedings, 10 P. M. 6 A. M.	Number of feedings in 24 hours	Amount at each feeding.	Total amount in 24 hours.
1 Week	2	3	9	2	11	1 oz.	10-11 oz.
2 "	2	3	9	2	11	1 to 1½ "	11-14 "
4 "	2	4	9	1	10	1½ to 2 "	15-20 "
6 "	2	4	9	1	10	2½ "	25 "
8 "	2½	4½	7	1	8	3½ "	28 "
3 Months	2½		7		7	4 "	28 "
4 "	2½		7		7	4½ "	31 "
5 "	3		6		6	5½ "	33 "
6 "	3		6		6	6 "	36 "
7 "	3		6		6	6½ "	39 "
8 "	3		6		6	7 "	42 "
9 "	3		6		6	7½ "	45 "
10 "	3		6 or 5		6 or 5	8 or 9½ "	48 "
11 "	3		5		5	9½ "	48 "
12 "	3		5		5	10 "	50 "

This table shows equally well the hours and intervals to feed a breast-fed baby.

Condensed Milk.—Condensed milk fattens babies to an abnormal extent, and while they are fat and plump, experience shows that they are too weak to withstand any trifling disease. It is a poor permanent food. It does have a useful place in infant feeding. While traveling or during the night in hot weather, it is an excellent substitute for the regular food. It should be made up for a single feeding at a time. For a child three months old:

Condensed milk	2½	half-teaspoonfuls
Water	2	ounces
Lime-water	2	teaspoonfuls
Salt		a small pinch

This quantity may be increased or decreased according to the age of the child.

Weaning Time.—The age at which a child may be weaned has been suggested to be some time between the eighth and fourteen month. Much depends upon mother, child, surroundings and season. A strong child may be weaned early. It is best to avoid weaning in summer. If the mother or nurse cannot attend personally to preparing the food, and

keeping bottles and food scrupulously clean, it is wise to continue nursing even the full fourteen months.

Gradual Weaning.—If the child is weaned early, do it gradually by substituting some artificial food. If late, the mother may stop the breast at once, and the child will experience little difficulty in transferring to some other food. Should the mother again become pregnant, she must wean her infant.

RULES FOR MANAGING THE INFANT DURING THE SUMMER MONTHS.

The great increase of sickness and death among young children during the summer months is due largely to ignorance on the part of mothers and nurses. Attention to the following rules would save many a life:

1. Bathe the child once a day in tepid water. If it is feeble, sponge it all over twice a day with tepid water, or with tepid water and vinegar.

2. Avoid all tight bandaging. Make the clothing light and cool, and so loose that the child may have free play for its limbs. At night undress it, sponge it, and put on a slip. In the morning remove the slip, bathe the child, and put it in clean clothes. If this cannot be afforded, thoroughly air the day clothing by hanging it up during the night. Use clean diapers, and change them often.

3. The child should sleep by itself in a cot or cradle. It should be put to bed at regular hours, and be early taught to go to sleep without being nursed in the arms. Without the advice of a physician never give it any spirits, cordials, carminatives, soothing syrups or sleeping drops. Never quiet it by candy or cake; they are the common causes of diarrhoea and of other troubles.

4. Give the child plenty of fresh air. In the cool of the morning and evening send it out to shady places. Whenever it seems to suffer from the heat, let it drink freely of ice water.

5. Keep your house sweet and clean, cool and well aired. In very hot weather let the windows be open day and night. Correct all foul smells by pouring into the sinks and privies carbolic acid or quick-lime, or the chloride of lime, or a strong solution of copperas. These articles can be got from the nearest druggist, who will give the needful directions for their use.

6. Breast milk is the only proper food for infants. If the supply is ample and the child thrives on it, no other kind of food should be given while the hot weather lasts. If the mother has not enough, she must not

wean the child, but give it, beside the breast, modified cow's milk. Nurse the child once in two or three hours during the day, and as seldom as possible during the night. Always remove the child from the breast as soon as it has fallen asleep. Avoid giving the breast when you are over-fatigued or over-heated.

7. If, unfortunately, the child must be brought up by hand, it should be fed on a milk diet alone—that is, warm milk out of a properly sterilized nursing-bottle. Modified cow's milk is the best. If the child thrives on this diet, no other kind of food whatever should be given while the hot weather lasts. At all seasons of the year, but especially in summer, there is no safe substitute for milk, if the child has not cut its front teeth. Sago, arrow root, potatoes, corn flour, crackers, bread, every patented food, and every article of diet containing starch, cannot, and must not, be depended on as food for very young infants.

8. Buy only whole milk known to be of good quality. Prepare either modified cow's milk or artificial foods exactly as directed under infant feeding. Keep bottles of food in a cool place, on ice, or if in the country and without ice lower a basket containing the filled nursing bottles in a well near the surface of the water. It is best to have the milk delivered during the early morning and have it prepared and sterilized before the day becomes hot.

9. If the milk should disagree, one-half to one tablespoonful of lime water may be added to each bottleful. Whenever pure milk cannot be gotten, try the condensed milk, which sometimes answers well. It may be prepared by adding to ten tablespoonfuls of boiling water, without sugar, one tablespoonful or more of the milk, according to the age of the child. Should this disagree, a teaspoonful of arrow root, sago or cornstarch may be cautiously added to a pint of the milk. If milk in any shape cannot be digested, try, for a few days, pure cream, diluted with three-fifths or four-fifths of water—returning to the milk as soon as possible.

10. The nursing-bottle must be kept perfectly clean; otherwise the milk will turn sour and the child will be made ill. After each meal it should be emptied, rinsed out, taken apart and the nipple and bottle cleansed in boiling water and placed in clean water, or in water to which a little soda has been added. It is a good plan to have eight or ten nursing-bottles, and to use them by turns. Then when food is prepared for the day each feeding can be placed in a bottle and kept ready for use in some cool place or in the refrigerator. The best kind is the plain bottle with a rubber nipple and no tube.



Wrong Way to Hold the Baby.



Right Way to Hold the Baby.

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Feeding the Baby.



Quieting the Baby.

© E. J. S.

11. Do not wean the child just before or during the hot weather, or, as a rule, until after its second summer. If suckling disagrees with the mother she must not wean the child, but feed it, in part, out of a nursing-bottle, on such food as has been directed. However small the supply of breast milk, provided it agrees with the child, the mother should carefully keep it up against sickness; it alone will often save the life of a child when everything else fails. When the child is over six months old, the mother may save her strength by giving it one or two meals a day of modified cow's milk or some prepared infant food put into a nursing-bottle. When from eight months to a year old, it may have also one meal a day of the yolk of a fresh and rare-boiled egg, or one of beef or mutton broth, into which stale bread has been crumbled. When older than this, it can have a little meat finely minced; but even then milk should be its principal food, and not such food as grown people eat.

12. The moment a diaper is soiled it should be removed and washed in water containing a small quantity of soda. Do not let diapers stand in soiled state. Before using again they must be thoroughly dried and care taken that all soda is removed.

13. When the baby is breast fed the mother must be very careful in regard to her nipples. Keep them clean by washing them with a mild solution of boracic acid and water both before and after each nursing (the water should be cool). The mother's bowels should move at least once daily as constipation with her deleteriously affects the child. Eat plain, well-cooked food. Drink plenty of pure water between meals, but avoid beer and other alcoholic drinks, as their reflex action on the child is bad. Use tea and coffee sparingly. Get all sleep possible. A restful mother makes a restful child. Take reasonable exercise, be in the open air as much as possible and be sure that living and sleeping rooms are properly ventilated.

14. The following is recommended as to the feeding of breast-fed babies:

(a.) From birth to three months.—Nurse the baby for fifteen minutes every two and one-half hours. No child should be nursed more than nine times in twenty-four hours.

(b.) From third to sixth month.—Nurse baby twenty minutes every three hours and not more than eight times in the twenty-four hours.

(c.) From sixth to ninth month.—Let the child nurse every three hours.

(d.) From ninth to twelfth month.—Let the child nurse every three and one-half hours.

Putting these instructions in tabulated form we have the following:

Age	No. of Nursings	Intervals of Nursing	Night Nursing 10 P.M. to 7 A.M.	Duration of Nursing
Birth to 3 months	9.....	2½ hours.....	2.....	Not over
3d to 6th month	7 to 8.....	3 hours.....	2.....	15 or 30
6th to 9th month	6.....	3 to 3½ hours.....	1.....	Minutes
9th to 12th month	5.....	3½ hours.....	1.....	

DEVELOPMENT OF THE CHILD.

Mothers, nurses and friends are often badly misinformed as to what constitutes a healthy, normal, full-term child, and often know less about what should be its natural development.

Weight.—The average weight of infants at birth is six and one-half pounds for a girl and seven and one-half pounds for a boy. Of course, great variations from this may occur. Children have weighed at birth but two and three-fourths pounds and have lived to develop into strong manhood, while, on the other hand, children have been born weighing as much as twenty-two pounds. During the first week after birth the infant loses steadily in weight. Sometimes a full pound is lost, usually not more than a half pound. After the first week there should be a steady gain of two to four ounces each week. The baby should frequently be weighed, and if it does not increase in weight some change of food should be made.

Length.—The average baby at birth measures twenty inches in length. At six months it should be twenty-four inches. At birth the trunk is longer in proportion than the body. The first growth is largely in the length of the legs. Growth usually occurs in cycles. While gaining rapidly in weight little is gained in length. While teething, or immediately after, the growth in length is marked.

General Development.—The fat, flabby child, such as we see when bottle-fed with condensed milk, or occasionally when breast-fed, is not a healthy child. An acute illness will be badly borne. Rickets, bow-legs and delayed teething are noted. The healthy child has pink skin, rounded limbs, with firm muscles. It is not necessarily fat. It is always active when awake.

Periods of Development.—For convenience the child's life may be considered as consisting of three periods: The first period extending

from birth to the beginning of teething; the second, that of teething (milk teething); the third extends from the first teething to the end of the second teething.

During the first period breast milk is the ideal food. At this time babies cannot digest starchy foods, hence all table food, bread and the like must be withheld. During the second period saliva is formed in the mouth and occasionally good broths may be given. During the third period the digestive apparatus is prepared for more complex food. See *Special Diet Lists*.

Exercise and Air.—Almost as important as food and bathing is that of exercise and air for the growing infant. Exercise for its muscular system can be secured by massage after the bath, and by dressing in such a way as to give the child the freedom of its limbs. It is of great importance that the child be taken in the fresh air and sunshine as much as possible. Only in inclement weather should this be neglected. A baby carriage is desirable for this purpose. A sun-bath given with the nude baby on a pillow inside a sunny window in winter and in the fresh air in summer is healthful. Nurseries should be large, airy and well ventilated, and should be located on the sunny side of the house. The heating plant should be so managed as to give an equal temperature of 72 degrees, with fresh outside air entering at all times.

TEETHING OR DENTITION.

Time of Teething.—The most usual age for an infant to begin teething is from the sixth to the eighth month. This is only a general rule. Bottle-fed babies, delicate infants and children with rickets, teethe later than the eighth month. Precocious infants may teethe much earlier. Children are occasionally born with one, two or more teeth; others have no teeth until the eighteenth month.

How the Teeth Come.—The lower central incisors usually appear first, and in a few weeks the four upper incisors follow. From the twelfth to the fourteenth month the remaining lower incisors and the premolars come through. There is a long delay preceding cutting of the incisors. They appear from the eighteenth to the twentieth month. The remaining molars appear about two and a half years of age. The full set of milk teeth numbers twenty, ten in each jaw. The accompanying diagram shows their appearance most graphically. It also shows the full set of teeth and the age at which they appear.

Convulsions.—Dentition is a physiologic process and should cause no serious disturbance to the health of the child. It is true that there may be considerable irritability of temper, and resulting from it some digestive disturbance. The dreaded convulsions of teething are very much over-rated.

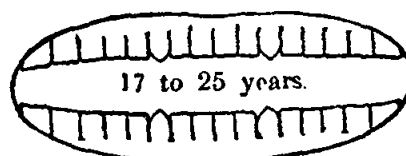
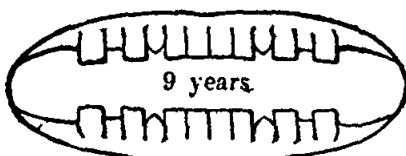
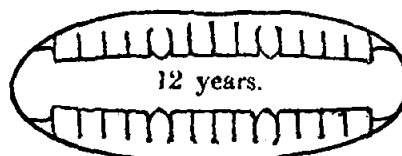
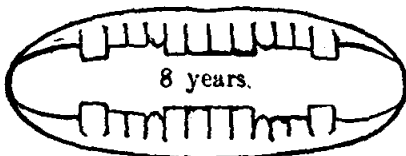
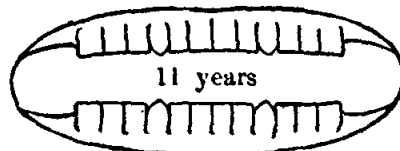
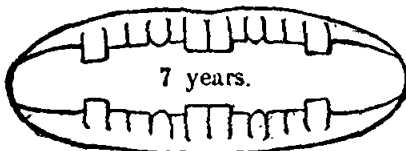
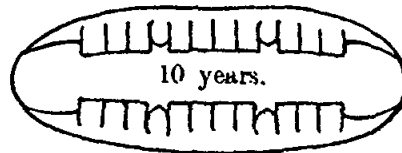
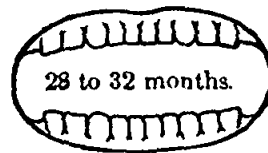
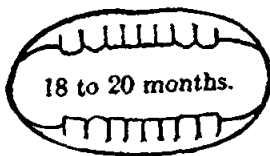
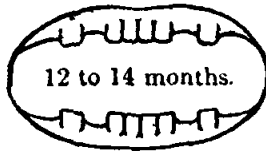
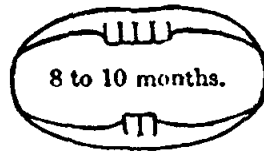
What to Observe in a Child.—The most important points to be attended to in making up an opinion of a child's condition are the countenance, noting its expression, coloration, wrinkles, etc.; the sleep; the cry; the state of emaciation or fatness; the condition of the skin, as to eruptions, color, temperature, degrees of dryness, swelling, etc.; the pulse; the respiration; the signs furnished by the mouth and throat; the power of sucking; and, finally, the state of the abdomen.

Keeping the Baby's Mouth Clean.—The development of a child's teeth is very considerably affected by the care which the mother takes in keeping the baby's mouth clean and in thoroughly sanitary condition. During early life the baby's mouth should be constantly watched and taken care of many times each day, in order that the gums and mucous membranes may be kept in healthy condition. This is done by washing out the baby's mouth before each nursing so that no infected mucus or other foreign materials may be carried into the stomach and cause indigestion, and also as preventive of poison being carried to the mother's nipples.

A glass-stoppered bottle should be procured and filled with a saturated solution of boracic acid, the bottle with stopper out being first thoroughly boiled to insure sterilization. The solution is made by adding a heaping teaspoonful of boracic acid to a pint of water which has been previously boiled for at least ten minutes, care being taken that such water after boiling is properly covered until put in the stoppered bottle, as if exposed to the air the water would again become contaminated with bacteria and the effect of the boiling entirely lost. The solution is ready for use as soon as dissolved. Shake before using.

As required for use pour a small quantity into a cup or shallow dish—just enough for one using, as that which has been poured out of the bottle must not be used a second time nor poured back into the bottle. A piece of clean absorbent cotton is wound around the index or little finger and dipped into the solution in the cup or dish and the baby's mouth is gently but thoroughly swabbed, taking care to wash the insides of the cheeks, about the gums and the upper and under sides of the tongue. Should there be considerable mucus present it may be wise to use several pieces of cotton to make the mouth clean, but under no circumstances

HOW AND WHEN FIRST TEETH COME



use the same piece of cotton twice, and take a fresh piece each time you dip into the solution. If sterilized cotton is not obtainable any light, white fabric may be sterilized for the purpose by boiling it for an hour or baking it in an oven with temperature over 212° F. for forty minutes. It is well to cut the cloth into small pieces of requisite size before sterilizing and after sterilizing. Keep them in sterilized jar that must be kept covered. Then before nursing, the mother's nipples should also be washed with the same solution, of course using a fresh piece of cotton. Where the baby is fed from bottle great care must be taken to keep the rubber nipple clean. It should be scalded immediately after using and put into a covered receptacle containing boracic solution until it is again needed.

Effect of Diet on Teeth.—The baby's teeth are greatly affected by the food it eats. Of course nothing must be given that does not thoroughly agree with the child's digestion and oftentimes it takes much experimenting to find the food most suitable for the child, what agrees with one frequently not agreeing with another, but in so far as possible the food should contain sufficient material of a bone-building nature to thoroughly supply that requirement in the child. The free and continuous use of lime water in milk not only aids digestion, but is of great value in building up bone. Emulsion of cod liver oil is frequently given to infants who are cutting teeth, and being a nourishing food it aids dentition by toning up the system while, being rich in phosphates, it hardens and develops the bones.

Malformations.—Heredity usually plays an important part in the shape, size and color of teeth, but their hardness, symmetry and utility may be very considerably benefited by attention to the child's diet during dentition and to early care that no force is brought to bear in an abnormal direction in the forming and growth of the mouth and teeth, such, for instance, as is frequently caused by **thumb-sucking**. The child so naturally puts its thumb or finger in its mouth and seems to derive so much contentment therefrom that the mother is very apt to permit the habit to grow, and the facial expression of the child may thereby become so moulded in a wrong or abnormal direction as to be a serious affliction throughout life, for during the first year of the child's life the jaws are very plastic and may be readily forced in unnatural directions, not only causing deformity in the jaw, but also in many cases displacement of the teeth and the ill probably remains unnoticed until the hardening process of the bones makes remedy painful and difficult—in some cases impossible. Thus what is commonly called a **parrot mouth**—that is, abnormally

high palate or vault, narrow upper arch, protruding upper teeth and re-
truding lower ones, may be directly attributable to thumb sucking. As
the infant lies in recumbent position that portion of the thumb which is
continuous with the palm of the hand rests firmly with constant force
upon the partially developed gums and roof of the mouth, pressing the
latter upward and narrowing the width, while the back of the thumb
resting on the lower lip and chin acts as a fulcrum, bringing the full
weight of the arm upon the lower jaw, pressing it downward and back-
ward. This produces not only a deformity in facial expression, but
causes false location of the teeth, rendering them incapable of properly
performing the work which nature intended of them, thereby preventing
that mastication of food which is essential to good digestion. Deformities
of course are often due to heredity, as for instance large teeth may be in-
herited from one parent and small jaws from the other, causing a crowd-
ing of the teeth within too small a space. Lip sucking is another bad habit
which may result in depressing the teeth. By drawing the lower lip into
the mouth a pressure is exerted upon the teeth which may force them in-
ward to such an extent as to result in deformity, the space for the back
teeth being greatly contracted, causing crowding of the teeth. Mouth
breathing also produces irregularity of the teeth. The habit is commonly
indulged in during sleep. It may be due to some nasal obstruction of the
air passages, in which case operation may be necessary. Where there is
no nasal obstruction the mouth should be so bandaged as to make breath-
ing through it difficult and thus induce breathing through the nose. Spe-
cial rubber appliances for this purpose can be secured. Also there may be
local causes for irregularity of teeth such as too long retention of the first
teeth or their too early extraction, or delayed eruption of permanent teeth
or their injudicious abstraction. In all cases where such deformities are
found to exist, whatever their cause, it is well to consult with a dentist of
undoubted standing and qualifications at as early an age of the child as may
be possible, as frequently under careful professional care in early child-
hood such difficulties may be largely overcome.

Illness of Teething.—During the eruption of the deciduous or tem-
porary teeth the child is apt to suffer from indigestion. The lower cus-
pids or canines, which may come from the fourteenth to the twentieth
month, are very commonly called stomach teeth, and the corresponding
upper ones called eye teeth. This is due to an idea, which is traditional,
that the cutting of these two lower teeth cause an especial disturbance of
the stomach and that the cutting of the upper ones affect the eyes. This

idea is erroneous. The fact is that during this time the whole system is undergoing very important changes, the organs of digestion are adapting themselves to the assimilation of other food than milk, and these constitutional changes during dentition produce susceptibility to nervous and digestive troubles and the mother should be more than ordinarily watchful throughout this whole period, but in the specific cutting of a "stomach tooth" there is no more reason to expect disturbance in the stomach than in the cutting of any other tooth. Delayed or difficult dentition may result in general disturbance of the digestive system or affect the whole constitution and exaggerate any other ailment of the child existing at this time, and special care should be taken that the child should not catch cold at this period, as this may retard dentition and be the cause of serious disturbance. The severity of illness commonly depends upon the number of teeth advancing at the same time, but individuals constitutionally vary, and a single tooth in one case may be the cause of much greater disturbance than the oncoming of a number of teeth in the case of another child.

Hot gums, redness, swelling and pain are ordinary and normal symptoms during teething and should not cause anxiety unless they be accompanied by high fever, vomiting, diarrhoea or other noticeable disturbance of the system. The flow of saliva (drooling) which accompanies teething generally allays abnormal inflammation and keeps the gums sufficiently moist and cool. Relief may often be given by rubbing the affected gum with a gold or silver thimble. The thimble must be boiled for fifteen minutes before using, in order to destroy all germs. But when the gum where the tooth is coming is hard and white, the mouth dry and the baby feverish, fretful and sleepless, the gum should usually be lanced, as otherwise there may be convulsions, followed by serious and sometimes fatal constitutional disturbance.

Lancing is also sometimes necessary when the gums themselves display no untoward symptoms, the only indications being general disturbance of the system due to dentition and which may be alleviated by lancing, and this sometimes even when the teeth have put in a partial appearance as a tooth may be held back by the bands of tissue which draw over the surface of the tooth between the cusps, and these bands must be cut to permit of free egress of the tooth. Where lancing is necessary relief usually immediately follows the operation, which is of most simple nature, but which should be done by physician or dentist. The lancet must pierce the gum until it touches upon the tooth and to relieve the pressure must

completely divide all overlying tissue. The tightly-stretched tissues have little nerve sensation and the pain caused by lancing is therefore very slight and is but momentary. However, lancing is by no means always essential, the teeth as a rule cutting their own way through without assistance.

The eruption or cutting of teeth should occur as soon as the teeth are hard enough for use, and as the hardness is dependent upon the amount of lime salts the teeth contain, as distinct from purely animal matter, dentition will be delayed if the child's diet has been lacking in this necessary element, as there is further apt to be general disturbance of the system in various ways.

Temporary and Permanent Teeth.—Temporary teeth contain more organic matter. Consequently they are softer and more quickly subject to decay than the permanent teeth, and unless great care be exercised they are apt to be destroyed and lost before they have performed those important functions which are necessary of them before the coming of the permanent teeth. Temporary teeth are not only essential to proper mastication of food during a period of rapid growth, but they have an important relation in the development of the jaw and their early extraction may not only seriously affect digestion and so the constitution but may retard jaw development, resulting not only in a prejudice to facial expression, but the crowding of the permanent teeth with resultant ill effects of various kinds. The importance then of retaining the first teeth until the second teeth are ready to take their place cannot be overestimated, and therefore there should be constant watchfulness of them and they should not be permitted to prematurely decay. Under normal conditions and where proper attention has been given to prevent decay, the roots will become absorbed and the crowns drop out without even the assistance of a string. But if decay be permitted in the temporary teeth the nerve fibres will be affected and cause such irritation of the pulp tissue as will result in its premature decay and prevent its natural absorption, which would otherwise occur. The child is not only the subject of severe toothache until gumboil forms, but the space to be occupied by the permanent tooth instead of being free for its advance is filled up with roots of the temporary one, so that there is danger of the permanent tooth being forced to one side or other on its course through the gum, resulting in misplaced teeth and inefficient mastication.

Prevention of Decay.—The most potent factor is cleanliness. Children should be trained in the assiduous use of the toothbrush from the

earliest possible age, and should use it after each meal, and until the child is capable of doing this the mother or attendant should carefully wash the mouth and teeth twice daily, using a clean rag and an antiseptic wash and further should at least once a day use a brush, in order to remove particles that cannot be reached with a cloth. The brush should be small with uneven rows calculated to suit the spaces between the teeth. It should be of medium stiffness. A brush that is too soft does not sufficiently stimulate the gums, while one that is too stiff will cause bleeding and soreness. Do not be content with merely brushing teeth on their outer surface. They must be brushed across and up and down, both inside and out and no material permitted to remain in any space or crevice. Constant watchfulness and regular care will greatly conduce to hard and pearly teeth and will not only save the child from much suffering from decaying teeth, but healthy gums and mucous membranes with sound teeth will ensure that with proper mastication the food taken into the stomach will be in right condition for easy and natural digestion, which is an essential of general good health. With the first indication of decay the child should be taken to the dentist and his teeth given such attention as may be necessary. After the child is two to three years of age he should be taken to the dentist several times a year to make sure there are no cavities, which will sometimes be found in spite of care.

Filling Temporary Teeth.—Many people take the view that it is unnecessary to fill temporary teeth, as they are shortly to be superseded by permanent ones, but there are a number of reasons why all cavities should be filled as they occur: (a) Unnecessary suffering from toothache is prevented; (b) Inability to properly masticate food is avoided; (c) The retention of all the temporary teeth until the permanent ones are ready to take their place is assured and thereby the fullness of arch for the permanent teeth is conserved and developed.

Dental Care of Permanent Teeth.—The retention of all permanent teeth is of extreme importance, but perhaps none so important as that of the first permanent molars which at the age of about six years appear back of all the milk or baby teeth. These are often mistaken for temporary teeth and permitted to decay until beyond ordinary methods of restoration. The early extraction of these permanent molars is almost certain to result in the malposition of other teeth, permitting them to occlude improperly, throwing additional and unintended strain on other teeth, causing improper mastication and frequently resulting in prejudicial change in facial expression. The upper and lower molar teeth

should so meet each other as to interlock like the cogs of a wheel and it is the loss of the first permanent molar which more often disarranges the whole occlusion than any other tooth. In case this tooth has been neglected until it is beyond proper repair, there is an advantage in having it extracted before the commencement of the eleventh year, in order that the second permanent molar which cuts through at from the twelfth to the fourteenth year may have room to grow a little forward from its regular place and together with the third molar occupy the allotted space for the three teeth and so give regularity as to the final complement of teeth.

Where a child is suffering from toothache and for some reason cannot be taken to a dentist, a little carbolized resin placed in the cavity on a little piece of cotton will so harden over the exposed nerve as to sometimes afford relief for several weeks, but a dentist should be consulted at the earliest date possible.

Pulse Rate of Children.—

Young infants	100 to 102.
First year	115.
Second year	118.
Second to sixth year	Sleeping, 76; waking, 92.
Sixth to ninth year	Sleeping, 73; waking, 90.
Ninth to twelfth year	Sleeping, 72; waking, 80.
Twelfth to fifteenth year	Sleeping, 70; waking, 72.

In girls the rate is about five beats higher.

Temperature of Children.—1. The daily range of temperature is greater in the healthy child than that recorded in healthy adults, amounting to 1, 2 or 3 degrees.

2. There is invariably a fall of temperature in the evening, amounting from 1 degree to 3 degrees Fahrenheit.

3. This fall may take place before sleep begins.

4. The greatest fall is usually between 7 and 9 P. M.

5. The minimum temperature is usually observed at or before 2 A. M.

6. Between 2 and 4 A. M. the temperature usually begins to rise, such rise being independent of food being taken.

7. The fluctuations between breakfast and tea time are usually trifling in amount.

8. There seems to be no very definite relationship between the frequency of the pulse and respirations and the amount of the temperature, the former being subject to many disturbing influences.

Respiration in Children.—The average frequency of the breathing in

new-born children and during the first week of life is thirty-nine times per minute. It may rise, however, upon very slight disturbances, to fifty, sixty or eighty. In perfectly healthy infants, during sleep the respiration may fall to twenty-five per minute.

Between 2 months and 2 years the average number of respirations per minute is 35. Between 2 years and 6 years the average number of respirations per minute is 23. Between 6 years and 12 years the average number of respirations per minute is 22. Between 12 years and 15 years the average number of respirations per minute is 20.

Evacuations of a Child.—The healthy motion varies in color from a light orange yellow to a greenish yellow, and in number from two to four times daily.

Smell should never be offensive. Slimy, mucus-like, jelly motions indicate worms. Offensive, acid, pale-green motions indicate a disordered stomach. Dark-green evacuations indicate acid secretions and more serious stomach or bowel disorder.

Fetid, dark-brown stools are present in chronic diarrhœa. Putty-like, pasty passages are due to acidity curdling the milk or to torpid liver.

Amount of Sleep Required Each Day.—

At 4 months	20	hours of sleep is required.
At 6 months	18	hours of sleep is required.
At 1 year	15	hours of sleep is required.
At 2 years	13	hours of sleep is required.
At 4 years	12	hours of sleep is required.
At 7 years	11	hours of sleep is required.
At 9 years	10½	hours of sleep is required.
At 14 years	10	hours of sleep is required.

Infant Exercise.—Exposure of infants to pure air should begin in a very few weeks after birth; an hour or two a day at first, but daily whenever the weather permits. They soon evince a strong desire for the open air. When yet carried by the nurse they point to the door; when crawling they try to approach it; when walking they attempt to escape from the house to the air without. This, however, must not be construed into advice to carry out the child in unfavorable weather or for a long time, with an idea of hardening it. Catarrhal inflammations are easily produced in children.

Out-Door Playing.—When old enough to play and romp, the dress should not be so fine as to require an order of good care. Nothing affords more real enjoyment to children, and at the same time tends more decidedly to give them a sound and active tone of mind and body than a liberal indulgence in exercise and in their innocent sports out of doors.

General Signs of Health.--"Rotundity is the beauty of youth." Dr. Meigs says of a healthful child: "Its tissues are firm and solid; its surface of a cool and pleasant temperature; its coloration of clear and exquisite white, firmly tempered with a faint rosy tint in a warm atmosphere, or slightly marbled with light bluish spots in a colder air. Few marks more certainly indicate a healthful temper of the constitution than the clear and exquisitely tinted pink color of the palmar and plantar surface of the hands and feet of a young child. Nothing indeed can be more beautiful or perfect in shape and contour than the figure of a fine, hearty young child; nothing more pleasing to the eye than its delicate but vivid coloring; and nothing more expressive of the fullness of health than its whole appearance." The movements and gestures of a child give a clue to its condition. Healthy children, when awake, are in almost constant motion, or at constant play.

Diet.—"Food is the primary necessity in raising children; the character, quantity and time of administration should each have the scrupulous attention of all those who are responsible for the welfare of children." Dr. A. Jacobi says: "Children not only eat to live, but eat to grow also." Children need to be fed oftener than adults. The growing boy and girl each require a relatively greater quantity of food than the adult. The best results are to be gotten by a mixed animal and vegetable diet.

The following is a useful summary:

GENERAL RULES FOR FEEDING YOUNG CHILDREN.

1. Allow time for meals.
2. See that the food is thoroughly masticated.
3. Do not allow nibbling between meals.
4. Do not tempt the child with the sight of rich and indigestible food.
5. Do not force the child to eat against its will, but examine the mouth, which may be sore from erupting teeth; and examine the food, which may not be properly cooked or flavored. If good food is refused from peevishness merely, remove it and do not offer it again before the next meal time.
6. In acute illness reduce and dilute the food at once.
7. In very hot weather give about one-fourth or one-third less food and offer more water,

DIET FOR YOUNG CHILDREN.

TWELFTH TO EIGHTEENTH MONTH.

7 A. M.—Stale bread soaked in a breakfastcup of new milk.

10 A. M.—Milk, six ounces, and soda biscuit, or a thin slice of buttered bread.

2 P. M.—Beef tea, six ounces, bread and a tablespoonful of rice and milk pudding.

6 P. M.—Same as first meal.

10 P. M.—Same as first meal.

In alternation a lightly boiled egg, with bread crumbs and six ounces of milk may be given at 7 A. M., and at 2 P. M. a mashed baked potato moistened with four tablespoonfuls of beef tea; two tablespoonfuls of junket.

EIGHTEENTH TO THIRTIETH MONTH.

7 A. M.—New milk, eight ounces; the yolk of an egg lightly boiled; two thin slices of bread and butter, or else milk, and two tablespoonfuls of well-cooked oatmeal or wheaten grits, with sugar and cream.

11 A. M.—Milk, six ounces, with a soda biscuit or bread and butter.

2 P. M.—One tablespoonful of rare mutton pounded to a paste, bread and butter, or mashed potatoes moistened with good dish gravy, a saucer of junket; or else a breakfastcupful of beef tea or mutton or chicken broth, a thin slice of stale bread, a saucer of rice and milk pudding.

6.30 P. M.—A breakfastcupful of milk, with bread and butter, or soft milk toast.

TWO AND A HALF TO THREE AND A HALF YEARS—i. e., for Children Who Have Cut Their Milk Teeth.

7 A. M.—One or two tumblers of milk, a saucer of thoroughly cooked oatmeal or wheaten grits, a slice of bread and butter.

11 A. M.—If hungry, a tumbler of milk or a teacupful of beef tea, with a biscuit.

2 P. M.—A slice of underdone roast beef or mutton, or a bit of roast chicken or turkey, minced as fine as possible; a mashed baked potato moistened with dish gravy, a slice of bread and butter, a saucer of junket or rice and milk pudding.

7 P. M.—A tumblerful of milk and a slice or two of soft milk toast.

FROM THREE AND A HALF YEARS UP.

Breakfast.—Every day: Milk, porridge and cream, bread and butter. One dish only each day: Fresh fish, eggs lightly boiled, eggs poached, eggs scrambled, eggs (plain omelet), chicken hash.

Sound fruits may be allowed before and after the meal, according to taste, as oranges without pulp, grapes (seeds not to be swallowed), peaches, thoroughly ripe pears and cantaloupes.

Dinner.—Every day: Clear soup, meat roasted or boiled and cut into small pieces, bread and butter. Two dishes each day: Potatoes baked, potatoes mashed, spinach, stewed celery, cauliflower, hominy, macaroni (plain), peas, string beans (young), green corn (grated).

Junket, rice and milk or other light puddings and occasionally ice cream may be allowed for dessert.

Supper.—Every day: Milk, milk toast or bread and butter, stewed fruit.

From the third to the fifth year the child has twenty teeth, and often three meals a day suffice, although from the third to the fourth year four may be given.

When the second set of teeth begin to replace the deciduous or milk teeth, which gradually decay, digestion is sometimes interfered with temporarily from lack of ability to masticate thoroughly, and the food should be thoroughly subdivided before it is offered to the child.

Cereal Food.—Bread, rice, oatmeal and other cereal foods should always enter largely into the dietary of healthy children after they are able to digest them. Their fats should be derived chiefly from butter and cream. The best fruits for them are oranges, cooked apples and stewed prunes.

Diet Between Three and Four Years.—Children between three and four years of age should be fed when in health four times a day—at 7 A. M., 10.30 A. M., 1.30 P. M. and 6 P. M.

First Meal.—Half an orange, one and a half teaspoonfuls of oatmeal or hominy, well salted, with two tablespoonfuls of cream, but no sugar, and one glass of milk.

Second Meal.—A glass of milk or cup of broth and one slice of stale bread.

Third Meal.—Meat—either steak, chop or chicken—one green vegetable (e. g., spinach), one starchy vegetable (e. g., potato), water to drink, stewed prunes for dessert.

Fourth Meal.—Bread and milk or milk toast.

FOODS FORBIDDEN TO ALL YOUNG CHILDREN.

Indigestible Foods.—The following articles are particularly indigestible for children, and should not be allowed them under four years of age, and most of them should not be given under seven or eight years: Fried food of all kinds, game, salt food, the flesh of swine in all forms, pickles, salads, condiments, except salt, “stews,” the “dressing” of fowl, sauces, visceral foods (such as liver, kidneys, tripe, etc.), all raw vegetables, potatoes (except baked), tomatoes in any form; the coarser vegetables, such as beets, turnips, cabbage, and so forth; fancy bread, cake and pastry; griddle cakes, canned food of all kinds; fancy confectionery, sweets and preserves; cheese, rich soups, jellies, dried or unripe and overripe fruits (bananas, so often given to young children, are very bad for them), nuts, fruits with large seeds, such as grapes, the skin of all poultry, fruits or vegetables.

Good Cooking.—All food should be plainly and thoroughly cooked. No greasy or highly seasoned dishes are permissible, and, as a rule, twice cooked meats are indigestible.

Forbidden Drinks.—Tea, coffee and alcohol in every form must be withheld. The two former beverages interfere with digestion and make the child nervous, and the latter lays the foundation for a permanent alcoholic habit. Soda water with syrups should not be given. Too much water should not be allowed with meals, and what is given should not be ice-cold.

Regular Meals.—Children, as they grow up, should continue to observe regularity in the hours for taking meals, and the habits of perpetually nibbling at cake, crackers and confectionery between meals should not be tolerated. It is best for young children not to be put to sleep immediately after their most substantial meal of the day. As they require a nap in the early afternoon, many advise giving this meal at 4 P. M.

INDIGESTION IN INFANTS AND YOUNG CHILDREN.

The stomachs of infants and very young children being in process of development are capable of digesting and properly assimilating but comparatively few articles of food, and these only when taken in small quantities at a time. Either overfeeding or the feeding of improper articles will cause derangement that may have serious consequences.

Indigestion with infants and children, as with older people, may be *acute*, lasting only a few days, or perhaps but a few hours, or it may be *chronic*, lasting perhaps for months or even years. Bottle-fed children are more apt to suffer from indigestion than are those who are nursed at the mother's breast, if the mother be healthy and her milk of good quality and sufficient in quantity. When indigestion occurs with nursing infants it will usually be found to be due to the milk of the mother or wet-nurse which may be but temporarily affected by some local condition, such as strong mental emotions of grief, fright or anger, or by some passing physical disturbance such as indigestion, or by indulgence in some article of diet not suitable for one who is supplying an infant with food from her breast. Sometimes a diet which one mother may find advantageous in providing wholesome milk for the child may be unsatisfactory with another. Where a wet-nurse is employed it may be that her own child was born too long before the birth of the child she is engaged to nurse, and so her milk not suitable for the younger child, as the composition of breast-milk changes gradually as time goes on. Reappearance of the menses while nursing generally has an unfavorable effect upon the milk which may assume such character that the child cannot assimilate it and weaning may become necessary. Indigestion, too, sometimes attends weaning, due to the new food being given too suddenly or in a strength beyond the child's power to digest.

Delicate or feeble children; sufferers from scrofula, rickets, etc.; those recovering from acute diseases and complaints, and children who are teething all have delicate stomachs which are readily upset by very slight changes in quality or even the smallest increase in quantity, and they suffer from indigestion. Another fruitful cause of indigestion is the sudden change from a liquid to a solid diet. In older children overloading the stomach or eating food that is hard to digest are common causes of indigestion.

Symptoms of Acute Indigestion in Infants and Children.—Both with nursing infants and with children who have passed first dentition there are marked signs of distress. They are cross, fretful and peevish and sometimes suffer great pain, sometimes simply moaning and in other cases breaking into fits of screaming. Usually the face is very pale and they have the appearance of severe illness. The food remains for a long time in the stomach in an undigested form, which causes nausea, retching and finally vomiting. The length of time between the meal and vomiting and the degree of digestion the food has reached in the stomach during

that time are indicative of the state of the stomach and severity of the attack. If vomiting comes at an early stage there is great and almost immediate relief. If vomiting is delayed there is fever, high pulse and prostration, the tongue is usually coated, the belly becomes swollen and hard, there are muscular twitchings and startings and these symptoms are sometimes followed by convulsions, especially in infants and very young children who are highly nervous.

Attacks of acute indigestion usually come on suddenly and frequently can be traced to some specific violation of diet, and if vomiting follows quickly and is full and free there is almost immediate recovery and an hour or two after the child may be as well as ever or at worst is but slightly indisposed for a day or two. But, if vomiting or other relief be long delayed there is danger of serious trouble, especially in the case of infants and very young and delicate children.

TREATMENT.—The undigested food, which is the cause of the irritation, must at once be removed. With babies whether nursing at the breast or feeding from the bottle a quantity of lukewarm water may be given by spoon or from bottle, and this should act as an emetic. At the same time an enema of soap and water may be administered to relieve any undigested food which may have passed into the bowels. After the stomach has been emptied no food should be given for four hours, and after that the greatest care exercised for the next twenty-four hours. If the child is at the breast and the trouble known to be due to some error of diet of the mother or wet-nurse, it may be well to keep the child from the breast until the disturbing cause has been removed with the mother or nurse, simply feeding it on barley water administered in small doses in the meantime—care of course being taken to relieve the breast of milk during this time by artificial means so as to prevent caking or other trouble. In some cases weaning or change of nurse may be necessary.

As an emetic for children who are a little older, there is nothing better than ipecac administered in doses to suit the age, and this may sometimes be found advisable even with nursing children. For a child two or three years old a teaspoonful of the syrup of ipecac may be given or ten grains of the powder, and the dose repeated in twenty minutes if the first dose is not effective. This dose must of course be reduced for younger children to suit their particular age. If vomiting has not afforded relief and the child draws up its legs and cries with pain, and the bowels appear hard and distended, a dose of castor oil should be given, and if the symptoms are very severe the action of the oil may be assisted

by giving an enema of warm soapsuds. If there are indications of convulsions, especially if the child has suffered from them before, it should at once be placed in a warm bath. (See particulars as to treatment of convulsions under Accidents and Emergencies.) Application of hot flannels or poultices over the abdomen are often of much value in affording relief.

In severe cases of indigestion too great care cannot be exercised as to feeding for several days. There is real danger in commencing the use of hearty food too soon or of giving it in too large a quantity. Even a nursing child must be brought back to the breast with care. It may be advisable to keep the child from the breast for a whole day, and then only permit it to remain at the breast two or three minutes every three hours, gradually increasing the time at each nursing in accordance with the improvement seen. During this time nourishment of the child may be sustained by small doses of barley water or by small quantities of properly modified cow's milk and lime water, care being taken not to over-feed and the cow's milk being discontinued if it does not thoroughly agree with the child.

Chronic Indigestion.— While not causing the immediate distress of acute indigestion, chronic indigestion in children is more difficult of treatment, as the cause of the trouble cannot be so readily told, and the cause must be known and removed before real betterment of condition can be hoped for. With infants who are nursing at the breast, strict regard must be had to the quality of the mother's milk, and if there is reason to judge that this is the cause, as is most frequently the case, the child must be changed to bottle feeding, in respect of which the utmost care must be taken that the ingredients of the nourishment thus administered are not only suitable to the child's age, but to its existing condition of stomach. Read carefully instructions as to Infant Feeding in an earlier part of this chapter. In bottle-fed children these same instructions on Infant Feeding should be carefully studied. In the case of older children particular care should be taken that their food is truly wholesome and especial endeavor should be made that they have their meals at regular hours. Eating between meals is often a source of serious digestive trouble. Yet the child should not be forced to go hungry because of some hard-and-fast rule. In children of from one to two years a bread and milk diet should be largely relied upon, though an occasional exception may be made. As a rule at this age vegetables are not wholesome, and potatoes, to which children usually show much partiality, are frequently a potent source of

stomach trouble. If potatoes are desired, they are much better baked than boiled, but even then should be given sparingly where the stomach shows indication of weakness. Where the child is given meat (which should not be until it has at least its molar teeth) rare (underdone) beef is probably best, whether as roast or steak, but chicken is also wholesome and sometimes lamb and even veal, if especially well done, will be found to meet all requirements of easy digestion. Fat meats of all kinds should be avoided and pork in any form is to be shunned. Ripe fruits may be used in season, but in moderation, and they should not be "over-ripe."

Fresh air is of almost equal importance with proper diet. It is not unusual for a child quite free from indigestion during summer months, when it is almost constantly out of doors, to suffer continually from indigestion during winter months, when it is kept almost completely within door. Fresh air and outdoor exercise are as needful to the child in winter as in summer.

Existing constitutional troubles, such as rickets, scrofula, etc., or perhaps debility arising from some previous disease, such as measles, scarlet fever or other ailment, may cause chronic indigestion. Read the articles on these different constitutional diseases. In such cases an emulsion of cod liver oil (if the stomach will stand it) will often prove useful, and some of the numerous preparations of iron, or some of the bitter tonics may prove helpful. But do not constantly dose your child with medicine. There is always a danger of over-drugging children who have chronic indigestion, and this of itself oftentimes keeps up a trouble of the stomach which fresh air, moderate outdoor exercise and careful dieting would cure without medicine or very little of it.

Among medicines that may be used in moderation and in doses to suit the age and constitution of the child, the following may be mentioned: Emulsion of cod liver oil, using an emulsion made with the lacto-phosphates rather than the pure oil; powdered carbonate of iron, administered in grain doses; nux vomica as a bitters, one or two drops in half a wine-glass of water being given to a child of three years. Iron and nux vomica may be administered in the same preparation. The following prescription is frequently efficacious:

R.—Tr. Nucis Vomica	½	drachm
Elix. Calisaya	6	drachms
Tr. Card. Co.	2	drachms
Ess: Pepsin	2	ounces

Dose: Fifteen to thirty drops in water three times a day.

CATARRH OF THE MOUTH OR CATARRHAL STOMATITIS.

This is an affection of the mouth due to stomach trouble. The mucous membranes of the mouth and tongue are not only red and swollen, but are covered with a thick slimy mucus, and there is considerable local pain. The disease is common in infants and children, with whom it may be due to teething or to certain fevers, such as measles, scarlet fever, etc. The mucous membrane of the mouth becomes red and hot, causing a smarting or stinging pain, and there is an excessive secretion of saliva. The breath is foul and there is an unpleasant bitter taste in the mouth, accompanied by disturbance of the stomach and feverishness. The trouble usually subsides with treatment in a week, though sometimes endures longer. It is chiefly confined to infants and children, but occasionally is found in adults, chronic cases sometimes appearing in adults as the result of excessive use of tobacco or alcohol.

TREATMENT.—Mix well together two tablespoonfuls of honey and half a drachm of powdered borax and give a teaspoonful twice a day, administering it slowly and in such manner as to anoint all sore spots that may be visible. An excellent mouth wash is the mixing together of 40 grains of chlorate of potash, 15 drops of myrrh and 2 ounces of elixir of calisaya. A teaspoonful of this should be put in a wineglass of water and the mouth washed every four hours. If it is found too strong it may be further diluted. Another preparation which may be found beneficial is the following: Bismuth subnitrate, $\frac{1}{2}$ drachm; magnesia powdered, 2 drachms; bicarbonate soda, 12 grains; sugar milk, 24 grains. Make twelve powders; one two hours after feeding.

MALFORMATION OF MOUTH.

Hare-lip.—Children are sometimes born with a curious malformation of the upper lip, which has failed to unite at the centre previous to birth, and the child is left with a deep cleft sometimes reaching from the lip to the nostril. This cleft is usually at one side or other rather than in the center and sometimes is double—that is, there is a cleft on each side—or it may be complicated—that is, combined with a fissure of the palate (roof or upper part of mouth). It can only be remedied by surgical operation. The deformity may be so great as to prevent the child from nursing through inability to grasp the nipple or so inefficiently as to prevent securing sufficient food for nutrition. In such cases an im-

mediate operation is necessary. If the deformity does not interfere with nursing it is generally better to postpone operation until at least the fifth month, and may in some cases be advantageously delayed even as late as the eighteenth month. The operation is very simple, but should be performed by a skilful surgeon as in order to leave the least unsightly scar an exceptional nicety of adjustment of the parts is necessary.

Cleft Palate.—This is similar in nature to hare-lip, of which it is often an accompaniment. It is apt to seriously interfere with speech and should be operated upon by surgeon, the operation, as in the case of hare-lip, being delayed for some months unless the cleft is of such nature as to interfere with proper nursing.

Tongue-tie.—This malformation is caused by the undue shortness of the small membrane, called the frenum, which is attached to the tongue on the underside and which is thus sometimes to its very tip tied to the lower jaw. It can be detected when the child opens its mouth in crying and by its inability to thrust out the tongue. If it interferes with nursing it should be operated on the next day by nicking the band at the front edge and then tearing it back to about the usual position. No cutting should be resorted to, excepting in this superficial way, on account of a very active little artery which lies at the root of the tongue, and which, if wounded, might bleed so as to endanger an infant's life before the hemorrhage is stopped. On this account, if nursing is not seriously interfered with, it is better to wait some months before this untying. Simple as the operation is it is always advisable to have it performed by a surgeon if one can possibly be obtained. If the tongue can be thrust beyond the red edge of the underlip no operation is likely to be necessary.

COLIC.

Colic is one of the most common troubles with young children, especially during the first five or six months of infancy, and is invariably due to disturbed digestion. Both nursed and bottle-fed babies are subject to it, and it may occur in the healthiest baby from error in the last meal, and may be due in the case of a nursing baby to some indiscretion in diet on the part of the mother, or with a bottle-fed baby it may be due to a carelessly prepared bottle. See remarks on indigestion of children.

Slight attacks are frequent with almost all infants, the baby suddenly becomes fretful, draws up its legs toward the abdomen, cries for a few minutes and then becomes quiet. In a short time another attack occurs

and in turn subsides, and thus it goes on until relief is secured. It frequently happens, however, that the attack is much more severe and the symptoms become violent: there is continued unappeasable screaming, spasmodic kicking, reddening of the face, writhing of the body, etc., and the abdomen usually is not only disturbed, but hard and tense.

TREATMENT.—In the first place the feet and hands should be warmed by placing them against a hot water bottle or holding them before an open fire; the baby should be turned on the stomach, lying on a hot water bottle or hot flannel; pat the back gently to help up the wind, and as a relief to pain and also as an aid to belching give a teaspoonful of hot water with or without the addition of a few drops of essence of peppermint, anise, gin, brandy or asafœtida. Hot catnip tea is a safe and often efficient remedy and a soda-mint tablet dissolved in a wineglass of hot water is often helpful in relieving pain. Frequently relief is obtained by a rectal injection of one or two teaspoonfuls of glycerine in from two to four ounces of cold water—or ten drops of turpentine in a half teacupful of warm water injected slowly into the rectum, the abdomen being at the same time gently rubbed, will be found an excellent remedy. When with a nursing child colic is frequent and severe, there is usually reason to believe that the mother's milk is unwholesome, and it will probably be necessary to put the child on a diet of modified cow's milk.

The following prescription often proves of much avail in cases of violent colic: Bismuth subnitrate, 1 drachm; tincture cardamon comp., 1 drachm; glycerine, 2 drachms; essence of pepsin, 4 drachms; peppermint water to make 2 ounces. Fifteen to thirty drops, to be repeated.

Mothers and nurses cannot be too strongly cautioned against relieving colic by the common and pernicious habit of administering frequent doses of anodynes and carminatives. Almost all mixtures of this kind contain more or less opium and countless infants have been permanently injured by their employment, and beyond question death in many instances has been directly attributable to their habitual use. Among characteristic symptoms of continuous use of such drugs with infants are: loss of appetite and impaired digestive powers and constipated bowels, the skin then loses its healthy tinge, general apathy and debility follow, and if long continued there is apt to be termination in convulsions, dropsy of the head, glandular swellings, incurable jaundice or fatal exhaustion of the vital energies. These drugs are often administered to an infant by some nurse girl or woman in attendance without a mother's knowledge, and mothers should always be on guard against such happenings.

CRAMP IN THE STOMACH OR GASTRALGIA.

Children are frequently troubled with cramps in the stomach or a form of neuralgia, which causes violent pains in the stomach. They may be the effect of cold, through exposure, wet feet, drinking ice water and like causes, or they may be forerunners of acute stomach indigestion, due to indiscretions in eating.

The symptoms may be confined to mild intermittent pains in the stomach, or there may be such severe pain as to cause prostration, cold perspiration, faintness and a general pallor of the face.

TREATMENT.—The child should be put to bed and hot water bottles applied to the stomach and feet. Make a paste of mustard and olive oil (the olive oil prevents blistering) and spread this fairly thickly between two pieces of very thin flannel, which lay on the child's stomach. Administer hot drinks such as strong ginger tea. Hot water with a little brandy or gin may be given and where there is much pain five drops of spirits of chloroform may be added. Usually ginger tea if made sufficiently strong is better than any liquor. No food should be given while there is any pain, and when this is entirely relieved only the simplest and most easily digested food should be given.

INFANT DIARRHŒA.

At no other period of life is diarrhœa so common as in infancy, and not only so but the attack at this stage of life is more likely to become unmanageable and assume dangerous character than in later childhood or adult life.

The trouble may be due to any of various causes. Malnutritious food is the most potent cause. Nursing babies are less subject than bottle-fed infants. Infants fed with solid foods are especially liable to attacks, and where regularly allowed to partake of potatoes, meat, vegetables, etc., are liable to become afflicted with chronic diarrhœa. Intense summer heat is conducive to this trouble and complaints are much more frequent with children during summer weather than at any other season of the year.

TREATMENT.—A purgative dose of castor oil, laxol or syrup of rhubarb may be given, or a powder containing one-tenth of a grain of calomel and one grain of bicarbonate of soda, giving one such powder each half

hour until eight or ten have been taken, when follow with a teaspoonful of rice water or albumen water may be given, or whey. After this be very careful in feeding and if necessary change food.

If there has been continued diarrhœa for some time, the cleansing of the bowels by castor oil or other purgative will probably be unnecessary, and in such cases one-half to one grain of Dover's powder mixed with three grains of subnitrate of bismuth may be given, one such powder being administered every three or four hours. Another prescription recommended is the following:

Bismuth subnit. 24 grains
 Comp. chalk powder 16 grains
 Make into twelve powders. One every two, three or four hours.

Where there is much prostration five or ten drops of brandy in a teaspoonful of water may be administered from time to time as judgment dictates.

A teaspoonful, or one drachm, of castor oil is a purgative dose for a child up to six months, and is best administered in hot milk. For children up to six months, however, an enema of hot water (one pint) is frequently better than a purging dose.

Where there is fever the child should be sponged from time to time with a mixture of hot water and alcohol—about equal proportions.

CHOLERA INFANTUM (Summer Complaint).

Symptoms.—The first symptoms are heat and pain in the region of the stomach and bowels, hands and feet, followed by vomiting and purging, or both, with griping and severe pains at the pit of the stomach. Evacuations become greenish-yellow and slimy, frequent and painful. Vomit is also greenish and more or less offensive and sour. There is great prostration, with loss of bodily heat and intense thirst; later, a cold perspiration appears, and unless relief is afforded the patient speedily succumbs, or the disease passes into a chronic state.

Causes.—Causes are: unwholesome food, hot weather, bad ventilation, or painful teething.

TREATMENT.—1. The first step is to remove the cause—a nursing babe may suffer from an improper diet on the part of the mother. Give the patient pure air and sunlight—a trip to the country or on the water

may be all sufficient. If the trouble comes from teething, have the gums lanced and cared for.

2. The treatment should generally be very simple. When the symptoms first appear apply a spice plaster, or light mustard plaster, or flannels wrung out of hot water and spirits, over the whole abdomen; give a few teaspoonfuls of mint tea, and keep the child as quiet as possible.

3. The following mixture has been used with great success, in early stages especially:

Prepared chalk	10	grains
Subnitrate of bismuth	10	grains
Paregoric	1½	teaspoonfuls
Syrup of ginger	5	teaspoonfuls
Gum arabic mucilage	5	teaspoonfuls

Mix. Dose for child one year old, one-half teaspoonful two to six times a day, usually not oftener than once in five or six hours. Vomiting may be relieved by giving small pieces of ice, if the child is old enough to swallow them. This treatment will often bring relief, but if it does not, give a teaspoonful of flaxseed tea or slippery elm tea, with (for a child four to six weeks old) one drop of laudanum, once in two or three hours.

4. If child is two or three months old, give two drops of laudanum; if six months old, give three drops; if a year or more give from four to eight drops, according to age. If the stomach will not retain this remedy apply it as an injection, using a tablespoonful of thin boiled starch, blood heat, to double the amount of laudanum prescribed above—that is, two drops for a child of thirty days, four drops for a child of two or three months, and so forth.

5. As a general rule, we may say, give as little medicine as possible, and if the simple remedies first named do not give prompt relief, as they very often will, with proper care, call a physician in preference to trying to handle the case in its severe forms.

NURSING THE BABY.

Throughout this chapter we have recommended that in all cases where possible the mother should nurse her child, and there is no more fitting point with which to close.

It is stated on high authority that seven bottle-fed babies die to one that is breast-fed. It follows that it is the mother's duty to nurse her child if she can; that is, if she has sufficient wholesome milk. The baby should be breast-fed until it is at least six months old, and should never be

weaned in hot weather. Mother's milk is made up of 87 parts of water and 13 parts of solids, these latter being fats, sugar, proteids, and salts. They are all essential to the nourishment of the child, the fats to build up fatty tissues of the body and produce body heat and energy; the sugar gives similar results; the proteids build up the cells which compose the blood; the water holds the food in such solution that it may be digested and assimilated and aids the work of all the excretory organs; the salts are needed chiefly for the blood. It is of course possible to modify cow's milk so that it closely resembles the mother's milk in the proportions of its composition, but there are qualities in the mother's milk which cannot be reproduced by imitation. Moreover, no one knows the exact state in which the mother's milk goes from her breast to the stomach of her babe, but we do know that it is perfectly adapted to the requirements of the child.

Mother's milk not only gives the baby necessary help in the complicated task of growing, but to a large degree it renders the child immune to illnesses of many sorts and greatly increases the chance of life. Again it is easier to nurse a baby at the breast than to feed it by bottle. To secure pure milk, to properly modify it, to keep bottles and nipples and all utensils absolutely clean and sterilize them, is all matter requiring most scrupulous care and much work, and when the baby does not thrive and some change in its food is necessary, the difficulties of artificial feeding are multiplied. Too often it happens that the baby's first year is spent in a series of unfortunate feeding experiments, with the result that the growth and general development are seriously retarded. Then, too, a bottle-fed baby is often left to the care of nurse-maids who are careless and negligent as to the cleanliness of bottles and nipples and of the manner of feeding, and illness of the child follows.

There are of course cases where the mother cannot nurse her child, no matter how much she would wish to do so. But as a matter of fact the cases are very rare when maternal nursing is really impossible. It is the duty of every doctor and every nurse to insist that the mother shall exercise this function—to do everything possible to establish lactation, to promote it and even to bring it back if for any reason the breasts have ceased to secrete.

The milk does not come to the mother's breast until from 48 to 60 hours after the birth of the child, but during the interim period the baby needs no food. It may be given a few drops of slightly warmed water now and then, and beginning some six hours after birth it should be put to the

breast every six hours until the milk arrives. The first secretion of the breasts is called Colostrum, and serves some useful purpose to the baby, but perhaps the greatest value of this early nursing is the training of mother and babe in the habit of nursing. For the first few days and until the relation between supply and demand is established, there may be an excessive flow of milk to the breasts. If there is overdistension of the breasts the excess milk may be removed by the use of the breast pump, but this should not be resorted to unless absolutely necessary, or relief may be obtained by gentle massage of the breast, using warm oil on the hands. However, all manipulation tends to stimulate the glands to greater activity, and it is therefore usually better to relieve the discomfort in other ways. A bandage properly made and properly applied is oftentimes most availing, but this requires professional skill for its successful use. Hot or cold applications (according to the weather and the patient's preference) are sometimes of avail. Great care must be exercised to adopt nothing but the gentlest methods. Usually nature will soon take care of the excess of milk.

The nipples must be kept in good condition. They should be washed with boric acid or clean water after each nursing, thoroughly dried and at all times kept perfectly clean. They are apt to crack as a result of the baby's efforts to nurse and should this happen a nipple shield should be used (rubber or glass) until the abrasions are healed, for if the baby's mouth comes in contact with the sore nipple, infection may follow, which may lead to breast abscess, a most painful affliction and one which calls for surgical treatment. Cracked nipples may also result from permitting the baby to nurse too long at a time or at irregular intervals. Regularity in the times of nursing is of vital importance, both as respects the mother and the child.

The question of whether the baby is getting enough food may be determined by weighing at the end of each week or oftener. There is apt to be a slight loss in weight the first week, but after that there should be a steady gain in weight. If the baby cries much or does not gain in weight, it may be that the mother's milk is deficient in some necessary qualities, and it will be well to consult the family physician. The mother should not decide to give up nursing the baby excepting under most exceptional circumstances, and then only after consultation and advice. Even a very small quantity of mother's milk is valuable to the child, and especially during the first three months every effort should be made to give the child at least some quantity of maternal milk, even though the

bottle has to be resorted to as well. The attempt to nurse the baby will stimulate the flow of milk and with proper diet and general health will often establish this function, even when apparently hopeless. In the meantime the baby's food must be supplemented by cow's milk properly modified.

Diet for the Nursing Mother.—Usually this should be practically the same as during pregnancy, and the mother may largely follow her own inclinations as to what she eats. It is doubtful if the old idea that acids and vegetables taken by the mother cause colic with the child, nevertheless if they, or any food or drink, disturb the mother's digestion it is apt to have an unfavorable effect upon the milk, and should be discontinued, and it is therefore necessary to watch the diet very carefully and eliminate all articles that do not thoroughly agree. Eat slowly, chew all food thoroughly and above all refrain from worry, and the chances all are that the milk will agree with the baby. Constipation should be guarded against just as carefully as during pregnancy.

If there be but scanty quantity of milk it is an indication that there should be a more generous diet. Plenty of fresh milk, eggs, fresh vegetables, ripe fruit, and other plain simple food are required. In event of capricious appetite it will be better to take five or six small meals daily instead of three large ones. It cannot be too strongly commended that the mother while nursing should be in a quiet state of mind. There is nothing that interferes with a good secretion of milk than an overwrought or nervous condition, and notwithstanding the troubles and sorrows may be such as to make it almost impossible to keep from worrying, the remembrance of the little life that is so dependent on the mother's milk being wholesome may help to bring about a quieter state of mind. The mother should have pleasant outdoor recreation, and be surrounded with cheerful society, and as far as possible a variety of things that will interest her, and there should be every endeavor made to have at least eight hours sleep at night besides ample resting throughout the day. Air and sunshine are essential.

When the nurse has gone and the mother is left to herself she is apt to grow weary with the care of the child which now devolves entirely upon herself while she is yet more or less weak from her confinement, and at this time there is apt to be a diminishment in the quantity of milk secreted, causing the mother to become discouraged and inclined to believe that she will have to give up nursing her child. This is almost invariably a mistake. The strain of this period is gradually relieved from day to

day as the mother and babe become gradually adjusted to each other's ways, health revives and slowly but certainly things grow more comfortable, and with this improving state the milk will come back in its needful quantity. In a word, if the mother will specially strive to carry herself and the baby past this period she will in all probability be able to afterward successfully nurse her child. Every possible effort should be made to this end before resorting to weaning. The return of the menstrual periods is not necessarily sufficient reason for weaning, though it sometimes so affects the milk as to make it advisable, but pregnancy demands weaning because the mother's strength is not sufficient for the double tax.

A MOTHER'S RESPONSIBILITY IN CHILD TRAINING

"Mothers," remarked the cynic, "are of two classes: those who have preconceived ideas as to how to bring up their children and won't learn, and those who have no ideas and can't learn."

Ignorance of Mothers.—We will probably not all agree to this rather sweeping statement, for most of us are fortunate enough to number among our acquaintances several brave, conscientious women who are true mothers in every sense of the word. But looking the facts squarely in the face, we must admit that there are lamentably few such examples, and that the majority of women are most woefully ignorant on the important subject of child-training.

Occupation of Motherhood.—In these days of skilled labor, a person who desires to teach a certain branch of knowledge will spend several years beforehand in preparation. Women as well as men have learned to their cost that in order to obtain a business position they must be able to perform its duties well. The sole exception to this rule seems to be in the case of motherhood, which, of all the occupations in which a woman can engage, is beyond doubt the highest and the most difficult. Possibly because there is no money consideration attached to her duties, a mother's labor in the bringing up of her children is not generally considered in the light of a profession, and hence a woman rarely hesitates to undertake this difficult task without a previous study of the subject. The disastrous result of this act is felt not only by the child but also by the thoughtless mother, who alone is responsible for the consequences.

Who Are to Blame.—Ungrateful and wayward children have always been looked upon with horror, and unbounded sympathy expressed for the parents in their terrible affliction. All that is very right and proper, provided it is the children and not the parents who are to blame. Unfortu-

nately the latter is too often the case, and the sympathy that is given the father and mother frequently belongs to the unhappy offspring, who are made the innocent victims of someone else's ignorance or wrongdoing.

Children's Rights.—Too few mothers recognize the fact that their children have certain rights which should be respected; that among these rights are a healthy body, a good disposition and an intellectual and moral training. To the extent of her powers a mother should provide these for her child. I emphasize these duties as appertaining to the mother, since it is she and she alone in whom is vested the important office of the education of her offspring. The father provides the funds and may aid and advise his wife, but he can never take her place in the lives of his children.

Children's Imitative Powers.—The most characteristic thing about children is their power of imitation, and this power can be made to serve both a desirable and an undesirable end. Few people realize the extent to which this practice is carried by the average child and the reason for its existence. The child is a stranger in an unfamiliar world and among people of whose customs he knows nothing. There is an undefined prompting which urges him to imitate the acts committed by those around him, and even the words they speak. Finally, by constant repetition, he begins to understand what to him at first was an enigma. In the case of the tiny baby this imitation is unconscious, but finally it is performed consciously.

Children's Surroundings.—The tremendous importance of a child's surroundings will at once be seen. Since he must imitate, it is right that he should see and hear only things worthy of imitation, and herein lies a great difficulty; for people cannot be made to comprehend that what they do and say in the presence of children can have any effect upon their characters. "The child is too young to take it in," they assert. Some day they are startled and embarrassed when the youngster repeats their action and the very words uttered by them, in the presence of strangers. The truth is that children comprehend more than we know, and the ideas which they receive may lie dormant for some time before they are able to give them out. This explains many seemingly incredible acts of memory on the part of very young children.

Dispositions and Temperaments.—Not only do children imitate the words and actions of those around them, but they also reflect in a wonderful degree their dispositions and temperaments. If one or both of the parents are nervous and irritable, the chances are that their offspring

will be the same, and, on the contrary, if the family life is peaceful and happy it will be reflected in the sunny dispositions of the children. All these things will be considered by the wise mother who does not wish the little one to enter the great struggle of life with a terrible handicap at the very outset.

Froebel's System.—Friedrich Froebel, the originator of the kindergarten, and the greatest student of child nature that the world has ever known, was the first to see that the education of the child must begin when he is born. It is necessary, therefore, for the mother to understand the nature of the little being whose destiny lies in her hands, and to this end Froebel formed classes especially for mothers where they could be taught the physical, mental and moral requirements of their children. His book of songs and games is intended not only for the kindergarten but for the mother to use with her baby. The mottoes and commentaries on them are for the kindergartner's or mother's perusal. It is a work that all those who have the care of young children cannot well do without.

Start of Child Training.—The question is often asked, "How can a mother start the training of her child when it is yet too young to understand what she says?" If the questioner will but consider for a moment she will realize that the education of a human being begins at the moment of birth, continues throughout life, and only ceases when he dies. Every physician will testify to the necessity of forming desirable habits in the period of infancy, when the character is still in a plastic condition. The foundation for habits of punctuality and self-control are easily laid in the infant by accustoming him to a regular life. His meals should be given at stated periods, also his walks and his bath. He should be put to sleep at the same time every day, and gradually he will learn to know what is required of him and cheerfully conform to it.

Crying Children.—Children should be taught that no amount of crying and misbehavior will bring a coveted object which has once been denied them. A child who has thus been indulged once by a thoughtless parent will practice the same tactics another time. Children learn almost intuitively to connect cause and effect. "I cried for it and it was given to me, so it must be my crying that brings me what I want." And they lay that connection of ideas by for future use. In correcting this, as in so many other things, it is the first step that both counts and costs. There may be a scene or two at the outset when the half-formed will of the child is pitted against that of the mother, but what is that in comparison with the value of the final results in the formation of the child's character?

Few mothers realize the harm they can do a child by an unwise lowering of their parental authority.

Over-indulgence.—Over-indulgences in smoking, drinking and other vices are loudly condemned by all right-thinking people. It is an interesting fact that any number of such cases have been traced directly back to the foolish leniency of the mother in allowing in her child excesses in little things. For example, baby is permitted to suck his finger and soon is not happy unless doing so. Finally, the mother notices the act and straightway provides a rubber-ring or something similar to take the finger's place. The child quickly becomes accustomed to the new device, and when the ring is not forthcoming he sucks his cap-string, or anything within reach. Pencils, chewing-gum and candy take the place of the ring when the baby grows into the boy, and finally these give way to cigarettes when manhood is reached. Is it any wonder that a man finds the tobacco habit hard to break. He has been accustomed to having something constantly in his mouth, and with each year the habit grows stronger and his will weaker.

Correction of Overeating.—Eating after the cravings of nature have been satisfied is a common fault in little children, and thoughtless adults will frequently urge them to partake of more food than the stomach can possibly have any use for. This is a fertile cause of ill-health, but far worse than that, it is more injurious to the moral nature. This also applies to the excessive eating of candy and sweet things of which the child is very fond. The continual gratification of the appetite, or in fact of any of the senses, to a point beyond that which common sense dictates, can have but one result, and that is the loss of all self-control.

Children's Pitfalls.—It is far from my wish to discourage any mother in the training of her children by thus pointing out the numerous pitfalls that beset her way. These same pitfalls are many and deep, it is true, but continual watchfulness and a knowledge of wherein the danger lies will do much to keep one in the right path. It is to this in a large measure that the good kindergartner owes her wonderful influence over her small charges. She makes a study of each individual child, his virtues and faults, what he likes and dislikes and, in fact, all the peculiarities of his individual character. Thus she is enabled to correctly attribute his acts to the motives which prompted them and reward or punish the small doer accordingly. For it is a well-known fact that two children may do exactly the same thing—the one from a bad and the other from

a good motive; and a person not understanding the different natures would be likely to treat both in the same manner.

Rewards and Punishments.—The question of rewards and punishments is one of the gravest with which the mother and kindergartner is called upon to deal, for an unjust decision in such a matter is often the cause of much harm to the child. The arbitrator is practically in the position of God to the child who regards her decision as absolutely just and final. One of the saddest things that could happen to a mother is the loss of this faith, and it may safely be said that this loss only comes through her child's knowing that her decisions are unjust. She should be the standard of right and wrong in the eyes of her children, their conscience, so to speak, before their own has completely formed.

When to Enter School.—The age at which any given child may enter school must be decided for that child alone. The individual must be considered. As a rule children are sent to school too early. Strong, robust children may be sent to school at six or seven years of age. They may even have spent two years in the kindergarten before reaching that age. On the other hand a delicate child had better be kept in the open air and sunshine until nine or ten years of age, or even later. It is more important to a child to have a sound body than to have an educated brain.

Development of Puberty.—Puberty is that time of life in a boy or girl when they emerge from boyhood or girlhood into manhood or womanhood. It is a time in the life of most individuals fraught with danger. To the boy approaching puberty, little care need be given except to surround him with good influence and moral companions. Teachers should be patient in cultivating the voice. Singing should not be indulged in until the "new voice" is well established. The boy should be watched so that no bad habits are formed. This period is reached in the average boy in from the fourteenth to the sixteenth year, and at such time as the first manifestations of puberty occur, the father should carefully explain to the boy the nature of the change in his physical state and endeavor to imbue him with ideas of chastity, not only from its moral but also from its physical aspect. There should be no false modesty in such discussion with the son. The boy is certain to become informed of the facts from other boys, and there is always danger that the information may be imparted to him in such manner as will pollute his mind instead of giving him ideas of the nobility of manhood.

Puberty in Girls.—In girls, puberty is reached about the fifteenth year. At this time the mother must seek the girl's closest and strictest

confidence, and before the first menstrual flow occurs it is the mother's duty to explain physical conditions to the child and prepare her for that which is soon to happen. Failure to do this may, and often does, result in mortification, suffering and sometimes permanent injury to the maturing child. She must do no severe mental work at this time, neither should she indulge in violent exercise. When weary and languid, encourage rest in a reclining posture, with short walks in sunshine and fresh air daily. Many girls are better removed from school. The health and future usefulness of many girls are endangered, some even ruined, by injudicious care at this period. Moral companions must be secured at this period of life.

PART I OF BOOK IX

Describes the properties and uses of many simple remedies which should be in every home, giving also a number of instruments and articles which will be found very useful in the home treatment of disease.

<p>Absorbent Cotton1206</p> <p>Alcohol1203</p> <p>Antiseptic Gauze Bandage1206</p> <p>Aromatic Spirits of Ammonia1201</p> <p>Bandages1206</p> <p>Bicarbonate of Soda1205</p> <p>Bismuth, Subnitrate of1204</p> <p>Boric Acid1206</p> <p>Bromide of Soda1204</p> <p>Brown Mixture1204</p> <p>Cabinet for Medicines1207</p> <p>Calomel1205</p> <p>Camphor, Spirits of1203</p> <p>Camphorated Soap Liniment1203</p> <p>Chalk Mixture1204</p> <p>Chlorate of Potash1206</p> <p>Chloroform Liniment1203</p> <p>Chlorinated Lime1205</p> <p>Cold Cream1206</p> <p>Coryza1204</p> <p>Dropping Medicine1200</p> <p>Essence of Ginger1202</p> <p>Ginger, Essence of1202</p> <p>Ground Mustard1205</p> <p>Home Medicine Chest1199</p> <p>Household Remedies1201</p> <p>How to Dispense Medicines1200</p> <p>How to Keep Medicines1199</p> <p>Ideal Home Medicine Chest1199</p> <p>Implements1206</p> <p>Ipecac, Syrup of1201</p> <p>Laudanum1202</p> <p style="padding-left: 2em;">and Lead Water1203</p> <p>Lead Water and Laudanum1203</p> <p>Lime-water1204</p> <p>Lint Bandages1206</p>	<p>Liquid Medicines1201</p> <p>Measuring Medicine1200</p> <p>Medicine Chest1199</p> <p style="padding-left: 2em;">Convenience1199</p> <p style="padding-left: 2em;">Purpose of1199</p> <p>Miscellaneous Medicines1205</p> <p>Mustard, Ground1205</p> <p>Mustard Plasters1206</p> <p>Nitre, Spirits of1202</p> <p>Paregoric1202</p> <p>Pepsin1204</p> <p>Peroxide of Hydrogen1203</p> <p>Plasters1206</p> <p style="padding-left: 2em;">Mustard1206</p> <p style="padding-left: 2em;">Toothache1206</p> <p>Pouring Medicine1200</p> <p>Remedies, Household1201</p> <p>Rhynitis1204</p> <p>Seidlitz Powders1205</p> <p>Soda1205</p> <p>Spirits of Camphor1203</p> <p>Spirits of Turpentine1203</p> <p>Subnitrate of Bismuth1204</p> <p>Sulphate of Quinine1204</p> <p>Sweet Oil and Spirits of Turpentine.1203</p> <p>Sweet Spirits of Nitre1202</p> <p>Syrup of Ipecac1201</p> <p>Tablets1204</p> <p>Toothache Plasters1206</p> <p>Turpentine, Spirits of1203</p> <p>Valerianate of Ammonia1201</p> <p>Vaseline1206</p> <p>Whiskey1201</p> <p>Witch-hazel1203</p> <p>Zinc Ointment1206</p>
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Book IX

Home Administration of Medicine

PART I.

THE IDEAL HOME MEDICINE CHEST

Purpose.—The purpose of the home medicine chest should not be to displace the family physician, nor to take out of his hands the work that legitimately belongs to him, but rather to afford a convenient and ready means for giving relief in cases of minor indisposition where the physician would in all likelihood not be summoned, and in severe ailments for giving temporary treatment while awaiting his arrival. The intelligent mother who is watchful for any departure from the normal in her children, can often, if suitable remedies of a simple nature be at hand, prevent the development of more serious maladies.

Convenience.—Moreover, even among adults, it is often a convenience and a safeguard to have available such medicines as they will be most likely to have occasion to use in emergencies or in the absence of medical aid. The small expenditure of money required to procure such an outfit will be amply repaid by the peace of mind and ease of body which it will give. Before entering upon a detailed consideration of the remedies which it is desirable to keep in stock, a few suggestions as to the handling of medicines in general will not be inappropriate.

1. **How to Keep Medicines.**—All medicines should be plainly labeled, with their names, doses and general directions for use written in ink. Unless for temporary use only, liquids should be kept in glass-stoppered bottles. Never should a bottle be used which has contained something else, unless it has been thoroughly cleansed and the old label either scraped off or sufficiently defaced to prevent recognition. It is unsafe to simply paste a new label on top of the old one unless this precaution is observed,

for the new one may not adhere, but may fall off, and occasion liability to error.

All poisonous liquids should be in blue or other dark-colored bottles and should have some distinctive characteristic to the touch, as a rough surface. They should be plainly marked "*Poison*," with directions to follow in case of poisoning by an overdose or otherwise. They should also be placed in a less accessible part of the medicine chest or closet, so as to make it more difficult to obtain them.

2. How to Dispense Medicines.—Medicines should *never* be poured out and administered without first reading the label. No matter what degree of certainty may exist that the right medicine is being employed, errors are liable to occur, and the most careful people may under some circumstances make mistakes. Accordingly the risk of these errors should be reduced to a minimum by a scrupulous regard for this rule, a failure to adhere to which may cause, as it often has, suffering and death. Again medicines should never be poured out into a cup or glass and allowed to stand, unless proper precautions are taken to prevent the contents of the vessel being mistaken for something else.

Pouring.—In pouring medicine from a bottle into a measuring glass the latter should be held perfectly straight, on a level with the eye, and the medicine slowly poured out from the side opposite the label, in order to prevent soiling the latter by drops running down the outside of the bottle.

Dropping.—In dropping medicines, if a dropper is not available, the lip of the bottle should be moistened by touching it in one spot with the stopper on which is a drop of the medicine. By so tilting the bottle that the moistened part of the lip rests against the side of the stopper at an angle of about forty-five degrees, the liquid may be accurately and readily dropped out, if the hand is at all steady.

Measuring.—In measuring liquids in spoons, two teaspoonfuls equal one dessertspoonful, two dessertspoonfuls equal one tablespoonful, and four tablespoonfuls one wineglassful. The size of spoons, however, varies considerably, so that they are unreliable for accurate dosage.

Unless directions to the contrary are given it is always safer to dilute medicines freely. A little water added to a dose of medicine rarely diminishes its efficacy, whereas in its pure form it may often be too strong and may do harm.

USEFUL REMEDIES FOR THE HOUSEHOLD.

Number of Remedies.—To be of practical value in the home the number of such remedies to be recommended for use among the untrained must necessarily not be large, nor their nature complex, but such as with ordinary care may be used without risk, and such as with ordinary intelligence may be employed in the most common of the simpler ailments. Accordingly, the following are suggested as fulfilling these conditions. Departure from this schedule may of course be made according as individual preference, experience, and the advice of the family physician may dictate.

LIQUID MEDICINES.

1. **Aromatic Spirits of Ammonia**, two ounces of.—This is a diffusible stimulant, acting quickly as a restorative in cases of fainting or heart failure. Its effect as a stimulant does not last a great while. It should be cautiously held to the nostrils for the patient to inhale, and as soon as he can swallow a half teaspoonful should be given, diluted with a wineglassful of water, care being taken not to cause choking by administering too rapidly. Children may take ten drops at a dose.

It is useful also for the relief of sick stomach and of headache dependent on disordered stomach. It may also be of benefit in coughs, after these have become loose, to aid in expectoration. For this purpose it should be taken every hour or two.

LABEL.—For faintness, dizziness, nausea and headache.

DOSE.—Adults, a half teaspoonful; children, ten drops, well diluted.

2. **Whiskey**, four ounces of.—As a stimulant this acts less quickly than the former, but its effect is of longer duration.

LABEL.—Stimulant.

DOSE.—Adults, a tablespoonful; children, a half teaspoonful, in water.

3. **Elixir of Valerianate of Ammonia**, four ounces of.—This is useful for nervousness, hysterical attacks and nervous headache. A teaspoonful or two may be given every hour until relief is obtained, in a wineglassful of water.

LABEL.—For nervousness, and nervous headache.

DOSE.—Adults, a teaspoonful; children, ten drops, in water.

4. **Syrup of Ipecac**, two ounces of.—This is a safe and efficient emetic when it is desired to empty the stomach of undigested food or to relieve

an attack of spasmodic croup. For a child a teaspoonful should be given, to be repeated if necessary in a half hour. Vomiting usually occurs in about twenty minutes without previous nausea and without warning. In dry, harsh coughs, from five to fifteen drops every two hours, aids in loosening the cough and aiding expectoration.

LABEL.—As an emetic.

DOSE.—A tablespoonful for an adult; a teaspoonful for a child. As an expectorant, thirty drops for an adult; ten drops for a child.

5. **Sweet Spirits of Nitre**, one ounce of.—For the relief of slight fever, and to promote the action of the skin and kidneys, this remedy has long been popular in domestic use. It should, however, not be kept a great while as age causes it to deteriorate. An adult may take a half to one teaspoonful in a wineglassful of water and a child from five to ten drops.

LABEL.—For fever.

DOSE.—Adults, a half teaspoonful; children, five to ten drops.

6. **Essence of Ginger**, four ounces of.—This is serviceable for flatulence and colic. A teaspoonful for an adult or from fifteen to thirty drops for a child; should be taken freely diluted with hot water, and may be repeated in a half hour if necessary.

LABEL.—For colic and flatulence.

DOSE.—Adults, a teaspoonful; children, fifteen to thirty drops, well diluted.

7. **Paregoric**, two ounces of.—Its most frequent use is for the relief of pain. As it contains opium its use for infants and children should be guarded, and usually only under the supervision of a medical attendant. Nevertheless a few small doses may be given with safety in such ailments as colic and in diarrhœa, after any undigested substances have been gotten rid of by a number of movements. It is of special benefit in diarrhœa accompanied by pain. An adult may take a teaspoonful in a little water every two hours, a child ten drops or an infant two drops. A dose at the very beginning of a cold will often check it. An irritating cough is also often relieved by moderate doses of fifteen or twenty drops every two hours.

LABEL.—For pain and diarrhœa.

DOSE.—Adults, a teaspoonful; children, ten drops.

8. **Laudanum**, four ounces of.—As this contains a much larger proportion of opium than paregoric, still greater care should be observed in its employment, and whenever it is possible to use the milder preparation, as is usually the case for internal administration, this should be done.

Laudanum is, however, invaluable, locally applied, in painful injuries, as bruises, sprains, etc. Equal parts of laudanum and water are useful for this purpose. The dose internally for adults is from ten to twenty drops, and for children two or three drops. It should not be used for infants without the direction of a physician.

LABEL.—*Poison.*

DOSE.—Adults, fifteen drops for pain; antidote, produce vomiting by a teaspoonful of mustard in a cup of warm water. Give hot coffee internally and by injection.

9. **Alcohol**, eight ounces of.—This is useful as an evaporating lotion in headache and sprains, either pure or diluted with an equal amount of water. Sponging the surface of the body frequently with alcohol and water, in fevers, helps to reduce the temperature and adds to the comfort of the patient. In all cases where the patient is confined to bed for any length of time alcohol added to the bath is useful to aid in cleansing the surface and in preventing the patient from taking cold.

10. **Peroxide of Hydrogen**, four ounces of.—This is used as a disinfectant for open wounds. Being non-poisonous, it is especially well adapted for use by non-professional hands. When it comes in contact with blood or pus active effervescence takes place. In sore throat, diphtheria, etc., it is valuable, diluted with an equal amount of water, as a gargle. It should be kept tightly corked.

11. **Camphorated Soap Liniment, or Chloroform Liniment**, four ounces of.—Useful in sprains, muscular soreness, rheumatic affections of the muscles, and as a counter-irritant to the chest in cases of bronchitis.

12. **Spirits of Camphor**, two ounces of. This may be used locally for headaches, bites of insects, etc., and inhaled through the nostrils for colds.

13. **Spirits of Turpentine**, four ounces of. This is for external use and will be found of value in making turpentine stupes and also as an ingredient in making liniments.

14. **Lime Water and Linseed Oil (equal parts)**, four ounces of. This is sometimes called carron oil and should be kept handy for burns of any description.

15. **Witch-hazel**, one pint of. This is for local use in bruises, sprains, application to hemorrhoids, etc.

16. **Lead Water and Laudanum**, eight ounces of. This is for external use only. It is useful for sprains of all kinds and for reducing swellings.

TABLETS.

The use of compressed tablets has become so universal that a list of convenient remedies in this form is given. They economize space, are inexpensive and often more agreeable to take than liquid medicines. They are conveniently kept in wide-mouthed bottles, each containing an ounce, and provided with screw caps.

1. **Subnitrate of Bismuth**, fifty tablets of, each containing five grains.—This is a non-poisonous and efficient remedy for nausea, vomiting and diarrhœa. As it is tasteless it is easily administered to children, mixed with a few drops of water after crushing it. The dose may be repeated every hour even to young children.

2. **Chalk Mixture**, fifty tablets of.—These are so made that each tablet when crushed and mixed with water represents a teaspoonful of chalk mixture. In diarrhœa, especially of children and infants, this makes an efficient remedy, aiding in the correction of an acid condition of the intestinal discharges. The dose may be repeated every two hours.

3. **Lime-water**, one hundred or more tablets of.—These are made so that each, when dissolved in a teaspoonful of water, shall represent a teaspoonful of lime-water, and are used in sick stomach. Added to milk, in the proportion of one or two tablespoonfuls of the prepared lime-water to a half tumblerful of milk, the "biliousness" of which many people complain when taking milk is usually obviated.

4. **Pepsin**, fifty tablets of, each containing five grains.—These are used for indigestion, one being given at each meal time. In the diarrhœa of infants, which is caused by a failure to properly digest their food, this is often markedly beneficial.

5. **Bromide of Soda**, fifty tablets of, each containing five grains.—In headache and sleeplessness from nervous conditions and overfatigue, one of these may be taken every two hours, a child taking half that amount.

6. **Brown Mixture**, fifty tablets of.—These are made to represent a teaspoonful of the liquid medicine. For coughs of a bronchial character a tablet may be taken every two hours.

7. **Sulphate of Quinine**, fifty tablets of, each containing two grains.—In malarial conditions one may be taken every three or four hours. As a general tonic one three times a day will be useful. At the beginning of a cold ten grains will often check its progress.

8. **Coryza or Rhinitis**, one hundred of. These are effective in the

early stages of coryza or cold in the head. One or two may be given every one or two hours for three or four hours.

9. **Calomel (1-10 grain), or Calomel and Soda**, one hundred of. One may be given every hour until twelve or fifteen have been given. They act on the liver and increase the flow of bile.

10. **Cascara (three grains)**, one hundred of. These produce a mild action on the bowels and can be given at any time without producing ill effect.

MISCELLANEOUS MEDICINES.

Seidlitz Powders, Twelve.—1. Each dose consists of two powders wrapped in papers of different colors to distinguish them. One powder of each color is dissolved in a third of a glass of water, separately, the two solutions are mixed and taken while effervescing.

Cases of acute indigestion and acute constipation, and of headache dependent on these conditions, are often promptly relieved by their administration.

Chlorinated Lime.—2. One-half pound of chlorinated lime, commonly known as chloride of lime, in a hermetically sealed package. This is for disinfecting purposes, a solution of it being used in the strength of one to twenty parts, for pouring down the drain-pipes and into the utensils used for receiving the discharges of the patient. If economy of space is not an object a quart bottle of Platt's chlorides or of electrozone will be found more convenient.

Ground Mustard.—3. One-quarter pound can of ground mustard. This is useful as an emetic, from one to four teaspoonfuls being stirred into a pint of warm water. Externally, as a counter-irritant, it is employed in the form of poultices, either pure or mixed with two or three parts of flour, to which may advantageously be added the white of an egg. Cases in which there is an excess of blood in the head, usually producing headache, are benefited by a foot-bath, into which a tablespoonful of mustard has been stirred.

Bicarbonate of Soda.—4. Two ounces of bicarbonate of soda. In some forms of indigestion, a pinch of soda taken before meals will be of assistance, whereas other cases are more benefited by taking it after meals. In cases of burns where the skin is not broken, soda applied after moistening the surface often affords relief to the pain. The same may be said of the stings of bees and insects. When the urine is acid, as is often the case in rheumatism, and when there is an irritable bladder, a good-sized

pinch of soda in a little water taken every hour will aid in restoring the normal condition.

Chlorate of Potash.—5. Two ounces of chlorate of potash. A saturated solution of this in water is of value as a gargle in sore throat and sore mouth.

Boric Acid.—6. Two ounces of powdered boric acid. This has mild antiseptic properties and is good to dust on open wounds, abrasions, and so forth. A teaspoonful in a cup of boiled water, first mixing it into a paste, before adding the entire bulk of water, is beneficial in mild cases of sore eyes, or inflamed lids.

Vaseline.—7. Two ounces of carbolized vaseline. This is also a good antiseptic dressing. In burns and open wounds it is healing and soothing.

Zinc Ointment.—8. Two ounces of benzoated oxide of zinc ointment. This is soothing and healing, though less antiseptic than the former. In many of the milder forms of skin diseases and as a dressing for open wounds when the healing process is nearly completed this may be used.

Toothache Plasters.—9. One box of toothache plasters. These are small plasters containing red pepper and other ingredients, which are applied to the gum of the aching tooth and often with marked relief.

10. **Mustard Plasters.**—These can be secured in any quantity. They are simply moistened with warm water and applied when needed.

11. **Absorbent Cotton and Lint Bandages.**—These can be used for many conditions and are especially useful in cases of accident.

12. **Antiseptic Gauze Bandages.**—These can be procured in various widths and are invaluable in dressing wounds, cuts, etc., or in applying to an injury or fracture.

13. **Cold Cream,** two ounces of. This is a pleasant and effective application for rough skin, cold-sores, etc., or as a mild application for any condition.

Implements.—In addition to the drugs and remedies above enumerated there are a number of appliances which should be in every medicine chest, the mere mention of which will in most instances be all that is required:

One pair of sharp scissors about four and a half inches long.

One glass piston syringe, preferably with soft rubber tip, to contain about two teaspoonfuls.

One medicine dropper.

One roll of prepared lint for dressings.



One-quarter pound absorbent cotton.

Six roller bandages, each three inches wide and five yards long, in aseptic packages, obtainable at supply stores for physicians' instruments, or at drug stores.

One graduated medicine glass, marked to indicate teaspoonful, dessertspoonful, tablespoonful and wineglassful.

One box prepared mustard plasters.

One spool adhesive plaster, one or two inches wide. To be used only on perfectly clean, dry surface.

One fountain syringe.

One hot-water bag.

One clinical thermometer, self-registering.

One bundle of yucca wood, a material for splints. This is prepared in thin strips three and a half by eighteen inches, is a porous light wood, which, when moistened, can be made to conform to any shape desired, and when allowed to dry will retain that shape.

One alcohol lamp or one appliance to rest over the gas fixture for heating liquids.

Accommodation of Medicines and Appliances.—A small cabinet, or a shelf in a closet, or preferably a wooden box, should be provided. If the latter, the articles described under implements should be kept in a tray or drawer about four inches deep, the smaller appliances being in a separate section or box.

The medicines should be below the tray, the liquids in one section, the solids in another.

A box about twelve by eighteen inches, inside measurement, and ten inches high will accommodate all the articles described. It should be provided with lock and key, but the latter should be attached to the handle of the chest or be in such an accessible place that it will not be mislaid.

PART II OF BOOK IX

Is a chapter on Food Hygiene, giving food compositions, the relative digestibility of various foods and the time required to prepare them in different ways.

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Home Administration of Medicine

PART II.

FOODS AND THEIR DIGESTION

FOOD HYGIENE.

The world is fast awakening to the realization of the fact that inefficiency and crime are closely connected with under-nourishment. Many of the cures effected in hospitals are the results of living under proper hygienic conditions and not the least of these is the right kind and amount of food. Every mother should study the needs of her child and furnish as near as in her power the proper nourishment for his growing body.

The amount of food that an individual requires varies with the size of the individual and the kind of work he is doing. A clerk or a book-keeper requires much less food than one who has walked behind the plow all day.

Some years ago a Canadian workman received an injury to the stomach which enabled Dr. Beaumont to make a series of experiments and observations upon the process of digestion which have been of great value. Dr. Beaumont's list of foods arranged in the order of their digestibility is as follows: Rice, tripe, whipped eggs, sago, tapioca, barley, boiled milk, raw eggs, lamb, roasted and baked potatoes, fricasseed chicken. Rice in one hour, fricasseed chicken in two and three-quarter hours, roast beef in three hours. A mixed diet is absolutely necessary for man. Many people suffer from excess of animal food—especially is this true of Americans—but since the cost of meat has advanced so greatly it is hoped the diseases caused by excessive meat diet may diminish. People living upon strictly vegetable diet have too small an amount of albuminous matter for any degree of muscle. The Chinese and Japanese are often cited as proof to the contrary, but while they live principally upon rice, their diet is supplemented by eggs, fish, pork and chicken.

The nutritive value of meat is due to the presence of the proteids, fats and mineral salts, the carbohydrates existing only in very small quantities.

Meat properly roasted or broiled is more easily digested than when boiled or fried. Red meats contain a large amount of nitrogenous substance which is irritating to the kidneys. It is therefore prohibited to rheumatic patients and those suffering from diseases of the kidneys.

Milk becomes a source of danger unless handled with the greatest of care. To obtain pure milk it is essential that the cow be not diseased, that the dairy is clean, and the methods of milking are clean. Pasteurized milk is the only safe method of receiving it into the home. And every conscientious mother investigates the source of the milk supply furnished her family. Cases of milk poisoning, many of them fatal, are due to the presence of certain bacteria found in unclean milk. Milk bottles should be inspected and milk cans washed in boiling water and afterwards exposed to the sun and air. Ice cream freezers should be sweet and clean, especially free from rust. More cases of ptomaine poisoning have been the result of rusty freezers than from any other cause. The regulations regarding milk have greatly improved in cities during recent years, but much remains to be done in the rural districts along that line.

Bread is the most generally used food known. Wheat being the nutritious cereal and containing gluten, is the best adapted to bread making. It should not be too white as that shows a lack of gluten. Good flour holds together in a mass when squeezed by the hand and retains the impressions of the fingers longer than poor flour, which is sticky and will spread itself upon the board instead of remaining in a round shape. Bread must be white, sweet and spongy. Damp, mouldy bread causes serious digestive disturbances. Baking powders containing alum should be avoided. The combination of bicarbonate of soda with sour milk is a wholesome "leaven" and better to use than baking powders.

Vegetables.—In preparing vegetables care should be taken in cleaning them properly. Germs of infectious diseases, such as typhoid fever, are found in some fertilizers and vegetables washed in polluted water may also be a source of infection.

Fruits when ripe are wholesome and easily digested. Children should be encouraged in eating apples and prunes, especially before going to bed. Many times they serve as laxatives without the aid of medicines. Bananas and figs are the most nutritious fruits and are staple articles of food in the Southern countries.

Cocoa and Chocolate contain about 50 per cent. of fat and are most nourishing beverages. They should be used with milk for children instead of tea and coffee, both of which are absolutely wrong to give a child under twelve years of age.

TABLE OF DIGESTION.

ALIMENTS.	Form of Preparation.	Time Required for Stomachical Digestion.
Apples—mellow	Raw	2 hours
Apples—sour, hard	Raw	2 hours, 50 minutes
Apples—sweet, mellow	Raw	1 hour, 50 minutes
Barley	Boiled	2 hours
Bass—fresh	Broiled	3 hours
Beans—pod	Boiled	2 hours, 30 minutes
Beans and Green Corn.....	Boiled	3 hours, 45 minutes
Beef—fresh, lean, rare.....	Roasted	3 hours
Beef—fresh, lean, dry.....	Roasted	3 hours, 30 minutes
Beef—fresh steak	Broiled	3 hours
Beef—with salt only.....	Broiled	2 hours, 45 minutes
Beef—with mustard, and so forth.....	Broiled	3 hours, 30 minutes
Beef	Fried	4 hours
Beef—old hard, salted.....	Boiled	4 hours, 15 minutes
Beets	Boiled	3 hours, 45 minutes
Brains—animal	Boiled	1 hour, 45 minutes
Bread—corn	Baked	3 hours, 15 minutes
Bread—wheat, fresh	Baked	3 hours, 30 minutes
Butter	Melted	3 hours, 30 minutes
Cabbage—head	Raw	2 hours, 30 minutes
Cabbage—with vinegar	Raw	2 hours, 30 minutes
Cabbage	Boiled	2 hours
Cake—corn	Baked	4 hours, 30 minutes
Cake—sponge	Baked	3 hours
Carrot	Boiled	2 hours, 30 minutes
Cartilage	Boiled	3 hours, 15 minutes
Catfish—fresh	Fried	4 hours, 15 minutes
Cheese—old, strong	Raw	3 hours, 30 minutes
Chicken	Fricassee	3 hours, 30 minutes
Codfish—cured, dry	Boiled	2 hours, 45 minutes
Corn (green) and Beans	Boiled	2 hours
Custard	Baked	3 hours, 45 minutes
Duck—domesticated	Roasted	2 hours, 45 minutes
Duck—wild	Roasted	4 hours
Dumpling—apple	Boiled	4 hours, 30 minutes
Eggs—fresh	Hard boiled.....	3 hours
Eggs—fresh	Soft boiled.....	3 hours, 30 minutes
Eggs—fresh	Fried	3 hours, 30 minutes
Eggs—fresh	Roasted	2 hours, 15 minutes

ALIMENTS.	Form of Preparation.	Time Required for Stomachical Digestion.
Eggs—fresh	Raw	2 hours
Eggs—fresh	Whipped	1 hour, 30 minutes
Flounder—fresh	Fried	3 hours, 30 minutes
Fowls—domestic	Boiled	4 hours
Fowls—domestic	Roasted	4 hours
Gelatin	Boiled	2 hours, 30 minutes
Goose—wild	Roasted	2 hours, 30 minutes
Heart—animal	Fried	4 hours
Lamb—fresh	Boiled	2 hours, 30 minutes
Liver—beef's, fresh	Boiled	2 hours
Marrow—animal, spinal	Boiled	2 hours, 40 minutes
Meat and Vegetables	Hashed	2 hours, 30 minutes
Milk	Boiled	2 hours
Milk	Raw	2 hours, 15 minutes
Mutton—fresh	Roasted	3 hours, 15 minutes
Mutton—fresh	Broiled	3 hours
Mutton—fresh	Boiled	3 hours
Oysters—fresh	Raw	2 hours, 55 minutes
Oysters—fresh	Roasted	3 hours, 15 minutes
Oysters—fresh	Stewed	3 hours, 30 minutes
Parsnips	Boiled	2 hours, 30 minutes
Pig—suckling	Roasted	2 hours, 30 minutes
Pig's-feet—soused	Boiled	1 hour
Pork—fat and lean	Roasted	5 hours, 15 minutes
Pork—recently salted	Boiled	4 hours, 30 minutes
Pork—recently salted	Fried	4 hours, 15 minutes
Pork—recently salted	Broiled	3 hours, 15 minutes
Pork—recently salted	Raw	3 hours
Pork—recently salted	Stewed	3 hours
Potatoes—Irish	Boiled	3 hours, 30 minutes
Potatoes—Irish	Roasted	2 hours, 30 minutes
Potatoes—Irish	Baked	3 hours, 20 minutes
Rice	Boiled	1 hour
Sago	Boiled	1 hour, 45 minutes
Salmon—salted	Boiled	4 hours
Sausage—fresh	Broiled	3 hours, 20 minutes
Soup—barley	Boiled	1 hour, 30 minutes
Soup—bean	Boiled	3 hours
Soup—beef, vegetables and bread	Boiled	4 hours
Soup—chicken	Boiled	3 hours
Soup—marrow bones	Boiled	4 hours, 15 minutes
Soup—mutton	Boiled	3 hours, 20 minutes
Soup—oyster	Boiled	3 hours, 30 minutes
Suet—beef, fresh	Boiled	5 hours, 30 minutes
Suet—mutton	Boiled	4 hours, 30 minutes
Tapioca	Boiled	2 hours
Tendon—boiled	Boiled	5 hours, 30 minutes

ALIMENTS.	Form of Preparation.	Time Required for Stomachical Digestion
Tripe—soused	Boiled	1 hour
Trout—salmon, fresh	Boiled	1 hour, 30 minutes
Trout—salmon, fresh	Fried	1 hour, 30 minutes
Turkey—domestic	Roasted	2 hours, 30 minutes
Turkey—domestic	Boiled	2 hours, 25 minutes
Turkey—wild	Roasted	2 hours, 18 minutes
Turnips	Boiled	3 hours, 30 minutes
Veal—fresh	Broiled	4 hours
Veal—fresh	Fried	4 hours, 30 minutes
Vegetables and Meat—hashed.....	Warmed	2 hours, 30 minutes
Venison—steak	Broiled	1 hour, 35 minutes

FOOD COMPOSITIONS

Cow's Milk.—In 100 parts—

Water	86.8
Albuminoids	4
Fats	3.7 to 4.50
Sugar	4.8
Salts	0.7

Butter.—In 100 parts—

Fats	88
Albuminoids	3.3
Water	6
Salts (variable)	2.7

Cheese.—In 100 parts—

Fats	24.3
Albuminoids	33.5
Water	36.8
Salts	5.4

White Wheaten Bread.—In 100 parts—

Carbohydrates	50.2
Albuminoids (nitrogenized matters).....	7.5
Salts	1.6
Fats	1.5
Water	39.2

Oatmeal.—In 100 parts—

Water	15
Albuminoids	12.6
Fats	5.6
Carbohydrates	63
Salts	3

Rice.—In 100 parts—

Water	10
Albuminoids	5
Fats	0.8
Carbohydrates	83.
Salts	0.5

Maize, Indian Corn.—In 100 parts—

Water	13.5
Albuminoids	10
Fats	6.7
Carbohydrates	64.5
Salts	1.4

Peas.—In 100 parts—

Water	15
Albuminoids	22
Fats	2
Carbohydrates	53
Salts	2.4

Potato.—In 100 parts—

Water	74
Albuminoids	2
Fats	0.16
Carbohydrates	21
Salts	1

Egg.—Ten per cent. of weight deducted for shell.

Water	73.5
Albuminoids	13.5
Fats	11.6
Salts	1.4

Eggs, Yolk.—

Water	51.5
Albuminoids	15
Fats	30
Salts	1.5

Eggs, White.—

Water	84.5
Albuminoids	13.5
Fats	3
Salts	1.3

Beef.—Little fat; best quality.

Water	74.4
Albuminoids	20.5
Fats	3.5
Salts	1.6

Beef.—Roast or boiled, with drippings.

Water	54
Albuminoids	27.6
Fats	15.45
Salts	2.95

Pork, Salt.—

Water	44.1
Albuminoids	26.1
Fats	7
Salts	22.8

Smoked Ham.—

Water	27.8
Albuminoids	24
Fats	36.5
Salts	10.1

Poultry.—

Water	74
Albuminoids	21
Fats	38
Salts	1.2

(*Letheby.*)

Chicago Corned Beef.—

Water	52.2
Albuminoids	23.3
Fats	14
Salts	4

TIME REQUIRED FOR BOILING.

(Much depends upon the freshness and age of the articles.)

For each pound of corned beef.....	30 minutes
For each pound of beef	15 to 30 minutes
For each pound of veal	15 to 20 minutes
For shoulder of mutton weighing 5 to 6 pounds	1 hour
For leg of mutton, for each pound	20 minutes
For leg of lamb	15 minutes
For tongue of beef	4 hours
For ham, for each pound	½ hour
For turkey, for each pound	20 minutes
For brill	10 to 15 minutes
For turbot (4 to 5 pounds)	20 to 30 minutes
For haddock	15 to 30 minutes
For mackerel	20 to 30 minutes
For salmon, to each pound	8 minutes
For skate	30 to 60 minutes
For whiting	5 to 15 minutes
For cod (only simmer)	1 hour
For fish in general, to each pound.....	10 minutes
For carrots	1 hour
For turnips, parsnips, cabbage, seakale.....	1 hour
For cauliflower, onions, beans (young).....	1 hour
For peas (young), squash (spring).....	½ hour
For dried peas.....	2 hours
For winter squash (steam).....	2 hours
For oyster-plant	1 hour
For beets (young).....	1 to 2 hours
For beets (old)	3 to 8 hours
For asparagus (young).....	½ hour
For asparagus (old).....	1 hour
For artichokes	1 hour
For winter carrots, parsnips, turnips and cabbage	2 hours
For corn	10 to 15 minutes

TIME REQUIRED FOR ROASTING.

For beef (rare), to each pound	10 minutes
For beef (well-done), to each pound.....	15 to 20 minutes
For mutton, to each pound	15 minutes
For veal, to each pound.....	20 minutes
For turkey, to each pound.....	10 to 12 minutes
For duck (game)	½ hour
For duck (tame)	1 hour
For capon	50 to 60 minutes
For fowl	60 minutes
For pigeon	15 to 30 minutes
For pheasant	35 minutes
For partridge, woodcock or plovers.....	15 minutes
For grouse, snipe, small birds	20 minutes
For larks	6 minutes
For hare	1½ hours
For rabbits	20 to 60 minutes
For goose	2 hours

TIME REQUIRED FOR BAKING.

For potatoes (with or without skins).....	1 hour
For egg-plant and tomatoes	1 hour
For omelet	15 to 20 minutes
For eggs (until they set).....	15 to 20 minutes
For shad	1 hour
For cod, black fish and haddock, 4 pounds.....	1 hour
For fish generally, 4 to 6 pounds.....	1 hour
For clams	20 minutes

PERCENTAGE OF NUTRITION IN VARIOUS ARTICLES OF FOOD.

Raw Cucumbers	2	Raw Beef	26
Raw Melons	3	Raw Grapes	27
Boiled Turnips	4½	Raw Plums	29
Milk	7	Broiled Mutton	30
Cabbage	7½	Oatmeal Porridge	75
Currants	10	Rye Bread	79
Whipped Eggs	13	Boiled Beans	87
Beets	14	Boiled Rice	88
Apples	16	Barley Bread	88
Peaches	20	Wheat Bread	90
Boiled Codfish	21	Baked Corn Bread	91
Broiled Venison	22	Boiled Barley	92
Potatoes	22½	Butter	92
Fried Veal	24	Boiled Peas	93
Roast Pork	24	Raw Oils	95
Roast Poultry	26		

WARMTH AND STRENGTH DERIVED FROM VARIOUS ARTICLES OF FOOD AND DRINK.

GRAINS OF STRENGTH YIELDED BY ONE
POUND OF 7,000 GRAINS.

	<i>Grains.</i>
Beer or Porter	1
Parsnips	12
Turnips	12
Whey	13
Greens	14
Skimmed Milk	34
New Milk	35
Buttermilk	35
Barley	70
Rice	70
Bacon	78
Rye Bread	89
Baker's Bread	90
Pearl Barley	91
Fresh Pork	108
Seconds Flour	120
Cornmeal	125
Fresh Fish	129
Cocoa	130
Oatmeal	140
Mutton	140
Fresh Beef	172
Beef Liver	200
Split Peas	250
Cheddar Cheese	310
Skim Milk Cheese	360

GRAINS OF WARMTH YIELDED BY ONE
POUND OF 7,000 GRAINS.

	<i>Grains.</i>
Whey	150
Turnips	238
Beer and Porter	315
Buttermilk	335
Skimmed Milk	351
New Milk	378
Carrots	399
Parsnips	425
Potatoes	770
Fresh Fish	980
Beef Liver	1,220
Red Herrings	1,455
Baker's Bread	1,990
Fresh Beef	2,300
Molasses	2,300
Skim Milk Cheese	2,350
Cheddar Cheese	2,550
Seconds Flour	2,700
Rye Bread	2,700
Rice	2,750
Barley Meal	2,780
Indian Meal	2,800
Sugar	2,900
Fresh Pork	3,100
Bacon	4,200
Butter	4,700
Lard	4,800
Drippings	5,500

PART III OF BOOK IX

Gives the various weights and measures used in medicine, tables of doses and several statistical tables.

<p>Administering LaudanumI224</p> <p>Approximate Equivalents, Table of..I224</p> <p>Average Pulse RateI225</p> <p>Birth TableI227</p> <p>Body, Composition ofI228</p> <p>Death-rate TableI226</p> <p>Dentition TableI226</p> <p>Drug, Fractional Doses ofI225</p> <p>Expectation of Life at Various AgesI229</p> <p>Female Death-rate TableI226</p> <p>Fractional Doses of a DrugI225</p> <p>Laudanum, AdministeringI224</p> <p>Length of Life in Various Occupa- tionsI227</p> <p>Length of Life, Table ofI227</p> <p>Life, Expectation of at Various AgesI229</p> <p>LiquidsI223</p> <p>Male Death-rate TableI226</p> <p>Man, Stature ofI228</p> <p>Man, Weight ofI228</p> <p>Marriage TableI227</p> <p>Measures in Metric SystemI225</p> <p>Measures, Table ofI223</p>	<p>Metric SystemI225</p> <p>Milk TeethI226</p> <p>Permanent TeethI226</p> <p>Pulse RateI225</p> <p>Regulating Doses of MedicineI224</p> <p>SolidsI223</p> <p>Stature of ManI228</p> <p>System, MetricI225</p> <p>Table for Administering Laudanum.I224</p> <p>Approximate EquivalentsI224</p> <p>BirthI227</p> <p>Death-rateI226</p> <p>Death StatisticsI227</p> <p>DentitionI226</p> <p>Doses of MedicineI224</p> <p>MarriageI227</p> <p>Weights and MeasuresI223</p> <p>TeethI226</p> <p>MilkI226</p> <p>PermanentI226</p> <p>Various Occupations, Length of Life inI227</p> <p>Weight of ManI228</p> <p>Weights in Metric SystemI225</p> <p>Weights, Table ofI223</p>
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Home Administration of Medicine

PART III.

TABLES OF WEIGHTS AND MEASURES

Table of Weights and Measures Used in the Preparation of Medicines—
Doses and So Forth.

SOLID.

20 grains equal 1 scruple equals 20 grains.

60 grains equal 1 drachm equals 3 scruples.

480 grains equal 1 ounce equals 8 drachms.

5760 grains equal 1 pound equals 12 ounces.

In some places the use of the terms scruple and drachm have been discarded; and where formerly wine measure was employed, what is known as Imperial measure is now used.

LIQUID.

In mixing medicines measures of capacity are now frequently used. The following tables of Minims and their equivalents will be found useful:

60 minims equal 1 fluid drachm equals 60 minims.

480 minims equal 1 fluid ounce equals 8 fluid drachms.

9600 minims equal 1 pint equals 16 fluid ounces

76800 minims equal 1 gallon equals 8 pints.

[A minim is the smallest liquid measure, being equal to about one drop. The minim, however, is an exact measurement, being 1-60th part of a fluid drachm; and it is indicated on all properly graduated medicine glasses, while the drop varies somewhat according to the consistency of the fluid, and is also affected by the vessel or utensil from which the medicine is dropped, as for instance one medicine dropper may have a larger

opening than another and the quantity of medicine will vary accordingly.

It follows that when exact measurement is required it is always best to use the minim instead of the drop.

A TABLE OF APPROXIMATE EQUIVALENTS.

A tumbler contains about 8 fluid ounces. A teacup contains about 4 fluid ounces. A wineglass contains about 2 fluid ounces or 4 tablespoonfuls. A tablespoon contains about one-half a fluid ounce or 4 fluid drams. A dessertspoon contains about one-fourth a fluid ounce or 2 fluid drams. A teaspoon contains about one fluid dram.

One teaspoonful equals 60 to 80 drops. Four large tablespoonfuls equal one-half gill. Eight large tablespoonfuls equal one gill. Sixteen large tablespoonfuls equal one-half pint.

The sizes of spoons vary considerably and therefore cannot be relied upon for accurate measurements. Where this is necessary graduated glass must be used.

TABLE FOR REGULATING THE DOSES OF MEDICINE

Take the dose for an adult as one teaspoonful:

1 year old	dose 5 drops
2 years old	dose 7 drops
3 years old	dose 10 drops
4 years old	dose 15 drops
7 years old	dose 20 drops
14 years old	dose 30 drops
20 years old	dose 40 drops
From 20 to 60 years old	dose 60 drops

GRADUATED TABLE FOR ADMINISTERING LAUDANUM.

For a child at birth, or 1 month old.....	$\frac{1}{2}$ to 1 drop
Under a year old	$\frac{1}{2}$ to 3 drops
From 1 to 2 years	1 to 5 drops
From 2 to 5 years	2 to 8 drops
From 5 to 10 years	5 to 15 drops
From 10 to 15 years	10 to 20 drops
At 15 years	15 to 20 drops
For an adult	25 to 30 drops

METRIC SYSTEM OF WEIGHTS AND MEASURES.

- 1 kilogram equals 2.2 avoirdupois pounds.
 500 grams equal 17 avoirdupois ounces plus 279 grs.
 453.6 grams equal 16 avoirdupois ounces (1 pound).
 31.1 grams equal 1 troy ounce (480 grs.).
 30 grams equal 1 avoirdupois ounce plus 25 grs.
 28.3 grams equal 1 avoirdupois ounce (437.5 grs.).
 1 gram equals 15.43 grs.
 0.1 gram (1 decigram) equals $1\frac{1}{2}$ grs.
 0.065 gram equals 1 gr.
 0.01 gram (1 centigram) equals 1-6 gr.
 0.001 gram (1 milligram) equals 1-65 gr.
 1 liter equals 33.8 fluid ounces.
 946 cc. equal 32 fluid ounces (1 quart).
 500 cc. equal 16.9 fluid ounces.
 473 cc. equal 16 fluid ounces (1 pint).
 100 cc. equal 3.38 fluid ounces.
 30 cc. equal 1 fluid ounce.
 15 cc. equal 4 fluid drachms.
 1 cc. equals 16.2 minims.

PULSE RATE (Average).

Fœtus	150-130 per minute.
New-born infant	140-130 per minute.
Under 1 year	130-115 per minute.
Under 2 years	115-100 per minute.
2-7 years	100- 90 per minute.
14-21 years	85- 75 per minute.
21-65 years	75- 65 per minute.
In old age	85- 70 per minute.

In health the pulse rate varies not only with the age, but is affected by such conditions as sex, temperament, excitement, food and temperature.

ADMINISTRATION OF UNUSUAL FRACTIONAL DOSES OF A DRUG.

Dr. M. S. Aaronson, of New York, has devised a rule whereby one may readily administer any fractional dose of a drug, starting out with one of the standard tablets of known strength. Thus, if one has a tablet

of morphine containing one-eighth of a grain, and if it is desired to administer one-sixty-sixth of a grain of this drug, the procedure is as follows: Take sixty-six minims of water and in this dissolve the tablet. Eight minims of this solution contains the required dose. This rule is applicable in the administration of any fractional dose, whether or not the denominator of the fraction is a multiple of the denominator of the fraction represented in the tablet.

DENTITION TABLE (Average).

Milk Teeth.—Dentition usually begins at the sixth or seventh month and should be completed by the second year.

Central incisors, lower, 6th month; upper, 7th month.

Lateral incisors, upper, 9th month; lower, 10th month.

First molars, 12th month.

Second molars, 2nd year (may be later).

Permanent Teeth.—

First molars 6½ years.

Lower central incisors 7 years.

Upper central incisors 8 years.

Lateral incisors 9 years.

First bicuspid 10 years.

Second bicuspid 11 years.

Canines 12 years.

Second molars 13 years.

Third molars (wisdom) 17-25 years. (or later.)

TABLE SHOWING THE DEATH-RATE PER 1,000 OF EACH SEX IN EACH OF THE THREE CONDITIONS OF LIFE.

AGES.	MALES.			FEMALES.		
	<i>Unmarried.</i>	<i>Married.</i>	<i>Widowers.</i>	<i>Unmarried.</i>	<i>Married.</i>	<i>Widows.</i>
20-25.....	12.88	8.92	49.60	8.32	9.92	12.31
25-30.....	10.17	6.24	21.84	9.02	8.98	23.62
30-35.....	11.51	6.82	19.17	9.87	9.36	16.90
35-40.....	13.15	7.52	17.50	10.87	9.29	15.03
40-45.....	16.62	9.55	18.89	13.28	10.14	12.73
45-50.....	19.60	11.47	22.20	15.71	10.69	13.30
50-55.....	25.80	15.61	26.80	20.97	14.11	15.20
55-60.....	32.10	21.50	34.17	26.90	19.29	24.47
60-65.....	45.92	32.60	47.50	40.52	30.75	37.07
65-70.....	58.50	44.80	62.97	58.30	45.30	53.50

BIRTH, MARRIAGE, AND DEATH STATISTICS.

The following interesting table gives a comparative view of the fertility of marriages, the legitimacy and illegitimacy of births, and the mortality in city and country in the various European States:

COUNTRIES.	CHILDREN TO ONE MARRIAGE.		INFANT MORTALITY.		ADULT MORTALITY.		FERTILITY OF MARRIAGE.		ILLEGITIMATE TO LEGITIMATE BIRTHS.	
	City.	Country.	City.	Country.	City.	Country.	City.	Country.	City.	Country.
France.....	3.16	3.28	*35.69	*28.56	1:21.51	1:42.21	2.03	2.34	*15.13	*4.24
Netherlands..	3.91	4.32	36.25	28.90	1:35.55	1:43.03	2.49	3.07	7.7	2.84
Belgium	3.80	4.17			1:34.35	1:44.31			14.59	5.88
Sweden.....	2.99	4.19	38.86	24.50	1:28.95	1:46.86	1.83	3.16	27.44	7.50
Denmark....	3.04	3.34	29.66	22.68	1:37.41	1:49.77	2.14	2.58	16.45	10.06
Schleswig...	3.50	3.69	27.42	23.42	1:35.17	1:48.49	2.54	2.83	8.38	6.37
Holstein....	3.37	3.88	29.92	25.29	1:38.73	1:44.15	2.36	2.90	15.50	8.74
Saxony.....	4.60	4.13	39.88	36.22	1:31.10	1:34.70	2.77	2.64	15.39	14.64
Hanover....	2.93	3.65	28.70	26.47	1:38.52	1:41.17	2.08	2.68	17.42	9.06
Prussia.....	4.00	4.44	36.02	29.47	1:27.97	1:34.46	2.56	3.13	9.80	6.60

* Per cent.

AVERAGE LENGTH OF LIFE IN VARIOUS OCCUPATIONS.

The Report of Registration of the State of Massachusetts shows that the average length of life of the various trades and professions has been as follows:

Occupations.	Years.	Occupations.	Years.
Farmers	65.19	Weavers	44.65
Millers	57.43	Artists	44.56
Sawyers	56.67	Shoemakers	44.45
Physicians	55.08	Brushmakers	43.40
Hatters	54.55	Furnace Men	43.05
Clock and Watchmakers.....	54.43	Founders	42.73
Carpenters and Joiners.....	53.31	Shoecutters	42.62
Blacksmiths	53.31	Pianofortemakers	42.50
Sailmakers	52.84	Glasscutters	42.39
Woodturners	52.55	Civil Engineers	42.34
Combmakers	51.38	Cigarmakers	41.59
Masons	50.48	Engineers	41.57
Butchers	50.29	Musicians	41.19
Tanners	50.05	Tinsmiths	40.96
Cabinetmakers	48.65	Expressmen	40.94
Gunsmiths	48.57	Nailmakers	40.80
Carriagemakers	48.38	Machinists	40.80
Harnessmakers	48.36	Jewelers	40.29
Brickmakers	47.99	Servants (women)	40.19
Woolsorters	47.55	Teamsters	40.13
Leatherdressers	47.41	Bookbinders	39.94
Laborers	47.39	Upholsterers	39.78
Musical Instrument Makers..	47.32	Barbers	39.77
Tailors	47.19	Pail and Tubmakers	39.50
Architects	47.15	Cutlers	39.23
Bakers	46.76	Operatives	38.92
Dressmakers (women)	46.49	Printers	38.57
Seamen	46.33	Engineers and Firemen.....	38.21
Stonecutters	46.30	Drivers	38.16
Coppersmiths	46.07	Milliners	37.30
Silver and Goldsmiths.....	45.46	Glassblowers	37.81
Dyers	45.35	Plumbers	35.43
Mechanics	45.13	Carvers	33.84
Painters	45.05	Operatives (women)	27.98

AVERAGE WEIGHT AND STATURE OF MAN.

MALES.			FEMALES.		
Age.	Feet.	Pounds.	Age.	Feet.	Pounds.
0 years.....	1.64	7.06	0 years.....	1.62	6.42
2 years.....	2.60	25.01	2 years.....	2.56	23.53
4 years.....	3.04	31.38	4 years.....	3.00	28.67
6 years.....	3.44	38.80	6 years.....	3.38	35.29
9 years.....	4.00	49.95	9 years.....	3.92	47.10
11 years.....	4.36	59.77	11 years.....	4.26	56.57
13 years.....	4.72	75.81	13 years.....	4.60	72.65
15 years.....	5.07	96.40	15 years.....	4.92	89.04
17 years.....	5.36	116.56	17 years.....	5.10	104.34
18 years.....	5.44	127.59	18 years.....	5.13	112.55
20 years.....	5.49	132.46	20 years.....	5.16	115.30
30 years.....	5.52	140.38	30 years.....	5.18	119.82
40 years.....	5.52	140.42	40 years.....	5.18	121.81
50 years.....	5.49	139.96	50 years.....	5.04	123.86
60 years.....	5.38	136.07	60 years.....	4.97	119.76
70 years.....	5.32	131.27	70 years.....	4.97	113.60
80 years.....	5.29	127.54	80 years.....	4.94	108.80
90 years.....	5.29	127.54	90 years.....	4.94	108.81

COMPOSITION OF THE HUMAN BODY.

ELEMENTS.	Pounds.	Ounces.	Grains.
1. Water, which is found in every part of the body, and amounts to	109	0	0
2. Fibrine, and like substances, found in the blood, and form the chief solid materials of the flesh.....	15	10	0
3. Phosphate of lime, chiefly in bones and teeth, but in all liquids and tissues	8	12	0
4. Fat, a mixture of three chemical compounds, and distributed all through the body.....	4	8	0
5. Osseine, the organic framework of bones; boiled, gives gelatine. Weighs	4	7	350
6. Keratine, a nitrogenous substance, forming the greater part of hair, nails and skin. Weighs.....	4	2	0
7. Cartilage resembles the osseine or bone, and is a nitrogenous substance, the chief constituent of cartilage, weighing	1	8	0
8. Hemoglobine gives the red color to the blood, and is a nitrogenous substance containing iron, and weighing	1	8	0
9. Albumen is a soluble nitrogenous substance found in the blood, chyle, lymph and muscle, and weighs.....	1	1	0
10. Carbonate of lime is found in the bones chiefly, and weighs	1	1	0
11. Kephalin is found in nerves and brain, with cerebrine and other compounds	0	13	0
12. Fluoride of calcium is found in teeth and bones, and weighs	0	7	175
13. Phosphate of magnesia is also in teeth and bones, and weighs	0	7	0
14. Chloride of sodium, or common salt, is found in all parts of the body, and weighs.....	0	7	0
15. Cholesterin, glycogen and inosite are compounds containing hydrogen, oxygen and carbon, found in muscle, liver and brain and weighing.....	0	3	0
16. Sulphate, phosphate and salts of sodium, found in all tissues and liquids	0	2	107
17. Sulphate, phosphates and chloride of potassium are also in all tissues and liquids.....	0	0	300
18. Silica, found in hair, skin and bone.....	0	0	30

EXPECTATION OF LIFE AT VARIOUS AGES.

Age.	Male.	Fem.	Age.	Male.	Fem.	Age.	Male.	Fem.	Age.	Male.	Fem.
0 year	39.91	41.85	25 years	36.12	37.04	50 years	19.54	20.75	75 years	6.49	6.93
1 year	46.65	47.31	26 years	35.44	36.39	51 years	18.90	20.09	76 years	6.15	6.56
2 years	48.83	49.40	27 years	34.77	35.75	52 years	18.28	19.42	77 years	5.82	6.21
3 years	49.61	50.20	28 years	34.10	35.10	53 years	17.67	18.75	78 years	5.51	5.88
4 years	49.81	50.43	29 years	33.43	34.46	54 years	17.06	18.08	79 years	5.21	5.56
5 years	49.71	50.33	30 years	32.76	33.81	55 years	16.45	17.43	80 years	4.93	5.26
6 years	49.39	50.00	31 years	32.09	33.17	56 years	15.86	16.79	81 years	4.66	4.98
7 years	48.92	49.53	32 years	31.42	32.53	57 years	15.26	16.17	82 years	4.41	4.71
8 years	48.37	48.98	33 years	30.74	31.88	58 years	14.68	15.55	83 years	4.17	4.45
9 years	47.74	48.35	34 years	30.07	31.23	59 years	14.10	14.94	84 years	3.95	4.21
10 years	47.05	47.67	35 years	29.40	30.59	60 years	13.53	14.34	85 years	3.73	3.98
11 years	46.31	46.95	36 years	28.73	29.94	61 years	12.96	13.75	86 years	3.53	3.76
12 years	45.54	46.20	37 years	28.06	29.29	62 years	12.41	13.17	87 years	3.34	3.56
13 years	44.76	45.44	38 years	27.39	28.64	63 years	11.87	12.60	88 years	3.16	3.36
14 years	43.97	44.68	39 years	26.72	27.99	64 years	11.34	12.05	89 years	3.00	3.18
15 years	43.18	43.90	40 years	26.06	27.34	65 years	10.82	11.51	90 years	2.84	3.01
16 years	42.40	43.14	41 years	25.39	26.69	66 years	10.32	10.98	91 years	2.69	2.85
17 years	41.64	42.40	42 years	24.73	26.03	67 years	9.83	10.47	92 years	2.55	2.70
18 years	40.90	41.67	43 years	24.07	25.38	68 years	9.36	9.97	93 years	2.41	2.55
19 years	40.17	40.97	44 years	23.41	24.72	69 years	8.90	9.48	94 years	2.29	2.42
20 years	39.48	40.29	45 years	22.76	24.06	70 years	8.45	9.02	95 years	2.17	2.29
21 years	38.80	39.63	46 years	22.11	23.40	71 years	8.03	8.57	96 years	2.06	2.17
22 years	38.13	38.98	47 years	21.46	22.74	72 years	7.62	8.13	97 years	1.95	2.06
23 years	37.46	38.33	48 years	20.82	22.08	73 years	7.22	7.71	98 years	1.85	1.96
24 years	36.79	37.68	49 years	20.17	21.42	74 years	6.85	7.31	99 years	1.76	1.86
									100 years	1.68	1.76

PART IV OF BOOK IX

Gives more than one hundred standard medical prescriptions and simple formulas for many diseases.

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IMPORTANT

READ CAREFULLY

ATENTION is directed to the fact that all through this book the doses mentioned are for **ADULTS**, except where the treatment is specifically for a child.

PLEASE NOTE particularly the footnote on pages 1233 to 1248 inclusive.

Also note full directions given on pages 1224 and 1719, to determine doses for children.

Home Administration of Medicine

PART IV.

MEDICAL PRESCRIPTIONS

The following prescriptions are prepared and used by B. F. Scholl, M.D., Ph.G., Philadelphia, Pa. The doses are for adults except where otherwise mentioned. See footnote.

ABSCESSSES (BOILS).

LATIN.

Sulph. calcis 2 grains
Sacch. lactis 20 grains
Mft. Cht. No. XX. One powder every hour or two. For children, two or three times a day.

ENGLISH.

Sulphide of lime 2 grains
Sugar of milk 20 grains
Make 20 powders. Take one powder every hour or two. For children, two or three times a day.

ASTHMA.

Ammonia bromid 3 drachms
Ammonia chlorid 1½ drachms
Lobelia tinct 3 drachms
Spts. aeth. comp 1 ounce
Syrp. acacia 2½ ounces
Mft. Take a teaspoonful every hour during paroxysm.

Bromide of ammonia 3 drachms
Chloride of ammonia 1½ drachms
Tincture of lobelia 3 drachms
Com. spirits of ether 1 ounce
Syrup of gum arabic 2½ ounces
Take a teaspoonful every hour during paroxysm.

BILIOUSNESS.

Podophyllin 6 grains
Aloin 6 grains
Ex. nucis vomicæ 6 grains
Ex. belladonna 3 grains
Mft. Div. in pil. No. XXIV. Sig.—
Take one or two pills at night, followed in morning by a dose of Rochelle salts.

Podophyllin 6 grains
Aloin 6 grains
Ex. nux vomica 6 grains
Ex. belladonna 3 grains
Divide into 24 pills. Take one or two pills at night, followed in morning by dose of Rochelle salts.

Children's Doses: Between one and two years, one-seventh of an adult dose; between two and six years, one-quarter; between six and twelve years, one-third; between twelve and fifteen years, one-half.

BRONCHITIS (ACUTE).

LATIN.

Liq. ammon. acetatis 1 ounce
 Syrp. ipecac 2 drachms
 Syrp. pruni virg. 1 ounce
 Syrp. acacia 2 ounces
 Aqua dest 3 ounces
 Dose: Tablespoonful every two or three hours.

ENGLISH.

Liq. acetate of ammonia... 1 ounce
 Syrup of ipecac 2 drachms
 Syrup of wild cherry.... 1 ounce
 Syrup of gum arabic 2 ounces
 Water 3 ounces
 Dose: Tablespoonful every two or three hours.

BRONCHITIS.

Ammon. chlor 1½ drachms
 Ammon. carb 8 grains
 Mist. Glycyrrh Co 4 ounces
 Sig: Two teaspoonfuls every 3 or 4 hours.

Chloride of ammonia 1½ drachms
 Carbonate of ammonia .. 8 grains
 Brown Mixture 4 ounces
 Two teaspoonfuls every 3 or 4 hours.

BUNIONS.

Iodine tinct. 2 drachms
 Belladonna tinct. 2 drachms
 Mft. Apply twice a day with camel's-hair brush.

Tincture of iodine 2 drachms
 Tincture of belladonna 2 drachms
 Apply twice a day with camel's-hair brush.

BURNS AND SCALDS.

Soda bicarb. 2 ounces
 Aqua dest. 1 pint
 Mft. Apply if skin is not broken.
 Acid carbohc 8 grains
 Vaseline 2 ounces
 Mft. Apply on lint where skin is broken.
 Aqua calcis 4 ounces
 Ol. lini 4 ounces
 Locally.

Bicarbonate of soda 2 ounces
 Water 1 pint
 Apply if skin is not broken.
 Carbohc acid 8 grains
 Vaseline 2 ounces
 Apply on lint where skin is broken.

Limewater 4 ounces
 Linseed oil 4 ounces
 Locally.

CARBUNCLE.

Resorcin 2 drachms
 Lanoline 1 ounce
 Mft. Apply on lint.

Resorcin 2 drachms
 Lanoline 1 ounce
 Apply on lint.

CATARRH.

Liquor antisepticus alk. 6 ounces
 Sig: Use freely in an atomizer to the nose and throat.

Alkaline antiseptic solution... 6 ounces
 Use freely in an atomizer to the nose and throat.

CATARRH (NASAL).

Acid carbohc liq. 30 minims
 Soda bicarb. 1 drachm
 Soda biboras 1 drachm
 Glycerina ½ ounce
 Aq. rosæ 3½ ounces
 Mft. To be used with atomizer four or five times a day.

Liq. carbohc acid 30 minims
 Bicarbonate of soda 1 drachm
 Borax 1 drachm
 Glycerine ½ ounce
 Rose water 3½ ounces
 To be used with atomizer four or five times a day.

Children's Doses: Between one and two years, one-seventh of an adult dose; between two and six years, one-quarter; between six and twelve years, one-third; between twelve and fifteen years, one-half.

CATARRH (FAUCIAL).

LATIN.		ENGLISH.	
Soda salicylate	2 drachms	Salicylate of soda	2 drachms
Soda biboras	3 drachms	Borax	3 drachms
Glycerina	4 drachms	Glycerine	4 drachms
Aq. rosæ	5½ ounces	Rose water	5½ ounces
Mft. A dessertspoonful in one pint of water and used with atomizer to throat.		A dessertspoonful in a pint of water and used with atomizer to throat.	

CHILBLAINS.

Camphor	75 grains	Camphor	75 grains
Alcoholis	3 drachms	Alcohol	3 drachms
Glycerina	5 drachms	Glycerine	5 drachms
Mft. Apply several times daily.		Apply several times daily.	

CHOLERA (SUN).

Tinct. opii camp.	1 ounce	Paregoric	1 ounce
Tinct. capsici	1 ounce	Tinc. of cayenne pepper	1 ounce
Tinct. rhei. aromat.	1 ounce	Tinc. of rhubarb aromatic	1 ounce
Aq. menth. pip.	1 ounce	Peppermint water	1 ounce
Camphora spts.	1 ounce	Spirits of camphor	1 ounce
Sig.—Take 20 to 40 drops in water every two or three hours.		Take 20 to 40 drops in water every two or three hours.	

CHOLERA INFANTUM.

Ex. belladonna fld.	50 drops	Fld. extract of belladonna, 50	drops
Tinct. opii camp.	1½ drachms	Paregoric	1½ drachms
Soda sulphate	15 grains	Sulphate of soda	15 grains
Syrp. limonis	2 ounces	Syrup of lemons	5 ounces
Sig.—A teaspoonful every two or three hours to a child one year old. Increase or lessen with age.		A teaspoonful every two or three hours for a child one year old. Increase or lessen with age.	
Bismuth subnit.	32 grains	Subnitrate of bismuth	32 grains
Tr. card. co.	½ drachm	Comp. tinct. of cardamon.	½ drachm
Glycerine	1 drachm	Glycerine	1 drachm
Aqua mentha vir ad.	2 ounces	Spearmint water to make.	2 ounces
Teaspoonful every 2 or 3 hours.		Teaspoonful every 2 or 3 hours.	

CHOLERA MORBUS.

Spts. chloroformi.	30 minims	Chloroform	30 minims
Tinct. opii camp.	2 drachms	Paregoric	2 drachms
Camphora spts.	20 minims	Spirits of camphor	20 minims
Aq. menth. pip.	1 ounce	Peppermint water	1 ounce
Sig.—A teaspoonful every hour.		A teaspoonful every hour.	

Children's Doses: Between one and two years, one-seventh of an adult dose; between two and six years, one-quarter; between six and twelve years, one-third; between twelve and fifteen years, one-half.

COLIC (INFANTILE).

LATIN.

Assafetida tinct.	15	drops
Cinnamoni tinct.	30	drops
Syrp. rhei. aromat.	3	drachms
Soda bicarb.	20	grains
Aq. dest.	1½	ounces

Sig.—Half a teaspoonful every two or three hours.

ENGLISH.

Tincture of assafetida....	15	drops
Tincture of cinnamon	30	drops
Syr. rhubarb aromatic	3	drachms
Soda bicarbonate	20	grains
Water	1½	ounces

Half a teaspoonful every two or three hours.

CONVULSIONS (INFANTILE).

Ammonia bromid	40	grains
Potass. bromid	30	grains
Ex. gelsemium fld.	20	drops
Ex. valerian fld.	20	drops
Aq. dest.	1	ounce

Sig.—Half a teaspoonful for a child every two or three hours.

Bromide of ammonia	40	grains
Bromide of potash	30	grains
Fluid ext. of gelsemium	20	drops
Fluid ext. of valerian	20	drops
Water	1	ounce

Half a teaspoonful for a child every two or three hours.

CONSTIPATION

Aloin	2	grains
Ext. Bella.	2	grains
Ext. nucis vom.	4	grains
Ext. cascara sagrada	16	grains

Div. in pil. No. XVI. Sig.—One at night.

Aloin	2	grains
Extract of belladonna	2	grains
Extract of nux vomica	4	grains
Extract cascara	16	grains

Make 16 pills. Take one at night.

Aloes soc.	20	grains
Gambogue	10	grains
Saponis	5	grains
Podophyllin	2½	grains
Leptandrin	1½	grains
Ol. capsici	1	drop

Mft. Div. in pil. No. XII. Sig.—Take one three times a day.

Aloes	20	grains
Gamboge	10	grains
White soap	5	grains
May-apple	2½	grains
Leptandrin	1½	grains
Oil capsicum	1	drop

Make 12 pills, and take one three times a day.

CROUP (SIMPLE).

Give teaspoonful of syr. ipecac as an emetic, then—

Vin antim	2	drachms
Syrp. papaveris	½	ounce
Syrp. tolu	2	drachms
Aq. dest.	1	ounce

Sig.—A teaspoonful every hour or two for a child one year old. Increase or lessen with age.

Give teaspoonful of syr. ipecac as an emetic, then—

Wine of antimony	2	drachms
Syrup of poppies	½	ounce
Syrup of tolu	2	drachms
Water	1	ounce

Teaspoonful every hour or two for a child one year old. Increase or lessen with age.

DIARRHŒA (ACUTE).

Tinct. opii camp.....	1	drachm
Bismuth subnit.	2	drachms
Syrp. simplex	½	ounce
Mist. cretæ	1½	ounces

Sig.—A teaspoonful every two or three hours to a child one year old.

Paregoric	1	drachm
Subnitrate of bismuth ...	2	drachms
Simple syrup	½	ounce
Chalk mixture	1½	ounces

A teaspoonful every two or three hours to a child one year old.

Children's Doses: Between one and two years, one-seventh of an adult dose; between two and six years, one-quarter; between six and twelve years, one-third; between twelve and fifteen years, one-half.

DIARRHŒA (CHRONIC).

LATIN.

ENGLISH.

Ex. ergot 20 grains
Ex. nucis vom. 5 grains

Aqueous ext. of ergot..... 20 grains
Extract of nux vomica 5 grains

Mft. Div. in pil. No. XX. Sig.—
One pill every three or four hours.

Make 20 pills. Take one pill every
three or four hours.

DIPHTHERIA.

Call physician and give antitoxin early in the case. This will also apply to membranous croup.

Potash chlor. 20 grains
Tinct. ferri chlor. 2 drachms
Glycerina 1 ounce
Aq. rosæ 1½ ounces
Sig.—Apply to throat every hour.

Chlorate of potash 20 grains
Tinc. chloride of iron.... 2 drachms
Glycerine 1 ounce
Rose water 1½ ounces
Apply to throat every hour.

DYSENTERY (ACUTE).

Cupri sulph. ½ grain
Magnesia sulph. 1 ounce
Acid sulph. dil. 1 drachm
Aq. dest. 4 ounces
Sig.—A teaspoonful every hour or two.

Sulphate of copper ½ grain
Epsom salts 1 ounce
Sulphuric acid, diluted 1 drachm
Water 4 ounces
A teaspoonful every hour or two.

DYSENTERY (CHRONIC).

Vin ipecac 1 ounce
Sig.—One drop every hour when stools are slimy.

Wine of ipecac 1 ounce
One drop every hour when stools are slimy.

DYSPEPSIA (FLATULENT).

Bismuth subnit 1 drachm
Magnesia ½ drachm
Pv. belladonna 1 grain
Pv. zingiber 3 grains
Mft. Cht. No. X. Sig.—One every three hours in aq. menth, pip.

Subnitrate of bismuth 1 drachm
Magnesia ½ drachm
Powdered belladonna 1 grain
Powdered ginger 3 grains
Make 10 powders. Take one every three hours in peppermint water.

DYSPEPSIA (GASTRIC).

Soda sulph. gran. 1 ounce
Soda bicarb. 1 ounce
Pv. cinchona 1 ounce
Sig.—A teaspoonful in half a glass of water before and after meals.

Sulphate of soda, gran..... 1 ounce
Bicarbonate of soda 1 ounce
Powdered cinchona 1 ounce
A teaspoonful in half glass of water before and after meals.

DYSPEPSIA (NERVOUS).

Bismuth sub. carb. 3 drachms
Pulv. aromatic 1 drachm
Mft. Cht. No. XII. Sig.—One before each meal.

Subcarbonate bismuth 3 drachms
Aromatic powder 1 drachm
Make 12 powders. Take one before each meal.

Children's Doses: Between one and two years, one-seventh of an adult dose; between two and six years, one-quarter; between six and twelve years, one-third; between twelve and fifteen years, one-half.

EARACHE

LATIN.

Atropia sulph 1½ grains
 Ol. Olivæ 1 drachm
 Glycerina 1 ounce
 Mft. Place one or two drops in ear
 on absorbent cotton two or three times
 a day.

ENGLISH.

Sulphate of atropia..... 1½ grains
 Sweet Oil 1 drachm
 Glycerine 1 ounce
 Place one or two drops in ear on ab-
 sorbent cotton two or three times a
 day.

ERYSIPELAS.

Ichthyol ½ ounce
 Ether sulph. 2 drachms
 Glycerina 2 drachms
 Mft. Apply locally.

Ichthyol ½ ounce
 Ether 2 drachms
 Glycerine 2 drachms
 Apply locally.

FLATULENCE.

Pulv. columbæ ½ ounce
 Pulv. zingiber ½ ounce
 Aq. bulliens 1 pint
 Senna fol. 1 drachm
 Mft. infusion. Sig.—Take a wine-
 glassful three times a day.

Powdered columbæ ½ ounce
 Powdered ginger ½ ounce
 Hot water 1 pint
 Senna leaves 1 drachm
 Make an infusion. Take a wineglass-
 ful three times a day.

HAY FEVER.

Adrenalin or adnephtrin 1 to 3,000 to
 be used in an atomizer to the nose 3 to
 6 times a day.

Adrenalin inhalant or anesthetic
 cream applied to the nostril.

HEADACHE (BILIOUS).

Ammonia brom. 3 drachms
 Caffeine cit. 30 grains
 Spts. ammon. aromat..... 1 drachm
 Elix. guarana 4 ounces
 Aq. rosæ 4 ounces
 Sig.—A teaspoonful every half hour
 until relieved.

Bromide of ammonia 3 drachms
 Citrate of caffeine 30 grains
 Aromatic spts. of ammonia 1 drachm
 Elixir guarana 4 ounces
 Rose water 4 ounces
 A teaspoonful every half hour until
 relieved.

HEADACHE (NERVOUS).

Strontium Bromide 2½ drachms
 Tr. nucis vom. 1 drachm
 Tr. card. co. 6 drachms
 Syrupus 1 ounce
 Aqua ad. 4 ounces
 Mix.—Sig.:—One or two teaspoonsful
 every four hours.

Bromide of strontium 2½ drachms
 Tinct. of nux vomica..... 1 drachm
 Comp. tinct. of card..... 6 drachms
 Syrup 1 ounce
 Water to make 4 ounces
 Mix.—One or two teaspoonsful every
 four hours.

Zinci phosphide 3 grains
 Ex. nucis vom. 10 grains
 Confec. rosæ q. s.
 Mft. Div. in pil. No. XXX. Sig.—
 One after each meal.

Phosphide of zinc 3 grains
 Ext. of nux vomica 10 grains
 Confection of roses... Sufficient quantity
 Make 30 pills. Take one after each
 meal.

Children's Doses: Between one and two years, one-seventh of an adult dose;
 between two and six years, one-quarter; between six and twelve years, one-third;
 between twelve and fifteen years, one-half.

HEART-BURN.

LA'TIN.

Soda bicarb 1 drachm
 Pulv. rhei. ½ ounce
 Spts. menth. pip. 2 drachms
 Aq. dest. 4 ounces
 Sig.—A tablespoonful after meals.

ENGLISH.

Bicarbonate of soda 1 drachm
 Powdered rhubarb ½ ounce
 Spirits of peppermint 2 drachms
 Water 4 ounces
 A tablespoonful after meals.

HICCOUGH.

Zinci valer. 8 grains
 Ex. belladonna 3 grains
 Mft. Div. in pil. No. XII. Sig.—
 Give one every three or four hours as
 required.

Valerianate of zinc 8 grains
 Ext. of belladonna 3 grains
 Make 12 pills. Give one every three
 or four hours as required.

INFLAMMATION OF BREAST.

Ung. belladonna 1 ounce
 Pulv. camphora 1 drachm
 Mft. and apply to breast.

Ointment of belladonna 1 ounce
 Powdered camphor 1 drachm
 Mix together and apply to breast.

INFLUENZA (LA GRIPPE).

Quinia sulph. 32 grains
 Phenacetin 32 grains
 Caffeine 8 grains
 Aloin 2 grains
 Mft. cap. No. XVI, div. Sig.—One
 every three or four hours.

Quinine 32 grains
 Phenacetin 32 grains
 Caffeine 8 grains
 Aloin 2 grains
 Make 16 capsules and take one every
 three or four hours.

Potass. bromid. 1 drachm
 Ammon. chlorid. 50 grains
 Syrp. scillæ 2 drachms
 Mist. glycyrrhiza comp. 2½ ounces
 Sig.—Take a teaspoonful every two
 hours.

Bromide of potash 1 drachm
 Chloride of ammonia 50 grains
 Syrup of squills 2 drachms
 Brown mixture 2½ ounces
 Take a teaspoonful every two hours.

JAUNDICE.

Hydr. chlor. mite 6 grains
 Pulv. rhei. 3 grains
 Podophyllin ¼ grain
 Soda bicarb. 8 grains
 Mft. Cht. No. VI. Sig.—One every
 two or three hours.

Calomel 6 grains
 Powdered rhubarb 3 grains
 Powdered May-apple ¼ grain
 Bicarbonate of soda 8 grains
 Make 6 powders. Take one every two
 or three hours.

KIDNEYS (INFLAMMATION OF).

Flor. scoparius tinct. 7½ drachms
 Tinct. juniperi 2½ drachms
 Aq. bulliens 2 pints
 Mft. an infusion. Sig.—Take a wine
 glassful four times a day.

Tinct. flowers of broom.. 7½ drachms
 Juniper 2½ drachms
 Hot water 2 pints
 Make an infusion. Take wineglassful
 four times a day.

Children's Doses: Between one and two years, one-seventh of an adult dose; between two and six years, one-quarter; between six and twelve years, one-third; between twelve and fifteen years, one-half.

LUMBAGO.

LATIN.

Phenacetin 24 grains
 Salol 24 grains
 Caffeine 6 grains
 Mft. pil. No. XII. Div. Sig.—One
 every three or four hours.

Potass. iodid 2 drachms
 Vin colch. sem 1 ounce
 Syrp. sarsaparilla comp. 1 ounce
 Aq. dest. 1 ounce
 Sig.—A teaspoonful in water every
 three hours.

Tinct. iodine 2 drachms
 Tinct. aconit root 3 drachms
 Spts. chloroformi 4 drachms
 Tinct. sapo. camph. 9 drachms
 Locally.

ENGLISH.

Phenacetin 24 grains
 Salol 24 grains
 Caffeine 6 grains
 Make 12 pills. One every three or
 four hours.

Iodide of potash 2 drachms
 Wine of colchicum seed 1 ounce
 Com. syr. of sarsaparilla. 1 ounce
 Water 1 ounce
 A teaspoonful in water every three
 hours.

Tincture of iodine 2 drachms
 Tincture of aconite root ... 3 drachms
 Chloroform 4 drachms
 Soap liniment 9 drachms
 Locally.

MARASMUS.

Ol. morrhuae 2 ounces
 Aq. calcis 4 drachms
 Syrp. calcis lactophos 1½ ounces
 Sig.—A teaspoonful three times a day
 for a child one year old. Increase or
 lessen with age.

Cod-liver oil 2 ounces
 Limewater 4 drachms
 Syr. lactophosphate of lime 1½ ounces
 A teaspoonful three times a day for
 a child one year old. Increase or lessen
 with age.

MALARIA.

Strych. sulph. ½ grain
 Acid arsenious ¾ grain
 Ferri pulv. 15 grains
 Quinia sulph. 15 grains
 Aloes soc. 3 grains
 Mft. Div. in pil. No. XX. Sig.—Take
 one pill every three hours.

Strychnine ½ grain
 Arsenious acid ¾ grain
 Iron by hydrogen 15 grains
 Quinine 15 grains
 Aloes 3 grains
 Make 20 pills. Take one pill every
 three hours.

MEASLES.

(For fever.)

Tr. aconite rad. 12 drops
 Liq. ammon. acet. ½ ounce
 Liq. Potass. Cit. 1½ ounces
 Syrupus 1 ounce
 Sig.—Teaspoonful every two or three
 hours for a child 2 to 6 years of age.

Tinct. of aconite root 12 drops
 Spirits of minderus ½ ounce
 Sol. citrate of potash 1½ ounces
 Syrup 1 ounce
 Take a teaspoonful every two or three
 hours for a child 2 to 6 years of age.

Acetanilid 10 grains
 Quinia sulph. 20 grains
 Soda salicylate 10 grains
 Mft., mass and div. in cht. No. XV.
 Sig.—One every four hours.

Acetanilid 10 grains
 Quinine 20 grains
 Salicylate of soda 10 grains
 Make 15 powders. Take one every
 four hours.

Children's Doses: Between one and two years, one-seventh of an adult dose; between two and six years, one-quarter; between six and twelve years, one-third; between twelve and fifteen years, one-half.

MUMPS.

LATIN.

Oleum camphorata 2 ounces
 Sig.—Bathe over the swelling.
 Quinia sulph. 10 grains
 Potass. chlor. 25 grains
 Tinct. aconite rad. 10 drops
 Spts. nit. dulc. 2½ drachms
 Syrp. simplex 14 drachms
 Sig.—A teaspoonful every three hours for a child ten years old. Increase or decrease according to age.

ENGLISH.

Camphorated oil 2 ounces
 Bathe over the swelling.
 Quinine 10 grains
 Chlorate of potash 25 grains
 Tincture of aconite 10 drops
 Sweet spirits of nitre ... 2½ drachms
 Simple syrup 14 drachms
 A teaspoonful every three hours for a child ten years old. Increase or lessen according to age.

NEURALGIA.

Quin. sulph. 1 drachm
 Phenacetin ¼ drachm
 Acid arsenious 1 grain
 Aconit ex. 7½ grains
 Strych. sulph. ½ grain
 Mft., mass and div. in pil. No. XXX.
 Sig.—Take one three or four times a day.

Sulphate of quinine 1 drachm
 Phenacetin ¼ drachm
 Arsenious acid 1 grain
 Extract of aconite 7½ grains
 Sulphate of strychnine .. ½ grain
 Make 30 pills. Take one three or four times a day.

PLEURISY.

Phenacetin 24 grains
 Quinia sulph. 24 grains
 Caffeine 6 grains
 Mft. cap. No. XII, div. Sig.—One every three hours.

Phenacetin 24 grains
 Quinine 24 grains
 Caffeine 6 grains
 Make 12 capsules and give one every three hours.

Acetate potass. ½ ounce
 Tinct. verat. viride 25 minims
 Syrp. tolu ½ ounce
 Liq. potass. citratis 2½ ounces
 Sig.—A teaspoonful every two hours.

Acetate of potash ½ ounce
 Tinc. verat. viride 25 minims
 Syrup of tolu ½ ounce
 Liquor citrate of potash.. 2½ ounces
 A teaspoonful every two hours.

PNEUMONIA.

Potass. iodid 1 drachm
 Ammonia mur 1½ drachms
 Mist. glycyrrhiza comp. 6 ounces
 Sig.—A tablespoonful every three hours.

Iodide of potash 1 drachm
 Muriate of ammonia 1½ drachms
 Brown mixture 6 ounces
 A teaspoonful every two hours.

PRICKLY HEAT.

Soda biboras 6 drachms
 Spts. camphora 6 grains
 Aq. rosæ 6 ounces
 Mft. Bathe the parts, and between applications dust on pulv. lycopodium.

Borax powder 6 drachms
 Spirits of camphor 6 grains
 Rose water 6 ounces
 Bathe the parts, and between applications dust on lycopodium powder.

Children's Doses: Between one and two years, one-seventh of an adult dose; between two and six years, one-quarter; between six and twelve years, one-third; between twelve and fifteen years, one-half.

RHEUMATISM (ACUTE).

LATIN.

Acid salicylic 2½ drachms
 Sodii bicarb. 2 drachms
 Vin. colch. sem. 6 drachms
 Syrupus 1 ounce
 Aqua mentha pip. ad.... 2 ounces
 Sig.—Dessertspoonful every three or four hours.

Sodii salicylate 2½ drachms
 Vin. colch. rad..... 3 drachms
 Tr. card. co. 6 drachms
 Syrupus 1 ounce
 Aqua 2 ounces
 Sig.—Two teaspoonfuls every four hours.

ENGLISH.

Salicylic acid 2½ drachms
 Baking soda 2 drachms
 Wine of colchicum seed... 6 drachms
 Syrup 1 ounce
 Peppermint water 2 ounces
 Dessertspoonful every three or four hours.

Salicylate of soda 2½ drachms
 Wine of colchicum root .. 3 drachms
 Comp. tinct. of cardamon.. 6 drachms
 Syrup 1 ounce
 Water 2 ounces
 Two teaspoonfuls every four hours.

RHEUMATISM (CHRONIC).

Potass. bicarb. 2 drachms
 Acid salicylic 2 drachms
 Potass. iodid 2 drachms
 Tinct. colch. sem 3 drachms
 Syrp. aurant. cort..... 3 ounces
 Sig.—A dessertspoonful every three hours.

Bicarbonate of potash 2 drachms
 Salicylic acid 2 drachms
 Iodide of potash 2 drachms
 Tinc. of colchicum seed.... 3 drachms
 Syr. of orange peel 3 ounces
 A dessertspoonful every three hours.

RHEUMATISM (MUSCULAR).

Ammon. chlorid ½ ounce
 Ex. cimicifuga fld. 2 ounces
 Syrp. acacia 1 ounce
 Aq. lauro-cerasi 1 ounce
 Sig.—A teaspoonful four times a day.

Chloride of ammonia ½ ounce
 Ext. of blacksnake root 2 ounces
 Syr. of gum arabic 1 ounce
 Cherry-laurel water 1 ounce
 A teaspoonful four times a day.

RINGWORM.

Hydrag. C. C. 10 grains
 Alcoholis 1 ounce
 Ol. sinapis 1 drachm
 Mft. lotion and apply several times a day.

Corrosive sublimate 10 grains
 Alcohol 1 ounce
 Oil of mustard 1 drachm
 Make lotion and apply several times a day.

SPITTING OF BLOOD (LUNGS) HEMOPTYSIS.

Tinct. cinnamoni 2 drachms
 Tinct. digitalis 30 drops
 Ex. ergot fld. 14 drachms
 Sig.—A teaspoonful every hour and then decrease.

Tincture of cinnamon 2 drachms
 Tincture of digitalis 30 drops
 Fluid ext. of ergot..... 14 drachms
 A teaspoonful every hour and then decrease.

SPITTING OF BLOOD (STOMACH) HEMATEMESIS.

Ferri et ammon. sulph..... 50 grains
 Aq. cinnamoni 4 ounces
 Sig.—A tablespoonful every two or three hours.

Sulphate of iron and ammonia 50 grains
 Cinnamon water 4 ounces
 A tablespoonful every two or three hours.

Children's Doses: Between one and two years, one-seventh of an adult dose; between two and six years, one-quarter; between six and twelve years, one-third; between twelve and fifteen years, one-half.

SORE EYES (CONJUNCTIVITIS).

LATIN.

ENGLISH.

Acid boracic 8 grains
 Aq. camphora 1 ounce
 Aq. dest 1 ounce
 Mft. Bathe the eye several times a day.

Boric acid 8 grains
 Camphor water 1 ounce
 Distilled water 1 ounce
 Bathe the eyes several times a day.

SUPPRESSED MENSES (AMENORRHEA).

Tinct. ferri chlor 3 drachms
 Tinct. cantharides 1 drachm
 Tinct. guaiac ammon. 1½ ounces
 Tinct. aloes ½ ounce
 Syrp. simplex 3½ ounces
 Mft. A tablespoonful three times a day.

Tinc. chloride of iron..... 3 drachms
 Tinc. Cantharides 1 drachm
 Ammoniated tinc. of guaiac 1½ ounces
 Tincture aloes ½ ounce
 Syrup simple 3½ ounces
 A tablespoonful three times a day.

SLEEPLESSNESS (INSOMNIA).

Potass. bromid 4 drachms
 Chloral hydrate 2 drachms
 Syrp. prunus virg. 1 ounce
 Aq. dest 10 drachms
 Sig.—A teaspoonful at bedtime.

Bromide of potash 4 drachms
 Hydrate of chloral 2 drachms
 Syr. of wild cherry 1 ounce
 Water 10 drachms
 A teaspoonful at bedtime.

SORE THROAT (QUINSY).

Tinct. guaiac 1½ ounces
 Glycerina 1½ ounces
 Sig.—A teaspoonful every hour or two.

Tincture of guaiac 1½ ounces
 Glycerine 1½ ounces
 A teaspoonful every hour or two.

SCARLET FEVER.

Tinct. ferri chlor..... 2 drachms
 Potass. chlor. 3 drachms
 Syrp. simplex 4 ounces
 Sig.—A teaspoonful every hour to a child four or five years old. Increase or decrease according to age.

Tinc. chloride of iron..... 2 drachms
 Chlorate potash 3 drachms
 Simple syrup 4 ounces
 Teaspoonful every hour to child four to five years old. Increase or decrease according to age.

Resorcin 2 drachms
 Vaseline 1 ounce
 Mft. Apply to skin to hasten desquamation.

Resorcin 2 drachms
 Vaseline 1 ounce
 Apply to skin to hasten desquamation.

Children's Doses: Between one and two years, one-seventh of an adult dose; between two and six years, one-quarter; between six and twelve years, one-third; between twelve and fifteen years, one-half.

TOOTHACHE.

LATIN.

Pulv. arsenious acid..... 30 grains
 Acidum Carbolicum 2 grains
 Menthol crystals 8 grains
 Glycerine Sufficient
 Mft. paste. Sig.—Apply to tooth
 on absorbent cotton.

Creosotum 1 drachm
 Apply to the cavity of the tooth on
 cotton.

ENGLISH.

Powd. arsenious acid 30 grains
 Carbolic acid 2 grains
 Menthol crystals 8 grains
 Glycerine Sufficient
 Make paste: Apply to tooth on ab-
 sorbent cotton.

Creosote 1 drachm
 Apply to the cavity of the tooth on
 cotton.

VOMITING.

Pepsinæ 1 drachm
 Acid hydrochlor dil. 2 drachms
 Aq. dest. 6 drachms
 Sig.—Teaspoonful every two or
 three hours.

Pepsin 1 drachm
 Hydrochloric acid, diluted.. 2 drachms
 Water 6 drachms
 Teaspoonful every two or three
 hours.

WETTING OF BED (INCONTINENCE OF URINE).

Ergotin 20 grains
 Strych. sulph. ½ grain
 Ext. bella. ⅔ grain
 Mft., mass and div, in pil. No. XL.
 One pill three or four times a day.

Strych. sulph. ½ grain
 Pulv. cantharides 2 grains
 Ferri redacti 20 grains
 Mft., mass and div, in pil. No. XL.
 Sig.—One pill three times a day to a
 child ten years old. Increase or de-
 crease according to age.

Ergotin 20 grains
 Sulphate of strychnine..... ½ grain
 Extract of belladonna..... ⅔ grain
 Make 40 pills. One three or four
 times a day.

Sulphate of strychnine..... ½ grain
 Powdered cantharides 2 grains
 Reduced iron 20 grains
 Make 40 pills. Give one pill three
 times a day to a child ten years old.
 Increase or decrease according to age.

WHITES (LEUCORRHEA).

“Vaginal Astringent Douche Tablets.” •
 One or two dissolved in a pint of
 warm water as an injection night and
 morning.

Soda Bicarb. 1 drachm
 Tinct. belladonna 2 ounces
 Aq. dest. 1 pint
 Mft. Use as a vaginal injection.

Aristol 35 grains
 Camphora 35 grains
 Lupulin 35 grains
 Mft. suppositories No. XII. Insert
 one in vagina after each injection.

“Vaginal Astringent Douche Tablets.”
 One or two dissolved in a pint of
 warm water as an injection night and
 morning.

Bicarbonate of soda 1 drachm
 Tincture belladonna 2 ounces
 Water 1 pint
 Use as a vaginal injection.

Aristol 35 grains
 Camphor 35 grains
 Lupulin 35 grains
 Make 12 suppositories. Insert one
 in vagina after injection.

Children's Doses: Between one and two years, one-seventh of an adult
 dose; between two and six years, one-quarter; between six and twelve years,
 one-third; between twelve and fifteen years, one-half.

WATER-BRASH (PYROSIS).

LATIN.	ENGLISH.
Quinia sulph. 12 grains	Sulphate of quinine 12 grains
Acid sulph. dil. 2 drachms	Sulphuric acid, diluted .. 2 drachms
Spts. chloroform 2 drachms	Chloroform 2 drachms
Tinct. aurant. cort. 1½ ounces	Tinc. of orange peel 1½ ounces
Sig.—A teaspoonful in water every two or three hours.	

WHOOPIING-COUGH (PERTUSSIS).

Cocci 10 grains	Cochineal 10 grains
Potass. bicarb. 1 drachm	Bicarbonate of potash 1 drachm
Ex. belladonna fld. 10 drops	Fluid ext. of belladonna... 10 drops
Syrp. simplex 4 ounces	Syrup simple 4 ounces
Sig.—A teaspoonful every two or three hours for a child ten years old. Increase or decrease according to age.	

WORMS (TAPE).

Tinct. rottlera 1 drachm	Kamee'a 1 drachm
Ex. filix mas aeth. 2 drachms	Male fern, ethereal ext. 2 drachms
Syrp. acacia 1 ounce	Syrup of gum arabic. 1 ounce
Mft. Make 2 doses. Sig.—First in morning, two hours after half-ounce ol. ricini, and in half an hour the remainder.	

WORMS (ROUND AND STOMACH).

Hyd. chlor. mite. 10 grains	Calomel 10 grains
Soda bicarb. 10 grains	Bicarbonate of soda 10 grains
Santonine 10 grains	Santonine 10 grains
Pv. rhei 10 grains	Rhubarb 10 grains
Mft. cht. No. VI. Sig.—One every three hours and then a purge.	

SIMPLE REMEDY FORMULAS IN LATIN AND ENGLISH

THE DOSES ARE FOR ADULTS, EXCEPT WHERE OTHERWISE MENTIONED. SEE FOOTNOTE.

ASTHMA.

LATIN.	ENGLISH.
Lobelia folia 1 teacupful	Lobelia leaves 1 teacupful
Aqua bulliens 1 pint	Hot Water 1 pint
Steep a half hour. Dose: One tablespoonful every fifteen to thirty minutes till free spitting of mucus is produced.	

Children's Doses: Between one and two years, one-seventh of an adult dose; between two and six years, one-quarter; between six and twelve years, one-third; between twelve and fifteen years, one-half.

BOILS.

LATIN.	BOILS.	ENGLISH.
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Sulphur flores	6 tablespoonfuls	Flowers of sulphur ..	6 tablespoonfuls
Potass. bitartras	3 tablespoonfuls	Cream tartar	3 tablespoonfuls

Dose: One teaspoonful night and morning in syrup or molasses.

BLEEDING FROM THE LUNGS.

Pulv. sacch, alb.....	3 ounces	Powdered sugar	3 ounces
Acid gallic	½ ounce	Gallic acid	½ ounce

Mix. Dose: One teaspoonful three times a day.

Or,

Acid tannic	30 grains	Tannin	30 grains
Pulv. sacch. alb.....	1 drachm	Powdered sugar	1 drachm

Mix. Make ten powders and give one every ten minutes until relieved.

CHOLERA MORBUS.

Chloride sodium	3 teaspoonfuls	Common salt	3 teaspoonfuls
Piper nigrum	2 teaspoonfuls	Black pepper	2 teaspoonfuls
Acetum	½ teacupful	Cider vinegar	½ teacupful
Aqua bulliens	½ teacupful	Warm water	½ teacupful

Mix. Take tablespoonful every half hour until relieved.

CONSTIPATION.

Inf. senna comp	5 ounces	Compound infusion of senna	5 ounces
Potass. tart.	1 ounce	Tartrate of potash	1 ounce
Tr. senna } of each	4 drachms	Tincture of senna } of each..	4 drachms
Tr. jalap }		Tincture of jalap }	
Syr. rhamni	3 drachms	Syrup of buckthorn	3 drachms

Dose: Take one-fourth part at once, and repeat the dose every half hour until it operates.

CROUP.

Pulv. alumen	2 teaspoonfuls	Powdered alum	2 teaspoonfuls
Treacle	1 tablespoonful	Molasses	1 tablespoonful
Aqua bulliens	1 teacupful	Warm water	1 teacupful

Dose: For child one to three years old, a dessertspoonful every five minutes till relieved; for older children, a tablespoonful.

DIARRHŒA.

Rubus villosus	2 quarts	Ripe blackberries	2 quarts
Saccha alba	1 pound	White sugar	1 pound
Carophyllus	½ ounce	Cloves	½ ounce
Pimenta	½ ounce	Allspice	½ ounce

Boil all together. When cold press and strain. Add a pint of good brandy.

Dose: A teaspoonful to wineglassful every two to four hours.

DROPSY.

Pulv. jalapa	10 grains	Powdered jalap	10 grains
Potass. bitartras	1 teaspoonful	Cream tartar	1 teaspoonful
Aqua sacch	1 wineglassful	Sweetened water	1 wineglassful

Take whole, once every four hours, until copious discharges are produced.

Children's Doses: Between one and two years, one-seventh of an adult dose; between two and six years, one-quarter; between six and twelve years, one-third; between twelve and fifteen years, one-half.

DYSENTERY.

LATIN.

ENGLISH.

Amylum	2 ounces	Thin boiled starch	2 ounces
Tinct. opii camp.....	1 drachm	Paregoric	1 drachm
Use as an injection every six to twelve hours.			
Tinct. rhei	1 ounce	Tincture rhubarb	1 ounce
Tinct. opii camp.....	1 ounce	Paregoric	1 ounce

Dose: One teaspoonful every three hours.

EARACHE.

Succus alium	2 teaspoonfuls	Onion juice	2 teaspoonfuls
Ol. olivæ	2 teaspoonfuls	Sweet oil	2 teaspoonfuls

Mix, and drop from four to six drops warm in affected ear. Repeat in half an hour if necessary.

GOUT.

Pulv. ulmus	2 tablespoonfuls	Powdered slippery elm	2 tablespoonfuls
Wheat bran	3 tablespoonfuls	Wheat bran	3 tablespoonfuls

Mix with a weak solution of vinegar and apply warm to the affected parts.

GRAVEL.

Pyrus rad	1 quart	Apple root tea	1 quart
Holland gin	1 pint	Holland gin	1 pint
Sacch. alb	8 ounces	White sugar	8 ounces

Small teacupful three times a day.

HEART-BURN.

Soda bicarb.	½ teaspoonful	Baking soda	½ teaspoonful
Aqua	½ teacupful	Water	½ teacupful

Take same after each meal,

HOARSENESS.

Armoricia	2 ounces	Horseradish, grated	2 ounces
Acetum	½ pint	Cider vinegar	½ pint
Mel	1 gill	Strained honey	1 gill

Put the horseradish in the vinegar, let stand twelve hours, add the honey and heat it nearly to boiling. Strain and bottle. Adult dose, a teaspoonful four times a day till relieved.

INFLAMMATION OF THE BOWELS.

Ol. ricini	3 ounces	Castor oil	3 ounces
Ol. olivæ	2 ounces	Olive oil	2 ounces
Ol. terebinthinæ	2 teaspoonfuls	Oil of turpentine	2 teaspoonfuls

Adult dose, one tablespoonful every three or four hours.

Children's Doses: Between one and two years, one-seventh of an adult dose; between two and six years, one-quarter; between six and twelve years, one-third; between twelve and fifteen years, one-half.

NEURALGIA.

LATIN.

Ex. belladonna ½ ounce
 Vaseline 2 ounces
 Mix. Rub on affected parts several times a day.

ENGLISH.

Extract belladonna ½ ounce
 Vaseline 2 ounces

PILES.

Vaseline 1 tablespoonful
 Sulph. flores 1 drachm
 Mix, and apply as an ointment three times a day.

Vaseline 1 tablespoonful
 Flowers of sulphur ... 1 drachm

SIMPLE SORE THROAT.

Pulv. alumen 1½ teaspoonfuls
 Aqua 1 gill
 Make gargle and use every hour.

Powdered alum 1½ teaspoonfuls
 Water 1 gill

SCROFULA.

Rumex crispus 1 pound
 Stillingia rad 1 pound
 Taraxacum rad 1 pound
 Sarsaparilla rad 1 pound
 Sassafras rad ½ pound
 Aqua 4 gallons

Yellow dock root 1 pound
 Stillingia root 1 pound
 Dandelion root 1 pound
 Sarsaparilla root 1 pound
 Sassafras root ½ pound
 Water 4 gallons

Cut the roots fine. Boil slowly till reduced to four quarts. Strain and add five pounds white sugar, stirred in with gentle heat. Then add eight drachms iodide of potash. Dose: Two tablespoonfuls three times a day.

SORE EYES.

Soda biboras 2 grains
 Aq. camph. 1 ounce

Borate of soda 2 grains
 Camphor water 1 ounce

Mix. Drop one or two drops in eye four times a day.

TETTER.

Ol. terebinthinæ 1 ounce
 Hydrarg. ox. rub. 3 drachms
 Vaseline 4 ounces

Turpentine 1 ounce
 Red Precipitate 3 drachms
 Vaseline 4 ounces

Mix. Apply twice a day to affected parts.

TAPEWORM.

Ol. terebinthinæ 1 teaspoonful
 Ol. ricini 1 teaspoonful
 Lactis 1 teacupful

Turpentine 1 teaspoonful
 Castor oil 1 teaspoonful
 Milk 1 teacupful

Mix, and for adult take at one dose. If not successful, repeat next day.

WETTING THE BED.

Ergot fluid ex. 1 ounce
 Dose: Ten to fifteen drops three times a day.

Spurred rye 1 ounce

Children's Doses: Between one and two years, one-seventh of an adult dose; between two and six years, one-quarter; between six and twelve years, one-third; between twelve and fifteen years, one-half.



PART V OF BOOK IX

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Home Administration of Medicine

PART V.

NEW REMEDIES

Acetozone.—A germicide used frequently in typhoid fever, internally, thirty grains to the half gallon, given two to four ounces every four hours. Locally, diluted with boric acid, in surgery and gynecology.

Adalin.—Colorless and odorless powder. Sedative and hypnotic, promoting sleep. Dose, five to ten grains in water one hour before retiring.

Afsal.—A yellowish-white powder used in rheumatism in thirty to sixty grain doses during twenty-four hours.

Agaricin.—A white powder recommended for night sweats in phthisical subjects. Dose, one to one and one-half grains at night.

Agurin or Theobrimine Sodium.—Dose, five to ten grains, as a diuretic, three or four times a day.

Akaralgia.—A granular, effervescent laxative containing salicylate of soda and magnesia sulphate. Used as a migraine and antirheumatic.

Albolene, Blandine Liquid, Vaseline, Glycoline.—A refined liquid petroleum under various trade names. Used as oil sprays for catarrhal conditions of the nose, and also given internally in doses from two to four teaspoonfuls three times a day for chronic constipation.

Ammonol.—A composition similar to acetanilide comp. Used for neuralgia, etc.

Anasarkin.—Tablets containing extract of sambucus, scilli picrin, etc., used as a diuretic.

Antifebrin is an American trade name, and in Germany the official title for acetanilide.

Antiphlogistine.—A clay poultice containing glycerine, oil of wintergreen, boric acid, etc., used locally for sprains and various inflammations.

Apioline.—Prepared from parsley seed. Prescribed in amenorrhea and dysmenorrhea.

Apetol.—Composed of nux vomica, gentian, columba, quassia, etc., a bitter tonic useful in exciting the flow of gastric juice, aiding digestion and improving the appetite.

Argyrol, Protargol, Collargolum.—Silver in organic combination. Used instead of nitrate of silver for various local conditions, especially gonorrhœa and purulent eye disease.

Aristol.—Similar to iodide of thymol. Used locally as a dusting powder for ulcers, ulcerating sores, etc.

Aspirin.—A derivative of salicylic acid. White powder in soluble form. Used in all conditions in which the salicylates are used. Rheumatism, gout, neuralgias, sciatica, etc. Dose, five grains repeated.

Atophan.—Indicated in gout, acute and chronic rheumatism, gonorrhœal rheumatism, sciatica, lumbago, etc. Dose, seven to ten grains three or four times a day with water.

Avenine.—An extract of oats used as a nerve tonic in sexual conditions.

Baume Analgesique.—A combination of menthol, salicylate of methyl, and lanoline. Used locally for rheumatism, neuralgia, migraine, sprains, herpes zoster and many ailments of greater or less importance.

Betol.—Also known as naphthalol. Used in gonorrhœal cystitis, articular rheumatism, etc.

Borolyptol.—A liquid antiseptic for local and internal use, containing eucalyptus, myrrh, benzoin, etc.

Cann-Aven.—A combination in pill form for the treatment of seminal emissions, nervous debility, spermatorrhœa, impotence, etc.

Cellasin.—A ferment derived from Fungi—said to be curative in diabetes and various forms of malnutrition.

Capsolin.—A counter-irritant ointment, containing camphor, oil of turpentine, oleoresin of capsicum. Used locally in neuralgia, pleurisy, etc.

Chola-Sal.—A pill or capsule used in the treatment of gall stones and diseases of the gall duct and bladder.

Copaiba Comp.—A pill composed of oil of santal, copaiba, kava-kava, etc. A combination valuable in the relief of gonorrhœa, gleet, cystitis, and all irritating conditions of the bladder and prostate.

Corydallis.—Specific medicine, used in syphilis owing to its alterative effect; also employed in scrofulous and tubercular diseases. It relieves periosteal skin pains and syphilis nodes.

Creolin.—A saponified coal tar. Used locally as a germicide disinfectant and deodorant.

Dioxogen.—A trade name for peroxide of hydrogen solution.

Epinephrin.—Also known as adrenalin, etc. A powerful astringent, hemostatic and heart stimulant. Applied to a bleeding surface or nose bleeding it will control the bleeding at once. In hay fever, in a solution in water or oil, used with an atomizer three to six times a day, it affords wonderful relief to the patient, making him comfortable and shortening the disease. It is also used as a heart stimulant in small doses, but should be given under the direction of a physician.

Europhen.—Yellowish-brown powder. Used locally for venereal sores, chancres, ulcers, etc.

Formalin.—A solution of formaldehyde gas. Employed as a disinfectant and deodorant, especially in contagious diseases. Poisonous.

Hedonal.—A white powder sparingly soluble in water, used as a mild hypnotic. Dose 10 to 20 grains.

Helmitol, Cystogen, Formin, Urotropin.—These are various names given to the urinary antiseptic hexamethyane-tetramine. They are used in five to ten grain doses dissolved in water, for cystitis, acute and chronic conditions of the bladder from prostatic enlargement, also in gonorrhœa.

Hemabaloids.—An iron tonic combined with bone marrow, given in teaspoonful doses.

Hemostyptic.—A fluid extract of ergot and golden seal, used internally for hemorrhage in thirty drop doses three times a day.

Heroin.—A trade name for acetyl morphine used as a sedative in cough mixture and to relieve pain.

Hermotone.—Contains the active principles of the thyroid and other secretory organs used in the treatment of neurasthenia, presenility and sexual weakness.

Hydrastis.—Colorless. Used as an injection in gonorrhœa alone or combined with various astringents.

Hydrassan.—A mixture of phenacetin chlorides of mercury, arsenic, etc., used in chronic syphilis.

Iatrol.—A combination of iodine, etc., used instead of iodoform (odorless) as a local antiseptic.

Ichthalbin.—A compound of ichthyol and albumen a gray-brown odorless powder for internal used instead of ichthyol. Dose 10 to 30 grains.

Ichthyol.—Consists largely of ammonium salts of sulphonic acid ab-

tained from the fossil remains of fish, a thick brown liquid used mostly in various skin diseases and gynecological affections.

Ingluvin.—A pepsin obtained from the gizzard of the chicken, digestive and used in vomiting of pregnancy.

Iodoformal.—A compound iodine powder used as a local antiseptic.

Iodex.—A non-staining iodine ointment containing 5 per cent. of iodine, used instead of iodine.

Kaolin.—White earth, used as a base for cataplasm of kaolin and also used as an absorbent dusting powder.

Kinazyme.—An extract of the spleen, liver and pancreas used to increase weight in malnutrition and wasting diseases.

Labronium.—Has been found valuable in cases in which the bromides have been used. Hysteria, nervous sleeplessness, epilepsy, etc.

Lactone.—Tablets used to prepare buttermilk from fresh milk, one tablet converting one quart of milk into buttermilk in thirty-six hours.

Lactopeptine.—A compound digestive powder composed of pepsin, pancreatin, lactic acid, etc.

Laxol.—The trade name for a flavored and sweetened castor oil.

Lymph Orchitis Compound.—An organic preparation used in impotence, presenility, neurasthenia, etc.

Lysol.—Disinfectant and germicide. When mixed with water it is used for cleansing wounds, ulcers, etc., also on floors and for washing bedding.

Melachol.—A compound solution of phosphate of soda, nitrate of potash and citric acid used as a laxative.

Melubrin.—In pill or powder form possessing the medicinal activity of the salicylate, effective in sub-acute and chronic forms of rheumatism and as an antineuralgic. The dose is from seven and a half to fifteen grains three or four times a day.

Mercauro.—A solution of the bromides of mercury, arsenic and gold. Alterative and antisyphilitic. Dose, 10 drops three times a day.

Methylene Blue.—An aniline product used as an urinary disinfectant, frequently used in combination for gonorrhœa.

Morrhual.—An extract of cod liver oil put up in capsules and used in similar cases as cod liver oil.

Napthal Bismuth.—Same as orphol.

Neosalvarsan.—Similar to salvarsan or 606 used in syphilis.

Nephritin.—Employed in Bright's Disease and other disturbances of the kidneys.

Nenrotina.—A tablet containing nux vomica, iron, sawpalmetto, etc., used in sexual neurasthenia.

Oil of Cassia.—This oil is said to be effective in curing Barber's Itch and is also said to be good in allaying the poisonous effects of poison ivy, but it is essential that the true oil be used.

Omoform.—A fine, odorless, yellowish powder used as a substitute for iodoform.

Ovoferrin.—A mild form of organic iron in liquid form.

Panopepton.—A liquid food.

Papain, Papoid, Caroid.—Vegetable pepsins obtained from the juice of the pawpaw. Dose 2 to 5 grains.

Peptonoids Liquid.—A liquid food containing protein and carbohydrates from beef, wheat, etc., used especially in fever cases.

Phenacetin.—White, odorless and tasteless powder, useful for the allaying of fevers, also as an analgesic for the relief of headaches, neuralgias, etc. Dose, two to five grains.

Piperazine.—Used in cases of gout and rheumatoid arthritis, gravel and renal calculus. Dose, ten to twenty grains twice a day with an abundance of water.

Phycologen.—A name applied to a line of vaccines used hypodermically in rheumatism, gonorrhœa, etc.

Phenol Phthalein.—Used as a laxative and cathartic. A tasteless powder. Can be given to children as well as adults in doses from one to three or four grains. It produces watery stools. It is also given in pill form and in various combinations.

Pituitrin.—A stimulant to the uterus and used by physicians during labor when the pains have ceased and the labor is slow.

Pollantin.—A name applied to hay fever serum.

Rheumalgine.—Rheumalgine is diuretic, a urinary antiseptic, a solvent for uric acid deposits and promotes the elimination of septic products through both great channels, the urinary and alimentary tracts. It is of established value in the treatment of acute articular and chronic rheumatism, muscular pains, lumbago, sciatica, migraine of the rheumatic, gout and nervous irritability of the gouty or "lithemic." Whether they are due to auto-infection resulting from faulty elimination or to uric

acid diathesis. Rheumalgine is an efficient and rational treatment for rheumatic disorders. Dose, one to three tablets three or four times a day.

Salo Santol.—A combination of Santol oil and Salol used in gonorrhœa.

Saletin.—A trade name for aspirin.

Salvarsan or 606, used as a specific in syphilis.

Scarlet Red.—Used in 5 to 10 per cent. ointment on ulcers and wounds free from edematous swelling.

Staphisagria-Specific.—Used to allay irritation about the prostate gland and testicles and to check prostaticorrhœa and spermatorrhœa. A nerve stimulant for gloomy forebodings. Exercises a specific action upon the reproductive organs. Quiets irritation of the testes and strengthens their function.

Stypticin.—Used in hemorrhage, especially uterine.

Sulphonol.—Hypnotic and sedative. Dose, five to ten grains for the production of sleep.

Taka Diastase.—A brownish nearly tasteless powder used in indigestion due to starchy foods.

Theobromine.—An alkaloid found in cocoa, etc., used as a diuretic.

Tablogestin.—Used to relieve torpid or inactive liver and intestinal putrefaction. Also used in the treatment of catarrh of the bile tract and the prevention of gall stone formation.

Trionol.—Hypnotic and sedative. White powder soluble in hot water. Used in five to ten grain doses for insomnia.

Trypsogen.—Used in diabetes mellitus in connection with diet for that condition.

Vaginal Astringent Douche Tablets.—Antiseptic, cleansing, healing. For leucorrhœa, inflammation of the uterus and vagina. Non-poisonous. Freely soluble in water, odorless and will not stain.

Yohimbin.—A remedy for impotency, an alkaloid obtained from yohimbe bark. It is said to combat sexual impotency. Its effect is more marked when the trouble is due to a functional disturbance associated with a constitutional disease, as obesity, nephritis, or in sexual neurasthenics.

BOOK X

Treats of the home administration of simple remedies for many ills. It tells you what to do in case of sickness and the absence of the doctor.

Abscess	Chills and Fever
Ague	Choking
Alcoholism	Cholera Infantum
Anemia	Cholera Morbus
Angina Pectoris	Colds
Apoplexy	Cold Feet
Apthae	Cold, Feverish
Asthma	Cold in Head
Backache	Colic
Barber's Itch	Infantile
Bed Wetting	Painter's
Bile, Deficiency of	Constipation
Bilious Fever	Convulsions
Biliousness	Corns
Bites and Stings	Cough
Bladder, Inflammation of	Cramps in Stomach
Bladder, Irritable	Croup
Bleeding from Lungs	Diabetes
Bleeding from Nose	Diarrhœa
Bleeding from Stomach	Diphtheria
Blood Poisoning	Dizziness
Blood Purifier	Dropsy
Boils	Dysentery
Bowels, Inflammation of	Dyspepsia
Brain Fever	Earache
Bright's Disease	Eczema
Bronchitis	Epileptic Fits
Bunion	Erysipelas
Burns and Scalds	Fainting
Cancer	Falling of Palate
Catarrh	Felons
Carbuncles	Fever Sores
Catch in the Breath	Fever and Ague
Chafing	Fistula
Change of Life	Freckles
Chapped Hands	Frost Bites
Chapped Face	Frozen Limbs
Chest, Pains in	Gall Stones
Chicken-pox	Giddiness
Chilblains	Glands, Enlarged

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Book X

What to do in the Absence of a Doctor

HOME ADMINISTRATION OF MEDICINES

SIMPLE REMEDIES FOR MANY ILLS.

Abscess.—Make a mixture of equal parts of rosin and sugar, and apply for several days till broken; if not, poultice hourly with flaxseed meal or bread and milk or hop poultice, or an ointment of oleate of mercury and morphia may be used.

Ague.—Give full doses of quinine.

Alcoholism.—Remove the cause and give half teaspoonful of compound tincture of cinchona, with about three drops of tincture nux vomica every three hours, or give pill dipsomania.

Amenorrhœa.—Use warm sitz baths and take a pill of blaud and strychnine comp. three times a day.

Anemia.—Sponge body morning and evening with a solution of rock salt and whiskey and give iron and quinine as tonic—four grains of reduced iron and half grain of quinine—three times a day. Pepto Mangan is also an excellent tonic.

Angina Pectoris.—Inhale the fumes of chloroform or ether, or nitrite of amyl tears, one broken in handkerchief and inhale, and give one-twentieth grain of arsenic every three or four hours.

Apoplexy.—This state is caused by the rupture of a blood vessel within the skull and consequent escape of blood and pressure on the brain, or by the clogging of a blood vessel, thus cutting off the blood supply to

some part of the brain. The result is the same in either case: a part of the brain ceases to perform its functions owing to pressure of the clot. If the clot be small the effect will be slight; if it be large the effect will be grave if not fatal. The sufferer loses consciousness, sometimes falling as if felled by a heavy blow, sometimes becoming insensible more slowly. In well-marked cases, no effort will arouse the patient from insensibility. The face is flushed and the pupils of the eyes generally dilated, or one may be dilated and one contracted. Breathing is slow and labored; snoring may occur; cheeks are often puffed out with each respiration, the air being blown through the lips. Pulse is slow, full and hard. Paralysis is an important symptom and must be looked for. Paralysis generally is only on one side—the face, arm and leg on the same side being commonly affected. The mouth is usually drawn away from the affected side of the face.

TREATMENT.—Lay patient down, head and shoulders slightly raised; loosen clothing about neck and body; wrap cracked ice in a towel and place it on the head, or wrap head in wet cloths and keep them cold until arrival of the doctor. If without medical advice for long period, empty the bowels by giving an injection of soap and warm water, at the same time giving a cathartic, castor oil or salts, if the patient can swallow. Keep the patient quiet. *Do not give any stimulant.*

Appendicitis.—Early in the case to allay the pain and prevent the formation of pus, an ice bag should be applied, or if not convenient, use a flannel cloth, wrung out in hot water and put ten or fifteen drops of turpentine or kerosene on the cloth, and apply to the afflicted parts.

The bowels should be kept open with magnesia or salts. No solid food should be given. If neglected, and pus forms, it is always dangerous and it may be necessary for an operation.

Asthma.—Make strong solution of saltpetre and saturate pieces of blotting paper and dry. When a paroxysm is felt ignite a piece of the paper and inhale the smoke. This acts most quickly, alleviating distressing symptoms and shortens the paroxysm.

No fixed formula can be always depended upon; for a remedy which will benefit one case will often prove useless in another.

TREATMENT.—1. One of the best preparations is:

Iodide of potash.....	1½	drachms
Spirits Ether Co.....	3	drachms
Syrup of wild cherry.....	4	ounces

Two teaspoonfuls in water three times a day.



2. Another remedy, highly recommended, is thus prepared:

Lobelia leaves.....1 teacupful
Hot water.....1 pint

Steep one-half hour. Take one tablespoonful at a dose every fifteen to thirty minutes until free spitting of mucus is produced.

3. For very urgent cases the following is generally satisfactory, but must be used with caution:

Ether $\frac{1}{2}$ teaspoonful
Water 1 wineglassful
Laudanum10 drops

To be taken only once, or at most twice, and if second dose is given, it must not be sooner than six hours after the first dose.

Bachache.—Apply a mixture of one part of turpentine to two parts of sweet oil to the back two or three times a day. Use mixture warm. Chloroform liniment is also recommended.

Barber's Itch.—Excellent results have been received with the following treatment: Thoroughly wash the affected area with good soap and dry. Then apply a mixture of equal parts of alcohol and solution of peroxide of hydrogen, to which has been added bichloride of mercury, in the proportion of four grains to the ounce. The hydrogen peroxide seems to help carry the more powerful antiseptic into the infected areas about the hair-follicles.

TREATMENT.—1. In addition to the citrine ointment and vaseline recommended for ringworm, the following will be found excellent for barber's itch, and an almost infallible cure for common itch:

Plain vaseline.....4 ounces
Sulphur2 ounces
Sal ammoniac, powdered.....2 drachms
Mix and apply daily, after cleansing the part thoroughly with castile soap suds.

2. Another good ointment is composed of:

Plain vaseline..... 2 ounces
Venice turpentine $\frac{1}{2}$ ounce
Red precipitate..... $\frac{1}{2}$ drachm

Apply in same manner. Great care should be taken not to expose affected parts to cold draughts while ointment is in use, especially if the affected surface is large.

Bilious Fever.—Take about ten drops of the fluid extract of wild indigo-root in a little water, once in four hours. After a day or two commence with one grain of cinchonidia. To be taken every three hours.

Biliousness.—Use the juice of half a lemon each morning before breakfast. Boil two ounces of quassia root in one pint of water and strain. Take a teaspoonful every four hours for a week or two.

Bile, Deficiency of.—Give one grain of mercury and chalk (gray powder) three times a day.

Bites and Stings.—Apply a solution of saltpetre, one or two teaspoonfuls to a cup of water.

TREATMENT.—The irritation and itching caused by the bites and stings of insects, such as the mosquito, bee, hornet, and so forth, are relieved by the prompt application of spirits of ammonia (hartshorn), or of the juice from common plantain. For treatment of snake bites and other poisoned wounds, see Poisons and Antidotes.

Bladder, Irritable.—Bicarbonate of soda; sweet spirits of nitre.

Bladder, Inflammation of.—Give a mixture of one ounce tincture cubeb, one ounce tincture buchu and two drachms sweet spirits of nitre. Half a teaspoonful in water every two or three hours. Another remedy is an infusion of pipsissewa root, one ounce to pint of boiling water, and give wineglassful three or four times a day. Keep parts well warm with poultices and so forth over bladder. Drink plentifully of hot tea, which is an excellent remedy.

Bleeding from the Lungs.—**TREATMENT.**—1. The most common remedy, and one usually effective, is common salt, which should be eaten freely, a teaspoonful at a time, until relief is obtained; or half teaspoonful of fluid extract of ergot, repeated.

2. In obstinate cases, the patient should be kept perfectly quiet, and this powder given:

Gallic acid	60 grains
Powdered sugar	1 drachm

Make ten powders and give one every ten minutes.

[N. B.—Since spitting blood may be only a symptom of a much more serious trouble, a physician should always be called in when obtainable.]

Bleeding from the Nose.—Inject a strong solution of alum, made with one-quarter teaspoonful of alum to half teacup of water, into each nostril, and place cotton saturated with same to nostril. Apply cold to the nose.

When obstinate, take cobweb or grated salt beef, hard and dry, and push it into the nostril as far as possible. External pressure from thumb

and finger, continued fifteen or twenty minutes, will also be of benefit.

Another good method is to apply cold water or ice to forehead, also to back of the neck; or locally adnephtrin applied on cotton.

Bleeding from the Stomach.—This is often a serious condition and a physician should be consulted at once.

Blood Poisoning.—Quinine sulphate, one scruple; tincture chloride of iron, one and one-half drachms; simple syrup, two ounces; make mixture and give half teaspoonful four times a day.

Blood Purifier.—Sarsaparilla tea, a tablespoonful three or four times a day. Cream of tartar, half a teaspoonful night and morning in water.

Boils.—A quick poultice for a boil may be made of equal parts of soap and brown sugar, spread on a cloth and faithfully applied. The following powder may be taken internally to cleanse the system of impurities: Six tablespoonfuls of flowers of sulphur and three tablespoonfuls of cream of tartar, well mixed and one teaspoonful taken each morning and night in syrup or molasses.

Brain Fever.—Give from five to twenty drops of the following mixture every hour or two during the excitement: Tincture aconite root, thirty drops; tincture yellow jasmine, two drachms; sweet spirits nitre, one drachm; simple syrup, two ounces. Consult physician.

Bright's Disease.—Use skimmed milk freely, both at meals and between, and apply soothing fomentation to small of back, as infusion of hops with laudanum; and Bascham's Mixture, tablespoonful three times a day. Consult physician.

Bronchitis.—To a pint of flaxseed tea add the juice of two lemons and about three tablespoonfuls of sugar, and take a teaspoonful every half hour until relieved. If desired, you can add a small quantity of chloride of ammonia. Another remedy is to encircle the chest with flaxseed poultice and give three drops of aconite with ten drops sweet spirits of nitre, every two or three hours.

Bunion.—Apply adhesive plaster to part; put about a half teaspoonful of salicylic acid to two tablespoonfuls of lard and apply morning and night.

Burns or Scalds.—Put a teaspoonful of alum in a pint of water, and bathe parts frequently. Keep the parts well wet with this solution, which extracts the heat in a remarkable manner and soothes the patient into a calm and refreshing sleep. Apply equal parts of limewater and linseed oil.

Cancer.—Give a tablespoonful of sarsaparilla tea, made with two ounces of sarsaparilla root in quart of water boiled to pint; and apply to

cancer growth a poultice made of carrots scraped or mashed cranberries. Consult a physician.

Carbuncles.—Carbuncles are much more serious than boils. Consult Index for full discussion of. As temporary relief to pain, etc., apply one part tincture belladonna with two parts glycerine, and over this apply a warm poultice. Other treatments are:

1. To draw or ripen them, a poultice of poppy leaves is very efficacious.

2. Equally effective is a poultice made of sassafras root and slippery elm bark, boiled together, and the decoction thickened by stirring in cornmeal.

3. Linseed and slippery elm decoction, mixed with a little charcoal and yeast, used as a warm application, or lotion, seems to lessen pain and inflammation.

4. Carbuncles which head slowly should be opened with a knife, not by sticking, but by two transverse incisions. Menthol ethereal solution, 10 to 50 per cent., applied by camel's-hair brush, aborts boils, carbuncles and inflammatory gatherings.

Catarrh.—Use a mixture composed of one teaspoonful of common salt, a teacup of milk and half pint of warm water as injection for nostrils three times a day; or same quantity of borax can be substituted for the salt or alkaline antiseptic solution.

This results from neglected or repeated attacks of the acute form, or following measles, scarlet fever, and so forth. There is a constant offensive discharge from the nose and nasal passages, pain in the eyes and head, sneezing, loss of appetite, and so forth.

TREATMENT.—A snuff composed of

Bloodroot	2	ounces
Bayberry root	1½	ounces
Peruvian bark	2	ounces
Borax, pulverized	½	ounce

finely pulverized and mixed, should be kept on hand and constantly snuffed into the nostrils. The bowels must be kept open by taking occasional simple purgatives. Strength should be kept up by the use of tonic pills.

Locally use to the nose and throat liquor antisepticus alk. with an atomizer three or four times a day.

Catch in the Breath.—Cold sponging for infants waking with a catch in the breath at night.

Chafing.—Use powdered cornstarch freely after bathing and drying (well) the parts, or talcum powder.

TREATMENT.—Afflicts children and fleshy persons. Usually all that is required is washing well with castile soap and cold water, and anointing with plain vaseline. A solution, to be used twice a day in connection with frequent washing in cold water, is composed of:

Pure water	2 gills
Powdered borax	1 teaspoonful
Sulphate of zinc	½ teaspoonful

Apply by means of a soft rag several times daily. After drying well, dust the parts with wheat flour or cornstarch, powdered magnesia or talcum powder.

Change of Life.—For flushings, and so forth, three grains of bromide of potash every three hours. For headaches apply a mixture of two ounces of ammonia and common salt, three ounces of alcohol and thirty-two ounces of water.

Chapped Hands and Face.—Apply a mixture of one-third glycerine and two-thirds rosewater two or three times a day, or cold cream.

Chest, Pains in.—When not from inflammation, apply iodine ointment.

Chicken-Pox.—Keep child in darkened room and give nitre water as drink, and one drop of aconite every two hours for two or three days.

Chilblains.—Apply lime water to part affected several times a day. Another remedy is the application of balsam of Peru ointment or iodine ointment.

TREATMENT.—1. The first treatment for frosted feet, to be applied at once, before the feet are “thawed out,” is rubbing with snow and bathing them in ice-cold water. Let the normal blood-heat be restored very gradually, and continue the cold water treatment for some hours. Do not apply external heat of any kind.

2. For chilblains, the best treatment is frequent bathing in cold water and in a strong decoction of white oak bark. Bandaging the parts loosely with flannels saturated with crude petroleum has cured many cases. These are probably the best remedies, although many others have been tried with varying success.

Chills and Fever, Fever and Ague, Intermittent Fever.—**TREATMENT.**—1. Upon the first indications of a chill, the following powder will be found useful:

Sulphate of quinine	30 grains
Extract of podophyllin, pulverized	30 grains
Cayenne pepper, pulverized	1 drachm
Charcoal, pulverized	1 drachm

Mix thoroughly and divide into twenty powders. Dose for an adult is two powders, taken every two hours, until chill has ceased and the hot stage begins.

2. After first powder is taken, patient may be placed in a warm bath and given hot chamomile or mint tea, with a copious sprinkling of cayenne pepper. In place of the warm bath, patient may be covered up warmly in bed and dry heat applied (by means of hot bricks, and so forth) along the spine to the extremities, over the pit of the stomach, and so forth.

3. In the third stage (sweating) patient should be gently stimulated, if great weakness exists, with a little whiskey toddy, warm brandy or some similar drink. Between the ague fits, which may occur every other day, or once in three days, once in four days, or irregularly, give:

Sulphate quinine	30 grains
Sulphuric acid	30 drops
Pure water	1½ ounces

Mix in a bottle and shake well. Dose for an adult: One teaspoonful every two hours, or every hour, if necessary.

4. A good preventive of chills and fever is the following:

Good rye whiskey	4 ounces
Pulverized rhubarb	1 drachm
Pulverized Peruvian bark	1 ounce

Mix in a large bottle, and let it stand for some days. Take a good tablespoonful of the decoction three times a day during the continuance of aguish symptoms.

Choking.—In children who choke with liquids from their birth, from one to two grains bromide of potash every two or three hours.

Cholera Infantum.—Give one-fourth grain of gray powder (mercury and chalk) every hour or two, with lime water and milk for vomiting. Warm poultice to abdomen and bowels.

The following mixture also has been used with great success, in early stages especially:

Prepared chalk	10 grains
Subnitrate of bismuth	10 grains
Paregoric	1½ teaspoonfuls
Syrup of ginger	5 teaspoonfuls
Gum arabic mucilage	5 teaspoonfuls

Mix. Dose for child one year old, one-half teaspoonful two to six times a day, usually not oftener than once in five or six hours. Vomiting may be relieved by giving small pieces of ice, if the child is old enough to swallow them. This treatment will often bring relief, but if it does not, give a teaspoonful of flaxseed tea or slippery elm tea, with (for a child four to six weeks old) one drop of laudanum, once in two or three hours.

Cholera Morbus.—A handy preparation to have in the house for such conditions is the Squibbs' Mixture, composed of laudanum, one ounce; tr. capsicum, one ounce; spirits camphor, one ounce; chloroform, three drachms. Alcohol enough to make five ounces. Dose, thirty to sixty drops in warm water. Locally apply mustard to the abdomen.

Another remedy, highly prized by many, is:

Common salt	3	teaspoonfuls
Black pepper	4	teaspoonfuls
Cider vinegar	$\frac{1}{2}$	teacupful
Warm water	$\frac{1}{2}$	teacupful

Mix all together and take the whole dose, a tablespoonful at a time. If the first cupful is rejected, take another at once,

When stomach is settled take a powder composed of:

Powdered peppermint leaves	$\frac{1}{2}$	ounce
Powdered cloves	$\frac{1}{2}$	ounce
Pulverized rhubarb	1	ounce

Mix well together. Dose: One teaspoonful every thirty minutes, or less frequently after one or two doses. Hot fomentations applied to the stomach and abdomen are not out of place at any stage of cholera morbus.

Colds.—Mix ten drops of spirits of camphor with a pint of hot water. Sip the whole of it as hot as it can be taken. Avoid draughts till the free perspiration has carried the cold off. Quinine and Dover's powder; open bowels. Among other remedies the following may be mentioned: Sweet spirits of nitre and paregoric, a half teaspoonful of each for an adult, or sulphate of quinine, eight or ten grains to check; carbolized vaseline to inner surface of nostrils; if well developed inhale vapor of boiling water in which is a teaspoonful of paregoric.

Cold Feet.—Make solution of two teaspoonfuls of borax in quart of warm water, and soak feet thoroughly at bedtime, and wear woolen socks for sleeping. Bathe feet in cold water and rub dry with a rough towel. Essence of ginger, paregoric and water bag are also used to advantage.

Cold, Feverish.—At commencement a warm bath will cut short the attack, remove the aching pains and relieve the hoarseness.

Cold in Head.—Take at beginning ten drops of camphor every two hours and inhale spirits of ammonia, with warm bath at night.

This common complaint will frequently run its course and disappear in four or five days, but may be cut short by care and simple remedies.

TREATMENT.—In the first place take a saline purgative, such as a dose of Epsom salts—or a seidlitz powder. At bedtime soak the feet in hot mustard water and take ten grains of Dover's powder. Cover up warm in bed and "sweat it out." The use of quinine—say one two-grain pill every three hours, or the following, will be effective:

Phenacetin	24 grains
Quinine	24 grains
Caffeine	6 grains

Make twelve pills. One every three hours.

Colic.—In case of children or infants 10 to 15 drops of Asafoetida every half hour until relieved, or teaspoon doses of Chamomile tea every 10 or 15 minutes. Locally, apply fomentations of spirits of Chloroform 2 to 5 drops over the abdomen, or apply Flaxseed poultice, or Turpentine and Sweet Oil, equal parts, on flannel cloth.

For adults, teaspoonful of Paregoric in hot water repeated until relieved.

TREATMENT.—1. To relieve the pain give an injection of thin starch containing twenty to thirty drops of laudanum. To relieve the constipation give a Seidlitz powder, or a tablespoonful of castor oil, to which may be added a half teaspoonful or less of spirits of turpentine. The application of warm fomentations to the abdomen, or a mustard plaster wet with vinegar is also recommended. Soaking the feet in hot water is also of benefit. Colic is a very painful disorder, but seldom or never terminates fatally.

2. One of the best general remedies for colic, diarrhœa, pain in the stomach and bowels is the following cordial:

Gum myrrh	½ ounce
Ground nutmeg	½ ounce
Cayenne pepper	½ ounce
Good brandy or whiskey	1 quart

Pulverize the myrrh, nutmeg and pepper together; put them into a two-quart bottle; add the brandy or whiskey and cork tightly. Let it stand ten days or more, shaking frequently, then strain and bottle for use. Dose for an adult: One teaspoonful. An excellent and harmless remedy for colic, pain in the stomach and bowels, and

very useful in diarrhœa. This preparation ought to be kept in the house constantly. In using this for colic do not neglect the use of a purgative also, such as a dose of castor oil or salts.

Colic, Infantile.—Relief is sometimes afforded by stirring a teaspoonful of salt in a large glass of water and giving a teaspoonful every five minutes. It is also a good preventive of colic, sour stomach and constipation, and for such purposes should be given three or four times a day.

Colic, Painter's.—Give ten grains of alum every hour until relieved; then tablespoonful of epsom salts.

Constipation.—Drink glass of cold water before and eat orange after breakfast each morning, or five grains of ext. cascara at night, or twenty drops of the fluid extract cascara sagrada night and morning. In some cases one-sixth of a grain of belladonna at bedtime affords relief or a suppository of two grains of the extract. Two or three grains of rhubarb with a grain or two of carbonate of soda are also frequently efficacious. Salted mineral waters before breakfast are oftentimes valuable. A tablespoonful of tincture of aloes and two tablespoonfuls of soap liniment mixed and rubbed over the bowels five minutes daily is said to have beneficial results. A tea made of slippery elm taken daily in half-teacupful doses or a teaspoonful of flaxseed in cup of boiling water for few minutes and then strained.

SOAP INJECTION.—Cut a piece of yellow soap two or three inches long and of the thickness of the little finger, making the same pointed at one end. If this is introduced into the bowel and held there for a few moments it will produce a good evacuation; or make a strong soap-suds, to which add a tablespoonful of glycerine or use a glycerine suppository.

The following is well adapted for frequent or daily use in habitual constipation, but is hardly so active as the preceding:

Powdered senna	2 ounces
Powdered licorice	2 ounces
Powdered fennel	1 ounce
Flowers of sulphur	1 ounce
White sugar	6 ounces

Mix and pulverize well together. Dose: One teaspoonful in one-half glass of water well stirred up. For children, reduce the dose in proportion to age. When there are dropsical or congestive symptoms add a teaspoonful of cream tartar to each dose to stimulate the removal of the fluids from the system.

Habitual constipation is hard to cure, and calls for strict observance of dietary regulations. Coupled with a proper diet and mode of life one of the following will often effect a cure:

A good purgative biscuit is made as follows: Powdered jalap, one teaspoonful; flour, eight tablespoonfuls; sugar, twelve tablespoonfuls; powdered ginger, half teaspoonful; make twelve biscuits; one may be eaten once or twice a day according to effect desired. For children three years old and infants one-third the quantity.

Convulsions.—Epileptic.—CAUSES.—The causes of this strange disease are but imperfectly understood, and no infallible remedy has yet been discovered.

TREATMENT.—1. Total abstinence from rich and animal food, with hygienic modes of living constitute the best defense of an epileptic patient.

2. When adults are laboring under the paroxysm little in general can be or ought to be done, except bringing the patient into the fresh air, taking off what may be around the neck and baring the chest, together with the more imperative duty of preventing the patient from doing himself any injury. If the paroxysm be prolonged greatly, the application of cold to the head may be of some service. The inhalation of ammonia or chloroform has been found useful. Internally the mixed bromides often afford relief.

Convulsions—Infantile Fits.—CAUSES.—Indigestion, worms or the irritation of teething are the usual causes of fits in childhood, or “spasms,” as they are called.

TREATMENT.—1. Place the child in a warm mustard bath, say about two teaspoonfuls of mustard to one bucketful of water, and at the same time apply cold water to the head; this will relax the spasm and allow you to take steps to remove the cause of the trouble. If the child is teething and the gums are hot and swollen they should be lanced and allowed to bleed freely.

2. If indigestion or constipation seems to be the cause, give from fifteen to thirty drops of castor oil, in gruel, and an injection of warm, soapy water. Sometimes a simple emetic should be first given.

3. If you have reason to suspect that the child has worms, proceed as directed in article on worms, which see. To prevent the recurrence of the spasms the bowels must be kept reasonably free by giving small doses of castor oil daily. The warm bath, with cold water on the head, rarely fails to give instant relief from the severe and threatening symptoms. It should be applied at once, when spasm commences.

4. The following is an excellent remedy for infantile convulsions:

Chloroform	½ drachm
Bromide of potash	½ drachm
Tincture of cardamom	½ ounce
Spearmint water	2½ ounces

Shake well and give one-half teaspoonful in water to child one year old; smaller children a proportionate dose.

Corns.—Apply kerosene oil to part each night. Apply turpentine to part each night, or salicylic acid twenty grains to one-half ounce simple cerate.

Cough.—Flaxseed tea, a teaspoonful every ten or fifteen minutes. A mixture of lemon and sugar is very efficacious. Take small quantity every ten or fifteen minutes. Other remedies are: Tablets of “Brown Mixture;” syrup of ipecac; aromatic spirits of ammonia; paregoric. In chronic cough, ten grains of alum in teaspoonful of water and spray throat with same, or spray throat with wine of ipecac.

This form of a cold may originate in the throat and chest, or may be caused by the spreading downward of unchecked nasal catarrh.

TREATMENT.—1. Treatment in first stages is similar to that given for nasal catarrh (preceding) or for bronchitis, with a saline purgative. If the cough becomes troublesome use:

Muriate of ammonia	1½ drachms
Fluid extract of licorice	4 drachms
Syrup of wild cherry bark	1 ounce
Water	1½ ounces

Dose: A teaspoonful every two hours, according to severity of symptoms

2. If the cough still continues after three or four days, make a cough mixture composed of:

Syrup of squills	6 drachms
Syrup of wild cherry	6 drachms
Ext. Cannabis Indica	1½ grains

This should be compounded by an apothecary and thoroughly mixed. Dose for adult, one teaspoonful every six hours. This mixture is very effective, but must be used with caution, as it contains ingredients which are poisonous in overdoses.

Cramps in Stomach.—Make mustard poultice, with white of egg instead of water, and apply same to bowels, and give Squibbs’ Mixture. Hot water bags often afford relief. Paregoric and also laudanum relieve pain, but must be used with great caution.

Croup.—A most insidious and sometimes fatal affection if treatment is not immediately applied. Turpentine stupes applied to front of throat and breast have proved most effective, saving many lives thereby. The stupes should be made with one-third turpentine and two-thirds water, as hot as can be borne, and apply the same on flannel cloths every few moments until relief is obtained. It quickly acts upon the breathing tubes, cleaning them out, and enables the little sufferer to breathe easily, clearly and with safety. Give syrup of ipecac frequently until vomiting is produced. This condition should not be confounded with diphtheria. Other remedies are:

1. Fat bacon applied to the throat, as in sore throat, is recommended as a remedy for croup. Its action can be helped by taking internally a few drops of kerosene oil on sugar.

2. Mix a teaspoonful of alum with the white of one egg, and give a teaspoonful every few minutes until free vomiting occurs. Give one-quarter teaspoonful of syrup of ipecac every ten minutes until free vomiting occurs.

Diabetes.—In this disease there is an excessive flow of yellowish, sweet urine, with frequent calls to void it.

TREATMENT.—1. A tea of water-horhound, drunk freely, is an excellent remedy. Or, in place of the tea, a teaspoonful of the tincture may be taken four or five times a day.

2. A tea of common chickweed, drunk freely for some time, is also mentioned as an excellent remedy. Salicylate of soda in five-grain doses is most efficacious.

3. A purely milk diet, in copious quantities, has been found to result favorably.

4. One-quarter grain doses of codeine three times a day. No sugar should be used in the diet.

Diarrhœa.—Take half ounce of blackberry root and boil in pint of water about fifteen minutes, strain and give teaspoonful every hour or two until relieved; or fluid extract, dose five to ten drops in a little water; one-half to one teaspoonful of paregoric in water. Other remedies are:

1. An infusion of chamomile, prepared by steeping four to six heads of chamomile flowers in a cup of boiling water for an hour, and giving a teaspoonful hourly. Avoid solid food until bowels are all right.

2. Tablets of chalk mixture, of subnitrate of bismuth, or of pepsin; paregoric, laudanum.

3. Give starch injection with half a teaspoonful of laudanum for

adult; for child only a few drops, and one drop of the wine of ipecac every hour, especially if vomiting be present, or half a grain of gray powder (mercury and chalk) every hour or two.

4. A good blackberry cordial, such as the following, is often found to be a preventive and specific for summer complaint, diarrhœa, etc.:

Ripe blackberries 2 quarts
 Sugar, white 1 pound
 Cloves and allspice ½ ounce of each

Boil all together. When cold, press out and strain the juice and add a pint of good brandy. This makes a pleasant drink, and may be taken in quantities from a teaspoonful to a wineglassful every two to four hours. Be careful not to take too much astringent medicine and thereby check the diarrhœa too suddenly.

Diphtheria.—Spray the throat with peroxide of hydrogen. Give small doses of calomel repeated. Call a physician and use antitoxin.

Dropsy.—Make a tea or infusion of half an ounce of skull cap root to one quart of water, and boil to pint. Take wineglass of same three or four times a day. Or the same quantity of grapevine root, made in same manner, and taken as above. Bascham's Mixture, dessertspoonful three times a day.

The following prescription has been found of value:

Fluid Extract Digitalis.....20 drops
 Fluid Extract Belladonna30 drops
 Fluid Extract Buchu.....1 ounce

Dose: Four drops in water every four hours.

Dysentery.—Take an ounce of dewberry root and boil in quart of water to one pint, and give half wineglass of same every two or three hours until discharges diminish. Ten grains of subnitrate of bismuth frequently. See Diarrhœa.

Dyspepsia.—Small doses bicarbonate soda before meals and do not eat any fried food. Pepsin tablets. Three grains of bismuth, with five grains of charcoal, to be taken before meals, and three grains pepsin in a little water after meals. Half teaspoonful of compound tincture cinchona, with five drops tincture of nux vomica in a little water, taken three times a day, is very beneficial.

Dizziness.—Give five drops of tincture of gelsemium four times a day.

Earache—Inflammation of the Ear.—TREATMENT.—1. Beware of injections into the ear, or the use of any and all instruments. Either of the preparations here described will almost surely give relief:

2. A drop or two of chloroform on cotton and placed in the ear and heat applied.

Sweet oil 2 teaspoonfuls
Chloroform 1 teaspoonful

Mix. Lie with head resting on the side opposite the inflamed ear, and drop from a warm teaspoon from four to six drops of this mixture into the affected ear; then stop with cotton.

3. Another, equally good, is:

Onion juice 2 teaspoonfuls
Sweet oil 2 teaspoonfuls
Chloroform 1 teaspoonful

Mix and use as above directed. Be sure to apply warm, not below blood heat. To get the onion juice, roast one or two large onions and press out the juice. It is a good plan to soak the feet in hot water and take an active cathartic if bowels are in the least constipated.

Eczema.—1. Chronic eczema (skin disease) may be treated successfully by an ointment of pitch and turpentine melted together; an ounce of each. Add an ounce of vaseline and two drachms of red precipitate. Mix all well and apply as a salve, or ichthyol and zinc ointment.

2. A good eczema wash is made of an ounce each of bruised blood root and yellow dock, steeped well in a pint of alcohol and half pint of vinegar.

3. A paste of sulphur and lard applied to the affected skin morning and evening is recommended as a good eczema cure.

4. Apply ichthyol, one drachm; zinc ointment, one ounce. If itching ten drops of carbolic acid can be added. A cold potato poultice, with a small quantity of camphor, has proven most beneficial.

Enlarged Spleen.—Give quinine and the tincture of the chloride of iron—one-half grain of quinine and ten drops of the tincture of iron—three times a day, and apply morning and night over the enlargement the compound iodine ointment.

Erysipelas.—Put about a tablespoonful of baking soda in one pint of water and bathe parts several times a day. Keep parts well bathed with witch hazel. Other remedies are:

1. Boil white navy beans, mash and add cornmeal to make poultice. Apply hot and change frequently.

2. A wash containing two parts of borax to five of water is effectual in subduing inflammation; also an ointment of three grains of morphine, two drachms of green vitriol and one ounce of lard, applied several times a day. Tincture iron along the margin to prevent spreading.

3. Take one teaspoonful of following mixture every two hours: One ounce each of glycerine, chloroform and tincture of iron.

4. Give five drops tincture of aconite every hour at commencement. Add a teaspoonful of tincture of digitalis to half a pint of boiling water, and apply by means of flannels wrung out of the decoction to parts.

Exposure to Cold.—See Frost Bites.

Fainting.—Aromatic spirits of ammonia; whiskey; keep head low, have clothing around neck and waist loose, and give plenty of fresh air. Sprinkle face with cold water.

Falling of Palate or Uvula.—Make a strong decoction of white oak bark, and use as a gargle several times a day.

Felons.—These painful inflammations usually occur on the fingers or hands. They are seated at the bone and begin with throbbing pain and great soreness and inflammation.

TREATMENT.—1. A good drawing poultice is made of brown soap and unslacked lime, into which a little alcohol has been introduced.

2. The white of an egg and salt make an application which sometimes serves to scatter the inflammation, or bread and milk poultice.

3. Immerse the afflicted finger or hand in hot water frequently.

4. Mix thoroughly half teaspoonful of powdered camphor and one egg and apply two or three times a day.

Fever, Simple.—Give about half a teaspoonful of sweet spirits of nitre in a little sweetened water every two or three hours for an adult, and smaller quantity to child, in proportion to age. Keep bowels well open with simple purgative. Ascertain temperature by clinical thermometer. 98.6 degrees is normal; 99 to 101, slight fever; above this marked fever. Bathe with alcohol and water.

Fever and Ague.—Make an infusion of one ounce of dogwood root boiled in one quart of water to one pint; strain and give half wineglassful every two or three hours. Quinine in liberal doses.

Fever Sores.—Make a decoction of clover blossoms, and apply to parts three or four times a day. Half ounce of clover blossoms to one pint of water, and boil about half an hour. Apply spirits camphor.

Fistula.—Use as an injection a solution of witch hazel, diluted with water.

Freckles.—TREATMENT.—Freckles are sometimes removable and sometimes not. The following lotions are as good as any:

Rain water 8 ounces
 Borax ½ ounce

Mix and dissolve; wash part twice daily.

Rose water 4 ounces
 Alcohol ½ ounce
 Hydrochloric acid ½ drachm

Mix and apply with sponge or rag three times daily. Painting with tincture of iodine is sometimes effective. Generally speaking, it is best to leave the freckles alone.

Frost Bites, Frozen Limbs, etc.—In severe winter weather any exposed or insufficiently clad part of the body is liable to become frozen, and this is especially likely with the extremities such as nose, ears, fingers, toes, etc. The parts first become blue, then purple and then white and stiff. When solidly frozen the part becomes as hard as stone and at the same time is very brittle so that, for instance, were you to strike a solidly frozen ear, it would break off. Freezing is apt to occur without the victim being aware of the fact. It may usually be prevented by rubbing any part which feels very cold, as this brings warm blood to the surface. The danger is when after being cold the part suddenly has no feeling. The object of treatment is to gradually restore circulation to the congealed part. Application of snow or cold water to the frozen part, gently rubbing and pinching it, is the most common method of restoration, but care must be taken in severe cases to do this so gently as not to break off any brittle part. Under no circumstances should dry heat be applied nor hot water, as either of these methods is apt to cause mortification of the frozen part; but it is now recognized that the most efficacious treatment is that of commencing the thawing process with water that is merely warm and then gradually as the thawing takes place making the water warmer until it is as hot as may be borne. (See General Index for full discussion of this condition.)

Gall Stones.—Drink about one wineglassful of sweet oil at bedtime, followed in morning by cathartic, as seidlitz powder or cream of tartar, and phosphate of soda, teaspoonful each morning in wineglassful of water. This treatment to be pursued several weeks. Massage the part over the region of the liver lightly night and morning. Gall stones being very painful and dangerous, it would be well to consult Liver Colic. During

attack ten grains of chloral every two or three hours until relieved, or tablespoonful of olive oil every two or three hours until relieved. Apply warm fomentations to seat of pain.

Giddiness—Vertigo.—This is a symptom rather than a disease, and generally arises from a disordered stomach or (in women) a derangement of the menstrual functions. Ordinarily a good purgative, or sometimes an emetic, with hot foot-baths, will remedy the trouble.

Glands, Enlarged.—Apply iodine ointment and give internally three grains of sulphide of calcium three times a day.

Gleet.—To one ounce of Port wine add about ten grains of tannin, and use as an injection three or four times a day, or pills *Copa-Kava*.

Goitre.—Apply the following several times a day: Extract of belladonna, half drachm; compound ointment of iodine; two drachms; vaseline, half ounce. This treatment must be kept up for several months. Another effective treatment is the application once or twice a day of iodine petrogen.

Gonorrhœa.—**TREATMENT.**—1. This should be chiefly by injection into the urethra, and probably the best, especially for the earlier stages, is the following:

Fluid extract hydrastis	1 ounce
Distilled water	6 ounces
Gum arabic, pulverized	2 drachms

Mix and inject with proper syringe three or four times daily.

2. Internally give pills of santal comp., one four times a day.

3. Observe care as to diet and so forth. Should the disease run into the chronic form, known as "gleet," we recommend the following injection:

Sulphate of zinc	10 grains
Sugar of lead	15 grains
Water	4 ounces

Gravel.—1. Treatment of gravel in the acute form comprises the warm bath, suppositories of a grain of opium and one-sixth of a grain of belladonna, flaxseed tea, and the use of salty purgatives.

2. In chronic gravel tea or fluid extracts of buchu are often used, and in stubborn cases five-drop doses of diluted nitromuriatic acid, or salicin in five-grain doses, thrice daily, may be given.

3. Some recommend onion juice for gravel, in doses of a wineglassful morning and evening.

4. Relief is sometimes had from a mixture of two teaspoonfuls of powdered borax and five of cream of tartar, dissolved in a pint of water, the dose being two or three dessertspoonfuls four times a day.

5. The juice of the garden beet, boiled to a syrup, and taken two to three times a day in doses of a wineglassful, is said to have valuable curative efficacy.

6. To one teaspoonful of powdered borax add about two tablespoonfuls of cream of tartar and one pint of water; of this mixture take four teaspoonfuls four or five times a day; also give ten grains of the bicarbonate of potash three times a day to dissolve the calculi. Use water freely. See General Index for full article on Stone in Bladder (Calculus).

7. Boil turnips, pour off the water into a jar and drink a cupful four times a day.

AUXILIARY TREATMENT.—A palliative of the spasm of pain is a warm bath or a wrapping of the patient in a blanket saturated with hot water. Keep the blanket hot by frequent applications of the water.

Hay Fever.—If much irritation of eyes and nostrils, inject into nostrils, three or four times a day, a mixture composed of ten grains of sulphate of zinc, half teaspoonful of borax, and about four ounces of rose-water or use adnephtrin in atomizer. A solution of cocaine with atomizer is useful; also in the inhalation of spirits of camphor; also spraying the throat with wine of ipecac.

Headache.—Seidlitz powder; tablets of bromide of potash; aromatic spirits of ammonia; elixir of valerianate of ammonia; alcohol locally.

Or two drops tincture of belladonna every hour or two. Hot sponge face, temples and neck. Bathe forehead with spirits of camphor and cologne. Apply mustard leaf to nape of neck, or cayenne pepper plaster. Five grains of carbonate of soda every two or three hours.

This is generally a symptom of some other disorder, and can be relieved only by curing the primary trouble. There are five distinct kinds of headache, which may be described as follows:

Sick Headache.—This is caused by some derangement of the stomach and liver and is apt to occur more or less regularly at intervals of two or four weeks. It is a most distressing form of the malady. The pain is often confined to the temples, or is most severe there; occasionally the back of the head seems most affected. There is really no trouble in the head; it is all in the digestive tract. The following method of treatment will usually cure:

TREATMENT.—Soak the feet in hot water containing a handful of

either mustard or salt; at the same time give an emetic, such as two teaspoonfuls of wine of ipecac; or an infusion of lobelia (made by steeping two teaspoonfuls of the powdered leaves for twenty minutes in a half pint of boiling water). Before taking this emetic, it is well to drink a half-pint or pint of some warm tea, like sage or pennyroyal. When free vomiting has occurred, give patient a little gruel and let him rest in bed for two or three hours. Then give an active cathartic.

AUXILIARY TREATMENT.—Keep the bowels open by giving one or two cathartic pills every night for several days. Bathing the whole body with weak saleratus water often affords relief, in conjunction with this treatment; also applications of cold water to the head when the heat is intense.

Nervous Headache.—This form of headache denotes a weak, debilitated condition of the nervous system, caused by long-continued illness, loss of blood, unwonted mental excitement, etc. There is more or less stupidity and confusion of ideas, sometimes dimness of vision, and a dull pain in the head.

TREATMENT.—1. The treatment is directed to toning up the system. Have the following prescription prepared by an apothecary:

Extract of valerian	15 grains
Sulphate quinine	10 grains
Extract hyoscyamus	15 grains
Cayenne pepper	5 grains

Make into 15 pills and take one pill three times a day.

2. In addition to this, it is advisable to get:

Tincture of bloodroot	1 ounce
Muriated tincture of iron	1 ounce

Mix. Take ten drops in a gill of water three times a day. This adds tone and strength to the blood.

Or ten to fifteen grain doses of bromide of potassium in water.

Rheumatic and Sympathetic Headache.—In cases of fever of any kind the heated blood passing through the brain gives rise to pains in the head that may be relieved somewhat by the application of cold water or cracked ice, but cannot be cured without removing the primary trouble. Disease of the kidneys gives rise to headache, caused by insufficient elimination of the uric acid; women often suffer from headache during pregnancy.

TREATMENT.—These forms of the malady can only be relieved by

cooling the head, as above directed. When a person is suffering from rheumatism, it sometimes seems as if the pain jumps from the affected part to the head and back again at intervals. In such cases the employment of remedies for the original trouble is required.

Chronic Headache.—Sometimes there appears a chronic form of headache, originating, perhaps, in some severe spell of sickness and persisting in spite of all remedies. This form is likely to affect some one part of the head, and whilst it may vary in intensity, is seldom entirely absent.

TREATMENT.—The treatment consists of laxative medicines to keep the bowels always free, but without violent purging. Keep the feet warm and the circulation equalized. Diet must be plain and nourishing. A certain form of chronic headache sometimes accompanies catarrh, and is relieved only by curing the catarrh. As a good general rule—keep the feet warm, the head cool, the skin clean and the bowels open.

Plethoric Headache.—This type of headache most affects persons of full habit, and is caused by too great flow of blood to the brain. It can easily be recognized; stooping down and then raising the head gives a sense of fullness and pain; suddenly jarring or shaking the head aggravates the pain; blowing or straining, or pressure on the neck gives rise to pain, with more or less giddiness. Sometimes the excess of blood in the brain indicates an over-supply all through the body; in other cases it is caused by a derangement of the circulation, other parts of the body suffering from an insufficient amount of blood. In the latter case the extremities will be cold, while the head is flushed and hot, with severe throbbing sensations.

TREATMENT.—In such cases the feet and legs must be soaked in hot mustard water, with a sprinkling of cayenne pepper, and thoroughly rubbed with a coarse towel. Give an active hydragogue cathartic and repeat every three days, if necessary, until complete relief is obtained.

DIET.—Diet should be light and unstimulating—fruits, oatmeal porridge, etc.

Heart.—When violent and throbbing, two drops of aconite tincture every half hour until relieved. Mustard plaster over heart, also to neck. When very weak from accident, fright, loss of blood, etc., brandy and wine. Nitrite of amyl, five drops placed on handkerchief, and inhaled a few minutes. Large poultice applied to heart region. Hot applications to calves of legs and soles of feet.

Heartburn.—Give five drops of the tincture of nux vomica half an hour before each meal.

Heart-Failure.—Aromatic spirits of ammonia; whiskey; hot water bag and mustard plasters to extremities; if they are cold treat as in fainting.

A mixture of one-half ounce of the fluid extract of digitalis and one-half ounce of the fluid extract of Stramonium given in doses of three drops every four hours, has been found of value.

Heatstroke or Sunstroke.—This is induced by exposure to excessive heat, either with or without direct rays of the sun. There are certain general symptoms of its oncoming which should serve as a warning—headache, a sense of weakness at the pit of the stomach, a weakness of the knees, dizziness and sometimes vomiting and disturbed vision. These symptoms may gradually merge into unconsciousness or without warning the stricken one may suddenly collapse and lie insensible. A characteristic condition is the intense, burning dry heat of the face, head and body. The face itself becomes red and flushed; the pulse is full and rapid; convulsive twitchings of various parts of the body are frequently observed.

TREATMENT.—Endeavor at once to reduce the heat of the body. Undress the patient, wrap the body in a sheet and keep the sheet wet with cold water by frequent sprinkling. Continue this until consciousness returns and the body feels cool. If after becoming conscious the patient relapses into unconsciousness, the cold water process must be repeated. If impossible to immediately follow the above treatment, then wring out cloths in ice water, or coldest to be had, and place them on the head, back of the neck and around the wrists.

Hemorrhage, Nose.—A strong solution of alum or the powder sniffed up the nostrils. Compress the facial artery of the upper jaw near the nose. Apply ice bag to spine, upper part of neck, and give one drop tincture of aconite every hour.

Hemorrhage, Lungs.—Give half a teaspoonful of common salt every hour or two until hemorrhage abates unless nausea be produced. Five to ten drops of turpentine may be given in sweetened water every two hours. Fluid extract of ergot is also indicated. Apply ice bag to spine, middle part of back and lower part of neck. Perfect rest is essential. Ice should be sucked constantly.

Hemorrhage, Stomach.—Ice to be constantly sucked. Give two drops of the tincture of witch hazel every two or three hours. Perfect rest.

Hemorrhage, After Childbirth.—Insert pieces of ice into the vagina and rectum, also inject into vagina four ounces of the perchloride of iron

with twelve ounces of water, and give ten drops fluid extract of ergot every two hours.

Hiccoughs.—Put about quarter of a teaspoonful of cinchona bark, powdered, in two ounces of peppermint water, and give a teaspoonful every five or ten minutes till relieved; or a teaspoonful of mustard in four ounces of boiling water, taken when cool; or three drops each tincture camphor and aqua ammonia in wineglass of water.

Hives—Causes.—These irritating visitations, generally upon children, are mostly due to indigestion, or partaking of certain disagreeing foods, or extremes of heat and cold.

TREATMENT.—1. To allay itching, rub with flour; buckwheat is the best.

2. Sassafras or saffron tea is a good internal remedy, since it promotes perspiration and lessens irritation.

3. Bathing with diluted vinegar is a good treatment.

4. Small doses of salts three times a day.

5. Locally carbolic acid, twenty drops to a pint of water, or a tablespoonful of baking soda to a pint of water.

Hoarseness.—A mixture of scraped horseradish, with a small proportion of wheaten flour, use of this a small quantity several times a day. Or the juice of one lemon, with sufficient sugar to saturate, and take teaspoonful of same several times a day, or a small piece of borax dissolved in mouth and swallowed slowly, or chloride of ammonia in five-grain doses.

Hysteria.—Elixir of valerianate of ammonia.

Incontinence of Urine, "Bed Wetting."—Three drops tincture belladonna three times a day. The child should drink but little some hours before going to bed, and should be wakened in the middle of the night to pass water.

Indigestion.—An exclusive diet of fruit for several days is found efficacious in most cases of indigestion. This diet is excellent in dyspepsia and constipation.

Indigestion, Acute.—Dyspepsia, heartburn, a functional derangement of the stomach with pain, a sense of distension and gas, regurgitation of food, headache, and frequently perspiration. Regulation of the diet is of great importance, and for the acute symptoms bismuth 10 to 20 grains, essence of peppermint, one-half teaspoonful in water, bicarbonate of soda, and if pain is severe one or two teaspoonfuls of

paregoric in hot water. The after treatment consist in keeping the bowels open and you may take the following:

Subnitrate of bismuth	2½	drachms
Fluid extract cascara	4	drachms
Compound tincture cardamom	6	drachms
Glycerine	4	drachms
Peppermint water	4	ounces

Inflammation of Bladder.—Make an infusion of pipsissewa root, one ounce to pint of boiling water, and give wineglassful three or four times a day. Keep parts well warm with poultices, and so forth, over bladder. Drink plentifully of hop tea, which is an excellent remedy; also an infusion of cubebs and buchu.

Inflammation of the Bowels.—Make poultice of flaxseed meal, and put on surface a mixture of equal parts of tincture of aconite root and laudanum, and apply to bowels, changing same every three hours. Perfect quiet. Give no cathartics. Mucilaginous drinks: Gum arabic water, toast water, and so forth.

Inflammation of Stomach.—Make decoction of hops or stramonium leaves, of either one ounce to pint of boiling water, and foment stomach and bowels several times a day. Apply mustard plaster.

Inhalation of Noxious Vapors.—Remove patient from influence; place in open air; put two tablespoonfuls of turpentine in quart of boiling water and inhale vapor to counteract the deleterious effects of the poisonous gas.

Insomnia.—On going to bed, take some sound, as a clock-tick or the breathing of some one within hearing, and breathe long full breaths, keeping time to the sound. In a very short time you will fall asleep, without any of the painful anxieties attending insomnia. Endeavor to relax the body.

Itch.—Apply sulphur ointment once a day for four days. See Scabies.

Itching of Anus.—Make a solution of ten grains of borax to the ounce of hot water and apply freely to the anus, or apply ten drops of carbolic acid to a pint of water.

Itching of the Skin.—Dust parts with mixture of equal parts borax, camphor and bismuth.

Jaundice.—In attacks lasting three or four days, take one-third grain of gray powder (mercury and chalk) three or four times a day for three days, then take a seidlitz powder, or take twenty drops nitro-muriatic acid in wineglassful of water three times a day.

TREATMENT.—1. The treatment is directed to cleaning up the bile duct, and forcing the bile into its proper channel. Probably the best remedy is this: Take a two-grain blue-mass pill twice daily for two or three days in succession—not longer. This is better than taking a larger dose once a day. If relief comes after one or two doses, take no more.

2. As a substitute for this, the following purely vegetable pills can be substituted, and often with equal success:

Extract taraxacum	40 grains
Podophyllin	4 grains
Leptandrin	10 grains

Make into twenty pills. Dose: One pill four times a day.

Or 3. Phosphate of soda daily before breakfast.

Kidney Disease.—Make decoction of sheep-sorrel, one ounce to pint; boil, strain and cool. Give wineglassful three or four times a day. Or the same quantity of buchu leaves, made in same manner, and dose the same, and apply the spinal ice bag to kidneys. Have urine examined. Spirits of sweet nitre is indicated to promote action.

Kidney Troubles.—Saltpeter (nitrate of potash) in small doses increases the flow of urine and in some cases increases perspiration. In large doses it acts as a purge and irritates the stomach.

La Grippe.—1. Small pills made of asafœtida, and taken three times a day are recommended as a remedy for the grippe. *Actea racemosa* has been used with great success in doses of twenty drops of the tincture every three or four hours, or phenacetin and quinine in two-grain doses of each every four hours.

2. Some use a tea of red pepper, or of cayenne, with great success. The dose is a teaspoonful in a cup of hot water, drunk slowly, before each meal and on retiring. Larger doses in proportion to the intensity of the disease. Sponging the face, temples and neck with water as hot as can be borne relieves the headache of grippe.

Lead Colic.—Bicarbonate of magnesia, fifteen to twenty grains three times a day, or iodide of potash, three grains every three hours.

Causes.—This is about the worst form of colic, and is attended by obstinate constipation, most violent pains and more or less paralysis of the bowels and abdominal muscles. It is generally caused by inhaling the fumes arising from various preparations of lead, and the most frequent victims are painters and leadworkers.

SYMPTOMS.—The attack generally comes on gradually, the pain be-

ginning in the stomach and slowly extending downward. After a time the distress seems centered about the navel, and, in severe cases, there are shooting pains through the abdomen, with spasms of the intestines and abdominal muscles. Nausea is usually present, there is some vomiting, thirst, anxiety; the countenance is pale and contracted with pain; pulse is rapid; abdomen may become knotted and sore to the touch; the bowels seem paralyzed and incapable of expelling their contents. Unless relief is obtained inflammation of the bowels will occur, and death is almost certain.

TREATMENT.—1. The first thing to be done is to relieve the constipation by means of an active purgative, such as three to five of the antibilious pills (see Bilious Fever), and the application of hot fomentations over the whole abdomen. To relieve the spasm give an injection composed of:

Thin boiled starch 2 tablespoonfuls
Tr. Cannabis Indica 30 to 40 drops

Hypodermic injections of about one-eighth grain of morphia are also useful, but can be administered only by a physician.

2. In extreme cases, when the cathartic does not act promptly, it is sometimes advisable to give from two to four drops of croton oil, on lump sugar; but this is a dangerous drug in the hands of any one except a physician.

Leucorrhœa or Whites.—1. Alum, teaspoonful to pint of water as injection or teaspoonful of carbonate of soda, two ounces tincture belladonna, one pint of water, and give tincture chloride or iron, ten drops, three times a day.

2. A decoction of white oak bark, used as an injection twice daily, is found very beneficial. Ounce of the bark to a pint of water.

3. Cleanse the parts effectually with warm water by means of an injection. Then inject a full syringe of a mixture made by dropping a tablespoonful of extract of witch hazel into warm water.

4. Yarrow-root tea, in doses of a teacupful three times a day, gives effectual relief.

5. The Vaginal Astringent Douche Tablet is recommended.

6. Blackberry tea is valuable as an enema.

7. Oregon grape root has been highly recommended as a cure. Make a strong decoction by boiling an ounce of the root in a pint and a half of water down to one pint and take a wineglassful four times a day.

If the root cannot be obtained ask your druggist for *Berberis Aquifolium*, which is the Latin name of the Oregon Wild Grape Root. Of this fluid extract take one-half teaspoonful in water three times a day, and also put one teaspoonful in a cup of tepid water and use as a vaginal douche. Lie flat on the back in taking douche.

Liver Complaint.—Make infusion of dandelion tea, one ounce to one pint of boiling water, strain and cool, and give wineglassful morning and evening. Or use from one to three grains of may apple night and morning for several weeks, followed occasionally by a light purgative, as seidlitz powder or rochelle salts, or a laxative liver pill at night.

Lockjaw.—Apply a warm poultice of flaxseed meal, saturated with laudanum and sugar of lead water, to the jaws and neck. Consult physician at once.

Loins, Pains in.—Apply belladonna or capsicum plaster to small of back; also useful when pain is due to uterine diseases or piles.

Lumbago.—A mixture of ice and salt applied to small of back, or back to be ironed, a piece of brown paper intervening. Give five grains saltpetre every two hours, or turpentine in fifteen-drop doses every three hours. Apply poultices very hot, then cover skin with flannel and oiled silk.

Malaria.—Give one grain of quinine every three hours for several days; then five drops of Fowler's solution three times a day for about two weeks. Tablets of sulphate of quinine, preceded by small doses of syrup of ipecac to stimulate liver, may be administered, and seidlitz powders given as a laxative.

Measles.—Give two drops tincture of aconite every two hours, after carbonate of ammonia every three hours. Rub hands and feet with fat to remove heat and tightness produced by rash. Keep child in dark room. Warm mustard bath if rash recedes. Give nitre water as drink.

Melancholia.—Use a pill composed of about three grains of asafetida three or four times a day; change of scene; bright surroundings, and so forth, or one grain of musk three or four times a day.

Membranous Croup.—Give the patient a warm bath. Put a small piece of quicklime in a little water in a pitcher and place it so that the patient can breathe the fumes. Do this at quarter-hour intervals. The inhalation of the fumes from a cloth saturated with a mixture of salt and vinegar is said to be equally effectual. Consult a physician at once and use antitoxin.

Menses, Suppressed.—1. The juice of the common beet has been found

to be an excellent remedy for suppressed or tardy menses. Boil the beets until thoroughly done, then remove the beets and boil the juicy water again until it assumes the form of a syrup. Take a cupful three or four times a day.

2. Hot sitz bath with mustard a few days before the period. Ice applied to the lower portion of the spine increases the amount of blood supplied to the pelvic organs and restores the monthly flow.

Menstruation, Excessive.—1. The juice of one lemon taken three times daily will stop excessive menstruation when all other remedies fail, and regulate the system preparatory to the next flow.

2. Tea of comfrey root boiled in sweet milk and drunk in half-teacupful quantities three times daily will check menses when too profuse. Sucking the juice of one or two lemons is a valuable remedy for excessive menstrual flow, or the pill *uter-ova*, one three times a day.

Mumps.—Keep jaws warm with poultices or fomentations, and give half grain of gray powder every two or three hours to hasten the reduction of swelling.

TREATMENT.—Nothing is needed beyond rest and proper care, except an occasional dose of salts, or, if the pain is very severe, the application of a poultice, made from mullein leaves, with a sprinkling of laudanum or camphorated oil.

Nausea or Sick Stomach.—Drink a teacup of warm water every few minutes until free vomiting takes place, and apply a small mustard plaster, made with the white of egg instead of vinegar or water, to the pit of stomach, allowing same to remain an hour or two, as no blister will occur. Give cracked ice and fifteen drops aromatic spirits of ammonia.

Nervous Headache.—See Headache.

Nervousness.—Three grains bromide of potash every three or four hours, or elixir valerianate of ammonia, half teaspoonful every three or four hours.

Nettle Rash.—Make a strong solution of common baking soda, about three teaspoonfuls to pint of water, and sponge or bathe body thoroughly.

Neuralgia.—An affection of the nerves, causing at times most excruciating pain and suffering. Cold is its most frequent cause, although it may sometimes arise from disease of the sheath or covering of the nerves. Its most frequent seat is in the fifth pair of nerves which supplies the head, face, arms and so forth. A quick method of alleviating the same is to make pressure upon this nerve at its origin, just over and below the temple. Great relief is obtained by warm fomentations, especially one

made from the leaves of the eucalyptus plant. The fomentation is made by adding about one and a half ounces of the leaves to a pint of hot water, and apply fomentations of the same to part until relief is obtained. Internally the pill acetanilide comp. or gross neuralgia pill will relieve.

Equal parts of tincture of belladonna, tincture of aconite root and laudanum applied to part affected, several times a day. Or make mixture of one teaspoonful of common black pepper, the yolk of one egg, make plaster and apply; renew if necessary.

Neuralgia (of Face).—Use aconite liniment, care being taken that it does not enter the eyes. An infusion of capsicum pods, one handful to a pint of warm water, and applied on lint is most efficacious. Internally pill acetanilide comp.

Night sweats.—Make a strong infusion of sage tea, and use a tablespoonful three times a day, with double dose at bedtime. Sponging body before retiring with alum or borax water often checks same, and induces refreshing sleep. Apply belladonna ointment at night to chest, or tr. belladonna internally.

Nipples, Sore.—Alum to harden nipples, or brandy and water, and washed off before child nurses. If cracked, apply glycerine with starch, or arnica ointment.

Offensive Breath.—Teaspoonful each of powdered myrrh and camphor and put in pint of water; use as a wash for mouth. Look for the trouble in the teeth.

Painters' Colic.—Give patient a free purge of cream of tartar, about tablespoonful in a glass of water, and apply warmth to stomach and bowels.

Palpitation of Heart.—Make an infusion of geranium root, half ounce in pint of boiling water; strain and cool and give wineglassful three or four times a day. Rest. Another treatment is to give two grains camphor every two or three hours, or two drops aconite every hour. Place feet in hot mustard bath.

Peritonitis.—Apply turpentine stupes to abdomen. Cover abdomen with large poultice.

Perspiration—To Remove Odor.—A frequent source of vexation to ladies and gentlemen is the unpleasant odor arising from perspiration. This may be entirely removed by adding one or two tablespoonfuls of hartshorn (spirits of ammonia) to each gallon of water used for bathing. Its excessive use, however, is not recommended, although no serious trouble can arise from it.

Piles.—**SYMPTOMS.**—They consist of little tumors which form at the

edge, or just inside of the fundament, and give rise to intense pain, especially during evacuation. Very often their surfaces exude blood, in which case they are called "bleeding piles." When seated at the edge of the fundament they are not apt to bleed, and are called "blind piles."

TREATMENT.—1. When small, an ointment of ten grains of extract of belladonna, thirty grains of tannin, and twenty grains of powdered opium, will generally relieve them. When large, protruding and very stubborn and painful, apply a solution of cocaine to the parts affected. Then gently press the tumors back into the rectum. The swelling will gradually diminish and the pain subside; or apply hot witch hazel.

2. A strong solution of salt injected two or three times a day has been found efficacious. The solution is to be weakened to suit the conditions of each particular case. Inject half a pint of cold water before going to stool each day.

3. An effective remedy is the simple extract of Canada Pine (*Pinus Canadensis*). It is applied by rubbing it on with the finger, two or three times a day.

4. Calomel, half a teaspoonful, well beaten into lard, and used as an ointment, two or three times daily, is spoken of as an excellent cure.

5. In some places cranberry juice is said to be used with good effect. It is used in the ordinary cooked form and eaten freely as a sauce.

6. An ointment of white lead and linseed oil, well mixed and applied twice a day, has produced some very effectual and rapid cures.

7. An ointment of tannin and glycerine, well mixed and applied once or twice a day, is a favorite remedy with some medical men.

8. Smartweed root, about half an ounce, boiled with two ounces of lard, and apply to piles three or four times a day; or a warm application of witch hazel.

9. A cold water injection of about one-half a pint every morning before going to stool cures in many instances. In bleeding piles use injection of witch-hazel. Rhubarb is most efficacious, a piece of about ten grains to be chewed or dissolved in the mouth nightly; or apply the following ointment: Carbonate lead, one-half drachm; tannin, twenty grains; ceratum, one ounce.

AUXILIARY TREATMENT.—Avoid all liquors, tea, coffee and highly spiced foods. Take exercise. Bathe the parts frequently with cold water. Injections for the purpose of securing easy stool are of benefit.

Pleurisy.—Make a decoction of prickly ash bark, one ounce to one pint of boiling water; cool and strain and give tablespoonful about four

times a day, and apply poultices hot as can be borne, or spirits turpentine and sweet oil locally. Another internal treatment is the administration of two drops of tincture of aconite every hour.

Pneumonia.—Give two drops tincture belladonna every hour. Apply hot mustard poultice to chest, or pack the chest with cloths wrung out of ice water, and renewed every hour.

A poultice made of flaxseed meal, vinegar and onions placed across the chest and under the armpits has proven very successful in some cases. The onions should be thoroughly boiled before using. Under no circumstances permit the poultice to become cold. It must be carefully watched and renewed before it becomes cool.

Polypus.—Apply powdered poke root several times a day. This treatment must be pursued for some weeks, or have them removed by physician.

Proud Flesh.—Apply to part powdered burnt alum until the flesh is entirely removed.

Putrid Sore Throat.—Make strong decoction of white oak bark, one ounce to pint, and use as a gargle several times a day, or a solution of borax, one drachm to one-half pint of water, or apply equal parts of iron and glycerine to the throat.

Quinsy.—In inflamed tonsils, when they almost meet, mercury and chalk (gray powder), the third of a grain every hour, acts like magic. Cold compress used nightly to harden throat. Early 10-drop dose ammoniated tincture of guaiaci.

Rheumatism.—1. Make use of lemon juice freely. Use decoction of black snakeroot, one ounce to pint of boiling water; a tablespoonful four times a day. Wet cold compress, renewed every two hours, applied to painful joints, or oil of wintergreen. Wrap the parts in cotton.

2. Among the many remedies found effective in rheumatism is rochelle salts. Dissolve a dessertspoonful in water and take every two hours. After twelve hours take once in four hours or five-grain doses salicylate of soda every four hours.

3. Acid steam bath is most effective. Cold, wet compress applied to painful joints. The bicarbonate and citrate of potash in doses of five grains each three or four times a day. Drink freely of lemonade, or apply locally oil of wintergreen and cover with cotton.

4. **Baking Cure.**—The application of hot, dry air as a therapeutic agent is regularly practiced in an increasing number of cases of gout, rheumatism, inflammation, obesity, ænemia, and all forms of pain. The patient is placed in a specially devised oven which covers the entire

body except the head, and it is said that a temperature of 400 degrees Fahrenheit can be borne without danger. Sips of cold water are given during the process. It is claimed that persons have been able to walk after years of affliction with deforming rheumatism, and in certain cases chronic forms of disease have been cured. The treatment can be applied to an affected joint or the hand or foot.

Rheumatism, Muscular.—Bicarbonate of soda; camphorated soap liniment and hot water bag.

Ring-Worm.—Make a strong solution of tobacco leaves, and apply to part until it entirely disappears, or use ointment of oleate of copper.

Rupture.—Make poultice of lobelia and stramonium leaves, equal parts, and apply to part; renewing as often as necessary. In the reduction of hernia the use of chloroform is obvious. Consult physician at once.

Salivation.—Use as a wash for mouth mixture composed of the tincture of cinchona, four ounces; borax, one drachm; water, six ounces. Wash mouth thoroughly several times a day.

Salt Rheum.—Use an astringent wash as alum, tablespoonful in pint of water, and keep bowels opened by cooling medicines, as cream of tartar, rochelle salts and so forth.

Scabies (Itch).—The patient is to take a hot bath every second evening, after which freely apply the following ointment before retiring. It is of importance that, after the disease has been cured, the clothing should be exposed to a heat of 212° F. in order to destroy any parasites which may adhere to them and thus prevent renewal of the affection.

Betanaphthol	20 grains
Sulphur	1 drachm
Peruvian balsam	1 drachm
Oxide of zinc	1 drachm
Lard	2 ounces

Make an ointment and apply twice daily to affected parts.

Scalds.—See *Burns*.

Sciatica.—As this is a form of neuralgia, the treatment should be by means of the following:

Sulphate quinine	1 grain
Phosphate iron	2 grains
Strychnine	1-50 grain

Have fifty of these pills made; take one after each meal. Specially useful in neuralgia and rheumatism, with good results.

The use of these tonics will tend toward a cure, but the disease is very obstinate, and strict observance of hygienic precautions is imperative. In this disease, as in lumbago, the use of belladonna plasters, which may be bought at any drug store, often contribute to relieve the intense pain.

EXTERNAL TREATMENT.—The liniment as prescribed for rheumatism is also useful, and should be faithfully applied; or the liniment and ointment recommended for neuralgia may be employed with good results.

Use of Opiates.—When it is necessary to administer opiates to subdue the intense pain, it should be done under the advice of a physician. In an emergency, a dose of from fifteen to twenty drops of laudanum may be administered, either on lump sugar or in a tablespoonful of water.

Scrofula.—Make a decoction of walnut leaves, one ounce to pint of boiling water, and give one tablespoonful four times a day; or sulphide of lime in one-quarter to one-half grain doses, given after meals, is most efficacious.

Scurvy.—Use a decoction of dogwood root, one ounce to pint of boiling water; strain and cool and give tablespoonful four times a day. Give a vegetable diet.

Shingles.—Make solution of yerba rheuma, one ounce to pint of boiling water, and apply freely to part several times a day; or apply morning and night an ointment prepared from the oleate of mercury or belladonna ointment.

Sick Stomach.—Tablets of lime water; tablets of subnitrate of bismuth; aromatic spirits of ammonia.

Sleeplessness.—Persons so affected will be benefited by the use of a pillow composed of hops, or cup of warm hop tea on retiring, or bathe with dilute alcohol; or ten-grain doses of bromide of potassium or a teaspoonful of tr. valerian.

Small-Pox.—At once give a wineglass of infusion of pitcher-plant, made with one ounce to pint of boiling water, three or four times a day. Consult a physician at once.

Sore Eyes.—Boric acid.

TREATMENT.—1. In simple cases, where there is heat and pain in the eye, with some redness of lids and white of eye, this lotion is generally effective:

Borate of soda 2 grains
Camphor water 1 ounce

Mix. One or two drops in eye four times a day; also, saturate a small piece of lint in this mixture and apply it over the eye.

2. Another good lotion is composed of:

Hydrastis (Golden Seal) root	½ ounce
Best green tea	½ ounce
Sulphate zinc, pulverized	1 drachm

Steep the root and tea for a few minutes in a pint of boiling water; while cooling add the sulphate of zinc; when cold, strain well and bottle. Use as an eye wash three times a day. In severe cases a poultice is useful, made from pulverized slippery elm and warm milk and water. In most cases an active purgative is needed, such as a 5-grain blue pill at evening for two or three days, followed each morning by about half a bottle of citrate of magnesia or a seidlitz powder. In place of this the antibilious pills (see article on Bilious Fever) may be used.

All eye-washes must be used with caution, especially those containing belladonna or caustic solutions, or more harm than good may result.

Sore Mouth.—Boric acid; chlorate of potash; peroxide of hydrogen.

A disorder very common in infancy and childhood and sometimes affecting adults,

TREATMENT.—1. To correct the acidity of the stomach, which causes the disorder, give small doses of a few grains of prepared chalk or calcined magnesia dissolved in sweetened water. Wash the mouth frequently with the following excellent gargle:

Sumach berries	2 tablespoonfuls
Sage leaves	2 tablespoonfuls
Hyssop leaves	1 tablespoonful
Borax, pulverized	1 teaspoonful

2. Make a very strong tea, with a pint of boiling water, of the first three ingredients; sweeten with syrup or honey, and add the borax; stir well together and use frequently.

3. To cure canker in infants who are still nursing, the mother should chew small pieces of rhubarb root (two or three pieces the size of a pea) every day. This will benefit the child through the mother's milk. For grown children and adults the following laxative will probably cause the canker sores to disappear:

Flowers of sulphur	1 tablespoonful
Cream tartar	2 teaspoonfuls

Mix in one-half cupful of syrup and take one teaspoonful three or four times a day.

4. In some cases these little sores are very hard to get rid of, and assume a very angry appearance. For this phase of the disorder the following is highly recommended:

Tincture perchloride of iron ½ drachm
 Glycerine ½ drachm

Mix. Dip a camel's-hair brush into the mixture and lightly touch the ulcers with the point of the brush; after holding it there a moment, rinse out the mouth with tepid water. This is a little painful, but usually produces a radical cure. Or touch each sore with lunar caustic or trichlor acetic acid.

Sore Throat.—Hardly any remedy for sore throat proves more efficacious than the old-fashioned plan of tying around the throat a slice of fat bacon on which is sprinkled black pepper. Gargle with peroxide of hydrogen.

Sour Stomach—Heartburn.—**SYMPTOMS.**—This common and distressing complaint results simply from undue acidity of the stomach caused by errors in diet or by dyspepsia. It produces a burning sensation in the stomach and under the breast-bone, often accompanied by nausea.

TREATMENT.—Take the following mixture, after meals, when the trouble occurs:

Baking soda ½ teaspoonful
 Water ½ cupful

and avoid pickles, preserves, candies, sweet cakes and all sweetmeats.

Spleen, Enlargement of.—See *Enlarged Spleen*.

Sprains.—Hot water locally; laudanum and water; later camphorated soap liniment.

St. Vitus' Dance.—Make infusion of black cohosh, one ounce to pint of boiling water; strain and cool and give teaspoonful four times a day, or two drops of Fowler's Solution three times a day.

Stings of Insects.—Apply hartshorn or water of ammonia to part, which neutralizes the formic acid, the active principle of the poison.

Sun Stroke.—Apply alternately hot and cold applications to forehead and base of the brain or back of neck; place the feet in warm mustard water, and apply mustard to stomach and calves of legs. Keep perfectly quiet.

Sunburn.—Anoint the affected surface two or three times daily with plain vaseline or cosmoline or benzoated zinc ointment.

Tonsilitis.—Chlorate of potash, a teaspoonful in a teacupful of water, and gargle throat frequently. Borax, put quarter teaspoonful in teacup of water and gargle throat frequently.

Toothache.—Apply oil of cloves on small piece of cotton and place in cavity of tooth, or rub gum lightly with oil of sassafras. Or, a drop

of laudanum on a pledget of cotton, inserted loosely into cavity, if one exists. Hot water bag applied to face sometimes affords relief.

Tympanites.—Make mixture of one tablespoonful of turpentine to half pint of water, and apply as fomentations, hot as can be borne.

Ulcer.—Make poultice of fresh scraped carrot, and apply to ulcer or sore two or three times a day, keeping parts well cleansed.

TREATMENT.—1. Foul and indolent ulcers, old sores, and so forth, require cleansing and healing applications. Among the best washes is the following:

Carbolic acid, crystals	20 to 40 drops
Pure water	1 pint

2. Wash thoroughly with peroxide of hydrogen.

3. An excellent ointment for old sores and ulcers, is made as follows:

Burnt alum	1 ounce
Red precipitate	4 drachms
White vitriol	2 drachms
Sugar of lead	4 drachms

Pulverize finely together and make into an ointment with one-half pound of cosmoline or plain vaseline. Heat the vaseline and stir into the mixed powder, allowing it to cool slowly while stirring.

Urine.—Boil three tablespoonfuls of watermelon seeds in one pint of water, strain and cool, and give tablespoonful every half hour until relieved. Put patient in hot bath. Give five to ten grains of Dover's Powder.

Varicose Veins.—Apply witch hazel night and morning, and wear bandage during day.

Vomiting.—A distressing and harrassing affection, induced by various causes. But, no matter what the cause, mustard applied as follows is the sovereign remedy: A mustard plaster, made with two or three teaspoonfuls of common mustard, with the white of one egg (don't use water or vinegar in mixing the mustard), and apply the same to front of throat and directly over the pit of stomach, will quickly relieve the most obstinate case of vomiting, caused either by biliousness, nervousness or indigestion; or lime water and cracked ice may be used.

Vomiting, to Produce.—Emetic of mustard and warm water, or of syrup of ipecac.

Warts—To Remove.—**TREATMENT.**—Take a little nitric acid in a

glass-stoppered bottle and add one-half as much water, making the acid two-thirds normal strength. Apply by means of a little piece of wood, such as a match-stick, taking care to have the stick merely wet, and not with a drop adhering. Hold it on the top of wart until there is a slight burning sensation. Do not apply enough acid to cause active burning. Repeat this process daily, and patiently. In the course of a week or more the wart will be gone. Be careful not to let the acid touch any healthy surface, and do not try to do the work all at once. Avoid making a sore, even if it takes two or three weeks to destroy the wart; or the tri-chlor acetic acid may be used instead of nitric acid.

Water Brash.—Give about quarter teaspoonful of common baking soda in wineglassful of water after each meal.

Wen.—A mixture of ten grains sulphate of copper to two tablespoonfuls of water, and apply three or four times a day.

Whooping Cough.—**TREATMENT.**—1. Keep the bowels open with castor oil, or the following mixture:

Castor oil	2 ounces
Molasses	4 ounces

Mix well and give a tablespoonful once or twice a day.

2. To relieve the paroxysms of coughing have the following prepared by an apothecary:

Extract belladonna	2 grains
Powdered alum	1 drachm
Alcohol	4 drachms
Simple syrup	4 ounces

Give one teaspoonful of the mixture every four or five hours, or every three hours if the fits of coughing are very severe.

3. Or take:

Antipyrine	32 grains
Tincture belladonna	1 drachm
Syrup tolu	2 ounces
Syrup wild cherry	2 ounces

Teaspoonful every three or four hours.

Womb, Falling of the.—1. A mild infusion of white oak bark, or of alum, or of tannin, used in quantities of a pint as a douche, will often give immediate relief. Peach leaves, mullein leaves and hops made into a tea and used twice a day as an injection often cures when other remedies fail.

Womb, Ulceration of the.—1. The symptoms of pain, soreness and smarting at the neck of the womb yield to an injection of alum water, twice a day. The solution should consist of a third of a teaspoonful of powdered alum in a pint of water.

2. Fluid extract of white pond-lily, in doses of ten to fifteen drops, three times a day, has been recommended as an excellent cure. The same effect follows injections of an infusion of the plant, two or three times daily, at the same time drinking teacupful doses of the infusion three times daily.

3. An infusion of golden seal, used two or three times daily as an injection, proves efficacious.

4. An infusion of oak bark, used as an injection twice a day, is found very curative. If tannic acid be applied directly to the affected part, a like result is reached. A strong solution of tannic acid in collodion is very effective, or sulphate of zinc with warm water as a wash.

Worms.—Make decoction of pink-root tea, one ounce of pink-root to pint of water, and boil to half pint. Give teaspoonful three times a day for two days, followed by purge of castor oil or cream of tartar, or santonin, one quarter grain three or four times a day. Take a wineglassful of vermouth and mix it with twenty-five seeds of the pumpkin, add water and boil, as in making tea. Drink a teacupful of the tea three times a day for two to three weeks. This is the celebrated Kneipp cure for worms as practiced at his sanitoriums in Germany, and is generally effectual. Another valuable remedy is pink-root and senna, one ounce of the former and four drachms of the latter, steeped in a quart of water. Doses, two table-spoonfuls twice a day.

Tape Worm.—Among the many remedies used by the profession, the following have been found useful and harmless to the patient:

1.—

Asafoetida	2 ounces
Garden rue	1 ounce
Garlic	1 ounce
Rye whiskey	1 quart

Bottle and let it stand for about ten days. Dose: One-half wineglassful three times daily, before meals.

2.—

Spirits of turpentine	1 teaspoonful
Castor oil	1 teaspoonful
Milk	1 cupful

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Take this dose once a day. For a child under ten years, one-fourth the above, with or without the castor oil. This is also a good remedy for round or stomach worms.

3. A remedy found to possess much value is:

Fresh pumpkin seeds 24 ounces

Macerate and grind to powder; divide into twelve portions, and take one portion three times a day. The bowels should be kept open with castor oil or some similar purgative, and the system stimulated by iron and quinine tonics; food should be kept from patient as much as possible while using this remedy.

Round Worms.—An excellent remedy for round or stomach worms is the following:

American wormseed 1 ounce
 Cassia senna 1 ounce
 Manna 1 ounce
 Carolina pinkroot 1 ounce
 Boiling water 1 quart

Macerate the first four ingredients thoroughly together and add the boiling water; let it steep in a closed vessel for an hour or more; sugar and milk may be added. Dose for a child: One gill four times daily, on an empty stomach. Good also for pin worms.

Pin Worms.—These may often be destroyed by using the following injection:

Powdered aloes 5 grains
 Hot water $\frac{1}{2}$ pint
 Mix and divide into two injections and use at about bloodheat.

The following has also been used with success:

Quassia chips 1 ounce
 Water 1 pint
 Boil, strain and inject into the bowel.

Wounds, Healing of.—Wounds may heal by what is known as *first intention* or *primary union*—that is, when asepsis or freedom from germs has been obtained and preserved, resulting in that the wound quickly heals and leaves but little scar. But if a wound does not heal by first intention, then it comes under the slow process of *second intention*—that is, with formation of granulations—and finally leaves a large scar. Second intention is in evidence when the skin has been destroyed over such area that the edges cannot be brought together, when the wound is disturbed, when blood collects in it, forcing it apart, or when the wound is dirty—that is, when asepsis has not been preserved. Contused and lacerated wounds generally heal by second intention.

BOOK XI

Is a thorough treatise on the arrangement, structure, eruption and diseases of the teeth, cause and prevention of decay and the effects of diet upon the teeth.

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DISEASES OF THE TEETH

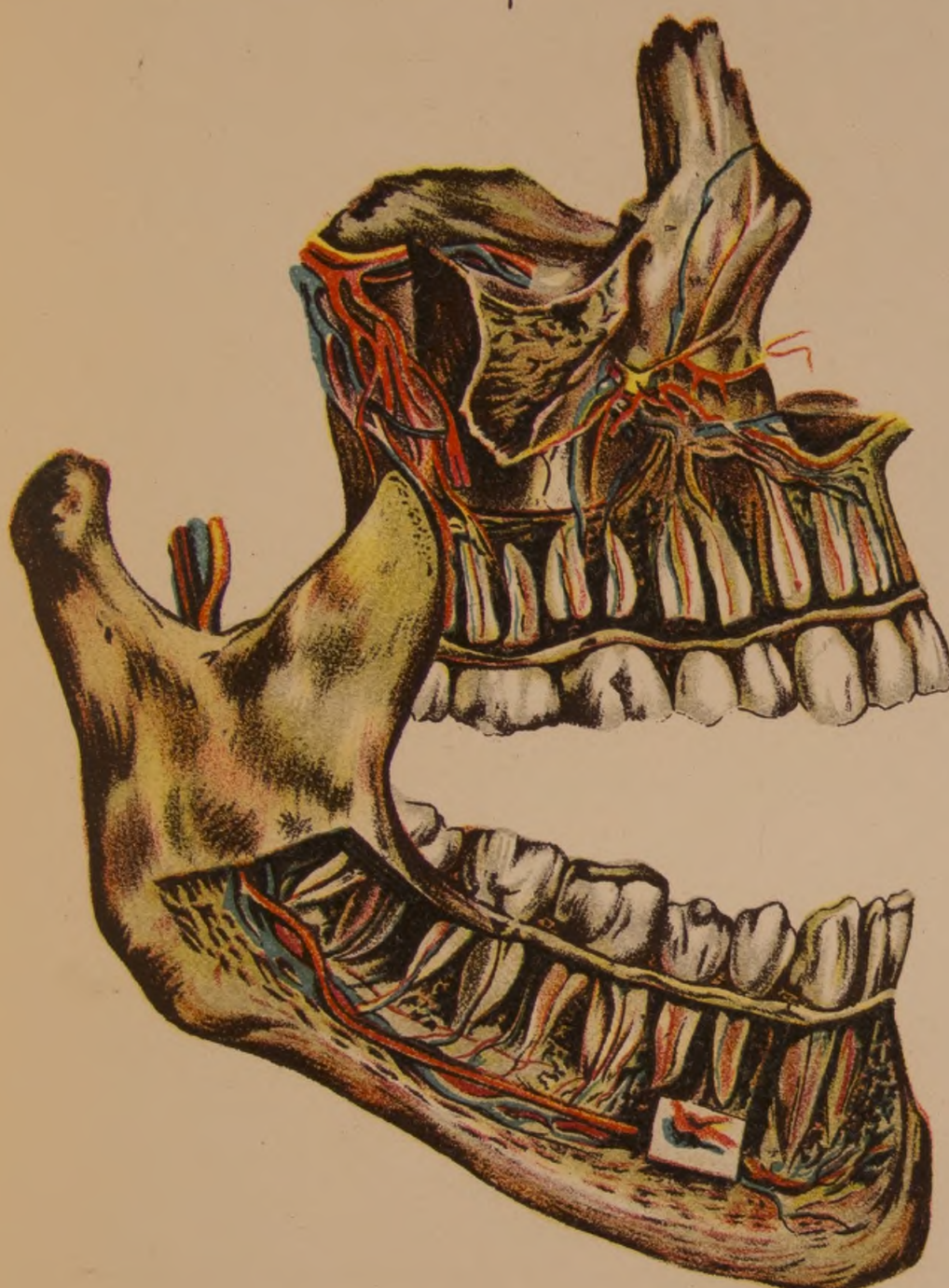
(See colored plate opposite)

- 1—Teeth showing imperfectly formed enamel.
- 2—Decay of molar involving nerve.
- 3—Proud flesh of the nerve or fungous pulp.
- 4—Cross-section of upper molars.
- 5—Cross-section of incisors.
- 6—Abscesses caused by decay extending into the jawbone.
- 7—Molar with decayed crown and intact side walls.

Diseases of the Teeth



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Book XI

THE CARE OF THE TEETH

INCLUDING A CONSIDERATION OF THE GUMS, THE MOUTH, ETC.

It has been well said that a healthy stomach indicates a healthy body, and many people give much attention directly to this organ, yet do not consider the requirements of its accessories without which the stomach cannot perform its functions. Prominent among the accessories are the teeth.

It is the purpose of this chapter to outline the close relationship between the stomach and the teeth and to show that none can be healthy who neglect the care of the teeth. In order to understand the relationship in all its bearings it will be necessary to consider for a moment the nature of the digestive organs generally.

THE DIGESTIVE ORGANS.

Nature's contrivance for the digestion of food consists of the alimentary canal and of certain accessory organs. The alimentary canal (see Fig. 1) is a muscular-membranous tube about thirty-five feet in length, extending from the mouth to the anus, and lined throughout the entire extent with mucous membrane. This canal is given different names in the various parts of its course, the entrance being called the mouth, where provision is made for the separation of the food into properly-sized particles by mastication and for its admixture with a fluid secreted by the salivary glands; beyond this are the pharynx and the œsophagus, the organs which convey the food into that part of the alimentary canal—the stomach—in which important chemical changes occur and in which the reduction and solution of the food takes place preparatory to digestion. The only substance which enters the circulation through the wall of the stomach is water, which is taken up by the process of *osmoses* or molecular attraction. The next part of the alimentary canal is the small intestine

where digestion of the food after admixture with the bile and pancreatic and intestinal fluids commences. The nutrient elements of the food are partially absorbed in the small intestine, complete absorption taking place in the large intestine, where the waste material is collected and expelled from the system through the rectum and anal canal. Each part of the

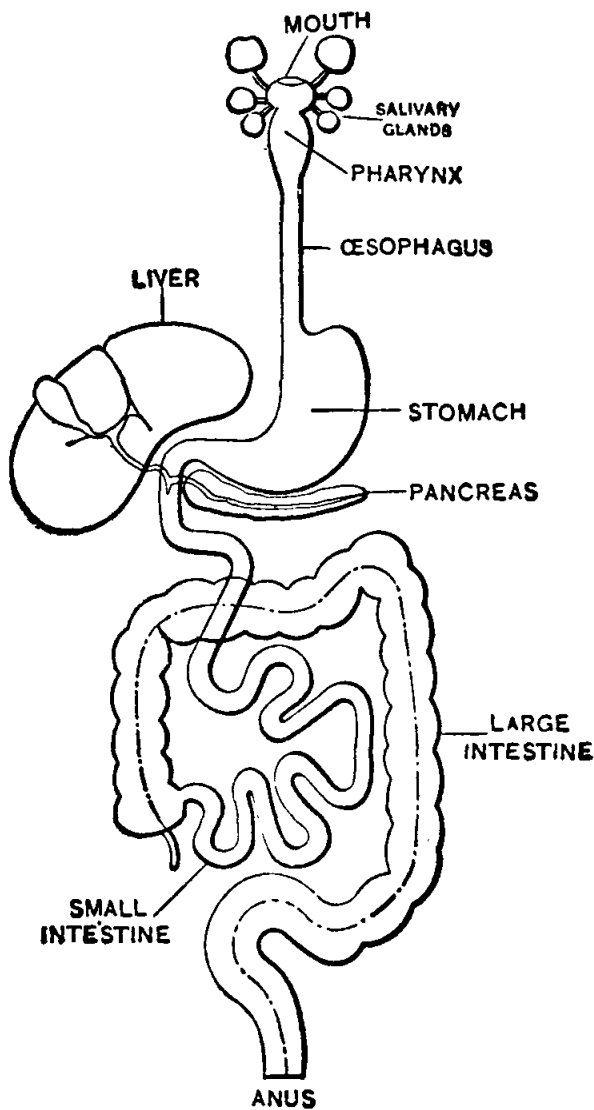


Fig. 1.
The Digestive System.

alimentary canal must properly perform its functions in rotation, and if there be failure on the part of any one portion, undue work is thrown upon the succeeding portions, and these, being thus overtaxed, are liable to become diseased. The pharynx, œsophagus, stomach and intestines each perform their functions automatically, but the mouth only receives what the individual chooses to put into it, and it performs its functions as directed by the will, and therefore if there be no deformity it is a matter of individual control whether this organ shall or shall not properly perform its functions. The mouth cannot be made to perform its functions properly, however, if it or any of its accessories be diseased, and the teeth are the most important of these accessories. The mouth also is the medium of speech, and has other duties to perform, in all of which the teeth play an important part.

THE MOUTH.

The mouth consists of two parts—an outer, smaller portion, called the vestibule, and an inner, larger part known as the cavity proper of the mouth.

The Vestibule.—The vestibule is bounded in front and laterally by the lips and cheeks, and behind and internally by the gums and teeth. It contains various glands and ducts and is lined with mucous membrane.

The Cavity of the Mouth Proper.—This is bounded laterally and in front by the alveolar or tooth-socket arches with their contained teeth; behind it communicates with the pharynx by a constricted aperture termed the *isthmus faucium*. It is roofed in by the hard and soft palate. The greater part of the floor is formed by the tongue, the remainder being completed by the reflection of the muscles from the sides and under surface of the tongue and the sublingual muscles which are attached to the mandible (lower jaw bone). The whole cavity is lined with mucous membrane. Upon lifting the tongue from its natural position the true floor of the mouth with its ducts and muscular arrangements may be examined.

The Palate.—The palate forms the roof of the mouth and consists of two portions, the hard palate about two-thirds in front and the soft palate about one-third behind.

The hard palate is bounded in front and at the sides by the upper alveolar arches and gums and at the back it is continuous with the soft palate. It consists of horizontal processes from the upper maxillary bones arching over the mouth and dividing it from the nose. The bone is covered on both sides by a dense structure of fibrous tissue which contains many mucous glands.

The soft palate is a movable slanting fold suspended from the posterior border of the hard palate. It consists of a fold of mucous membrane enclosing muscle fibres, nerves, lymphoid tissue, glands, etc. When occupying its usual position it is relaxed and pendant. Its anterior or upper border is attached to the posterior margin of the hard palate and its sides are blended. Its posterior or lower border is free.

Uvula.—Hanging from the middle of the soft palate is a small, cone-shaped pendulous process, called the uvula. It varies greatly in length in different individuals. It is composed of glands, connective tissue and muscle and is covered with mucous membrane.

Cleft Palate.—This is a frequent oral deformity, and may be either congenital or acquired. It may also be partial or complete. Most of the cleft is in the middle line. It may be a mere cleft of the uvula, it may be limited to the soft palate or it may involve the hard palate as well, and may or may not pass through the gums. Complete cleft is usually accompanied by harelip.

The Gums.—These are composed of a dense fibrous tissue distributed over the portions of the maxillæ holding the teeth. They also surround the necks of the teeth. They are covered by a smooth and vascular mucous

membrane, remarkable for its limited sensibility. Around the necks of the teeth the fibro-elastic portion presents numerous fine papillæ, is exceedingly dense and is in the form of a free fold of tissue known as the Dental Ligament or gum margin, and from here is reflected into each alveolus or tooth socket, where it is continuous with the periosteal tissue lining that cavity.

THE TEETH.

The human being is provided with two sets of teeth, which make their appearance at different periods of life. Those of the first set appear in infancy and are called the temporary, deciduous, or milk teeth. Those of the second set are called permanent or succedaneous teeth.

Temporary Teeth.—These are twenty in number; four incisors, two canines and four molars in each jaw (Figs. 2 and 3).

Permanent Teeth.—These are thirty-two in number; four incisors, two canines, four bicuspid and six molars in each jaw (Figs. 4 and 5).

The dental formulæ may be represented as follows:

Temporary Teeth.

Permanent Teeth.

General Characteristics.—Each tooth consists of three portions: the *crown* or *body*, projecting above the gums, the *root*, entirely concealed within the alveolus or tooth-socket, and the *neck* (the constricted portion between the root and the crown), covered by the gum margin.

Roots.—The roots of the teeth are firmly implanted within the sockets or alveoli of the jaws. These sockets are lined with periosteum, or fibrous tissue, which has strong fibres running from bone to root and fixed in each. This entire fibrous structure is the peridental membrane, better called the pericementum.

Surfaces.—Owing to the arch of the mouth such terms as anterior, posterior, internal and external are not applicable to the teeth and special terms are therefore applied. That which faces the lips and cheeks is called the *labial* and *buccal* surface, respectively; that toward the tongue, the *lingual* surface; that toward the middle line of the mouth (supposing the teeth were arranged in a straight line outward from the central incisor) is called the *mesal* surface; while that directed away from the middle surface is called the *distal* or distant surface. As both are in contact with adjacent teeth, both are called approximal surfaces. The surface which comes in contact with the teeth of the opposite jaw when at rest

is called "occlusal surface," when gliding over one another, the "articulating surface."

DESCRIPTION OF THE TEMPORARY TEETH.

The temporary, deciduous or milk teeth (Figs. 2 and 3) are smaller than the permanent set, but resemble the latter in form. The neck is more

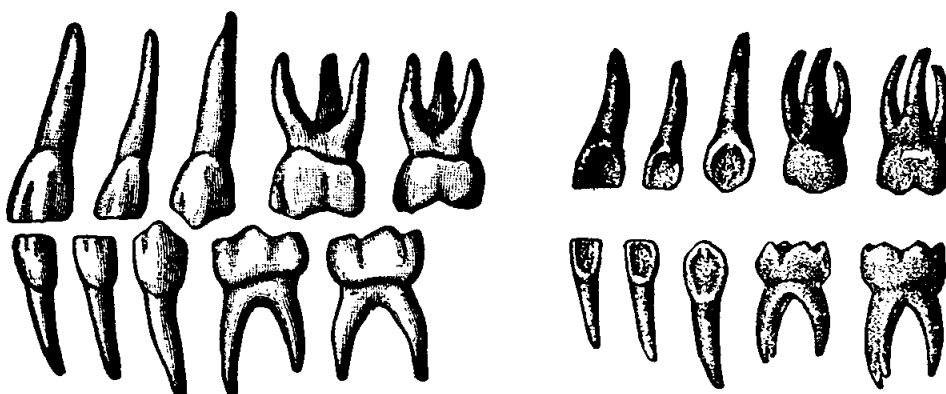


Fig. 2.
Temporary Teeth of left side. View from
outside of mouth.

Fig. 3.
Temporary teeth of right side.
View from inside of mouth.

marked owing to the greater degree of convexity of the labial and lingual surfaces of the crown. The last of the two temporary molars is the largest of all the deciduous teeth. The first upper molar has only three cusps—two labial and one lingual. The second upper molar has four cusps. The first lower molar has four cusps. The second lower molar has five cusps. The roots of the temporary molar teeth are smaller and more diverging than those of the permanent set, but in other respects bear a strong resemblance to them.

DESCRIPTION OF THE PERMANENT TEETH.

Incisors.—The incisors or cutting teeth are so called because of their sharp edges adapted for incising, cutting or tearing of food. They are eight in number and comprise the four front teeth in each jaw. The crown is directed vertically and is chisel-shaped. The labial surface is convex, smooth and highly polished. The lingual surface is concave and is marked by two marginal ridges extending from an encircling ridge at the neck to the angles of the cutting edge of the tooth. The neck of the tooth is constricted. The root is long, conical, transversely flattened, thicker before than behind, and slightly grooved on either side in the

longitudinal direction. The root is sometimes curved. The incisors of the upper jaw are larger and stronger than those of the lower, the central incisors being larger and flatter than the lateral. The direction is obliquely downward and forward.

Cuspid (Canine) Teeth.—These are four in number, two in the upper and two in the lower jaw. They are larger and stronger than the incisors, especially the roots, which are deeply implanted. The crown is large, spearhead in form, and its convex labial surface marked by three longitudinal ridges, the concave lingual surface being also marked by three ridges, which unite at a basal ridge. The point or cusp is longer than the other teeth. The root is single, is oval or elliptical in form, and is longer and more prominent than the incisor roots. The upper cuspids are larger

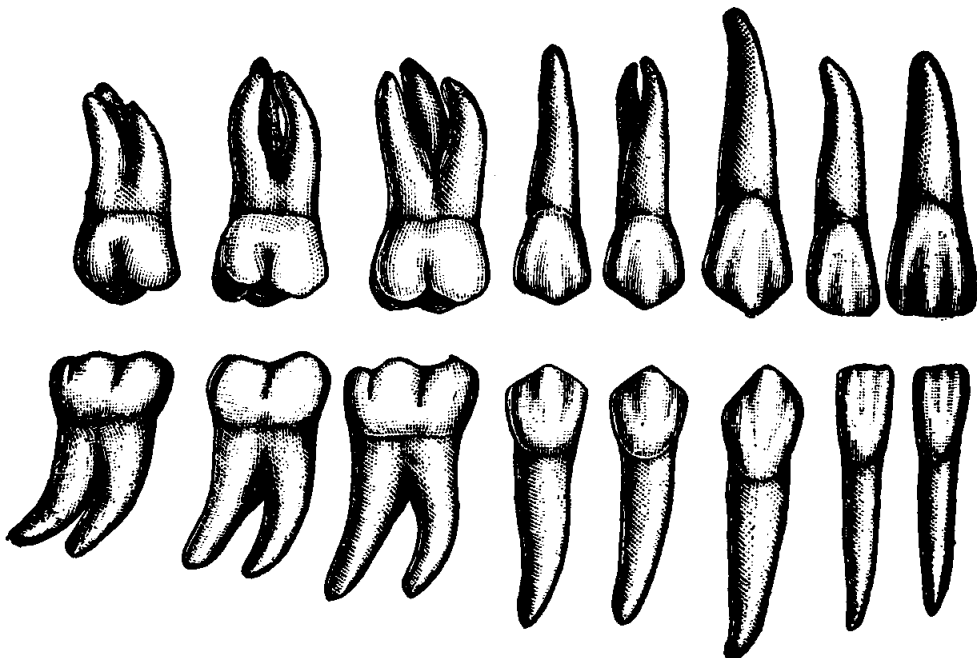


Fig. 4.
Permanent Teeth. Right side.

and longer than the lower. The lower cuspids have the general form of the uppers, but their approximal surfaces are much more flattened, as are also their roots.

Bicuspid Teeth or Premolars.—These are eight in number, four in each jaw, two upon each side of each jaw. The crown has two cusps which are separated by a groove. The necks of the teeth are oval. The roots are single and laterally compressed, those of the upper bicuspids being more so than the lower, and less rounded.

Molar Teeth.—These are twelve in number, six in each jaw, three being placed back of each second bicuspid. They are the largest and

strongest teeth of the permanent set and are adapted for the crushing and grinding of food. The crowns are convex and flattened. The necks of the teeth are large. The first upper molar has three roots, one large and two smaller, and the second upper molar has two roots of about the same size. There are only two roots in the lower molars, each of which is much flattened. The first molars are the largest of all the teeth, the second molars not only being smaller, but having their crowns more compressed. The third molars are commonly called wisdom teeth from their late eruption. These "wisdom teeth" have three cusps upon the upper and five upon the lower. The roots of the upper are frequently fused together, forming a grooved cone, which is usually curved backward. The roots of the lower (two in number) are compressed together and curve backward. Unlike the other molar teeth, the third molars have no definite number of roots. They may have from one to as many as five roots.

ARRANGEMENT OF THE TEETH.

The human teeth are arranged in two rows or arches, the upper row or arch being larger, its teeth overlapping the lower row or arch. Owing

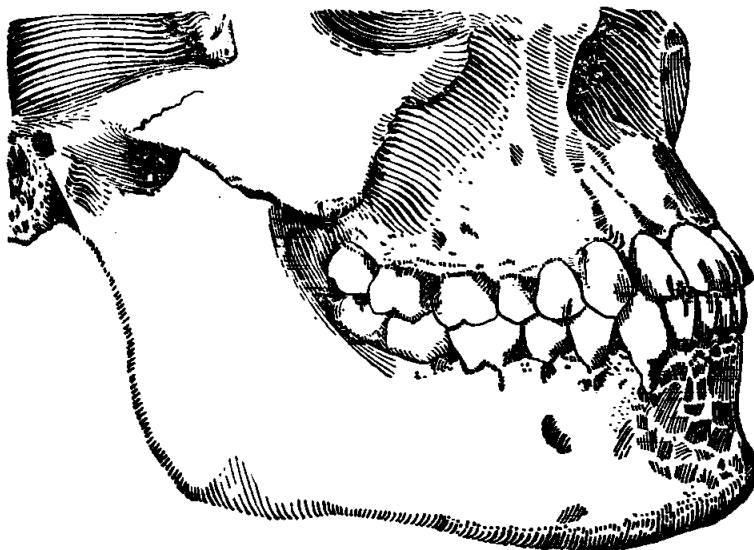


Fig. 5.
Front and side views of the teeth and jaws.

to the smaller sizes of the lower incisors, the teeth of the mandible, or lower jaw are each one-half a tooth toward the mesal of the upper corresponding tooth, so that each tooth of the whole series of upper and lower teeth has two antagonists, with the exception of the lower central incisors and upper third molars (see Fig. 5).

The order of placement of the teeth in both the upper and lower jaws is as follows: Four incisors in front; immediately behind these on each side are the cuspid teeth; next come the bicuspid, two on each side; behind these on each side are the three molar teeth.

The movement of the lower jaw in mastication is rotary. In the lateral movements but one side is in effective action at one time.

STRUCTURE OF THE TEETH.

The teeth are composed of four principal parts: Enamel, Dentine, Cementum and Pulp

Enamel.—This is the outer covering or occluding surface of the tooth. It is the hardest tissue in the human body. Because of its great density it is admirably adapted to the purposes of mastication of hard substances. The enamel may be easily distinguished from the dentine by its clear, lustrous and somewhat translucent appearance.

Dentine.—This is the principal constituent of the teeth. It lies under the enamel and is permeated by a great number of minute canals which connect with the pulp chambers. It is a hard, elastic substance with a yellowish tinge and is slightly translucent.

Cementum.—This is a thin structure covering the root of the tooth, and extends from the neck to the apex.

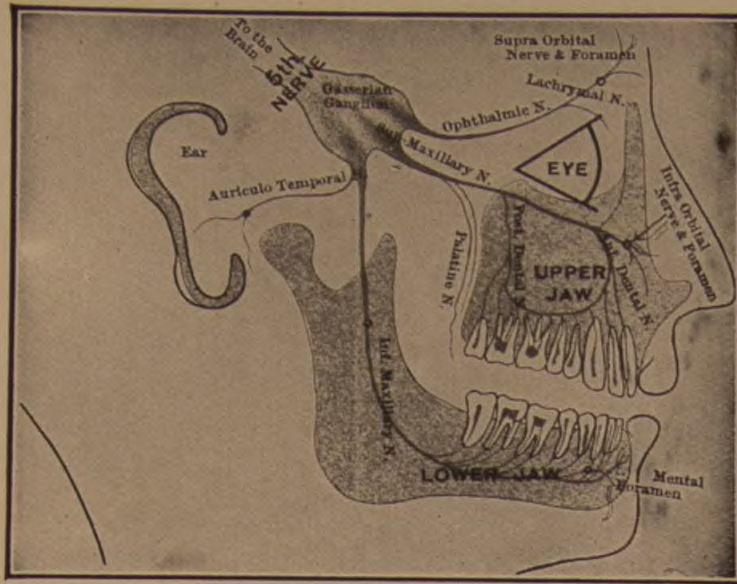
Pulp.—This is contained in what is called the pulp chamber of the tooth, which is an elongated canal, wide at the crown and narrow at the root portion. It is a soft tissue containing the nerves and blood vessels of the tooth. It is the vital part and sends forth minute fibers of living matter through the microscopic canals of the dentine, thus affording nourishment to it and endowing the teeth with sensation. These fibres when exposed to irritants like salt, sweet or acid substances, cold or heat, or when touched furnish a sensory response which should be taken as a warning of decay.

ERUPTION OF THE TEETH.

“Eruption” is the word generally used to indicate the appearance of the teeth, whether temporary or permanent. Eruption varies somewhat in different individuals, but approximately may be relied upon as follows:

Temporary Teeth.—

Central incisors	5th to 6th month.
Lateral incisors	7th to 8th month.
First molars	12th to 16th month.



Cross-Section of Head.



Teeth of child between six and seven years old. Bone removed to show second set forming in the jaws.

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Canines14th to 20th month.

Second molars21st to 36th month.

NOTE.—The eruption of the lower teeth usually takes place before that of the upper.

Permanent Teeth.—

First molars 5th to 6th year.

Central incisors, lower jaw..... 6th to 7th year.

Central incisors, upper jaw..... 7th to 8th year.

Lateral incisors 7th to 9th year.

First bicuspid 9th to 10th year.

Second bicuspid10th to 11th year.

Cuspids11th to 13th year.

Second molars12th to 13th year.

Third molars (wisdom teeth).....17th to 23rd year.

It is to be noted that the permanent first molar does not replace any tooth of the temporary set, yet is the first permanent tooth to appear. As a rule, it comes painlessly. It comes back of the temporary second molars and frequently being mistaken for a "first" tooth, it is neglected and decay ensues.

FUNCTIONS OF THE TEETH.

The teeth are a potent factor in speech and are of utility in other ways, but the most important of all their functions is that of mastication. Each and every tooth has its own specific work to do in the preparation of food for the stomach, and if even one tooth be lost or impaired there must follow a deterioration in the masticating powers, and hence the danger of sending food to the stomach in an improperly prepared state. It is not merely the grinding and disintegrating of the food, but the very process of mastication brings about a flow of saliva, the mixing of which with the food is essential to digestion. If this work of masticating the food be thoroughly performed before it passes to the stomach, the food is rendered easily susceptible to the action of what is known as the gastric juice, which is found in the stomach, and which by reducing the food to a liquid state prepares it for absorption into the system. When, however, the food is swallowed without proper mastication, the action of the gastric juice is retarded, becomes largely ineffective, and fails to yield all the nourishing essence which it contains. The result is indigestion, and if long continued, dyspepsia. All this applies both to the temporary and the permanent teeth, and it will therefore be apparent how important

it is that from very earliest childhood until old age the greatest of care should be taken to preserve all the teeth in such a manner that they may completely and efficiently perform their functions.

ERRONEOUS IDEAS CONCERNING TEMPORARY TEETH.

It is a common but grave mistake to consider preservation of the temporary teeth as of minor importance because they are so soon to be replaced by the permanent teeth. It is due to this impression that decay and filth are frequently allowed to accumulate and as soon as the teeth become troublesome they are extracted. School children lose sleep, suffer pain, have indigestion, lose time from school through sickness, are dulled mentally by all these processes and fall behind their normal rate of advance. Thus it is not theory but proven by tests of special classes in various mental attributes before and after dental treatment. The total average gains were from 32 to over 100 per cent., representing the average for all kinds of mental effort.

The idea that these deciduous teeth should be taken out as soon as they ache is not only erroneous, but may result in permanent injury to the mouth by preventing normal expansion of the arches for the accommodation of the permanent teeth, prejudicially affect the permanent teeth which are forced to appear before their allotted time, and cause life-harm to the digestive system, since the power of mastication is impaired through loss of the teeth. Nature indicates the time for the removal of the temporary teeth by absorbing their roots and loosening their crowns preparatory to the appearance of the permanent teeth, and when the proper time arrives the permanent teeth practically oust the temporary ones from their places without pain or inconvenience of any kind.

There is also danger in premature extraction of the deciduous teeth, because the jaw at this time is not fully developed, is frail and not only is liable to malformation, but to possible fracture if the socket of the early tooth be left vacant.

CAUSES OF DECAY.

There are many possible causes of decay of the teeth, but chief among them is the fermentation of particles of food lodged between the teeth or in the pits or depressions during mastication, and which through carelessness or indifference are not removed. Under the influence of warmth, moisture and microbes, fermentation or chemical change takes place, and

an acid is generated which dissolves the enamel and dentine, leaving a cavity which grows larger and deeper. The dentine is of a tubular structure and into these tubules microbes, which constantly exist in the mouth, penetrate as soon as there is opening through the enamel, and unless proper measures be taken to eradicate them and make the tooth impervious to them, they continue their work until the tooth is completely destroyed.

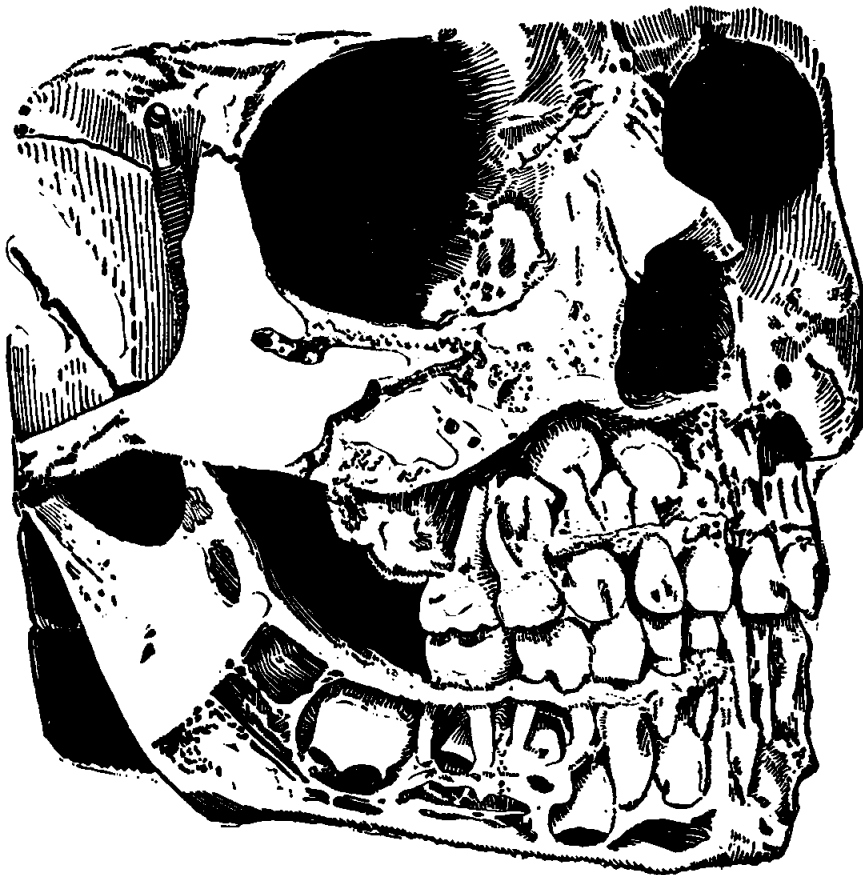


Fig. 6.

Temporary teeth in child aged about 4 years. The permanent teeth are seen in process of formation in their alveoli or sockets.

The process of fermentation itself is the result of the growth and multiplication of these minute organisms, which are so small that they are only visible under microscopes of the highest power.

Among secondary causes producing decay may be mentioned protracted illness, the lack of outdoor exercise, excessive study, worry, or anything tending to lower the general tone of the system. When the body is ill all organs are more likely to become diseased than at other times, and this holds good as respects the teeth.

Again, the teeth may be crowded or depressed, or there may be fis-

tures which offer a ready means for lodgment of food. The structure of the enamel may be imperfect and full of microscopic spaces, thus affording less resistance to the action of acids and bacteria.

Like the bones and other parts of the body, the teeth need constant nourishment, especially in childhood, and not infrequently it happens that the food partaken of does not contain the elements of nourishment requisite for the proper development of the teeth. Sometimes, too, there is hereditary tendency to decay.

When one tooth is decayed and permitted to remain in a decaying state it is certain sooner or later to affect and cause the decay of teeth in close proximity, for wherever there is decay of a tooth there are acids and microbes which will find their way to the surrounding teeth.

PREVENTION OF DECAY.

An adage handed down from the immemorial says: "An ounce of prevention is worth a pound of cure." Never was this saying more applicable than it is in respect of the preservation of the teeth, and the *sine qua non*, or indispensable condition, is CLEANLINESS.

The vital importance of keeping the teeth and the mouth free from remnants of food and masses of tartar cannot be too strongly urged. Competent members of the dental profession affirm that ninety-five per cent. of all diseases of the teeth are the outcome of uncleanness at some time in the life of the individual concerned. Whether it be during childhood or in adult years, the accumulation of particles of food upon and between the teeth invariably sets up fermentation, which continued must result in decay of the teeth. And not only are the teeth affected, but putrefaction may ensue and the mouth itself become the very center of disease and infection. Were the mouth to be kept perfectly clean and pure, from earliest infancy onward, teeth would never decay. But, as this is practically impossible, the only safeguard is to thoroughly clean the teeth and the mouth after each meal, that the remnants of food may be each time removed before deleterious action sets in.

Tartar.—This is a deposit of animal and mineral matter combined, precipitated from the fluids of the mouth upon the teeth, imparting to them a greenish, yellowish, darkish and occasionally a whitish color, and sometimes accumulating in such quantities as to completely incrust the teeth. Some of the effects of tartar upon the mouth, teeth and gums may be thus enumerated:

1. Spongy and sloughy gums, subject to bleeding upon the slightest irritation.

2. Suppuration of the gums, pus frequently accumulating in such quantities as to make the mouth most unwholesome.

3. By working its way between the gums and the teeth, such absorption of the bony socket ensues as to cause the teeth to either fall out of themselves, or permit of their removal with the least display of force.

4. Vitiating of the saliva occurs, and as this fluid is essential to digestion, the digestive organs are deranged and the entire system consequently disturbed.

5. Disagreeable odors are imparted to the breath, making the sufferer obnoxious to everyone.

It is then a first principle of prevention of decay that the teeth be kept free from accumulations of tartar. This cannot be accomplished by the mere polishing of exposed surfaces. There must be daily, diligent work in cleaning crevices and the brushing away of tartar before it reaches a hardened stage.

When a tooth is allowed to become incrustated with tartar, it is impossible for anyone to remove it himself or herself, because the accumulations cannot be seen by oneself, while further there is the necessary use of professional instruments. It is to be advised, therefore, that from early childhood the teeth should be examined at least twice a year by a competent dentist, and all tartar and other impurities properly removed.

Keeping the Teeth Clean.—After the teeth have been cleaned by a dentist, effort should be made to keep them clean by washing them several times daily with lukewarm water, polishing with a powder or other dental preparation and by using an antiseptic mouth-wash. Lukewarm water is recommended not only because it is more cleansing than either hot or cold water, but also because either hot or cold water, especially if one follows the other, will have a prejudicial effect, for as the laws of expansion and contraction will cause a glass to break when plunged from cold into hot water and *vice versa*, so in the case of the teeth a sudden change from one extreme to the other may cause the enamel to crack.

Choice and Use of Toothbrush.—A soft rather than a hard toothbrush is recommended, as the latter irritates and abrades the gums. Brushing should be from the gums towards the summits of the teeth—that is to say, longitudinally and transversely. By brushing across the teeth, particles of food may be forced between the teeth, and so become centers of decay.

After being used, the brush should be thoroughly washed, that all decomposed matter caught by the bristles may be removed.

A silk floss is of advantage in cleaning the teeth, by forcing it between the teeth, and thus removing matter which may have become lodged, and the daily use of floss silk with tooth powder in the same manner is recommended as an adjunct to the toothbrush.

Tooth Powders, Pastes and Mouth Washes.—Great care should be exercised in selection of these. There are undoubtedly many excellent preparations on the market, but on the other hand there are many of them which should be condemned. Some of them, for instance, clean the teeth very quickly and so seem to have much merit, yet they contain acids which work upon the mineral salts of the teeth, causing corrosion and dissolution, thus eating into the enamel and destroying the teeth. Another fatal error committed by many manufacturers is in the endeavor to make their pastes and washes palatable by sweetening, for which purpose a considerable percentage of sugar or like ingredient is used. Sugar in the mouth undergoes a chemical change, and is converted into an acid which is deleterious to the teeth. Then again because of economy the average tooth powder is made of cheap, gritty and coarse materials which by abrading the enamel frequently become a cause of decay. It is of vital importance then that special care should be taken in selecting pastes, powders and washes, and it will usually prove poor economy to use a preparation simply because it is cheap and quickly cleanses. It is not here intended to decry all patent tooth preparations, but simply to caution our readers as to selection. For those who wish to make a powder themselves, the following will be found safe, useful and agreeable:

Precipitated chalk	12 drachms
Rose pink	2 drachms
Carbonate of magnesia	1 drachm
Oil of rose	5 drops

Mix well together.

Or,

Precipitated chalk	1 ounce
Pulverized orris root	1 ounce
Pulverized castile soap	1 ounce

Flavor to suit with oil of rose, sassafras, wintergreen, etc.

A good mouth wash may be made up with the following ingredients:

Boric acid	10 grains
Resorcin	4 grains
Salol	2 grains
Thymol	$\frac{1}{2}$ grain
Pure glycerine	$\frac{1}{2}$ drachm
Pure water	1 ounce

To neutralize the acidity of the stomach use lime water, taken internally in moderate doses. It is very efficient in hardening the teeth. Lime water is of little value as a mouth wash. It has no action on bacteria, is not an antiseptic and the antacid effect is so momentary that it is of little value. Nevertheless, it is very valuable as an antacid, the idea being that an acid stomach is contributory to deranged nutrition and lime water in the stomach is an offset. A better antacid, however, is to be found in milk of magnesia. A mouthful "soused" about the teeth will upon expectoration of the excess leave a coating on the teeth and in the interproximal spaces.

A solution of bicarbonate of soda makes another excellent mouth wash. Use a teaspoonful in a glass of water after each meal. Like lime water it has a neutralizing effect when there is acidity of the mouth.

The teeth should be thoroughly cleaned and the mouth well rinsed every morning and every night and also after each meal. Lime water should occasionally be used to overcome extreme acidity of the mouth, as it is an alkali and neutralizes the affects of acids. Acids are not only contained in food, but are frequently found in the saliva itself, especially when one is in a state of debility. Lime water is also a bone builder, and taken internally will be found beneficial, especially with infants and with mothers during pregnancy.

EFFECTS OF DIET.

While lack of cleanliness is the main cause in the decay of teeth, there can be no question as to improper or deficient diet being also an important contributing factor.

The food which is proper for one person may not agree with another, and the question of diet must therefore be solved differently for different people. Temperament, age and occupation must all be considered. Yet there are certain foods which generally speaking are safe for all and which are nutritive to the teeth.

The bones, muscles, flesh, etc., of the human body are formed by

various combinations of some seventeen different elements, chief among which are hydrogen, nitrogen, carbon, and the salts of lime, and each part of the body nourishes and sustains itself by extracting from the blood a sufficient quantity of the elements which enter into its composition, so that if food be deficient in any one element necessary to any part of the body, such part is destined to suffer. With the exception of milk and eggs no one food contains all the elements which enter into the structure of the body, and so to properly nourish all parts of the body, recourse must be had to a diversified diet, in order that deficiency of certain elements in one food may be supplied by abundance in another.

Teeth are of the nature of bone in their composition, and are composed of animal and mineral elements. The mineral matter is the more abundant of the two, and chiefly consists of lime salts, such as phosphate of lime, carbonate of lime, fluoride of lime, and phosphate of magnesia. The teeth gain their strength and hardness from these elements, and if they be absent in any marked degree the teeth are weak, frail and soft. Scientific study has proven that these elements are found in greatest abundance in the following foods:

1. **Milk.**—This contains all the elements entering into the human structure, but as it is especially subject to microbes, it should be sterilized before using, and this is imperative in the case of infants.

2. **Buttermilk.**—This is a most valuable food and aids in development of tooth structure.

3. **Cheese.**—This also has high value as a food in aiding teeth structure, but is difficult of digestion if taken in large quantities.

4. **The Cereals.**—Wheat, maize, rye, oats and rice, when ground without separation of their parts, contain elements of value to the teeth, but the white flours should be sparingly used, because in their preparation the lime salts and phosphates are extracted. As an instance it has been estimated that five hundred pounds of graham flour contain seventy-five pounds of muscle and eighty-five pounds bone material, while an equal quantity of white flour contains only sixty-five pounds of muscle and but fifty pounds of bone material.

5. **Eggs.**—The necessary elements for the teeth are contained in eggs and they are nourishing to the whole system. They are better “soft-boiled” than “hard-boiled,” and are more wholesome if taken with bread.

6. **Meats.**—Beef and mutton are the most wholesome of the meats and contain a goodly percentage of the elements requisite to the teeth. Veal and poultry are also recommended.

7. **Fish.**—When fresh and well cooked, fish will aid in supply of nourishment to the teeth.

8. **Beans.**—The nutritive value of beans is very high and they are recommended for teeth nourishment.

9. **Peas.**—Peas have much the same qualities as beans, but not in as high degree as respects teeth nourishment.

10. **Potatoes.**—There is good nourishment in potatoes, which should always be eaten before becoming cold, as when cold they are hard to digest. They are most nourishing when baked or boiled with the skin on. Potatoes contain valuable potash salts, which are lost in boiling without the skins, but are retained in baking and roasting.

11. **Vegetables.**—Cabbage, parsnips, carrots, onions, tomatoes and beets are good foods and more or less aid directly and indirectly in nourishment of the teeth, but if taken in large quantities are difficult of digestion.

Innumerable other foods have great nourishing powers, but the foregoing have been especially mentioned because they abound in elements requisite for the teeth. Pastries and dainty viands which in their preparation have been deprived of the phosphates and lime salts (the elements that build up bone and teeth) should only be occasionally indulged in.

Lactophosphate of lime may be used in those cases in which the food is deficient in lime salts. It aids in retention of food in the stomach, strengthens the teeth, and in the case of childbearing contributes to the better development of the bones and teeth of the child. It should be taken in teaspoonful doses three or four times daily.

How to Eat.—This is second only in importance to the nature of the food itself. The following rules should be carefully observed:

1. It is important above everything that the food should be well masticated.

2. Food should not be taken in excess, for not only is the overloaded stomach retarded in the performance of its functions by overwork, but there is lack of saliva and gastric juice for the extra load, the stomach becomes disordered and the saliva acidified, and this acid saliva destroys the teeth.

3. Food should neither be very hot nor very cold. Food digests most readily at normal body heat, or 98 degrees F., and if taken either hot or cold the temperature of the stomach is raised or lowered accordingly, and the work of digestion thus retarded.

4. The stomach should be allowed full freedom of movement—that

is to say, its movements should not be restricted by tight corsets or the like, for these impede movement and retard digestion.

CHILDREN'S TEETH.

In a chapter entitled "The Mother and the Child" (see Index) will be found a full discussion of "Teething" and other matters concerning the teeth of children.

DISEASES OF THE TEETH AND RELATED PARTS.

Excepting in congenital cases, diseases of the teeth are primarily due to decay, technically termed "*caries*." There are many variations in the forms of decay, and among dentists classifications are made technically, distinguishing the different forms and their resultant diseases, but for the purposes of the present article it is sufficient to cover the whole series in general terms. The following then is an epitome:

Diseased teeth may be divided into three classes, namely:

1. Those in which the affection extends only to the dentine. The exposed part is sensitive to the touch and to heat and cold, but the pain is not acute and ceases when the immediate cause of irritation is removed. If attended to at this time the operation of filling is comparatively painless and the tooth becomes thoroughly sound, for the vital portions have not been affected.

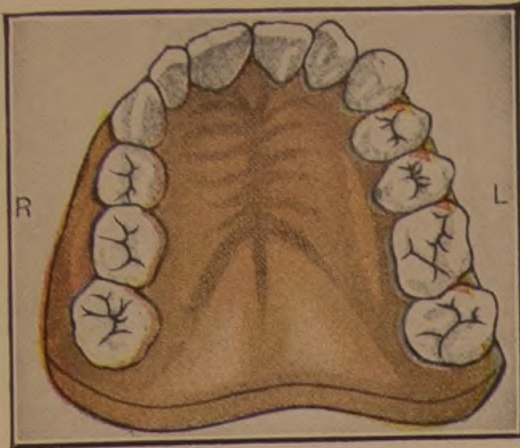
2. Those in which the pulp is exposed, but only recently. The pain is acute and may become agonizing. The pulp can be cured by the application of soothing mediums which will sufficiently remove irritation and inflammation to permit of filling.

3. Those in which the pulp has been long exposed and is either dead or dying. This class is subdivided into:

(a) Those in which the pulp is not yet dead or has only recently died. These can be cured by a competent dental surgeon with comparative ease.

(b) Those in which there is more or less inflammation and infection. These are quickly amenable to competent treatment, but require more skilful work than class (a).

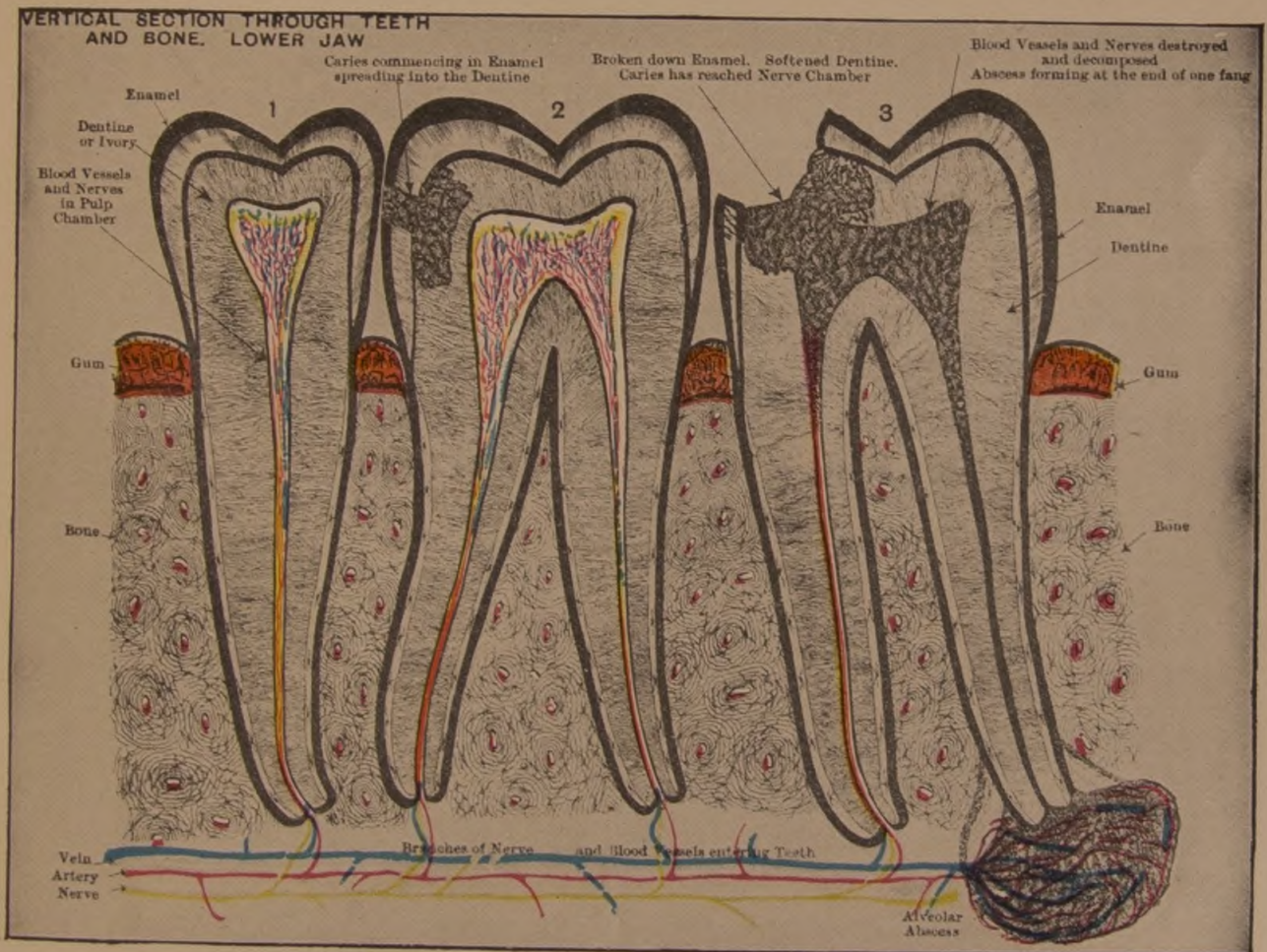
(c) Those with a fistulous opening and a more or less constant discharge of pus. These require long treatment and the exercise of unquestionable skill on the part of the dentist. The canals are often crooked, and as every particle of infected matter must be removed, the task is sometimes performed with great difficulty. It is sometimes necessary to put



Natural crevices on healthy back teeth in which food collects and so leads to decay and formation of cavities.



Upper Jaw.—Showing front teeth and places between the teeth where food has collected and led to decay.



in a temporary filling and leave it there for weeks before attempting permanent filling, watching all the time for untoward symptoms which may indicate that there is still some infected part uncleaned.

The following are some of the specific troubles which occur in connection with diseased teeth:

Abscesses or Gumboils.—These are collections of pus or putrid matter, due to infection and inflammation of the tissues surrounding the roots of diseased teeth, and unless given proper attention may result in serious and even dangerous ailments, such as neuralgia, locked jaw, necrosis, eye, ear and nose troubles, etc., which see under their respective side-headings in this chapter. The pain during the formation is almost insupportable and continues until the pus finds vent. It is a common practice to apply hot poultices to the outside of the face to relieve the pain. This is a grave mistake for it draws the pus toward the cheek and may cause the abscess to break through on the face. The proper method is to make a small poultice of equal parts of mustard and flour and mix into a paste with glycerine. Put this in a small, sterilized bag and apply over the diseased part within the mouth, and on the outside administer cold applications to the cheek. This tends to force a breaking of the abscess within the mouth, which is to be desired. If this fails the abscess should be lanced inside the mouth, its contents removed, the sore antiseptically cleansed and the tooth treated and filled or extracted, according as the circumstances may require.

Caries (decay).—In all cases where possible the tooth should be treated and filled, but a tooth is sometimes neglected so long and the decay becomes so great that the only remedy is the extraction of the tooth.

Cleft Palate.—This is sometimes a congenital defect, but frequently it is what is termed accidental or acquired, being due in some instances to syphilis. Both the hard and soft palates are divided into two parts, which are united in the median line of the mouth. The union usually takes place during the third week of embryonic life, but occasionally the union does not take place and the child is born with a cleft palate. Both in congenital and accidental cleft the affection may extend to both hard and soft palate or may be confined to one or the other. When it extends to both palates the interior of the nose and the bones of the skull are exposed. In congenital cases only little inconvenience is caused in eating for the instincts of self-preservation teach the child from the time of its birth to protect the cleft with the tongue, the food being taken under that organ and dexterously shifted from side to side until forced into the

pharynx. The process is curious and complicated and practically impossible of imitation by anyone who has been born with a normal palate, and so when the affliction comes from disease in adult life the sufferer is utterly unable to close the opening with the tongue, and consequently in eating a portion of the food is invariably forced into the nose, causing inconvenience, suffering and humiliation. But this is not all. Whether the cleft be congenital or accidental the sufferer is unable to speak clearly or distinctly and in some cases speech is utterly impossible. (Formerly the only treatment for cleft was a surgical operation called *straphylorrhaphy* which signifies suturing or sewing together of the parts. This operation was seldom entirely successful and there was usually an after breaking-away of the parts. Modern dentistry, however, has come to the rescue of such sufferers and artificial palates are now made which are held in place by attachment to the teeth and which are so true in their copy of nature that the sufferer is enabled to eat and speak as perfectly as one with normal palates.)

Syphilitic cleft is not as readily open to surgical treatment as is congenital cleft, and the use of the vellum or artificial cleft is, as a rule, the only remedy. On the other hand, congenital cleft is in its very nature clearly amenable to surgical treatment, and in most cases surgical treatment is to be recommended. It is advised that the operation should be performed in early infancy when ossification of bone tissue has only begun and the bones are very little more than masses of cartilage. Operation should be performed when the infant is from six to nine months of age. The flap of periosteum is laid over the cleft and sewn to the flap on the other side. The periosteum through the action of what are known as the giant cells, is the medium through which new bone tissue is formed, thus closing the cleft. If successfully performed, the results of this operation are more hygienic and in every way to be preferred to artificial vellum. Formerly the operation was usually unsuccessful, but latter-day surgery has accomplished marvelous results when the case has been taken in sufficiently early infancy.

Eye, Ear and Nose, as Affected by Abscess of the Teeth.—Diseased teeth frequently cause trouble with the eye, ear and nose. That portion of the upper jaw bone which holds the roots of the molars forms the floor of a cavity, one side of which is the wall of the nose. Through this wall there is an opening into the nostrils. It sometimes happens that the roots of a molar penetrate into this cavity. The walls of the cavity are thin and lined with a very sensitive membrane. If a penetrating molar be

comes diseased, inflammation and suppuration (the exuding of pus) may extend into this cavity, and if the pus accumulates in large quantities it will ooze out through the opening into the nostrils. Thus a constant discharge of pus from the nose may indicate a diseased tooth. If the accumulation of pus be very large it may press against the lower wall of the eye socket in such a manner as to displace the eye or cause partial or complete blindness, or it may break through the bone and discharge upon the face. Cases are on record where such abscesses have developed into tumors of such size and pressure as to plug the nose and finally, breaking down the wall of the cavity have dislodged the eye, forced themselves into the ear and even penetrated the brain. The only treatment in former times was extraction, but the dental surgeons of to-day resort to what is known as drainage of the antrum, either through the root of the tooth or by means of a drain introduced through an opening made between the second bicuspid and first molar or through the nasal orifice of the antrum. What is here advised is that the sufferer should immediately consult a competent dental surgeon. Every day of delay but aggravates the condition.

Fractured Jaw.—This subject is fully discussed in the chapter on surgical diseases (see index), but is here mentioned because the treatment of fractures of the jaw is now considered as within the province of the dental surgeon.

Locked Jaw.—This is a dental term and does not refer to *tetanus*, which is commonly termed “lock-jaw.” Locked jaw is the result of a severe abscess caused by diseased molars of the lower jaw. Through constant irritation the nerves become paralyzed, the muscles remain in a contracted state and the sufferer is unable to open his mouth. A competent dental surgeon should be at once consulted who will treat the tooth and abscess.

Necrosis.—Death or necrosis of the jaw-bone frequently results from an abscess caused by diseased teeth. When pus is permitted to accumulate in large quantities it may burrow between the bone and the enveloping membrane which gives it nutrition and vitality, and this membrane being thus severed from the bone the latter dies from lack of nutrition and the severe inflammation caused by the abscess. The treatment should be preventive by placing oneself in the hands of a competent dental surgeon at the beginning of the trouble. Where necrosis has actually set in the tooth and abscess must be first treated and then the bone treated as prescribed in the article on Diseases of the Bones (see Index).

Neuralgia.—The nerves of the eye, ear, face and teeth are intimately associated and an ulcerated tooth may cause severe neuralgia in any or all of these parts. This is thoroughly recognized by the oculist and aurist who frequently advise attention to the teeth as first treatment in seeming ailments of the eye and ear.

Pyorrhœa Alveolaris.—See Rigg's Disease.

Rigg's Disease.—This disease occurs with considerable frequency, and is especially serious because of the large quantities of pus involuntarily swallowed by the sufferer. It first makes its appearance at the margin of the gum, which normally adheres closely to the necks of the teeth, but which with this disease becomes detached from them and thickened. Even in its early stage small quantities of pus or blood-stained fluid may be squeezed out of the intervening space if firm pressure be made with the finger, and as the disease progresses this becomes more and more marked. Gradually the space becomes greater and deeper until an instrument can be passed down between the tooth and its socket, finally extending the whole length of the root and resulting in complete detachment and loss of the tooth. The disease usually starts with one tooth, but is apt to spread to adjoining teeth and may involve all. The pus is full of organisms. The cause of the disease is not definitely known. It was at one time attributed to irritation set up by accumulations of tartar, but this idea is now discredited. A dental surgeon should be consulted without delay, and where this is not possible the affected gum should be frequently and carefully washed with strong antiseptics and the mouth immediately after rinsed with a good antiseptic mouth wash.

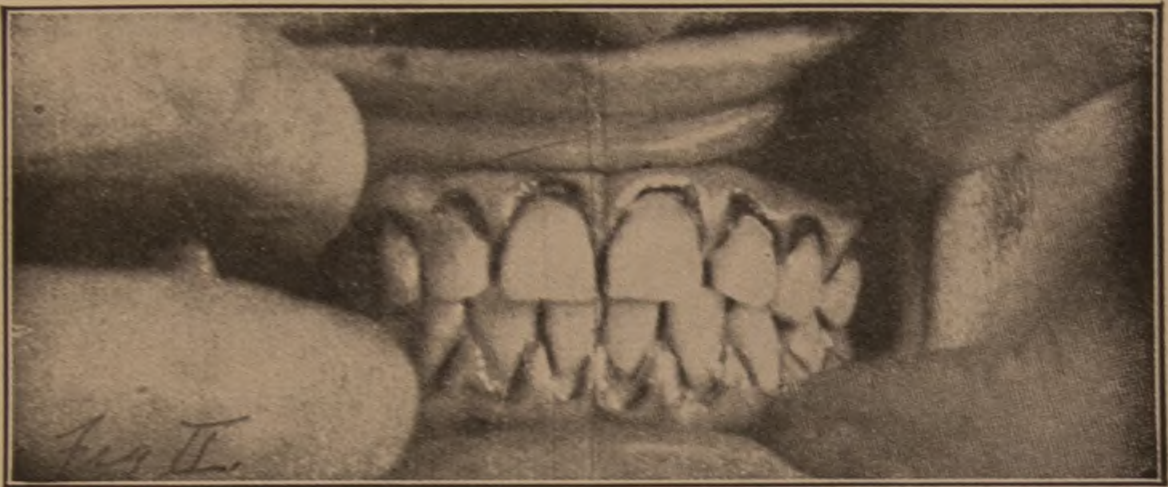
The accumulation of tartar deposits on and around the necks of the teeth constitutes a foreign substance, and if allowed to remain will continuously increase. Deposits act as an irritant to the gum tissue, which becomes inflamed. The numerous micro-organisms which are always present in the mouth and ever ready to act, find excellent soil for propagation in the inflamed area aided by the heat and moisture of the mouth, forming pus and destroying tissue. As a result of the disturbances the blood which is exuded is disintegrated and the lime salts in solution are deposited into the pus socket, thus increasing irritation.

The treatment is simple and positive and lies in a thorough cleansing of the parts affected and in proper and frequent massage of the gums, the idea being to destroy germs and produce normal circulation of the blood.

Toothache.—This is due to the exposure of the nerves of a tooth



Pyorrhea Alveolaris or Rigg's Disease.



Ulcerative Stomatitis.



Vincent's Angina.

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caused by decay. It is a natural accompaniment, too, of abscesses and all other diseases of the teeth. Its treatment should be by filling of cavities. See Home Remedies in this chapter.

Tumors.—See Abscesses.

Ulceration.—An ulcerated tooth is one in which decay has reached the roots causing an inflammation and the gathering of pus. This may occur in a tooth which has been filled, but where the pulp canal has not been thoroughly cleaned and some particle of infected matter has remained. See Abscesses.

HOME REMEDIES.

Toothache invariably indicates a more or less diseased tooth, and where there is disease it should be at once treated by a competent dentist. It is false economy to delay and later may result in serious trouble. Nevertheless there are occasions when it is practically impossible to visit a dentist and in such cases the following instructions will be found of great value and will in many instances afford temporary relief.

ACHING TOOTH WITH A CAVITY CAUSED BY DECAY.

1. **When the Pulp in the Cavity is Living.**—Whether the pulp be living or dead may be determined by holding very warm or very cold water in the mouth and bringing it in contact with the pulp. If the pulp is living the pain will be increased. Or, if on pressing a toothpick into the cavity the pain is intensified, the pulp is still alive. *Treatment.*—The cavity must first be washed out with lukewarm water. This may be done with a syringe or by adequately rinsing the mouth. Then saturate a little pellet of antiseptic gauze or absorbent cotton with spirits of camphor, oil of cloves or laudanum. On top of this insert a piece of dry cotton, so completely filling the cavity as to thoroughly protect it from changes of temperature and prevent the entrance of any foreign substance.

2. **When the Pulp in the Cavity is Dead.**—These cases may be divided into two classes. In the first the suffering is from mere inflammation of the lining membrane between the root and the socket. In the second the inflammation has become more severe and an abscess or gumboil has developed. If the first stage be promptly and efficiently treated the second stage will usually be avoided. Excepting that in the second stage there is swelling of the gum around the tooth the symptoms in the two stages are the same and consist in an elongation of the diseased tooth above the level of those surrounding it, so that on closing the teeth together the dis-

eased tooth is struck first and a painful shock occurs; the tooth is somewhat discolored, being darker, and there is frequently a bad odor. *In the first stage* relief may be temporarily secured in several ways:

(a) By applying a dental plaster to the gums. These may be obtained at almost any drug store.

(b) By rubbing a mixture of iodine and aconite (equal parts) about the gums with a camel's-hair brush or a sterilized rag, first cleaning the gum thoroughly with lukewarm water and antiseptic mouth wash. The application of the mixture facilitates the removal of waste material by causing a more healthy flow of the blood. The remedy must not be swallowed; it is poisonous when taken internally.

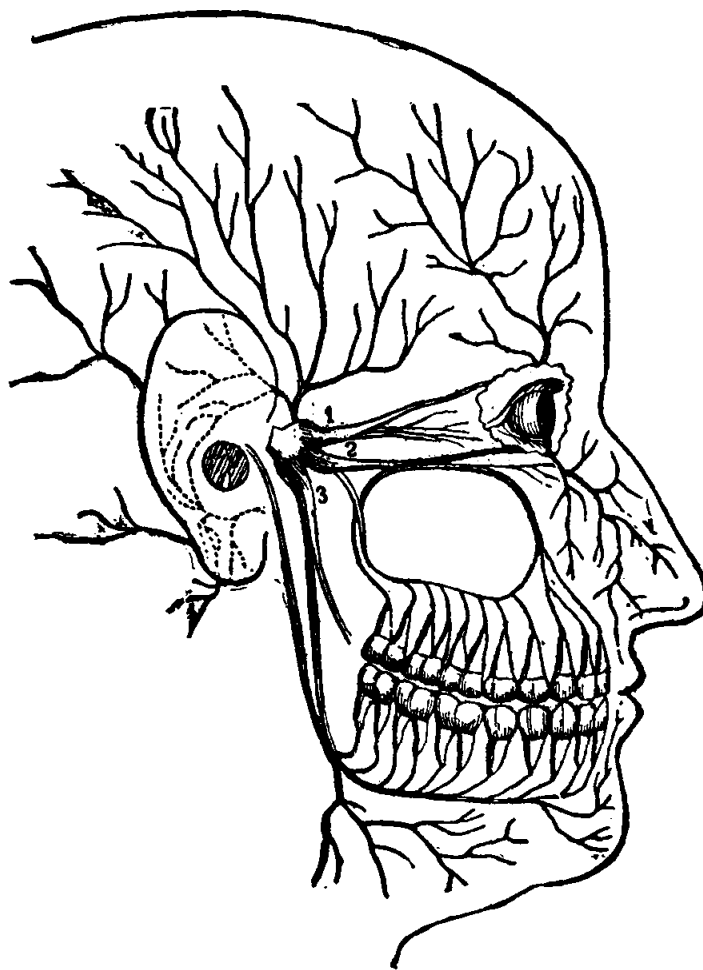


Fig. 7.

Showing nerves leading to the roots of the teeth.

(c) By using a cathartic. The effect of this is to reduce the quantity of water in the blood and so give relief by decreasing the blood pressure.

(d) By pressing with the fingers on large nerve, at points indicated by Figures 1, 2, 3. See Fig. 7.

In the Second Stage; that is, when an abscess is present, temporary

relief may be obtained by the application of poultices to the affected part, within the mouth—never on the outside. The following poultices are recommended:

(a) Capsicum Poultice.—Three parts flour, 1 part red pepper or capsicum; mix; put in small cotton bag; thoroughly warm; apply upon head of abscess in the mouth. Change every three hours.

(b) Flaxseed Poultice.—Put flaxseed in small linen bags and thoroughly heat; apply around the affected gum, replacing with hot poultice as fast as one becomes cool. This aids in bringing the abscess to a head and will prepare it for lancing. The lancing should always be done by a doctor or dental surgeon who will have proper instruments and anti-septic methods. Otherwise there is danger of blood poisoning.

(c) Raisin Poultice.—The seeds should be taken out and the raisins cut in two. Apply in the same manner as with flaxseed poultice, changing the poultices as fast as they become cool, and continuing the applications for several hours.

The breath is usually feverish and foul when an abscess is present, and to relieve this condition an antiseptic mouth wash should be frequently used. Either of the following are good: (1) 1 teaspoonful of bicarbonate of soda in a glass of lukewarm water; (2) 2 drachms carbolic acid, 4 drachms glycerine, 10 ounces rose water. When the abscess is so large as to cause swelling of the face cold applications to the face at the same time that hot poultices are being applied within the mouth are recommended. Heat must *never be applied externally*, as it may cause the abscess to burst through the cheek.

FILLED TEETH THAT ACHE.

When a tooth has been prematurely filled by a dentist; that is, filled before a living nerve is thoroughly quieted, or a dead one completely eradicated, after trouble is almost certain to ensue. It also sometimes happens in spite of the most skilful and cautious work that after the cavity has been filled the pulp dies beneath the filling. Thus there are two classes of disease with filled teeth—those with living pulps and those with dead pulps. When the pulp is alive there is usually intermittent or “jumping” toothache. When it is dead the pain is more constant.

1. **When the Pulp Beneath the Filling is Living.**—In the first place take a hot foot bath, putting a little mustard in the water. This tends to relieve the blood pressure and so lessens the pain. Then take a saline

cathartic, such as citrate of magnesia or epsom salts, which by reducing the water in the blood relieves blood pressure on the pulp.

2. **When the Pulp Beneath the Filling is Dead.**—Adopt the same method of treatment as that recommended for unfilled, aching teeth when the pulp is dead; that is, apply within the mouth, in the manner described, hot poultices of capsicum, flaxseed or raisins, and use cold applications to the outside.

ACHING GUMS.

Aching gums may result from several causes:

1. **Accumulation of Tartar.**—When this is the cause the gums will have receded from the teeth, the teeth will be more or less loose, the breath foul and usually there will be an oozing of pus from the gums. *Treatment.*—Mix one or two teaspoonfuls of bicarbonate of soda in a glass of lukewarm water and thoroughly dissolve. Rinse the mouth with this solution every hour. Paint gums with solution of aconite and iodine and see dentist.

2. **Effects of Colds.**—There is slight inflammation. *Treatment.*—The gums may be painted with a mixture of equal parts of calendula and water or rinsed with a solution of one teaspoonful of borax to a pint of water. One teaspoonful of chlorate of potash may be used instead of borax.

3. **Result of Recent Cleaning.**—After the teeth have been cleaned by a dentist the gums are apt to be sore for a day or two. This may be relieved by rinsing the mouth every half hour with salt and water—a teaspoonful of salt in a glass of tepid water and thoroughly dissolved. Or, a mild solution of bicarbonate of soda used as a mouth wash at short intervals will be found effective. Or still better, use a solution of aconite and iodine. A mouthful of whiskey or brandy used as a rinse and not swallowed is most effectual.

4. **Result of Lacerated Gums from Extraction.**—Use frequently a mouth wash of *tincture of calendula* diluted with an equal quantity of water. This hardens the gums, soothes the pain and sweetens the breath.

HEMORRHAGE.

Upon extraction of a tooth there is always a certain amount of hemorrhage or flowing of blood. This is normal and usually stops in a comparatively short time without treatment. But occasionally there is what is called secondary hemorrhage, which occurs perhaps several hours

afterward and which is due to a lack of coagulation or thickening quality in the blood, or there may be hereditary tendency to hemorrhage. *Treatment.*—The patient should be placed in a reclining position with the head raised. Apply hot water bags to the feet to draw the blood from the head. Thoroughly wash the mouth and cavity with lukewarm water and then force into the cavity a firm plug of absorbent cotton; take a piece of cork of suitable size, cut a notch in it and place astride the gum over the cotton plug, close the mouth firmly upon it and then bandage the mouth to keep it tightly shut. During active bleeding it is well to hold in the mouth a portion of a solution of two drachms of borax to a glass of warm water. Leather scrapings, alum, cobwebs or pieces of sponge saturated in nut-gall also sometimes prove effective as plugs in emergency. While one or other of these remedies is being employed the physician or dentist should be sent for, as hemorrhage sometimes proves to be of very serious character, requiring the best professional skill.

NEURALGIA.

Neuralgia frequently occurs when the teeth are perfectly sound. Such cases are dealt with elsewhere (see Index); but it is of common occurrence to find neuralgia directly due to diseases of the teeth, owing to the fact that the nerves of the face and the teeth are closely related. In such cases the remedy lies in finding out what tooth or teeth are affected and then removing the cause by having the tooth or teeth properly treated. There is sometimes considerable difficulty in locating the trouble when the tooth at fault is one that has been filled and therefore is apparently sound, but when neuralgia exists without apparent other good reason the question of the teeth should be carefully considered and endeavor made by the dentist to discover the cause.

FOUL BREATH.

Foul breath is one of the most disgusting of ailments, making the sufferer repulsive to all associates, yet in many cases the sufferer is quite ignorant of the ailment as it is not noticeable to himself and associates are usually loth to make mention of the ill. It may arise from disordered stomach or from certain diseases such as catarrhal affections, but probably more frequently than from any other cause it is due to decayed or filthy teeth. If this be the case the sufferer should at once see a dentist, have the teeth thoroughly cleaned and afterward guard against recurrence by daily use of proper powders or tooth pastes and of an antiseptic mouth

wash. In cases where a dentist cannot be seen at once the mouth should be thoroughly washed and rinsed a number of times each day with tepid water in which two grains of permanganate of potash have been dissolved.

SORENESS FROM ARTIFICIAL TEETH.

For a time after artificial teeth are first used there is liability to soreness of the palate. It may be due to the fact that the plate is not accurately fitted, in which case the defect should be immediately remedied by the dentist, or it may be due to the gums not having thoroughly healed after extraction of the teeth; but most frequently it is simply because the mouth has not become accustomed to the artificial contrivance.

TREATMENT.—The teeth should be removed for several days to permit of the mouth resuming normal conditions. Yet this is not advised unless there be real suffering, as where the discomfort is merely due to lack of custom the retention of the teeth in the mouth is the best means of overcoming the difficulty. Where there is much soreness relief is frequently obtained by use of an alum mouth wash, which is made by putting a piece of alum about the size of a plum in half a glass of water and leaving it there for five minutes. Another treatment is to paint the sore places with the following solution: One ounce of glycerine is placed in a jar and set in warm water, and into the glycerine stir slowly two ounces of tannic acid. Paint on sore spots with a camel's-hair brush.

DISLOCATED JAW.

See Accidents and Emergencies.

BOOK XII

Treats of the Occupational Diseases. The industrial poisons are arranged alphabetically in the form of a table, together with the industries in which they are used, the means by which the poison enters the body, the conditions produced and special measures of relief therefrom.

Acetaldehyde	I334	Carbon Bisulphide	I343
Acetate of Amyl	I335	Dioxide	I343
Acid, Carbolic	I364	Disulphide	I344
Fluoric	I355	Monoxide	I345
Hydrochloric	I354, I355	Oxychloride	I365
Nitric	I359	Carburetted Hydrogen	I346
Oxalic	I363	Cement	I347
Picric	I367	Chinin	I347
Sulphuric	I370	Chinone	I347
Sulphurous	I369	Chloride of Lime	I347
Acridine	I334	of Platinum	I367
Acrolun	I334	of Sulphur	I369
Air, Compressed	I349	Chlorine	I347
Alcohol, Amyl	I335	Chlorodinitrobenzol	I348
Wood	I358	Chloronitrobenzol	I348
Ammonia	I334	Chromium Compounds	I349
Amyl Acetate	I335	Compounds, Antimony	I338
Alcohol	I335	Arsenic	I338
Aniline	I336	Chromium	I349
Dyestuffs	I337	Cyanogen	I350
Antimony Compounds	I338	Rhodanic	I350
Arsenic Compounds	I338	Sulphocyanic	I350
Arseniureted Hydrogen	I339	Compressed Air	I349
Asphalt	I340	Copper	I350
Benzine	I340	Cotton	I350
Benzol	I341	Cyanogen Compounds	I350
Binitrobenzol	I352	Cyanide, Natrium	I350
Bone	I354	Diazomethane	I351
Brass	I342	Dimethyl Sulphate	I351
Bromin	I342	Dinitrobenzol	I352
Bronze	I342	Dioxide of Manganese	I357
Broom	I368	of Sulphur	I369
Carbolic Acid	I364	Dust, Street	I368

Dyestuffs, Aniline	1337	Nitrate of Silver	1368
Earths	1368	Nitric Acid	1359
Emery	1352	Nitrobenzol	1360
Ether	1352	Nitroglycerin	1361
Methylated	1352	Nitronaphthalene	1362
Ethylaldehyde	1334	Nitrous Gases	1362
Ethyl Nitrite	1352	Occupational Diseases	1331
Feathers	1353	Oxalic Acid	1363
Felt	1353	Paper	1368
Filings	1358	Paraffine	1363
Flax	1353	Petroleum	1364
Flour	1354	Phenol	1364
Fluoric Acid	1355	Phenyl Hydrazine	1364
Formaldehyde	1352	Phosgene	1365
Fumes, Solder	1351	Phosphorus	1365
Fur	1353	Phosphorus Sesquisulphide	1366
Gasoline	1353	Phosphureted Hydrogen	1367
Glass and Emery Dust	1353	Picric Acid	1367
Glycerin Trinitrate	1361	Platinum, Chloride of	1367
Gold	1354	Putty Powder	1353
Grain	1354	Pyridine	1367
Hair	1354	Rags	1368
Hemp	1353	Rhodanic Compounds	1350
Horn	1354	Shell	1354
Horsehair	1354	Silver, Nitrate of	1368
Hydric Sulphide	1369	Solder Fumes	1351
Hydrochloric Acid	1354, 1355	Steel	1355
Hydrogen, Arseniureted	1339	Stones	1368
Carbureted	1346	Straw	1368
Phosphureted	1367	Street Dust	1368
Sulphureted	1369	Sugar	1368
Iodine	1355	Sulphocyanic Compounds	1350
Iron	1355	Sulphur Chloride	1369
Jute	1355	Sulphur Dioxide	1369
Lead	1355	Sulphurous Acid	1369
Lime, Chloride of	1347	Sulphureted Hydrogen	1369
Lydol	1357	Sulphuric Acid	1370
Manganese Dioxide	1357	Tar	1371
Meerschaum	1357	Tobacco	1371
Mercury	1357	Triton	1371
Metal Filings	1358	Turpentine	1371
Methyl Alcohol	1358	Vanadium	1372
Methyl Bromide	1359	Volatile Oils	1372
Methylated Ether	1352	Wood	1372
Metol	1359	Wood Spirit	1358
Mirbane Oil	1360	Wool	1372
Natrium Cyanide	1350	Zinc	1372
Nitranillne	1359		

Book XII

OCCUPATIONAL DISEASES

When diseases are spoken of as occupational, it is not meant that they are peculiar diseases to be found only in those employed in certain occupations, but simply that people of certain occupations are more liable to become affected with this or that disease than those employed in certain other industries. There can be no question that occupation has a vital effect upon health. Some occupations are conducive to health, others are not. To follow any special trade does not mean that one must become diseased in some particular form, but that there is greater or less liability to this or that disease. One may handle dynamite without being blown up, yet there is always the risk, and so one may handle white lead without acquiring disease, yet there is always the possibility of lead poisoning. It is essential, therefore, to everyone to understand the hazards of different occupations. Some occupational diseases are very serious, yet are seldom encountered, while others are very frequently met with yet are not serious in their nature. There is a proneness with some people to exaggerate the hazards of certain occupations. Exaggeration should be avoided, yet on the other hand the risks taken should not be underestimated. If the risks be clearly and properly understood they may in many cases be avoided. As a matter of fact the serious occupational diseases may be almost entirely eliminated by proper safeguards, and these safeguards should be provided by employers, as is more and more being appreciated by those in authority and in respect of many risks there are now laws on the statute books which make due provision. There are also many precautions which the employee may take if there be proper knowledge of the risks involved.

Occupational diseases are complex in their nature. One substance may produce some particular ailment, others may cause a variety of ills, according to the special attending conditions. Steel dust is apt to cause "Knife-grinder's Consumption" (pneumoconiosis); lead poisoning may cause hardening of the arteries (arteriosclerosis), heart troubles, chronic nephritis, chronic anæmia, neuritis, etc.; mercury may cause bone necro-

sis, anæmia and a series of grave nervous and mental disorders. The number of substances and the variety of diseases they may cause are many. Dr. W. Gilman Thompson, of Cornell University and a high authority on occupational diseases, has well pointed out that it is not so much a question of how much of a poisonous substance enters the body, as how much of it is actually absorbed. A knowledge is necessary of the poisonous substances encountered in different occupations, the parts of the body affected by them, the manner of avoiding their ills, and the treatment necessary when the ill has come.

In regard to poisonous substances, they may be broadly classified as follows: (a) metallic poisons; (b) poisonous gases, vapor and fumes; (c) poisonous fluids, such as acids, alkalies, dyes, petroleum products, etc.; (d) irritant dusts and fibers, which may be soluble, insoluble or organic; (e) organic germs, such as those of anthrax, sometimes encountered by butchers, workers in horsehair products, etc.; (f) miscellaneous irritants.

Harmful environment is also a dominant factor and may be summarized thus: (a) air compression and rarefaction; (b) excessive humidity; (c) extreme heat and cold; (d) excessive light, such as X-ray, etc.

Certain tissues and organs of the body are more likely to become injured in one occupation than in another, and such injuries may be thus named: (a) injuries to the blood; (b) injuries to nerves, muscles and bones; (c) injuries to eyes; (d) injuries to ears; (e) injuries to mouth, nose, throat and lungs; (f) injuries to the skin.

The effects of different poisons encountered in industrial work may be divided into acute and chronic. Certain vapors and fumes such as methyl alcohol and sulphur vapors practically always act acutely, seldom if ever acting chronically, while nitrate of silver and some other substances almost invariably act insidiously or chronically, and still others such as carbon monoxide may not only cause acute symptoms but also have serious chronic effect. Cases of chronic poisoning are much more frequent than those of acute poisoning, and as the poison works insidiously serious condition may arise before the victim becomes aware of the nature of the the ill.

When these facts are taken into consideration along with the knowledge that the physique, constitution and temperament of different individuals make them respectively especially liable to certain ills, one may judge whether or not it is advisable to engage in certain occupations—as that which may be perfectly safe for one individual may not be for another. For instance, weavers, hatters and furriers are especially liable to

become afflicted with lung troubles, and therefore when the lungs are naturally weak these occupations should be avoided and some occupation selected which is not conducive to such disease.

As an instance of the effect of occupation upon health, mention may be made of the employees in cotton mills. There are dangers which are direct and obvious in their effects upon the health of workers. The work involves more or less constant confinement in a dusty atmosphere, in addition to which there is usually excessive heat, nauseating odors, irritating gases and generally lack of proper ventilation, resulting in artificial moisture which cannot but have a deleterious effect. Dust in cotton workrooms is only a prominent feature in the first few processes. The danger lies chiefly in the opening, picking and carding processes.

This danger from dust in cotton mills may be largely avoided by mechanical contrivances, and so it is with all trades in respect of which dust is a disease factor. The vital thing is to realize the actual danger in connection with each separate employment, and then, whether the danger be found in dust, in noxious gases, in contact with acids, other substances or conditions detrimental to the health, to find the proper means of safeguarding oneself.

In the following table, alphabetically arranged, will be found a list of the various poisonous substances which are to be found in connection with various industrial work, with particulars as to the different industries, where respectively danger exists, an explanation as to the mode of entrance into the body, the general symptoms of poisoning, and special measures of relief in case of emergency. This table has been especially prepared by the Bureau of Labor, Washington, D. C., which Department has authorized their use in this work.

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>Acetaldehyde; Ethylaldehyde. A colorless, very volatile fluid, of pungent odor.</p>	<p>Manufacture of vinegar; silver mirror manufacture.</p>	<p>In the form of vapor, through the respiratory organs and mucous membranes.</p>	<p>Irritation of the mucous membranes of the nose, larynx and bronchi; irritation of the mucous membrane of the eyes; acceleration of the heart's action; profuse night sweats.</p>	<p>Immediate removal from the poisonous atmosphere; artificial respiration; inhalation of steam; electric stimulation of the nerves of the forehead; free bloodletting; in case of obstinate spasm of the glottis, tracheotomy.</p>
<p>Acridine— Crystallizing in colorless needles.</p>	<p>Organic dyes industry.</p>	<p>Exerts effect in any state of aggregation on skin and mucous membranes.</p>	<p>Irritation and inflammation of skin and mucous membranes; severe burning and itching of the skin; violent sneezing.</p>	<p>See No. 1.</p>
<p>Acrolin— A colorless, very pungent smelling fluid, of fiery taste.</p>	<p>In the trying-out of fat-containing material, i. e., Bone rendering plants, oil-cloth and linoleum factories, varnish making, soap factories.</p>	<p>In vaporous form, through the respiratory system and the mucous membranes.</p>	<p>Itching in the throat; irritation of the eyes, causing watering of the eyes and inflammation of the eyelids; irritation of the air passages; bronchial catarrh.</p>	<p>See No. 1.</p>
<p>Ammonia— A colorless gas of sharply penetrating odor.</p>	<p>Coke ovens; mirror-silvering industry; coating iron plate with tin or zinc; manufacture of solidified ammonia and other ammonia compounds; manufacture of the carbonate of soda and of orselle dye-stuffs; dyeing industry; sewer cleaning; manufacture of bone black; gas plants; varnish and lacquer manufacture; tanning; beet sugar manufacture; manufacture of ice; refrigeration plants.</p>	<p>In gaseous form, through the respiratory system. Seldom pure, mostly in combination with other gases. Immediate effect on the eyelid and eyeball.</p>	<p>A proportion of more than 0.15 per cent. of ammonia in the air immediately causes an irritable condition of the mucous membranes. Chronic bronchial catarrhs are especially liable to follow long-continued inhalation of small quantities of the gas diffused in the air. From these are to be discriminated the acute conditions of transient illness: Intense irritation of the respiratory organs; violent sneezing; lachrymation, redness of the eyes, inflammation of the eyeball and eyelids; increased secretion of saliva; burning in the pharynx, and a sense of constriction in the</p>	<p>See No. 1.</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>5 Amyl Acetate— Zapon, a solution of celluloid in amyl acetate and acetone.</p>	<p>Zapone lacquer, used as a lacquering agent in metallic ware and jewelry factories; manufacture of metallic wire for incandescent electric lamps; oil-cloth manufacture.</p>	<p>In the form of vapor through the respiratory organs.</p>	<p>larynx; paroxysmal cough, with secretion of tough, stringy, even bloody mucus; difficult breathing, attacks of suffocation; vomiting of watery matter, ammoniacal odor of the perspiration, retention of the urine, which may last many hours and even two or three days; acute inflammation of the respiratory organs, and scattered areas of inflammation in the lungs, in severe cases a fatal outcome. Protracted breathing of small quantities is apt to cause chronic bronchial catarrh.</p>	<p>At the first symptoms of poisoning, immediate removal from the workroom to a cool, shady spot; change of clothing; cool affusions; administration of oxygen in connection with artificial respiration; in severe cases, bloodletting with subsequent infusions of physiological salt solution; copious ingestion of milk; in case of weak action of the heart, stimulants (black coffee, camphor, ether, but no alcohol); caution against the use of alcohol during and immediately after labor; total abstinence is advisable.</p>
<p>6 Amyl Alcohol— A colorless, oily fluid of very sharp taste and penetrating, disagreeable odor.</p>	<p>Manufacture of fruit essences, nitrite of amyl, valeric acid and aniline dyes; rectification of spirits.</p>	<p>In the form of vapor, through the respiratory system.</p>	<p>Nervous symptoms; headache; fullness of the head; giddiness; nausea; numbness; disturbances of digestion; palpitations of the heart.</p>	<p>Congestion of the head; headache; oppression of the chest; irritation of the air passages.</p> <p>See No. 5.</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>Aniline— A colorless oil which acquires a tint on exposure to air and light. Like aniline, all other amide compounds of benzol and its bromologues, as toluol, naphthaline, xylo, etc., are poisons. Especially should be mentioned alpha and beta naphthylamine, benzidine, tolidine, parantiramine, the diamines (phenylamine and tolyline diamine) as well as the aliphyl and aryl compounds of aniline, like their homologues (dimethyl and diethyl aniline, diphenylamine, etc.).</p>	<p>Manufacture of aniline and its derivatives, as well as of aniline dyes; manufacture of photographic materials and the like.</p>	<p>Absorption through the skin, by direct contact or by saturation of the clothing; through the digestive organs; absorption through the respiratory organs as volatile particles and impalpable dust.</p>	<p>Acute Poisoning.—(a) Mild Cases: Pallor of the skin and mucous membranes, with slight cyanosis; a feeling of weariness and weakness; head symptoms—vertigo, reeling, unsteady gait; deficient elasticity of movement; slow, labored speech; irritability (aniline "pip"); condition of slight inebriation, with loquacity, gaiety and defective power of orientation; loss of appetite, constipation and tense, rapid pulse. (b) Severe Cases: Dark blue to swarthy cyanosis; formation of methaemoglobin; bounding pulse; "air-hunger," with great frequency of respiration; lowering of sensibility; sometimes vomiting; painful urination and bloody urine. (c) In the most serious cases: Sudden prostration; cold, pale skin, blue lips, nose and ears; lessening and sometimes complete absence of sensibility; moist, cold skin; small pulse; death in a comatose condition, sometimes after antecedent convulsions. Subacute and Chronic Poisoning.—Anæmia; slowing of the pulse; disorders of digestion, such as eructations, loathing of food, vomiting, diarrhoea, and eczematous and pustular eruptions on various parts of the body, especially on the scrotum; nervous symptoms, as general debility, headache, ringing in the ears, vertigo, unrestful sleep, disturbances of sensibility, often of power of motion; spasmodic muscular pain. Subacute and chronic poisonings are rare. Anæmia and retarded pulse are early symptoms. The blood is of a brownish</p>	<p>See No. 5.</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p style="text-align: center;">8</p> <p>Aniline Dye-stuffs— The majority of the very numerous aniline dyes are non-poisonous. Generally the basic dyes are more dangerous than the acid dyes. Regarded as suspicious or injurious to the health are:</p>			<p>hue, but microscopically unchanged; occasionally the urine contains blood.</p>	
<p>(a) The various phenol nitrates, dinitrophenol, dinitroresol (saffron yellow, aniline orange), picric acid (trinitrophenol).</p>	<p>Aniline dye factories; dye houses; also manufacture of explosives.</p>	<p>Action on the skin; in the form of dust, through the respiratory organs; the digestive organs.</p>	<p>Itching, dermatitis, eruption, yellow discoloration of the cuticle and eyelids; sneezing and nasal catarrh; inflammation of the mucous membrane of the mouth; bitter taste; disturbances of digestion; irritation of the central nervous system and of the kidneys. Industrial poisoning by picric acid is extremely rare.</p>	<p>For the itching, 10 grains of menthol to the ounce of petrolatum, or 10 to 15 grains carbolic acid to the ounce. For a permanent relief, change of occupation.</p>
<p>(b) The many naphthol nitrates, dinitronaphthol, Manchester yellow, dinitro and naphthol calcium; tetranitronaphthol.</p>	<p>Aniline dye factories; dye houses.</p>	<p>Action on the skin; in the form of dust, through the respiratory organs; the digestive organs.</p>	<p>Blood poisoning. The morbid symptoms resemble those in poisoning by amido compounds; ailments of the central nervous system in great variety; paralysis. Intense irritation of the skin, caused, it is asserted, partly by using excessive quantities of chloride of lime in cleansing the skin.</p>	
<p>(c) The nitroso dyes.</p>	<p>Aniline dye manufacturer-ies; dye houses.</p>	<p>In the form of dust on the skin.</p>	<p>Intense irritation of the skin, caused, it is asserted, partly by using excessive quantities of chloride of lime in cleansing the skin.</p>	
<p>(d) The aurentia—hexa-nitrodiphenylamine; imperial yellow, its sodium salt.</p>	<p>Aniline dye manufacturer-ies; dye houses.</p>	<p>In the form of dust on the skin.</p>	<p>Inflammation of the eyelid or eyeball.</p>	
<p>(e) Ethyl and methyl violet.</p>	<p>Aniline dye manufacturer-ies; dye houses; manufacture of colored pencils.</p>	<p>As dust or fine particles in the eyes.</p>		

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
(f) The melidola dyes, corvulin, indulin, fast black.	Aniline dye manufactories; dye houses.	As dust or atomizer solution (in dyeing by the spraying process); action on the skin and respiratory organs.	Eruptions; severe irritation of the mucous membranes; uncontrollable sneezing.	
(g) Chrysoidin, fast black.	Aniline dye manufactories; dye houses.	In the form of dust; effect on the skin.	Eruptions (probably superinduced by the use of excessive quantities of the chloride of lime in washing the hands.	
(h) Bismarck blue.	Aniline dye manufactories; dye houses.			See No. 58.
9 Antimony Compounds — Trioxide of antimony. Antimony trichloride (antimonious chloride, but- ter of antimony, antimonial ore butter); Tartar emetic (tartrate of antimony and potas- sium); Golden sulphide (anti- mony pentasulphide), anti- mony colors.	Extraction of antimony and its compounds; bur- nishing of rifle barrels and steel ware; manufacture of antimony alloys, type and stereotype metal, hard lead (ammunition factories), britannia and white metal; remelting of old and scrap metal; manufacture of an- iline dyes, fireworks; vul- canizing and red-dyeing of indiarubber (antimony pentasulphide); mordants and fixing materials in cotton dyeing and textile printing.	In the form of vapor (trioxide of antimony, an- timonious acid, sulphide of antimony), through the organs of respiration; irri- tation of the skin; in the form of dust, in the manip- ulation of britannia and type metal.	Intensely itching eruptions of the skin, caused by local irri- tation and aggravated in the case of a perspiring skin; inflammation of the mouth, throat and stom- ach; constipation and intestinal colic; in acute cases, diarrhoea. albumin in the urine, loss of strength, weakness of the heart, vertigo and fainting. It appears to be somewhat doubtful, however, whether all of the enumerated compounds of antimony are detrimental to the health of the workers in them.	
10 Arsenic Compounds — Arsenic trioxide (arsenic, white arsenic) smelting dust; arsenous chloride, ar- senic colors, e. g., Schuler's green (Swedish green), ar- senite of copper. Schweinfurt green (pat-	Arsenic mining; roasting of arsenic-bearing ores; manufacturing of glass, colored chalk, chloride of arsenic for etching on brass; shot manufacture; metal working; manufac- ture of arsenic colors; preparation of organic dye- stuffs, colored lights, tex-	In the forms of gas and dust, through the respira- tory organs and mucous membranes, the stomach and intestinal canal.	Acute Poisoning.—The first symptoms usually appear after half an hour or an hour, viz., con- striction of the esophagus, pains in the stomach and bowels, vom- iting, diarrhoea, debility, cold, bluish skin, severe cramp, lower- ing of heart's energy, vertigo, headache, faintness, illusions, loss of consciousness, convulsions,	If arsenic has been in- gested, thorough gastric lavage is necessary; then administer at once by the mouth 5 tablespoonfuls of a solution of calcined mag- nesia (70 g. to 500 g. of distilled water); after- wards give a tablespoonful every five minutes until a

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>ent, original, new, moss, mountain parrot, May, Kaiser, Cassel, Paris, Vienna, Kirchberg, Leipzig, Wurzburg, Swiss green, compound of the arsenite and the sulphide of copper. Brunswick green, oxychloride of copper with copper oxide and sulphate of lime. Newwied green. (Similar, only a larger proportion of arsenic trioxide.) Cochineal (Vienna red), arsenic acid with extract of Fernambuco wood.</p>	<p>tile printing and dyeing; manufacture of wallpaper and colored paper; tanning; manufacture of oil-cloth and artificial flowers; taxidermy; painting (outside and decorative); pyrotechnics (Indian white fire). It is to be observed that zinc, silver, lead, bismuth, copper and the commercial acids often contain more or less arsenic.</p>	<p>In the form of a gas, through the organs of respiration (generally mixed with hydrogen).</p>	<p>death, sometimes choleraic symptoms. In mild cases, burning in the pharynx, vomiting, salivation, difficulty in swallowing and indigestion. Chronic Poisoning. — Constant and persistent headache, combined with melancholia; disinclination to labor and sleeplessness, which are sometimes the only symptoms; further, gastric disturbances, such as vomiting and diarrhoea, which result in emaciation and decline of strength; persistent symptoms of nasal catarrh, pharyngitis and bronchitis; frequently skin diseases, in varying form—erythematous, papular and pustular cutaneous eruptions, which also produce abscesses; falling out of the hair and nails; melanosis—that is, the deposition of a brownish pigment, not containing arsenic, on the neck, trunk and extremities. In severe cases, disturbances of the central nervous system: intense, lightninglike, lancinating pains; formication; furriness of the skin; impairment of the sensibility; chilliness; weakness of the muscles; also unilateral or bilateral paralysis, and often loss of the tendon reflexes; sometimes fever; albumin in the urine. The paralyzes are transient, or they may last for years, leaving not infrequently permanent disturbances.</p>	<p>movement of the bowels occurs; the internal use of lime water also is recommended for rinsing out the stomach and as an antidote; to counteract the exhaustion, cold affusions, rubbing, hypodermic injections of ether and camphor. In case of chronic arsenical poisoning: Electric vapor baths and electrical treatment are in order; the disturbances of the stomach are to be treated with caicined magnesia and uniritating liquid nourishment (milk, milk porridge, rice porridge, saiep); the cachexia, by fresh air and nutritious diet; in paralysis, use iodine preparations and electricity.</p>
<p>11 Arsenureted Hydrogen— A colorless, extremely of-</p>	<p>This gas is formed everywhere when, in the use of arsenical acids and metals, hydrogen is generated for</p>	<p>In the form of a gas, through the organs of respiration (generally mixed with hydrogen).</p>	<p>At first no disturbances, or only slight indisposition; after some hours, chilliness, vomiting (food, bile, then blood), pain in the back,</p>	<p>Fresh air and oxygen; later bloodletting; use of an alkaline solution of common salt; mild alkaline</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>offensive gas with the odor of garlic.</p>	<p>technical purposes (e. g., the filling of children's toy balloons); in soldering and etching metals or acids, e. g., enamel ware factories, tin, zinc and lead plating works; impure iron silicate, by the absorption of water, develops arseniureted hydrogen.</p>		<p>giddiness, ringing in the ears, faintness, small pulse, bluish discoloration of the mucous membranes; labored respiration; urine at times dark or even black, containing blood or blood crystals. After 24 hours, yellow hue of the skin and mucous membranes, from absorption of biliary fluids, fetor of the mouth (resembling garlic), swelling and sensitiveness of the liver and spleen, headache, delirium, mortal anguish; death or slow convalescence.</p>	<p>drink; analeptics (coffee, camphor).</p>
<p>12 Asphalt</p>	<p>Workers in asphalt.</p>	<p>As dust by inhalation; also by local irritation of the skin.</p>	<p>Bronchitis, inflammation of the eyelid, acne and yellow discoloration of the skin.</p>	<p>For the bronchitis, elixir of terpen hydrate and kerozin; for the inflamed eyelids, boracic acid in hot water and bathe frequently.</p>
<p>13 Benzine— A mixture of low-boiling portions of petroleum, known commercially under various names, e. g., petroleum, benzine, ligroline, gasoline.</p>	<p>Benzine distillation; chemical cleansing plants, glove cleaning; removal of fat from bones, fat solvent; lacquer, varnish and india rubber industries; manufacture of waterproof materials (application of the rubber mass dissolved in benzine); ornamental leather factories; used as a source of power.</p>	<p>In the form of a vapor, through the respiratory organs; to a less extent, probably, through the skin also.</p>	<p>Headache, vertigo, nausea, vomiting, cough, irregular respiration, weakness of the heart, drowsiness and deep sleep with cyanosis of the countenance, coldness of the skin and complete insensibility; on awaking, headache, vertigo and depression, fibrillar twitching of the muscles, trembling, especially of the musculature, as if from chilliness; benzoic acid is found in the urine. Chronic Poisoning.—Headache, flashes before the eyes, ringing in the ears, mental disorder with excitement and a state resembling inebriation, sensory disturbances and hallucinations. The occurrence of chronic benzine poisoning has been contested. The symptoms vary greatly be-</p>	<p>Removal of the patient into fresh air; in severe cases, stimulants, like coffee, camphor; then cold affusions.</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>14</p> <p>Benzol— A very unstable, colorless fluid, burning with a bright, very sooty flame; extremely volatile; its like compounds, e. g., toluol, xylo and cumol.</p>	<p>Manufacture of benzol, its like compounds and numerous derivatives; technical use of these products in the manufacture of colors, in carburizing illuminating and water gas, in refining and dissolving of caoutchouc, resins, fats, alkaloids, iodine, phosphorus, and sulphur; in the removal of grease from materials; dye works, laundries; lacquer and varnish factories; the rubber industry.</p>	<p>In the form of vapor, through the respiratory organs; reabsorption through the skin.</p>	<p>cause the benzine used technically is a complex mixture and not always of the same composition.</p> <p>Benzol, its like compounds and the rest of the hydrocarbons of coal tar have a specific affinity for the central nervous system and a general action on the protoplasm of the organic cells (fatty degeneration). Female workers, particularly in their developmental years, especially at the time of menstruation, are more susceptible than men to the poisoning, and in an extraordinary degree to the subacute and chronic forms of it.</p> <p>Acute Poisoning.—(a) In mild cases: Cerebral disturbances, humming in the ears, giddiness, steepiness, a condition resembling inebriation, vomiting and irritant cough, slight flushing of the face.</p> <p>(b) In severe cases: Symptoms on the part of the central nervous system, muscular tremor, like chilliness from exposure to cold; trembling of the whole extremities; finally, tonic and clonic spasms; pale, livid skin; lips remarkably scarlet hued; blood bright red, thin. Discolorations of the skin like those in aniline and nitro-benzol poisoning are wanting in benzol poisoning.</p> <p>(c) In the most violent cases: Hallucinations, delirium, protracted unconsciousness and death in tonic convulsions.</p> <p>Subacute and Chronic Poisoning.—Numerous spots of extravasated blood in the skin, together with severe anæmia; hemorrhage</p>	<p>Prompt removal of the patient into the fresh air; inhalation of oxygen; exclusion of female workers from every employment in which benzol is used.</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>15</p> <p>Brass— This may be pure or what is known as "ordinary." Pure yellow brass is made up of equal parts of copper and zinc, while ordinary brass is made up of copper, tin, lead and zinc, the component parts varying in proportion.</p>	<p>All trades where filing, cutting, polishing or casting of brass occur.</p>	<p>In the form of dust, through the respiratory system and entry into the alimentary canal.</p>	<p>from the mucous membranes—in women, from the genitals; fatty degeneration of the internal organs (heart, liver, kidneys).</p>	<p>Where the various symptoms mentioned appear in the patient, a change of occupation is essential.</p>
<p>17</p> <p>Bronze— An alloy of copper and tin, to which small quantities of other metals, especially zinc, are sometimes added, antimony chloride, nitromuriate of platinum and manganese are sometimes used as constituents.</p>	<p>Pharmaceutical and chemical industries.</p>	<p>In the form of vapor, through the respiratory system.</p>	<p>Deposit of copper tartar (green) on the teeth, gastro-intestinal catarrh, colic, chills, perspiration, headache, neuralgia, vomiting, taste as of metal in the mouth, chronic bronchitis, wasting of tissues.</p>	<p>See No. 28.</p>
	<p>All trades where bronze is used either in powder or liquid form.</p>	<p>Through the respiratory system, either in fumes or dust.</p>	<p>The symptoms are practically the same as those described in respect of brass.</p>	<p>See No. 15.</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>18 Carbolic Acid—</p>				<p>See No. 76.</p>
<p>19 Carbon Bisulphide— A volatile, nauseous, colorless fluid.</p>	<p>Preparation of chlorine compounds, purifying tallow and paraffin wax, vulcanizing rubber, extraction of sulphur from gas-washing materials, extraction of fats and oils in treating rags, bones and raw wool; refining of oil.</p>	<p>As a vapor, through the respiratory system, and in fluid form as a skin irritant. The most serious cases generally arise from absorption by contact with the hands.</p>	<p>(a) Acute Poisoning.—Paralysis of the central nervous system, deterioration of red-blood corpuscles, sleepiness, commonly fatal coma. (b) Chronic.—Pruritis, cough, general bodily pains, vertigo, mental excitation and exhaustion, chills, anaesthesia, cramps, tetany, paralysis, atrophy of the muscles, disarrangement of taste, smell, hearing and vision, dementia.</p>	<p>These various symptoms should be treated by a physician the same as if they were due to other causes. A change of occupation is necessary for permanent relief.</p>
<p>20 Carbon Dioxide— A specifically dense, odorless, colorless gas, collecting near the ground or floor.</p>	<p>Generated in mines by the process of breathing, by the burning of miners' lamps, and by blasting; in lime and brickkilns and dolomite calcining kilns; in decomposition and putrefaction gases; in tanneries (tan pits); in sugar mills (saturation vessels); manufacture of carbonic acid and of mineral waters; spirit distilleries; compressed yeast factories; breweries, fermenting rooms and wine cellars; in sewer and well gases; in firing and heating establishments; in the lighting of workrooms; by the exhaled air in closed workrooms and caissons.</p>	<p>In the form of gas, by inhalation.</p>	<p>Large quantities occasion sudden death by suffocation. With the inhalation of smaller quantities the symptoms of illness begin with pressure in the head, vertigo, ringing in the ears and sparks before the eyes, disturbed breathing and pain in the chest, sometimes psychic excitement and convulsions. Usually in cases of more protracted effect there is loss of consciousness and of the power of motion (or even death by suffocation), with gradual decline of the pulse and respiration, and often with the occurrence of delirium. On prompt removal from the poisonous atmosphere there is a restoration of consciousness with subsidence of the symptoms of illness and recovery in a few days. The occurrence of chronic poisoning by carbon dioxide is doubtful.</p>	<p>Examination of the air of suspected places before entering them; immediate removal from the poisonous atmosphere; artificial respiration to be persevered in for a long time; finally, inflation of the lungs with oxygen; cold affusions; stimulation to the skin; restoratives.</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>21</p> <p>Carbon Disulphide— In a pure state it is a limpid, highly refractive, extraordinarily volatile fluid, having an odor like that of chloroform; imperfectly refined, its hue is pale yellow and its odor offensive.</p>	<p>Manufacture of Carbon Disulphide; an agent for the mass in the process of gas purification; disinfection; a solvent for caoutchouc, gums, fats, oils, etc.; in vulcanizing caoutchouc and rubber (patent-rubber factories); for the extraction of lanolin, the refining of tallow, stearin, paraffin, and wax; production of carbon chloride; assembling and setting up carriage wheel rims and rubber tires; imitation silk factories.</p>	<p>In the form of vapor, through the respiratory system; in fluid form, through the skin, e. g., at the dipping of the hands in the fluid.</p>	<p>It causes heavy damage to the red blood corpuscles and to the central nervous system. Acute Poisoning.—In mild cases, marked stupefaction and a sense of intoxication; in more intense poisoning, pallor of the countenance, flaccidity of the arms and legs, even complete insensibility, obliteration of all reflexes, loss of consciousness, due to paralysis of the central nervous system. With the inhalation of concentrated vapor there is a fatal result in a few minutes. Chronic Poisoning.—The earliest symptoms (first becoming manifest, sometimes after employment for a few weeks, but, for the most part, after months or even years) are headache extending from the root of the nose to the temples, a sensation of giddiness and stupefaction, particularly at evening, after the close of labor; later, pain in the extremities, muscular weakness with trembling, spasms or fibrillar twitching, also contractures, transient and permanent paralyses, with atrophy of the muscles; deafness; itching and formication on the skin, reduction of the reflexes, circumscribed and more extensive areas of anæsthesia and analgesia; acceleration of the heart's action, nausea, vomiting, colic, alternate diarrhoea and constipation, the latter condition prevailing in the later stages of the disease; emaciation, disturbance of the sense of vision, sometimes transient, but rare in the initial stage; retrobulbar neuritis, choroiditis, central scotoma, disturbances of the senses of smell and taste. In respect to the</p>	<p>In acute poisoning, removal into the fresh air, warm baths, cold affusions; when there are symptoms of paralysis, electrical treatment; in disturbance of vision, potassium iodide and vapor baths; interdiction of the practice of dipping the unprotected hands into carbon disulphide.</p>

Designation of the Substance.	Industry in which Poisoning Occurs	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>22 Carbon Monoxide— A colorless, tasteless gas and, when in a state of diffusion, odorless, burning with a blue flame in the air. Coal vapor has from 0.5 to 5 per cent. of carbon monoxide. Illuminating gas, 6 to 10 per cent. of carbon monoxide.</p>	<p>In industrial plants with defective firing and heating arrangements; plants for the production of industrial gas; mining (mine gases); coal mines; blast furnaces (furnace gas); Cowper apparatus; gas purifications; coke ovens, smelting furnaces; gas machines; lime and brick kilns, dolomite calcining</p>	<p>In the form of gas, through the respiratory organs.</p>	<p>central nervous system, there is at first a condition of excitement, followed by depression; subsequently, very irritable, violent and explosive temper, with hyperstimulation of the sexual instinct; later its abnormal decline. After several weeks or months, relaxation, melancholy, a dreamy manner, weakness of memory, puerile enunciation, obtuseness. According to Charcot, psychic disturbances occur in 87.5 per cent. of the cases. Mental diseases under the semblance of acute mania and dementia occur with good prospect of recovery; the severer forms appear in cases where there is hereditary predisposition. There have been observed also local evidences of the paralyzing effect of the carbon disulphide upon the parts brought into contact with it, especially in the fingers. The prognosis, so far as the preservation of life is concerned, is favorable; as to the full restoration of health, it is unfavorable.</p>	
			<p>Acute Poisoning.—Increased blood pressure at first, with slowing of the pulse and pounding of the heart; later, lowering of the pulse, with rapid but small pulse, and not infrequently with discrete spots of dilation in the superficial blood vessels. Remarkably pale-red discoloration of the blood and of the dilated parts. (a) Disturbances of the general health: In mild cases, dull headache, flashes before the eyes, gidd-</p>	<p>Removal from the poisonous atmosphere; admission of fresh air; artificial respiration, with inflation of the lungs by oxygen for hours, if necessary, keep head of the injured person slightly elevated; subcutaneous injection of ether; camphor; cold affusions; rubbing; mustard poultice; electrical treatment; insufflation of ammonia</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>oxide and 33 to 40 per cent. of mine gas. Water gas, a mixture of 41 per cent. carbon monoxide, 50 per cent. hydrogen, 4 per cent. carbon dioxide and 5 per cent. nitrogen. Producer gas contains 34 per cent. carbon monoxide and 60 per cent. hydrogen gas.</p>	<p>kilns; iron and metal foundries (drying of the molds); soldering in tin shops; charcoal burning; resin distillation; ironing; heating with open coal braziers or coke stoves (drying the plaster and walls of new buildings); drying chambers.</p>		<p>diness, ringing in the ears, nausea and fullness in the gastric region. (b) In severe cases: Bluish discoloration of the skin; spasmodic, wheezing respiration; sometimes tonic and clonic convulsions, more often paralytic symptoms, either with weakness of all the extremities or of the lower only, or, indeed, of only single groups of muscles, including the facial muscles. The convulsive stage, which may be altogether absent, is succeeded by the stage of asphyxia, with sensory and motor disturbances, involuntary voiding of urine, semen and feces; subnormal temperature; weak, slow and intermittent pulse; loss of consciousness. As sequels there have been observed pneumonias, inflammations of the skin, paralyses and psychoses, the last two often pursuing an unfavorable course. Chronic Poisoning (among ironers, firemen, cooks, etc.).—Frequent headaches, dizziness, nausea, vomiting, coated tongue, weakness of memory; anæmia without chlorosis; "hot flushes," formication, palpitation of the heart, insomnia, general debility and feebleness of the psychic functions.</p>	<p>vapor; administration of stimulants.</p>
<p>23 Carburetted Hydrogen—</p>	<p>Usually mixed with other gases found in coal mines.</p>	<p>Through the respiratory system in the form of a gas.</p>	<p>Asphyxia; syncope, which is usually fatal.</p>	<p>Fresh air, artificial respiration and oxygen.</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>24 Cement—</p>	<p>Cement workers.</p>	<p>As a dust irritating the eyes and skin, and by inhalation.</p>	<p>Chronic bronchitis, asthma, ulceration of the nasal septum, eczema, pruritis, conjunctivitis.</p>	<p>The various symptoms should be treated as they arise by a physician.</p>
<p>25 Chinoin— A by-product of petroleum.</p>	<p>Refining of oils.</p>	<p>By locally irritating the skin.</p>	<p>Itching and a scaly eczema on face, arms and sometimes the whole body.</p>	<p>Locally, ichthyol and zinc ointment.</p>
<p>26 Chinone— A mixture of aniline, hydrochloric acid and potassium chromate.</p>	<p>Chemical factories.</p>	<p>Irritation of the eyes and skin in vapor form.</p>	<p>Inflammation of the eyeball and brown pigmentation of the cornea and skin.</p>	<p>Treat individual symptoms.</p>
<p>27 Chloride of Lime— A white, granular, somewhat desiccative powder, having the odor of hypochlorous acid, and containing 35 to 47 per cent. of chlorine.</p>	<p>Manufacture of the chloride of lime; use of the chloride of lime as an oxidizing and chlorinating agent in the chemical industry (for example, dye-stuffs); disinfection; manufacture of chloroform, chlorine, oxygen; bleaching of linen, cotton, paper; cotton print works.</p>	<p>In the form of vapor or dust, through the respiratory organs (inhalation of chlorine gas); direct action on the skin.</p>	<p>More or less severe, irritating symptoms of inflammation in the upper air passages, difficulty of breathing, bronchitis, asthma, sometimes spitting of blood, irritation of the eyelids, weeping; skin hot from action of chlorine; intensely itching and burning eruption on the skin, eczema, burns from the dust of lime and its chloride.</p>	<p>Admission to the employment of such, and only such, workmen as are sound and strong, and free from any predisposition to catarrhal affections; technical arrangements which permit the charging and emptying of the chamber from the outside.</p>
<p>28 Chlorine— A yellowish green, suffocating gas of penetrating odor, which forms a solution of a greenish yellow color when dissolved in water.</p>	<p>Manufacture of chlorine, chloride of lime, and of organic chlorine products; bleacheries; paper mills; laundries; ironing; tinning works; manufacture and use of disinfecting agents containing chlorine.</p>	<p>In the form of gas, through the respiratory organs.</p>	<p>The smallest quantities excite severe suffocative sensations and necessitate leaving the room, so that acute chlorine poisoning rarely occurs. Symptoms of Cutaneous Disease.—Burning, stinging formation of nodules, bulbs and even open wounds of the skin.</p>	<p>Removal of the patient into the fresh air; inhalation of amyl nitrite; artificial respiration; on account of the paralyzing effect of the chlorine on the heart, stimulants are required (black coffee, subcutaneous injection of</p>



Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>29</p> <p>Chlorodinitrobenzol— Forming yellow crystals.</p> <p>Chloronitrobenzol— Forming yellowish crystals of aromatic odor.</p>			<p>Effect on the Mucous Membranes.—Weeping, catarrh, cough, oppression of the chest and intense difficulty in breathing; bronchial catarrh with hemorrhage; sometimes lobular pneumonia. The concentrated vapor causes uncontrollable cough, spasm of the glottis, cold sweats, cyanosis and small pulse; death occurs within a few minutes (sudden collapse).</p> <p>In its Chronic Effect.—Distress in the gastric region; chronic catarrh of the stomach; heartburn; pallid countenance; catarrh of the respiratory tract; lobular pneumonia; headache, vertigo, insomnia; gradual emaciation and premature senescence.</p> <p>Chlorine Acne.—(Occasioned in the electrolytic production of chlorine by chlorinated carbonated hydrogen.) Inflammatory processes in the dermal glands; the occurrence of unusually diffuse, confluent comedones with indurated, dark-green heads; solid infiltration of the sebaceous follicles, their inflammation and suppuration causing pustules and boils.</p>	<p>camphorated oil); to control the irritating cough, hypodermics of morphine or cautious inhalation of steam.</p> <p>For the prevention of chlorine acne: Substitution of anodes made of molten metallic oxides for the carbon anodes.</p>
				<p>See No. 69.</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>30</p> <p>Chromium Compounds— Chromic acid, and anhydrous; chromates and bichromates, e. g., sodium chromate; sodium bichromate; lead chromate.</p> <p>Chromium colors: Chrome yellow (acid chromate of lead); chrome orange (basic and neutral chromate of lead); chrome red (chromo-cinnabar); acid chromate of lead oxide and lead hydrate; chrome green, poisonous only as a mixture of chrome yellow and paris blue. (See also under lead.)</p>	<p>Manufacture of chromium preparations, chrome colors, and hectograph composition; photography (color and carbon printing); oxidizing agent in the tar color industry; manufacture of matches; wet batteries; bleaching fats, oils and wax; mordant in Turkish red dyeing; textile printing (for neutralizing colors and for dyeing); chrome tanning (two-vat process); staining of wood.</p>	<p>Absorption by the skin and mucous membranes; in the form of dust, through the respiratory organs.</p>	<p>The chromates act very much like chromic acid itself; pitted, phagedenic ulcers, burrowing deep and spreading wide, very difficult to heal and very painful, occur almost exclusively on the skin of the hands, more rarely on the arms, thighs, scrotum and penis, resembling syphilitic ulcers; they also appear, though seldom, on the mucous membrane of the tonsils and of the hard and soft palates. With rare exceptions there is extension of the inflammation to, and perforation of, the nasal septum at the cartilaginous portion; eczematous eruptions.</p> <p>Irritations of the eyelids. Irritation of the Bronchioles.— Chronic bronchial catarrh, and small areas of inflammation in the lungs. In recent years the last mentioned symptoms are hardly ever encountered in a remarkably wide field of observation. It is at least extremely doubtful if disease of the kidneys is ever caused by chromium.</p> <p>In handling chromium dyes containing lead there is danger of chronic lead poisoning.</p>	<p>Chromium ulcers are successfully overcome by careful treatment of the skin, and by the immediate, complete and skillful closure of the lesions.</p>
<p>31</p> <p>Compressed Air—</p>	<p>Tunnel diggers, divers and workers under increased atmospheric pressure.</p>	<p>Through the respiratory system.</p>	<p>Trouble occurs after return to normal atmospheric pressure. Pain in lower extremities, joints and stomach; headache, vomiting, nausea, dizziness; paralysis and coma. These are indicative of caisson disease, divers paralysis, bends.</p>	

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>32 Copper— Usually associated with lead and arsenic.</p>	<p>Coppersmiths, flers, bronzers, miners, smelters, founders, watchmakers, etc.</p>	<p>Sometimes by swallowing, when the poison enters through the alimentary canal, but more usually through the respiratory system in the form of dust.</p>	<p>Vomiting, gastritis, bronchitis and generally such indications as described in regard to brass.</p>	<p>See No. 58.</p>
<p>33 Cotton—</p>	<p>Workers in cotton.</p>	<p>A fiber dust producing irritation through the respiratory passages, and in cotton-spinning by excessive humidity.</p>	<p>Chronic bronchitis, difficult breathing, anæmia, rheumatism, swellings, dysmenorrhæa.</p>	<p>Treat the various symptoms and change occupation.</p>
<p>34 Cyanogen Compounds— Dicyanogen; Prussic acid; hydrocyanic acid, a colorless, highly volatile fluid, of penetrating, pungent and irritating odor. Sodium Cyanide— Cyanide of potassium, potassium cyanide: A colorless salt, forming crystals which, after fusion, re-crystallize, but readily decomposes on exposure to the air, setting free hydrocyanic acid. Rhodanic (sulphocyanic) Compounds— Poisonous dose of the dilute hydrocyanic acid.</p>	<p>Extraction of gold; siler and gold plating, galvanoplastic, electro-plating; manufacture of cyanogen compounds and inorganic processes (when organic residues are heated with alkalis); reduction of residuum to gas; blast furnaces; gas works (purification process); dye workers and printeries; photographic establishments; manufacture of celluloid.</p>	<p>In the form of gas, through the respiratory organs; prussic acid, also through the epidermis.</p>	<p>Generally speaking, industrial poisonings by cyanogen are rare. Acute Poisoning. — Moderate quantities of the gas cause vertigo, headache, rush of blood to the head, oppression of the chest, palpitation of the heart, a sensation of constriction at the throat with pharyngeal irritation and dryness, nausea and vomiting, difficult, gasping respiration, with retention of consciousness. To the stage of difficult breathing succeeds that of spasm with cold, perspiring skin, convulsions and involuntary passing of water, with loss of consciousness. In the stage of asphyxiation there are temporary suspension of respiration, retardation of the heart's action, lividity of the skin and mucous membranes, lowering of the body temperature; with inhalation of large quantities, the stage of asphyxia supervenes immediately. Dilatation of the pupils; loss of consciousness; a few gasping inspirations; cyanosis of the skin and mucous membranes; collapse; death.</p>	<p>Fresh air; artificial respiration; administration of oxygen; cold affusions and friction; hypodermic injection of ether, camphor; if the poison has been taken into the stomach, give emetics, then immediately wash out that viscus with water, with the addition of one-quarter to one-half of 1 per cent. of potassium permanganate. Koert recommends a 3 per cent. solution of hydrogen binoxide for subcutaneous injection, doses of 1 cubic centimeter, at different points in the body. An alkaline solution of ferric sulphate, or an antidote for arsenic with some ferric salt, is indicated as the best remedy. To control the convulsions, give morphia hypodermically.</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>35 Diamonds and other precious stones imbedded in lead for cutting or soldering.</p>	<p>Workers in jewelry.</p>	<p>As dusts cutting and irritating the respiratory tissues, and by fumes from solder.</p>	<p>Chronic Poisoning (very doubtful).—Headache, vertigo, unsteadiness of gait; nausea, loss of appetite, disturbances of the gastric and intestinal functions; slowing of the pulse; albuminuria.</p>	<p>Treat tuberculosis and bronchitis. See No. 58.</p>
<p>36 Diazomethane— A very volatile yellow gas.</p>	<p>In methylating of every kind.</p>	<p>As gas, through the lungs; effect on the skin.</p>	<p>Acute Poisoning.—Severe headache; great physical depression; grave lesions of the lungs; other effects like those of dimethyl sulphate.</p>	<p>Fresh air and stimulation.</p>
<p>37 Dimethyl Sulphate— A colorless oily fluid.</p>	<p>Production of methyl ethers, methyl esters and methyl amines; manufacture of artificial perfumes.</p>	<p>In the form of gas, through the respiratory organs; direct action on the skin.</p>	<p>Strongly corrosive effect on the skin and mucous membranes; burns; pains in the nape of the neck and in the thoracic cavity; hoarseness; destruction of the mucous membrane and aspiration of the broken-down products into the lungs; watering of the eyes; conjunctivitis; formation of erosion-eschars and oedema, photophobia and parenchymatous clouding of the cornea; even coma, convulsions, paralysis and a fatal outcome.</p>	

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>38</p> <p>Dinitrobenzol or Binitrobenzol— When pure, crystallizing as slender, colorless, rhombic needles; when impure, in yellow, crystalline cakes.</p>				See No. 69.
<p>39</p> <p>Emery—</p>	Grinders.	As dust, cutting and irritating the respiratory tissues.	Chronic bronchitis, ulcers of nasal septum, rhinitis, inflammation of the ear, injury to the eye, tuberculosis.	Change occupation for bronchitis; sedatives.
<p>40</p> <p>Ether—</p>	Photography.	As a vapor, through the respiratory system.	Vertigo, nausea.	Fresh air, stimulants, artificial respiration.
<p>41</p> <p>Ether, Methylated—</p>	Incandescent mantle makers.	As a vapor, through the respiratory system.	Lassitude, insomnia, headache and nausea.	See No. 40.
<p>42</p> <p>Ethyl Nitrite—</p>	Manufacturing percussion caps.	As a vapor, through the respiratory system.	Difficulty in breathing and blueness of skin. Seldom fatal.	See No. 40.
<p>43</p> <p>Formaldehyde— A liquid, volatilizing as a gaseous vapor of penetrating odor; 10 per cent. formaldehyde, formalin.</p>	Disinfection; manufacture of many organic preparations, especially in the coal-tar color industry; preserving and hardening of human and zoological preparations.	In the form of vapor, through the respiratory organs and mucous membranes.	Intense irritation of the skin and mucous membranes.	Do not enter the disinfection chamber until after the introduction of ammonia and thorough ventilation.

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>44 Feathers—</p>	<p>Milliners, bedding makers, etc.</p>	<p>As a dust, by inhalation conveying dirt and germs into the lungs; also by inhalation of poisonous dyes, such as lead chromate or arsenic.</p>	<p>Chronic bronchitis, asthma, pulmonary abscess, tuberculosis.</p>	<p>See No. 33.</p>
<p>45 Felt and Fur—</p>	<p>Furriers and hatmakers.</p>	<p>As dust, by inhalation, and poisoning by mercury nitrate used in manufacture.</p>	<p>Chronic bronchitis, pulmonary abscess, asthma, chronic mercury tremors, premature senility, tuberculosis.</p>	<p>See No. 33.</p>
<p>46 Flax and Hemp Macerated in sulphuric acid.</p>	<p>Those engaged in the manufacture of line and rope.</p>	<p>As dust, causing irritation of the respiratory organs; also causing irritation by fumes from macerating and bleaching agents.</p>	<p>Flax-beater's ague, headache, neuralgia, nasal catarrh with inflammation of the nostrils, bronchitis, bleeding at the nose, parched mouth and throat, inflammation of the middle ear, eczema of the hands and arms.</p>	<p>See No. 33.</p>
<p>47 Gasoline—</p>	<p>Cleaning rubber and patent leather and many other materials.</p>	<p>As a vapor, by inhalation.</p>	<p>Blueness of the lips and face, sensation of burning in the mouth; difficulty in breathing, palpitation, sleeplessness, mental aberration. If accompanied by hemorrhage of the lungs it may be fatal.</p>	<p>Fresh air, stimulation and artificial respiration.</p>
<p>48 Glass and emery dust, including lead and other metals used in glass making; also putty powder; also excessive light and heat.</p>	<p>Glass factories and all industries where cutting and polishing of glass takes place.</p>	<p>As dust, through the respiratory system, and externally, injury to the eyes from light and heat.</p>	<p>Chronic bronchitis, tuberculosis, conjunctivitis, injuries to the eye from excessive heat and light, wounds to eyes and hands, eczema, rheumatism.</p>	<p>Treatment for consumption if symptoms are found.</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>49 Gold— Non-poisonous unless associated with acids, potassium cyanide, mercury or the like.</p>	<p>Those engaged in the manufacture of jewelry, gold beating, gilding, etc.</p>	<p>Usually in the form of fumes.</p>	<p>Symptoms depend on the acid or other poisonous substance used.</p>	
<p>50 Grain and Flour—</p>	<p>Millers.</p>	<p>As dust, causing irritation to the respiratory passages.</p>	<p>Nasal catarrh, bronchitis, bleeding at the nose, inflammation of the middle ear, "Miller's Asthma," pneumonia and tuberculosis.</p>	<p>Treat various symptoms.</p>
<p>51 Horn, Bone and Shell—</p>	<p>Buttonmaking.</p>	<p>As dust, by inhalation.</p>	<p>Chronic bronchitis, tuberculosis of the tissues.</p>	<p>Treatment same as consumption.</p>
<p>52 Horsehair and other Hair—</p>	<p>Upholstery, brushmaking, etc.</p>	<p>As dust, by inhalation.</p>	<p>Bronchitis, ulcers, carbuncles, asthma, bleeding at the nose, anthrax.</p>	<p>Treatment for anthrax if symptoms are present.</p>
<p>53 Hydrochloric Acid— In a pure state it is a colorless gas that fumes when open to the air, forming a dense, acid, white mist. The crude commercial acid is usually impure, containing arsenic among other admixtures.</p>	<p>Treatment with chlorine of previously roasted ores; potteries (glazing), enameling works, glass factories, soldering; in the chemical industry, manufacture of chloride and sulphate of soda, of muriatic acid, stannic acetate, etc.; manufacture of artificial fertilizers; bleaching, shoddy industry, cotton-print works; carbonizing of materials; india rubber industry.</p>	<p>Action on the skin and nasal mucous membrane; seldom in vaporous form, affecting the respiratory organs.</p>	<p>As a rule, the rarefaction of hydrochloric acid gas is so great that only in exceptional cases do any injurious effects occur, such as irritation of the respiratory organs. A proportion of 0.05 per mille of hydrochloric acid in the air is well borne, but only for a short time. A greater concentration causes chronic irritation of the mucous membranes which are exposed to the vapor. There are also catarrh of the eyelids, nasal, pharyngeal, laryngeal and bronchial catarrh, together with dental ulceration of the bone. Concentrated vapor may cause unconsciousness and death.</p>	<p>Removal of the patient from the poisonous atmosphere; inhalation of a finely nebulized solution of sodium bicarbonate. In addition, for acute poisoning, give atropine (1-50 grain) subcutaneously to stimulate the pneumo-gastric.</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>54</p> <p>Hydrochloric Acid, or Fluoric Acid— A colorless gas, of pungent odor and forming a dense mist in the air.</p>	<p>Production in chemical works; glass factories; etching on glass; laboratories of the pottery industry; extraction of the fluorides of antimony (substitute for tartar emetic in dye works); fertilizer factories (extraction of phosphorites); bleaching of cane for chair seats and extraction of its silicates.</p>	<p>In the form of gas, through the respiratory organs. In a fluid state it has an immediate action on the skin and mucous membranes.</p>	<p>Intense irritation of the eyelids, nasal catarrh, bronchial catarrh with spasmodic cough, ulceration of the nostrils, gums and oral mucous membrane; also painful ulcers of the cuticle, erosions and formation of vesicles; suppuration under the finger nails.</p>	<p>Fresh air and stimulants.</p>
<p>55</p> <p>Iodine—</p>	<p>Pharmaceutical and chemical industries.</p>	<p>As a vapor, by inhalation.</p>	<p>See Chlorine.</p>	
<p>56</p> <p>Iron and Steel—</p>	<p>All industries engaged in the handling of iron and steel where iron dust or steel filings are present, such as cutlery works, foundries, steel construction works, tube works, sand blasting, emery grinding of iron castings, needles, nails, etc.</p>	<p>Through the respiratory system in the form of dust, or by mechanical injury to the eyes.</p>	<p>Bronchial irritation, knife-grinder's consumption, eye injury, ulceration of the eye, etc.; the eyes may be injured by excessive heat and light.</p>	<p>Treatment same as consumption.</p>
<p>57</p> <p>Into—</p>	<p>Ropemaking, carpetmaking, bagmaking, etc.</p>	<p>By inhalation of fiber dust.</p>	<p>Conjunctivitis, asthma, bronchitis, anæmia, nasal growths, boils, eczema of scalp and hands, rhinitis.</p>	<p>See No. 33.</p>
<p>58</p> <p>Lead— A bluish white, highly lustrous metal, which on exposure to the air acquires a gray tarnish.</p>	<p>Smelting of lead and lead-bearing ores; manufacture and use of articles made of metallic lead; manufacture and use of lead colors and other lead compounds; in the trade of</p>	<p>Absorption of lead and lead compounds occurs— (1) In isolated cases, through the skin; whether through the uninjured skin is doubtful; (2) in the form of vapor (very finely</p>	<p>Industrial lead poisoning appears as a rule in the chronic form and arises from continuous absorption of infinitesimal quantities of lead during a protracted period of time (weeks, months and even years).</p>	<p>Discontinuance of work in lead at the slightest symptoms of lead poisoning. In lead colic, give first, by the mouth or subcutaneously, morphia, opium or atropine; after-</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>Lead alloys. Lead colors; other lead compounds. Lead sulphuret (galena) is held to be non-poisonous, and some lead polysilicates are regarded as nearly so.</p>	<p>painter, bouse painter and varnisher; plants for installation of gas and water; in the ceramic industry, the textile industry, etc. Materials containing lead may occasionally be employed in every industry, and that lead colors and other lead compounds are often met with in trade under fanciful names.</p>	<p>divided oxide of lead), and as dust, through the respiratory organs; (3) by way of the digestive tract by means of contaminated foods and drinks (for example, cigars, cigarettes, chewing tobacco). By inhalation the dust, laden with lead, finds lodgment in the upper respiratory tract, and, mixed with saliva, may reach the stomach.</p>	<p>The beginning is insidious, with disturbances of the general health, a sense of weakness, decline of bodily strength; sallow, pale-yellowish hue of the skin. Distress in the region of the stomach, eructations, lack of appetite, metallic taste in the mouth and fetid breath. The blue line (blue-gray discoloration of the gums), which, however, may be absent, even in severe cases; lead colic with constipation, retention of urine; frequently fibrillar trembling of the fingers; lead paralyses, of which the disturbances of sensation (paræsthesia and anæsthesia) take the precedence. Paralysis generally affects the extensor muscles of the arm and hand, with atrophic manifestations; more rarely, the flexor muscles. Sometimes also there are paralyses of the extensors and flexors of the legs or muscles of the shoulder. Those groups of muscles are especially affected which are most used in the occupational activities. Transient blindness, but also gradually progressive atrophy of the optic nerve; temporary loss of the senses of smell and taste; violent, often fatally ending disease of the brain, sometimes preceded only by slight premonitory symptoms, as irritability and headache, ringing in the ears, insomnia; more often, slowly increasing mental disturbances precede; epileptic convulsions, hallucinations; changes in the blood vessels and of the heart and kidneys (contracted kidney); increase of blood pressure and granular degeneration of the red blood corpuscles.</p>	<p>wards, cathartics (castor oil or podophyllin); in paralyses, electrical treatment, massage and baths; in every case, strengthening diet, iodide of potassium and sudorifics.</p>

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59 Lydel— A highly explosive fluid.	Blasting and like occupations.	Into the circulation, through the respiratory system in the form of vapor.	Disturbances in the sexual sphere in women; abortion, premature birth, low vitality of the children.	Fresh air and stimulants.
60 Manganese Dioxide— Brown mineral.	Breaking and grinding of manganese ore; sifting out of the refuse.	In the form of dust, through the respiratory organs.	After protracted action of the poison, the symptoms begin with disturbances of the sensibility, general debility, languor, sharp pains in the extremities, in the small of the back and nape of the neck, creeping sensation in the legs and numbness of the feet; salivation; tremor of the head, tongue and hands; later, locomotor disturbances with uncertain, stamping gait, and, ultimately, the impossibility of safe and sure progression.	No prompt treatment possible. Chronic symptoms require special treatment.
61 Meerschbaum—	Pipemakers.	As a dust, through the respiratory system.	Affections of the voice (low, whispering) combined with hoarseness of tone; forced laughter and weeping and lowering of intelligence. Sometimes dropsical affections of the lower extremities.	Treatment same as consumption.
62 Mercury— A silver white, shining	Mixing and smelting of quicksilver; occupation of mirror plater, amalgam grinding and silvering;	Absorption through the uninjured skin; absorbed in the form of vapor and as dust (amalgam dust,	Industrial mercurial poisoning is a chronic poisoning occasioned by work in this metal for a long period, commonly weeks, months,	Relinquishment of the employment; nutritious diet; vapor baths; potassium iodide.

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>metal, unchangeable in the air, but evaporating at hoase temperature. Mercury compounds, amalgams (alloys with metals). Cinnabat is non-poisonous.</p>	<p>manufacture of thermometers, barometers and manometric lamps, incandescent electric lamps, Roentgen and Hitley tubes, mercurial vapor lamps; manufacture of the salts of mercury, amalgams and colors, pharmaceutical products, antiseptic dyes, inflammable materials and explosives; employment of the salts of mercury, especially in the hare's fur business and felt hat manufacture; photography and steel engraving.</p>	<p>dust of the compounds of mercury).</p>	<p>years or decades. The first symptom is generally increased pyatism, with swelling and inflammation of the gums and of the huccal mucous membrane, often with the formation of rodent ulcers; besides, there are frequently disturbances of digestion, lassitude and pallor. Associated with the further absorption of mercury, "trethism" supervenes—a peculiar psychic excitability (timorousness, bewilderment, irritability) aside from the characteristic mercurial tremor. In a state of complete repose this tremor is not noticeable, and manifests itself only on voluntary movement, causing a quite distinctive, irregular tremulousness of the fingers, hands, arms and finally, also, of the legs and head. In strictly chronic cases the stomatitis and erethism are absent and only the tremor is observable. Death may result in the worst cases in consequence of the violent tremor and spasms affecting the entire body; in other cases, increasing weakness, Cachexia.</p>	
<p>63 Metal Fillings—</p>	<p>All workers in metals.</p>	<p>As dust, through the respiratory system; also, if soluble, as in the case of lead fillings, through the skin.</p>	<p>Chronic bronchitis, asthma, tuberculosis of the tissues, lead poisoning.</p>	<p>Treat symptoms.</p>
<p>64 Methyl Alcohol (wood spirit)— A colorless fluid of faint odor.</p>	<p>Produced by the dry distillation of wood; used in the preparation of varnish, lacquer, polish and perfumes; for the denaturing of spirits; for the produce-</p>	<p>Absorption through the digestive organs, also through the skin; in the form of a vapor, through the organs of respiration.</p>	<p>The effect is very persistent; nausea, headache, ringing in the ears, weakness of the muscles, insomnia, delirium, difficulty of breathing and sometimes deafness; inflammation of the throat</p>	<p>The substitution of innocuous media for methyl alcohol in the denaturing of spirits.</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>65</p> <p>Methyl Bromide—A colorless, gaseous body of aromatic odor. Methyl iodide, iodine methylete—An ethereal, colorless fluid of somewhat penetrating odor, soon becoming yellow on exposure to the air.</p>	<p>Employed in aniline dye factories.</p>	<p>In the form of gas, through the respiratory organs and the mucous membranes.</p>	<p>and the mucous membranes of the air passages of the bronchial tubes; finally, death by paralysis of the respiratory apparatus. Conjunctivitis; also serious affections of the retina and the optic nerve, resulting in blindness, even, from atrophy of this nerve. In chronic cases, fatty degeneration of the liver.</p>	<p>Fresh air and stimulants.</p>
<p>66</p> <p>Metol—In solution.</p>	<p>Photography.</p>	<p>By irritation of the skin.</p>	<p>In mild cases, vertigo, headache and transient stupor, with diplopia and a sensation of rigidity in the muscles of the eyes. In a severe case there was observed loss of consciousness continuing eight weeks, with staring look, pallor of the skin, retarded pulse and obstinate constipation. During brief intervals of wakefulness there was unrest with increasing excitability.</p>	<p>Ichthyol and zinc ointment.</p>
<p>67</p> <p>Nitraniline—Forming long, yellow crystals.</p>	<p>In making false pearls, nitro-benzol, sulphuric, picric and oxalic acids, metal etching, metallurgy, textile printing, metal plating.</p>	<p>As a gas, it irritates the respiratory mucous membranes and eyes and erodes the teeth. In solution it irritates the skin.</p>	<p>(a) Acute.—Bronchitis, pulmonary dropsy, difficulty in breathing, indigestion, colic, cyanosis, delirium, convulsions. (b) Chronic.—Bronchitis with</p>	<p>See No. 7.</p>
<p>68</p> <p>Nitric Acid—</p>	<p>Bicarb. soda applied locally.</p>	<p></p>	<p></p>	<p></p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>69 Nitrobenzol (mirbane oil, imitation bitter-almond oil)— A colorless, highly refractive fluid, having an odor like that of bitter almonds; and all nitro compounds of benzol and its homologues. The most of the nitro and chloro compounds are the more poisonous.</p>	<p>chrome compounds, jewelrymaking.</p> <p>Coal-tar color industry and those establishments in which its intermediate products are manufactured, as in explosive works; perfumery and soap factories, pharmaceutical laboratories, etc.</p>	<p>(1) Absorption takes place, first of all, through the skin, both the uninjured and especially the pathologically altered skin, particularly in the case of profuse perspiration; (2) through the respiratory organs; (3) through the digestive organs.</p>	<p>bloody sputum, anæmia, erosion and perforation of nasal septum.</p> <p>Poisoning by all of the homologues of nitrobenzol is very nearly the same. However, the larger proportion they contain of the nitro groups the more virulent they are likely to be. The nitro-chloro compounds are very much more dangerous than the simple nitro compounds.</p> <p>The first toxic symptoms may appear within a few hours (8 to 24) after absorption of the poison.</p> <p>Acute Poisoning.—(a) In mild cases: Uneasiness, headache, giddiness, nausea, loss of appetite, costiveness, burning sensation of the skin and mucous membrane.</p> <p>(b) In severe cases: A feeling of anxiety, disturbances of sensation, like formication on the legs and furriness of the soles of the feet, ringing in the ears; disturbances of co-ordination (reeling gait, stammering speech), increased excitability of the reflexes, convulsions and a state of general spasm; later, with decline of sensibility, symptoms of paralysis; vomiting; odor of the vomitus and of the exhaled breath like that of bitter-almond oil; jaundice of the skin; at first increased, afterwards diminished, activity of the heart, with lowered tension of the pulse; visual derangements (amblyopia, optic neuritis); blood viscid, brown to deep dun color; diminution of the red blood corpuscles and alterations in their form; formation of crystals. Death may occur with</p>	<p>Immediate removal from the workroom; inhalation of oxygen; artificial respiration; eventually blood-letting; stimulants, non-alcoholic; prohibition of the use of alcoholic drinks during working hours; avoidance of the same, also, outside of employment.</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>70 Nitroglycerin, glycerin trinitrate. An oily, vaporable, colorless fluid without odor.</p>	<p>Manufacture of explosives (dynamite, nitro-cellulose); in the use of dynamite.</p>	<p>Inhalation of the vapor; absorption through the injured skin, mucous membranes and wounds of the skin. In the explosion of dynamite the action of carbon dioxide and nitrous monoxide, as well as that of undecomposed nitroglycerin, is present.</p>	<p>deep insensibility, without other symptoms. The symptoms which point to blood changes predominate, in severe poisoning over the nervous symptoms. Subacute and Chronic Poisoning.—Jaundiced skin, which gradually becomes cyanotic; blood-crystal formation; symptoms of degeneration and regeneration of the red-blood corpuscles; general debility, anæmia.</p>	
			<p>Extraordinary toxicity; somewhat like prussic acid; a few drops are deadly, and even mere contact with products containing nitroglycerin may cause poisoning; severe headache, disturbance of the intellect, fainting, vertigo, burning in the throat and stomach; nausea, vomiting, colic; symptoms of paralysis in the muscles of the head and eyes, as well as in the lower extremities; bradycardia and retarded respiration, stertorous and difficult breathing; cyanosis; coldness of the extremities; injection of the conjunctiva; reddening of the countenance. In the mixing and sifting of dynamite: Obstinate ulcers under the nails and on the finger tips, eruption on the plantar aspect of the feet and interdigital spaces of both hands, with extreme dryness and formation of fissures. Explosion of nitroglycerin with little gas: Trembling, rush of blood to the head, vomiting, headache. Explosion of nitroglycerin with much gas: Vertigo, asphyxia.</p>	<p>Absolute avoidance of contact.</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>71</p> <p>Nitronaphthalene— A yellow, friable, crystalline mass of strongly aromatic odor. (See Nitrobenzol.)</p>			<p>cyanosis, motor paralysis and loss of consciousness; intermittent, stertorous respiration, coldness of the skin, small pulse; after recovery of consciousness, debility, nausea, vomiting, headache, intermittent pulse, and finally death.</p> <p>Chronic Poisoning.—Disturbances of digestion, trembling, neuralgia.</p>	
<p>72</p> <p>Nitrous Gases (low degrees of oxidation of nitrogen, which appear simultaneously)— Nitrogen protoxide; nitrogen deutoxide; nitrogen trioxide; anhydrous nitrous acid. Nitrogen protoxide is a colorless gas which, under the influence of atmospheric oxygen, is readily transformed into brown nitrogen dioxide. Below 20 degrees Centigrade nitrogen trioxide is a blue fluid; at the ordinary temperature it separates into nitrogen protoxide and nitrogen deutoxide.</p>	<p>Nitrous gases are produced by the action of nitric acid on deoxidating substances of various kinds, principally on metals (iron, lead, zinc, etc.), on organic substances (coal dust, wood, straw, paper, textile fabrics, woolen refuse, etc.), as well as many other substances (pyrites, sulphurous acid and its salts, soda sediment, hydrochloric acid, iron chlorides, sulphate of iron, etc.); in the preparation of nitric acid, its combinations and salts, among which the nitrous salts also are to be included; metal etching and metal refining; stamp mills and mints; galvanotechnics; nitrification in chemical works and manu-</p>	<p>In gaseous form, through the respiratory organs.</p>	<p>Susceptibility to the effects of nitrous gases fluctuates considerably. Persons who suffer from diseases of the respiratory organs are especially susceptible; not infrequently the continual inhalation of small quantities, for many consecutive years even, occasions no serious disturbances of the health. A pale, sallow complexion and chronic bronchial catarrh may be deemed, nevertheless, the usual consequences of occupational inhalation of very moderate quantities of nitrous gases. Often, however, larger quantities of the poisonous gases are borne for hours together (6 to 8 hours) without discomfort; when suddenly, after a long interval without disturbance, ominous symptoms appear.</p> <p>Symptoms of irritation in the air passages are manifest, as a</p>	<p>Immediate removal from the noxious atmosphere; inhalation of oxygen; finally, bloodletting and infusion of normal salt solution.</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>73 Oxalic Acid— It forms large, pellucid crystals.</p>	<p>factories of explosives; celluloid manufacture; sulphuric acid manufacture; production of picric acid; aniline colors, nitro-cellulose (gun cotton, collodion cotton), xyloidine, nitro-starch, nitro-jute, dynamite, abelite, nitro-man-nite, nitro-saccharose, viscoaine, etc.; nitric acid manufacture and storage; preparations of thorium and cerium; bleaching materials (oils, etc.); hat-making (maceration of the hair; etching and engraving on copper (etching of the plate); dyeing and printing (fixer and mordant).</p>	<p>In the form of dust, through the respiratory organs.</p>	<p>feeling of constriction of the larynx, spasmodic cough, oppression in the chest, labored respiration, anxiety, cold perspiration on the face, protrusion of the eyes, gasping speech, paroxysms of coughing, bluish discoloration of the countenance, coldness of the hands and feet. Consciousness is at first unimpaired, but with increased difficulty of breathing it becomes dimmed; injury to the teeth. The urine is scanty, brown in color, containing crystals and albumen. Death results from dropsy of the lungs. In very severe cases corpuscle crystallization is observed, and then a general systemic poisoning may result.</p>	<p>Chalk or magnesia mixed with water; emetics.</p>
<p>74 Paraffine—</p>	<p>Manufacture of oxalic acid; polishing of metals, especially of copper and brass utensils; used in dye works, chemical cleansing plants (rust and ink stains); straw hat manufacture and straw braiding.</p> <p>Arsenal workers, waterproof makers, electric wire insulators.</p>	<p>Into circulatory and digestive system as a vapor when melted; locally, by irritation of the skin.</p>	<p>Opalescent or bluish discolorations (with brittleness) of the nails; blood stasis in the hands; corrosive action on the mucous membrane of the œsophagus, of the stomach and bowel; weakness of the heart; convulsions and spasms. However, industrial poisonings by oxalic acid are extremely rare</p> <p>Diarrhea, dizziness, headache, gastric disturbances, difficulty in breathing, sweating, eczema and sometimes cancer of the skin.</p>	

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>75</p> <p>Petroleum—</p> <p>A mixture of various hydrocarbons of the methane, ethyl, and aromatic series.</p>	<p>Production of oil; refining of the crude oil; furniture polishing by use of so-called polishing oil.</p>	<p>In the form of vapor, through the respiratory organs. As a fluid it has a direct action on the skin.</p>	<p>The vapors of petroleum cause a profound acute poisoning with a condition of inebriation; shouting, reeling and prolonged sleep without any recollection of what has happened; in severe cases, loss of consciousness, lividity of the countenance, staring look and contracted pupils, almost imperceptible pulse, asphyxia. The chronic effect of petroleum vapor causes numbness and irritation of the Schneiderian membrane.</p> <p>In general, the symptoms of the action of petroleum resemble those resulting from the action of benzene. By reason of the high boiling point of petroleum there are produced in the extraction of paraffin butter, in the handling of crude paraffin, in the emptying of retorts, and in the filling of casks with petroleum, obstinate inflammations of the hand in the form of acne (nodules, pustules and boils).</p>	<p>Removal into the fresh air; in collapse, a tepid bath with cold affusions; subcutaneous injections of camphorated oil.</p>
<p>76</p> <p>Phenol (carbolic acid)—</p> <p>A white crystalline mass and its homologues, e. g., cresol, lysol and their derivatives.</p>	<p>Anthracite coal tar distillation; production of picric acid and of many organic aromatic compounds; used in dyeing, calico printing; manufacture of lamp-black, in photographing wood with tar and oil of tar; surgical dressing industry.</p>	<p>Action on the epidermis and the digestive tract.</p>	<p>Erosion of the skin, which by great extension may lead to severe internal injuries; symptoms of degeneration in the blood and in the internal organs (nephritis); gangrene, icterus, collapse.</p>	<p>Locally, bioarb. soda or alcohol; internally, demulcents and oils.</p>
<p>77</p> <p>Phenyl Hydrazine—</p> <p>A yellowish, oily fluid, shading into brown, of pungent odor.</p>	<p>A by-product in the manufacture of antipyrine from aniline; manufacture of organic compounds.</p>	<p>Absorption by the skin; action on the skin.</p>	<p>Obstinate vesicular eruption on the skin, with itching and burning; diarrhoea, loss of appetite; granular degeneration of the blood corpuscles; formation of crystals in the blood; a sense of faintness.</p>	<p>Remove at once from exposure to chemical; special treatment for symptoms required.</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>78 Phosgene (carbon oxychloride)— A colorless gas, of suffocating odor.</p>	<p>In the manufacture of phosgene and its use for the production of organic compounds.</p>	<p>In the form of vapor, through the respiratory organs.</p>	<p>Until the present time only the acute form of poisoning has been recognized. The first symptoms of illness sometimes appear only after many hours. By means of the hydrochloric acid arising from the decomposition of the gases in the lungs, destruction of lung tissue results, with difficulty of breathing, paralysis of the lungs and pulmonary dropsy. A fatal outcome is often observed.</p>	<p>Inhalation of oxygen and medical attendance immediately after breathing the phosgene gas.</p>
<p>79 Phosphorus— A colorless, transparent substance; on exposure to the light translucent and of a yellowish, waxy luster. In the air it is luminous, and when heated in closed iron crucibles to a temperature ranging from 250 degrees to 300 degrees C. it is converted into red or amorphous phosphorus, which is unaffected by the air. The yellow or white phosphorus is very poisonous; the red, non-poisonous.</p>	<p>Extraction of phosphorus from phosphorites and coprolites, boneblack (refuse of sugar mills), bone-ash (refuse of meat extract manufacture); production of phosphor bronze, of phosphorus compounds, igniting agents, matches and tar colors.</p>	<p>In the form of vapor, through the respiratory organs; into the digestive canal by means of food contaminated by the fingers; action on the skin.</p>	<p>As industrial poisoning it occurs only in the chronic form occasioned by the absorption of very minute particles of the poison for a period of months, generally, indeed, of years. Symptoms of the disease sometimes first appear long after relinquishment of the occupation. It is doubtful whether chronic phosphorism occurs (that is, general systemic poisoning by phosphorus). Chronic phosphorus poisoning uniformly affects the bones of the face, beginning with inflammation and sclerosis of the bones and of the periosteum; then, by extension of the suppurative process, necrosis results. This most frequently attacks that portion of the alveolar process of the jaw-bone which is least protected against infection. Swelling and ulceration on the gums and the buccal mucous membrane, pain even in the sound teeth, loosening and falling out of the teeth, infiltration of board-like hardness occurs in the soft parts surrounding the jaw; sup-</p>	<p>To the utmost possible extent the prohibition of the use of white or yellow phosphorus; exclusion of laborers that have dental caries; after extraction of a tooth at least two weeks' exclusion from the employment; change of occupation; improvement of the general health; there is no specific medical treatment; in appropriate cases, operative intervention.</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>80 Phosphorus Sesquisulphide— A grayish yellow, odorless and tasteless substance.</p>	<p>In chemical factories.</p>	<p>Inhalation of sulphureted hydrogen in the fusion of phosphorus and sulphur, as well as in the drawing off of the molten mass from the kettles; dust in the grinding and sifting of the paste; bicarburet of sulphur vapors in the extraction of yellow phosphorus and regeneration of carbon disulphide.</p>	<p>paration and destruction of the jawbone (necrosis) with numerous fistulous channels which here and there burrow through the cheek. Hand in hand with the ulcerative processes go osteoplastic formations, so that, while suppurative destruction of tissue takes place at one point, at another the formation of new bone is going on. The under jaw is more often affected than the upper; here the process goes on insidiously without formation of new bone, but with local destruction of the part. The palatal and orbital bones may be attacked with ulceration and shrinking of the eyeball. By extension of the inflammation along the sheaths of the vessels there result meningeal inflammation and cerebral abscess. There is remarkable brittleness of the bones, decline of appetite, pallid complexion, diarrhoea, emaciation. Sometimes there is amyloid degeneration of the abdominal organs. Death by sepsis.</p>	<p>Prevention of the contamination of phosphorous sesquisulphide with yellow phosphorus; precautions against injury from the effects of sulphureted hydrogen.</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>81</p> <p>Phosphureted Hydrogen— A colorless gas of nauseating odor.</p>	<p>In the extraction of phosphorus; in the preparation of red phosphorus and the sesquisulphide of phosphorus; in the reduction of iron silicate containing phosphorus by the action of moisture; in the production of acetylene with calcium carbide that contains an admixture of calcium phosphate.</p>	<p>In the form of gas, through the respiratory organs.</p>	<p>An oppression in the chest, changing to a burning, lancinating pain; affections of the head, vertigo, tinnitus aurium; general debility; loss of appetite; great thirst. Death occurs without convulsions, through the effect of the poison on the blood.</p>	<p>Fresh air and stimulants.</p>
<p>82</p> <p>Picric Acid— Trinitrophenol in a pure state forms pale yellow, bitter tasting foliate, metallic crystals.</p>	<p>Chemical works, dye houses; manufacture of explosives and powder (lyddite, melinite); jectile factories; filling shops.</p>	<p>In the form of dust, through the respiratory passages; direct action on the skin.</p>	<p>Poisonings with picric acid are rare; when they occur there are itching, inflammation of the skin, vesicular eruption, yellow pigmentation of the epidermis and of the conjunctiva, inflammation of the buccal mucous membrane, bitter taste, disturbances of digestion, epigastric pain, nausea, vertigo, diarrhoea and jaundice; picric acid decomposes the constituents of the blood.</p> <p>By the penetration of dust into the nostrils, sneezing and nasal catarrh are occasioned.</p>	<p>Wearing of rubber gloves; instant removal of the patient from the poisonous atmosphere.</p>
<p>83</p> <p>Platinum, Chloride of—</p>	<p>Developing in photography.</p>	<p>A skin irritant especially apt to affect the mucous membranes.</p>	<p>Eczema, fissures and ulcers of the skin; asthma, sneezing, coughing and bronchial affections.</p>	<p>Remove from use of chemical. See Eczema.</p>
<p>84</p> <p>Pyridine— A colorless fluid of pungent and characteristic odor. Its homologues, pyridine basis.</p>	<p>In its manufacture out of coal tar and bone tar; in the use of denaturing spirits (shops for wood-working, gliding and hat manufacture).</p>	<p>In the form of vapor, through the respiratory organs. In a fluid state it acts on the skin of the hands and arms.</p>	<p>Catarrh of the mucous membranes; hoarseness, irritation and choking sensation in the throat; headache, vertigo, flaccidity and trembling of the extremities; difficulty of breathing and clonic convulsions; eczema of the hands.</p>	<p>Wearing of rubber gloves; instant removal of the patient from the poisonous atmosphere.</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
85 Rags and Paper—	Papermaking.	Inhalation and contact with dust and dirt; also excessive moisture and poisoning by dyes and acid.	Anthrax, bronchitis, gastric catarrh, eczema, rheumatism, poisoning by acid fumes and dyes, etc.	Treat symptoms.
86 Silver, Nitrate of—	Electroplating, photography, glassmaking and the manufacture of silver leaf.	By absorption, through the skin and mucous membranes, and as dust, through the respiratory system and alimentary canal.	Discoloration of the skin and mucous membranes, usually of bluish-brown color.	The discoloration of the skin may be removed with cyanide of potash.
87 Stones and Earths—	Workers in flint, granite, marble, silica, limestone, terra-cotta, brick manufacture, etc.	As dust, by inhalation.	Chronic bronchitis, asthma, tuberculosis.	See general index for article on consumption.
88 Straw and Broom—	Broommaking, hatmaking, mattingmaking, etc.	Irritation of the respiratory passages by fiber dust, poisoning by bleaching agents, as acids, lime and dyestuffs.	Eczema, chronic bronchitis.	Locally, ichthyol and zinc ointment.
89 Street Dust— Composed of such substances as manure, asphalt, soot, ashes, earths, disintegrated brick, granite and other pavement materials, sand, concrete, etc.		By inhalation, conveying germs to the lungs, and by local irritation of the eyes.	Conjunctivitis, bronchitis and nasal catarrh.	Boric acid solution to the eyes.
90 Sugar—	Refiners.	Excessive heat and moisture combined with inhalation of charcoal dust.	Skin trouble, affections of the lymphatic glands and boils.	

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance Into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>91 Sulphur Chloride— A thick fluid of brownish color and suffocating odor, forming on exposure to the air.</p>	<p>Solvent for sulphur and fats; caoutchouc and patent rubber industry.</p>	<p>In the form of vapor, through the respiratory organs.</p>	<p>In contact with water and atmospheric moisture, it is resolved into hydrochloric acid vapor. The vapor of sulphur chloride is suffocating; if ingested, it excites vomiting.</p>	<p>Immediate removal of the patient from the poisonous atmosphere.</p>
<p>92 Sulphur Dioxide, Sulphurous Acid— Its anhydride is sulphur dioxide, in the form of gas; condensed it becomes fluid. The gas is of pungent odor and suffocating effect.</p>	<p>Roasting of sulphur-bearing ores; brick works, ceramic industry; manufacture of sulphuric acid, of ultramarine; extraction of bones, manufacture of glue and gelatine from bones; disinfection; refining of petroleum; manufacture of candles; bleaching of wax, silk and wool; chromium tanafoag (two-vat process); bleaching of straw hats and bristles; preserving wine and fruits; fumigating hops and casks with sulphur; ice machines; heating plants (burning of pyrite-bearing coal).</p>	<p>In the form of gas, through the respiratory organs.</p>	<p>In moderate concentration sulphurous acid is borne without inconvenience or injury; persons accustomed to the gas bear very well a proportion of .003 to .004 per cent. of sulphur dioxide in the air. Susceptible persons, at the beginning of their employment in an atmosphere containing sulphurous acid, manifest a transient irritation of the mucous membranes of the respiratory organs and of the eyes. In its severe action there is spasmodic cough with secretion of tenacious, often blood-tinged mucus. The protracted effect of a high degree of concentration is livid discoloration of the mucous membranes, bronchial catarrh, croupous angina of the bronchi and their branches and inflammatory areas in the lungs; disturbances of digestion.</p>	<p>Removal from the noxious atmosphere; admission of fresh air; artificial respiration; infusion of weak alkaline solutions (.05 to 0.1 per cent. liquor natrii caustica—solution of caustic soda).</p>
<p>93 Sulphureted Hydrogen or Hydric Sulphide— A colorless gas, having the fetid odor of rotten eggs.</p>	<p>Blast furnace plants. In granulating the slag; distillation of sulphur waters; ultramarine works; Leblanc soda and chemical factories; in the manufacture of the compounds of sulphur and phosphorus;</p>	<p>In the form of gas, through the respiratory organs, as pure hydric sulphide gas; often found in admixture with other gases; direct action on the conjunctiva.</p>	<p>In the less violent cases there are gastric distress, nausea, fetid eructations, irritation and inflammation of the conjunctiva; rarely, erosion of the cornea, formation of vesicles on the lips, irritating cough, headache and a sensation of giddiness. In long-</p>	<p>Before emptying of dung pits and the like, their contents should be thoroughly mixed with iron sulphate; the emptying should be effected by mechanical apparatus; safety ropes to be attached to the</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>94</p> <p>Sulphuric Acid— A colorless, odorless, thick, oily fluid.</p>	<p>sulphur metals (manufacture and use); sulphide of soda and sulphide of barium industry (manufacture of sulphide colors and dyeing with these); the extraction of cellulose (straw and wood); in the waste waters of industries which make use of organic substances; sedimentation tanks of sugar works; precipitation of soda residua containing calcium sulphide; work in sewers, latrines and dung pits; illuminating gas plants; flax retteries; tanneries.</p>	<p>In the form of vapor, through the respiratory organs; direct action on the skin.</p>	<p>continued inhalation convulsions and paralysis occur.</p> <p>In severe cases there are contraction of the pupils, slowing of the pulse, impaired respiration, involuntary oscillation of the eyeball, gnashing of the teeth, tetanus.</p> <p>With a very high proportion of sulphureted hydrogen in the air a man suddenly falls, becomes unconscious and dies without convulsions (apoplectic form).</p> <p>Chronic Poisoning.—Conjunctival catarrh; a sense of pressure in the head and on the chest; headache, debility, vertigo, nausea, disturbance of digestion; salivary gland enlargement; slow- slowing of the pulse; tendency to the formation of boils.</p>	<p>workman; prompt hoisting out of the unconscious workman; removal of the soiled clothing; artificial respiration; administration of oxygen; hypodermics of ether or camphor.</p>
<p>94</p> <p>Sulphuric Acid— A colorless, odorless, thick, oily fluid.</p>	<p>Manufacture of sulphuric acid; accumulator factories (mold and charging rooms); burnishing of iron, steel, etc.; textile industry, hat factories; petroleum distillation; factories for the manufacture of powdered fertilizers.</p>	<p>In the form of vapor, through the respiratory organs; direct action on the skin.</p>	<p>Inflammatory diseases of the respiratory organs (acute and chronic catarrh), inflammation of the lungs; anorexia; decalcification of the bones; injury to the teeth through softening of the dentine.</p> <p>As a result of the bespattering of the skin with concentrated sulphuric acid there is severe pain, a whitish discoloration of the skin, becoming brownish, with reddening and swelling of the surrounding tissues; in cases of extensive scalds there are, ultimately, decomposition of the blood, formation of ulcers of the duodenum, somnolence and even death.</p>	<p>workman; prompt hoisting out of the unconscious workman; removal of the soiled clothing; artificial respiration; administration of oxygen; hypodermics of ether or camphor.</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>95</p> <p>Tar— product obtained by dry distillation, particularly of anthracite coal and lignite.</p>	<p>Manufacture of illuminating gas; coke ovens; tar works; tar product factories; plants for wood preserving; manufacture of roofing paper; use for concrete paving; painting of metals; as a fuel; brickquet factories.</p>	<p>Direct action on the skin; in the form of vapor, on the respiratory organs.</p>	<p>Tar itch, under the form of diffuse acne, eczema or psoriasis, primarily on the upper extremities, later also on the other parts of the body; not infrequently on the irritated portions of the skin there appear cancrroid ulcers, especially of the scrotum (among chimney sweepers, paraffin and soot workers and briquetmakers). Together with the effect on the greater portion of the skin, there are also general symptoms: Loss of appetite, nausea, diarrhoea, headache, numbness, vertigo, besides disturbances of the urinary bladder (ischuria, strangury), also albuminuria and dropsy.</p>	
<p>96</p> <p>Tobacco—</p>	<p>Workers in tobacco.</p>	<p>As dust, by inhalation.</p>	<p>Palpitation, vertigo, insomnia, cough, nausea, vomiting, diarrhoea, emaciation, conjunctivitis, tuberculosis, dysmenorrhoea and a tendency to abortion.</p>	<p>Stimulants.</p>
<p>97</p> <p>Triton— An explosive powder.</p>	<p>Blasting, etc.</p>	<p>By inhalation.</p>	<p>Same as Lydol.</p>	<p>See No. 59.</p>
<p>98</p> <p>Turpentine— A mixture of various terebinthine hydrocarbons differing in odor and in composition, according to the botanical species from which they are severally derived.</p>	<p>Manufacture of varnish, cement, lacquer, sealing wax, colors; tapestry printing; trade of decorator, lacquerer and house painter; as a cleansing agent in various industries.</p>	<p>In the form of vapor, it acts upon the mucous membranes; in a fluid state, it acts on the epidermis.</p>	<p>Irritation of the mucous membrane of the eyes, of the nose (catarrh) and of the upper air passages (hemming cough, bronchial inflammation); salivation; besides, there are insensitiveness, fiddiness, headache. Prolonged action of the oil causes irritation of the kidneys, and then these organs excrete urine having the odor of violets.</p>	<p>Treat symptoms.</p>

Designation of the Substance.	Industry in which Poisoning Occurs.	Mode of Entrance into the Body.	Symptoms of Poisoning.	Special Measures of Relief.
<p>99 Vanadium—</p>	<p>Cloth printing; photography; steel casting.</p>	<p>In the form of vapor, through the respiratory system.</p>	<p>Severe irritation of the skin is excited, especially by the so-called pine oil (Russian oil of turpentine).</p>	
<p>100 Volatile Oils—</p>	<p>In the manufacture of flavoring extracts and perfumery.</p>	<p>As vapors, by inhalation.</p>	<p>Spasmodic cough, pulmonary congestion, pulmonary hemorrhage, nephritis, rhinitis, gastroenteritis, bronchitis.</p>	<p>Treat symptoms.</p>
<p>101 Wood—</p>	<p>Furniture making, etc.</p>	<p>Inhalation of dust and varnish solvents, sandpaper dust, floor-scraping dust, etc.</p>	<p>Headache, dyspepsia, vertigo, ringing in the ears, inflamed eyelids, erythema.</p>	<p>Fresh air.</p>
<p>102 Wool—</p>	<p>Woolen industry.</p>	<p>By inhalation of fiber dust.</p>	<p>Swelling of the joints, bronchitis, rhinitis, asthma, skin troubles, acute nasal catarrh, nausea, vomiting, vertigo.</p>	<p>See No. 33.</p>
<p>103 Zinc—</p>	<p>Zinc platemakers, engravers, dry-cell battery-makers, brass foundries and makers of zinc oxide or zinc white paint.</p>	<p>Through the respiratory system as a dust and as a vapor.</p>	<p>Anthrax, bronchitis, nasal catarrh.</p>	<p>See No. 15.</p>

PART I OF BOOK XIII

Treats of the inorganic or mineral materials used in medicine, together with the definition, property and use of each.

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Book XIII

MEDICAL MATERIALS; THEIR PROPERTIES AND USES

PART I.

INORGANIC (MINERAL) MATERIALS.

Importance of Drugs.—Drugs have to-day a very wide and important claim to our attention from the fact of their wide application. Those in more common use should be understood by the laity, while a knowledge of the rarer drugs should be close at hand, should we wish to learn of them. Drugs are our friends, but, like friends, must be properly and carefully used; in cases where not so used they prove a detriment rather than a benefit.

All Nature Assists.—For purposes of healing nature gives her vital forces in the form of plants and animals. Those forms of nature without life lend their aid, and thus some very important remedies come from the mineral kingdom.

Divisions of the Subject.—Our subject is therefore divided into parts, depending upon the source. Part I deals with drugs from the inorganic kingdom; Part II treats of drugs derived from the organic kingdom. The application of the drugs shall be given. Formulæ are not given, but such as are in common use will be found carefully and fully written under “Medicinal Prescriptions,” “Home Administration of Medicines,” and elsewhere.

(1375)

The first in alphabetical order of the INORGANIC MATERIALS is:

ALUM (Alumen).

Definition.—A double sulphate of potassium and aluminium.

Property.—It may cause vomiting. Locally it checks bleeding.

Use.—It acts as a styptic, astringent and emetic.

Manner of Using.—As an emetic a teaspoonful is the dose for a child and a tablespoonful for an adult, and it should be given in syrup. A lotion of alum and whiskey is very useful in the prevention of bed-sores.

AMMONIUM (Ammonium).

Definition.—The salts are derived from the gas, ammonia.

Property.—It stimulates the heart. Weak solutions excite the flow of gastric juice. It is an antagonist to acids.

Use.—It may be used in cases of fainting or in cases of heart failure. Weak solutions are used as a sub-acid.

Manner of Using.—The aromatic spirits may be used in water, a teaspoonful as a dose. It should be remembered that this affords but temporary relief. Locally the liniment is useful.

ARSENIC (Acidum Arsenosum).

Definition.—Occurs as a white powder or in dense masses of crystals.

Property.—It serves as a stimulant to the nervous system, and in small doses improves the appetite and digestion.

Use.—Its properties indicate its use. Its stimulant effect upon the nervous system is made use of in the treatment of St. Vitus' dance. Preparations are used locally.

Manner of Using.—The common form used internally is called Fowler's solution, which is used in doses as high as ten drops. For local use a concentrated preparation is employed. In all cases arsenic is to be used with extreme caution, as it is very apt to produce symptoms of poisoning.

BISMUTH (Bismuthi Subnitras).

Definition.—A heavy white powder.

Property.—It has a soothing influence on the gastro-intestinal or digestive tract. Locally applied it is sedative and exsiccant; that is to say, it dries up excretions.

Use.—In cases of diarrhœa large doses are employed for the astringent effect. Locally it is employed in the treatment of burns and in skin diseases, where there is secretion to dry up.

Manner of Using.—It may be taken as a powder or in mucilage of acacia.

BORIC ACID (Acidum Boricum).

Definition.—It appears as colorless, transparent six-sided plates.

Property.—The influence of boric acid is sedative and destructive to low forms of organized life.

Use.—As a sedative and antiseptic.

Manner of Using.—Internally it is given in the form of a powder. For external application a lotion is prepared by dissolving the acid in water.

CALCIUM (Calcium).

Definition.—A metallic substance, the oxide of which constitutes lime. Chalk is scientifically called the carbonate of calcium.

Property.—Some preparations are sedative, others are sedative and astringent. Lime water and chalk are astringent and alkaline.

Use.—Either freshly slacked lime or, better, chlorinated lime may be used as a disinfectant. Carron oil consists of linseed oil and lime water, and is useful in the treatment of burns. Prepared chalk on account of its soothing and astringent effects makes a very useful tooth powder.

Manner of Using.—For internal use lime may be given in the form of a syrup where its assimilation is desired. Lime water may be used as a spray, or may be taken internally. Added to milk it prevents curdling.

CHLORINE (Chlorum).

Definition.—A gaseous element of a greenish color and strong suffocating odor.

Property.—Chlorine has the property of destroying the various forms of bacteria.

Use.—Chlorine is generated in the sick room and used in its free state as a disinfectant. For commodes, for bed-pans, or for internal administration a solution of chlorinated soda is employed.

Manner of Using.—Chlorine is to-day but little used internally, its principal use being external, and depending upon its power to kill germs.

COPPER (Cuprum).

Definition.—A metallic substance used to a slight extent in medicine, more widely in the arts.

Property.—Copper is astringent and caustic.

Use.—Its use is dependent upon its properties, it being an astringent and caustic. Copper is sometimes added to pickles to make them of a bright green color. This fraud can be detected by placing a piece of steel or the blade of a knife in the liquor; if it contains copper there will be a deposit of metallic copper upon the steel in a few minutes. The amount of copper present would not be sufficient to cause symptoms of poisoning. A far more dangerous source is the pigment found in wall-paper made of copper arsenite, which is very poisonous. This imparts to the wallpaper its green color.

Manner of Using.—Copper should always be used with caution, and never without the advice or direction of a physician. When used internally a salt known as the sulphate is used. Externally its caustic action is effected.

GOLD (Aurum).

Definition.—A well-known precious metal. On account of its high place among the metals gold was supposed to have some special value in medicine. As a matter of fact it is but little employed.

Property.—Its chief property is to stimulate the glands of the stomach and liver. It acts also upon the kidneys, increasing the flow of urine.

Use.—It is used for its general stimulatory effect on the system and for its stimulant effect on the liver and stomach in particular.

Manner of Using.—The preparation used is an orange-colored powder made of equal parts of sodium chloride or common table salt and gold chloride. The dose for internal administration is minute.

HYDROCHLORIC ACID (Acidum Hydrochloricum).

Definition.—A metallic acid sometimes called muriatic acid or spirit of salt.

Property.—Dilute hydrochloric acid excites or stimulates the flow of secretions of the digestive tract and thus promotes appetite and digestion.

Use.—In dyspepsia due to insufficient amount of hydrochloric acid, the dilute acid is of value.

Manner of Using.—The dilute acid is used in drop doses freely diluted with water.

IRON (Ferrum).

Definition.—The most useful, widely distributed and abundant of all the metals.

Property.—Being a normal or natural element of the blood, iron and its preparations have the property of building up the blood and tissue worn out by disease. Iron has also a tonic effect on the nerves.

Use.—In cases of anemia or lack of blood the various preparations of iron are employed to replace the loss. In convalescence from disease iron is of distinct value when given in small doses over a long period.

Manner of Using.—Locally the tincture of the chloride is astringent. Care must be taken whenever iron or its preparations are used locally about the throat or taken internally in liquid form that they do not come in contact with the teeth. Internally iron may be given in pill form or as a solution.

MAGNESIA.

Definition.—A metallic substance, four preparations of which are used generally in medicine.

Property.—Magnesia being an alkaline substance is antagonistic to acids. It is also laxative.

Use.—The laxative property is marked in the oxide of magnesia and in the sulphate of magnesia or epsom salt. The citrate is laxative. The oxide is a useful antacid.

Manner of Using.—The sulphate or epsom salt is readily soluble in water. A teaspoonful is sufficient for most people as a purgative, though a tablespoonful would do no harm. Magnesia can be used in doses as high as a teaspoonful to two teaspoonfuls for an adult. For young children the dose is ten to twenty grains. The citrate of magnesium is a pleasant purgative in liquor form.

MANGANESE (Manganum).

Definition.—A metallic substance, two preparations of which, the dioxide and the sulphate, are used in medicine.

Use.—Manganese is used in the same cases as iron.

MERCURY (Hydrargyrum).

Definition.—A heavy fluid, with a silvery lustre and free from odor or taste.

Property.—Mercury in small quantities acts as a tonic, improving the condition of the blood. It is sometimes called an alterative from the fact that it alters or changes the state of the system.

Use.—Its use is that of a tonic, but should always be used advisedly. The preparation called corrosive sublimate, which is the bichloride of mercury, has no equal as an antiseptic. Calomel and blue mass are valuable as laxatives.

Under the name quicksilver we recognize the mercury used in the arts, as to manufacture thermometers and mirrors.

Manner of Using.—Corrosive sublimate should be used only externally without a physician and with great caution, as it is very poisonous. Blue mass pill may be given as high as five grains. Calomel is best taken in small amounts, but this, too, should be used with caution.

NITRIC ACID (Acidum Nitricum).

Definition.—One of the metallic acids occurring as a colorless, fuming liquid.

Property.—Locally the application of nitric acid is followed by destruction of tissue. Taken internally it is an astringent.

Use.—The local effects are made use of in the employment of the acid as an escharotic. Internally it is used where astringent results are desired, as in diarrhœa.

Manner of Using.—The strong acid is used locally, but for internal use only small quantities are used and very well diluted.

OXYGEN (Oxygen).

Definition.—A gaseous element forming one-fifth of the atmosphere.

Use.—Being a vital part of the air we breathe it is used in diseases of the heart and lungs associated with great difficulty in breathing.

Manner of Using.—It is usually kept in tight cylinders ready for use. It is used by inhalation.

PHOSPHORUS (Phosphorus).

Definition.—A yellow wax-like substance obtained from bones. It has the odor of garlic.

Property.—Phosphorus acts upon the nervous system and upon the bones.

Use.—In disease of the bones, dependent upon defective nutrition, phosphorus is of great value. In those nervous diseases dependent upon nerve exhaustion, rather than organic disease, phosphorus is employed with benefit.

Manner of Using.—Phosphorus is given in the form of pills or as a liquid preparation. Poisonous effects quickly follow an over-dose.

SILVER (Argentum).

Definition.—Another of the precious metals. It is much more extensively used than the metal with which it is so often associated.

Property.—The preparation of silver that is most often used and the only one to be considered in this work is the nitrate of silver, or, as it is called, lunar caustic.

Locally and internally lunar caustic is astringent in its properties. The mark made externally is white, but this subsequently becomes black on exposure to light. Solutions of this substance behave in the same manner.

Use.—Locally the astringent or even caustic property of the drug are made use of in the destruction of exuberant granulations forming what is commonly called proud flesh. A solution of thirty grains to a pint of water painted on the finger will absorb a felon. Internally also the drug is used for its astringent action on the gastro-intestinal tract.

Manner of Using.—Internally minute doses are used. For external applications solutions are employed and are made of varying strength, depending upon the particular need.

SODIUM (Sodium).

Definition.—This element is not used by itself in medicine, but certain of its salts are well known and widely employed.

Property.—Sodium hydrate or caustic soda, as its name implies, is a caustic. Bicarbonate of soda is a sedative when used externally. Internally it is antagonistic to acids, hence is said to be antacid. Borax or

sodium-borate is used internally, but is liable to disturb the stomach. It is sedative in its action. Sodium chloride or table salt is an important part of our food. Sodium phosphate is mildly purgative in its action. Sodium sulphate or Glauber's salt is a powerful purgative.

Use.—Bicarbonate of soda is much used in dyspepsia. When given a few hours before meals it stimulates the flow of gastric juice. When given an hour or so after meals it serves to neutralize fatty acids which are products of faulty digestion. Sodium chloride in solution is much used to-day injected in the bowel or under the skin.

Manner of Using.—All the salts are soluble and should be taken internally in solution, in doses to meet the requirements of each case.

SULPHUR (Sulphur).

Definition.—A lemon yellow-colored substance, brittle, tasteless and without odor. It is found native in Sicily and Iceland in the neighborhood of extinct volcanoes.

Property.—Locally applied, sulphur is a stimulant to the skin and a parasiticide. Internally it acts favorably, so changing the nutrition of the person that it is called an alterative. This drug has long been famed as a medicine needed by the young in the spring time.

Use.—The preparation known as compound licorice powder is a mild laxative. In cases of disordered nutrition sulphur oftentimes acts most favorably. The fact that sulphur is absorbed into the blood from the small intestine is shown by the effect upon silver coins or jewelry work by persons taking it. The effect or results is a beneficial one upon the blood, hence in cases where the blood is deranged or below par, sulphur is useful.

Manner of Using.—Internally sulphur is taken in solution. It may be taken in syrup or molasses. Externally it is best applied in ointment.

SULPHURIC ACID (Acidum Sulphuricum).

Definition.—A heavy oily liquid without odor, but with a strongly acid taste. It is sometimes called oil of vitriol.

Property.—Sulphuric acid is astringent and antiseptic when taken internally. Locally it acts as an escharotic.

Use.—Its properties indicate its use. It is an escharotic, internal antiseptic, astringent and tonic.

Manner of Using.—Sulphuric acid should be used well diluted and always advisedly taken.

PART II OF BOOK XIII

Treats of the Organic (Vegetable) Materials used in medicine. Superb colored illustrations of eighty-four plants, fruits and vegetables are also to be found in this chapter.

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MEDICAL MATERIALS

PART II.

ORGANIC (VEGETABLE) MATERIALS

The materials of this group are far more numerous than those of the preceding group. They will be found arranged according to their common names, the scientific names in most cases being given.

ACETANILID (Acetanilidum).

Definition.—A white, crystalline substance, made from acetic acid.

Property.—It is sedative to the nervous system; causes a lowering of the temperature associated with free sweating.

Use.—It is employed in the treatment of spasms, for the relief of headache and to reduce temperature in mild cases of fever.

Manner of Using.—May be used as the powder or in the form of a tablet or capsule, five grains being the usual dose.

ACETIC ACID (Acidum Aceticum).

Definition.—A colorless liquid with a vinegar-like odor.

Property.—It checks hemorrhage locally, also has a soothing local effect. Taken internally it produces a cooling sensation.

Use.—It is useful as an antagonist to scurvy, as a refrigerant in mild cases of fever and locally for its soothing properties in sunburn. It acts also as a styptic.

Manner of Using.—The dilute acid is the safe preparation and may be used in amounts from one to two teaspoonfuls.

ACONITE, MONKSHOOD (Aconitum).

Definition.—Aconite is the root of a plant growing in Europe. The root is conical in shape, two or three inches long, and closely resembles

horseradish. When slowly chewed it produces a sensation of warmth, slowly followed by numbness.

Use.—Aconite is sedative in its effects, and in accordance with this property it is employed locally in neuralgia. It is used also in cases of vomiting. Its principal action is upon the circulation, its effect being to slow the pulse.

Manner of Using.—The tincture of aconite is the preparation usually taken internally. The dose is very small, and even then poisonous symptoms are prone to develop.

AGUE ROOT (*Aletris Farinosa*).

(See Plate I.)

Height, from a foot to eighteen inches; leaves, pale and smooth; bears white flowers; grows mostly in sandy soils. It has proved useful in dyspepsia and flatulent colic, and is especially useful for the purpose of restoring the activity of the generative organs, giving them vigor and healthy action. A valuable agent to prevent tendency to miscarriage and falling of the womb. The dose of the tincture is from six to ten drops three times a day, or can be used in pill form.

ALCOHOL, SPIRIT OF WINE.

Definition.—Alcohol is a transparent, colorless liquid obtained from the distillation of fermented saccharine material. For use in medicine, whiskey should be at least two years old and wine at least four years old. Wine is made by fermentation without distillation. Red wine differs from white wine in that in the production of the former the skins of the grape are used. Malt liquors—ale, beer, porter, are produced by fermentation of malt and hops and contain nutritive material.

Use.—When taken internally in small amounts and at meal-time the effect of alcohol is to stimulate the glands of the stomach to greater secretion. The presence of alcohol in the stomach, however, retards digestion, so that if much be taken it is a detriment rather than an advantage.

As a result of the long-continued use of alcohol, changes take place in the coats of the stomach. The inner lining of the stomach loses its delicacy and becomes thickened. It can no longer secrete as formerly, and indigestion results. Upon the heart and circulation alcohol is a decided stimulant. It strengthens the heart, it enlarges or dilates the blood-vessels and hence the flushed face of the one addicted to alcohol. Alcohol by its stimulant action enables the system to pass through great strains, but if its use is prolonged beyond the period of actual need it

is followed by its harmful effects. These latter manifest themselves by changes in the stomach, liver and kidneys and blood-vessels, and consist essentially of a hardening of these organs, rendering their functions imperfect. Alcohol does not increase the heat of the body, as some suppose. By actual experiment it is found that by dilatation of the capillaries it leads to a loss of heat. It is found, for instance, that those explorers in the Arctic region who avoid alcohol can better endure the trials of those regions than those who indulge.

Manner of Using.—A discussion of this portion scarcely seems necessary. Much depends upon the person. There are many persons who cannot take even the malt liquors, which contain but from three to five per cent. of alcohol. On the other hand, we have abundant examples of men who have indulged in alcohol and yet whose health seems not to be greatly impaired by such indulgence. From the physical standpoint alone it may be said that people, especially young people, do not need alcohol in any form. Their system does not require it. In disease its benefits are undoubted, and, it may be added, are greatest to those to whose system it is a stranger.

ALLSPICE (*Pimenta*).

Definition.—Allspice represents a fruit.

Use.—It is employed chiefly to promote appetite and digestion. It may be used to disguise the taste of unpalatable drugs and is one of the ingredients of spice plasters.

Manner of Using.—Internally, the oil is the preparation used in drop doses.

ALMOND (*Amygdala*).

Definition.—There are two varieties of almond—the bitter almond and the sweet almond.

Use.—There are two oils of almond, one, the oil of bitter almond, is used in minute doses, the other, known as the expressed oil of almond, may be used in large doses, *i. e.*, as high as a tablespoonful. It is quite important that these two oils should not be confused. Expressed oil of almond and mixture of almond are bland and soothing for local application.

Manner of Using.—Locally or internally, as already indicated.

ALOES (Aloe).

Use.—The dry juice is medicinal and one of the best laxatives for promoting and righting the action of the colon or large intestine. It excites the circulation of the blood in the organs of the pelvis, and is invaluable in promoting the menstrual flow—in this case it is generally combined with iron and myrrh. It is used for chronic costiveness, but those that suffer from piles should not take it. By reason of its tendency to increase the menstrual flow it ought not to be used during menstruation, especially by those having naturally an abundant flow. It should be avoided during the period of pregnancy. The dose is from two to five grains, generally in pills, combined with other drugs.

ANISE (Anisum).

The virtues of this drug depend upon the warming effect when taken into the stomach. As it has a pleasant odor and taste, it is much used in cases of colic in young children.

ARNICA, LEOPARD'S BANE (Arnica).

Definition.—The preparations of arnica are obtained from arnica flowers and arnica root. The flowers are orange-yellow, dish-shaped, with rays.

Use.—Arnica is used in domestic practice, but very little by physicians. The tincture is usually employed in cases of spasms, bruises and for rheumatic pains. Taken internally, in small doses, it produces a sensation of warmth over the body and increases the secretions.

ASAFETIDA (Asafetida).

Use.—The dry juice of this plant is a powerful stimulant in many nervous affections, particularly in women. Its most frequent use is in the treatment of hysteria. The ordinary dose is from two to five grains. From fifteen to twenty drops of the tincture may be given as a dose.

BALSAM APPLE (Momordica Balsamina).

Part used—fruit and seeds.

A liniment formed by infusing the fruit in olive oil is applied to burns, old sores, piles, prolapsus ani, and so forth, and the fruit itself is

mashed and used in the form of poultices. An extract prepared from it is useful in dropsy in the dose of from 5 to 15 grains.

BEAN.

Those who have tried the white navy bean as a cure for erysipelas say it furnishes a sure cure if the disease is taken in time. The beans should be boiled soft and applied as a poultice to the affected parts. Renew frequently.

BEET (Beta Vulgaris).

Whenever tried the juice of the common beet has been found a remedy for gravel. Boil the beets till thoroughly done. Remove the beets and boil the juicy water again till it assumes the form of a syrup. Take a cupful three or four times a day. Pursue the treatment till the stones pass.

BENZINE (Benzinum).

Definition.—Benzine represents a purified distillate from American petroleum. It is a clear, colorless, diffusible liquid. Its vapors, when mixed with the air, are explosive; hence it should be kept in a cool place remote from light or flame.

Use.—Benzine is not used internally in medicine. Externally benzine is used as a counter-irritant. It may be applied by rubbing, or upon a flannel cloth.

BENZOIN (Benzoinum).

Definition.—Benzoin is a gum resin obtained by incisions made into the bark of a tree growing in the East Indies. It occurs in large masses.

Use.—The medicinal preparation of opium known as paregoric contains some benzoin. The tincture of benzoin is useful as an expectorant. The compound tincture is useful for local application as a protectant to excoriated surfaces. Benzoin prevents fat from becoming rancid.

BITTER ASH (Bittera Febrifuga).

A tree indigenous to the West Indies. The bark is the part used. A decoction is made with one ounce to a pint. Dose: A tablespoonful four times a day. Has been found most useful in intermittent fever, for which it is claimed to be almost a specific.

BLACK MUSTARD (*Sinapis Nigra*).

(See Plate V.)

BLACK SNAKEROOT (*Cimicifuga*).

Definition.—*Cimicifuga* represents the rootlets of the plant.

Use.—Upon the nervous system it acts as a sedative. It is claimed that it is of value in rheumatic affections of the muscles.

Manner of Using.—A preparation known as the fluid extract is usually employed and taken in small and repeated doses. A tea of the root, drunk freely, is used in rheumatic affections.

BONESET.

This plant is indigenous of and is found in most parts of North America. The tops and leaves are medicinal. They should be made into an infusion which is generally known as boneset tea. It is a tonic, diaphoretic, expectorant, and when taken in large doses or warm it acts as an emetic and aperient. The extracts of boneset may be purchased at drug stores. The fluid dose is from one to two drachms. With the solid extract the dose is from one to one and one-half ounces and that of the infusion from one to two ounces.

Two scruples of eupatorin (boneset), one scruple of xanthoxylin and one-third grain of strychnia mixed and made into twenty powders, one powder being taken three times a day, is recommended for torpor of the liver or kidneys and also for rheumatism.

BUCHU (*Buchu*).

Use.—This is one of the best known remedies to soothe the irritation of the urinary organs. It has been used for catarrh of the bladder and in cases of pain in urinating. Best results are obtained from the infusion made from one ounce of the leaves in two pints of boiling water. Two or three soup-spoonfuls four or five times a day. There is also an extract, which dose is from a half to one teaspoonful.

BURDOCK (*Lappa Minor*).

Root spindle-shaped, about a foot in length. Flowers purple and seeds quadrangular. The root is the part employed, and in venereal and cutaneous diseases supplants mercury, the iodides and arsenic, eliminating

very rapidly the specific poison from the blood. Best administered in decoction by boiling two ounces of the root in three pints of water to two, and given in the dose of a tablespoonful four times a day.

CAFFEINE (Caffeina).

Definition.—Caffeine is prepared from the dried leaves of the *thea sineusis* or from the dried seeds of *coffea arabica*. It occurs also in other plants. It exists in the kola nut of Africa. Caffeine is in the form of colorless silky crystals.

Use.—Caffeine stimulates the nervous system. It quickens the intellect and causes sleeplessness. It causes an increase in the flow of the urine. It is used to stimulate the heart, to increase the flow of urine, and combined with other remedies it is of value in relieving headache of nervous origin.

Manner of Using.—The preparation used is known as citrated caffeine. It is given in powder form.

CALABAR BEAN (Physostigma).

Definition.—*Physostigma* is the seed of the *physostigma venanosum*, growing in Western Africa, along the River Niger.

Use.—The chief action of the drug is to depress the spinal cord, and in accordance with this action it is used to produce quietude in cases of convulsion, as from strychnine poison, from tetanus, and so forth.

CALAMUS, SWEET FLAG (Calamus).

Calamus is used as a substitute for tobacco by those habitual to the weed. It is a constituent of various bitters used to stimulate and promote the appetite.

CAMPHOR TREE.

The uses of camphor in medicine are numerous. It affords one of the safest and surest of household remedies for headache, spasms, neuralgia, gout, rheumatism and general debility. It is equally efficacious as an external remedy for pains, sprains, chilblains, bruises and flesh soreness. In such cases the tincture is generally used, and it can be made at home by mixing an ounce of the gum with a pint of spirits. It affords a speedy remedy for colds, in the form of a drink made of one pint of hot water into which ten drops of the spirits of camphor has been dropped. It should be sipped slowly and as hot as can be taken.

CARBOLIC ACID (Acidum Carbolioum).

Definition.—Carbolic acid is made from coal-tar. It occurs in the form of colorless crystals, but exposure quickly converts it into a colorless or slightly reddish liquid.

Property.—A slight fall in temperature follows the use of carbolic acid. Its chief action depends upon its property of destroying low forms of germ life.

Use.—By virtue of its properties it is used as an antiseptic and internally as an antiferment.

Manner of Using.—Two or three drops may be taken internally, best given with a powder of bismuth. Locally it is used in solutions of various strength, the usual being 5 per cent.

CARDAMON (Cardamon).

This drug represents a fruit. It is an agreeable vehicle for disguising the taste of other drugs, and it also produces a sensation of warmth in the stomach.

CASTOR OIL (Ricini Oleum).

Definition.—Castor oil is a fixed oil expressed from a seed. It is a pale yellow liquid, having a faint odor.

Use.—Castor oil is a slow purgative, producing copious liquid stools. It stimulates the bowels.

Manner of Using.—The dose for an adult is half to one ounce; for a child, one to two drachms.

CAYENNE PEPPER (Capsicum Annum).

The stem is thick, smooth and branching, about three feet in height. The fruit is of a bright scarlet color and contains numerous kidney-shaped, whitish seeds. A powerful stimulant. Employed with great advantage in la grippe. Two tablespoonfuls of the powder, with a teaspoonful of common salt, infused for an hour in a pint of boiling water with half a pint of vinegar. This is strained and a teaspoonful given every hour. The same is useful as a gargle. In scarlet fever the same infusion diluted gives much relief and is of positive advantage. Dose: The same.

CELERY (Opium Graveoleus).

Various medicinal preparations of celery are used in the treatment of chronic rheumatism. The same result is reached by drinking freely

(Continued on page 1442.)

Fruits, Vegetables, Herbs, Roots

AND

Plants Valuable in Medicine

**How to Prepare Them
Their Uses**



THE LEMON (*Citrus Limonum*).
Treatment for twenty-seven diseases. See page 1451.

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GRAPE-FRUIT.

Mild astringent. Soothing to the stomach in cases of flatulence and dyspepsia.



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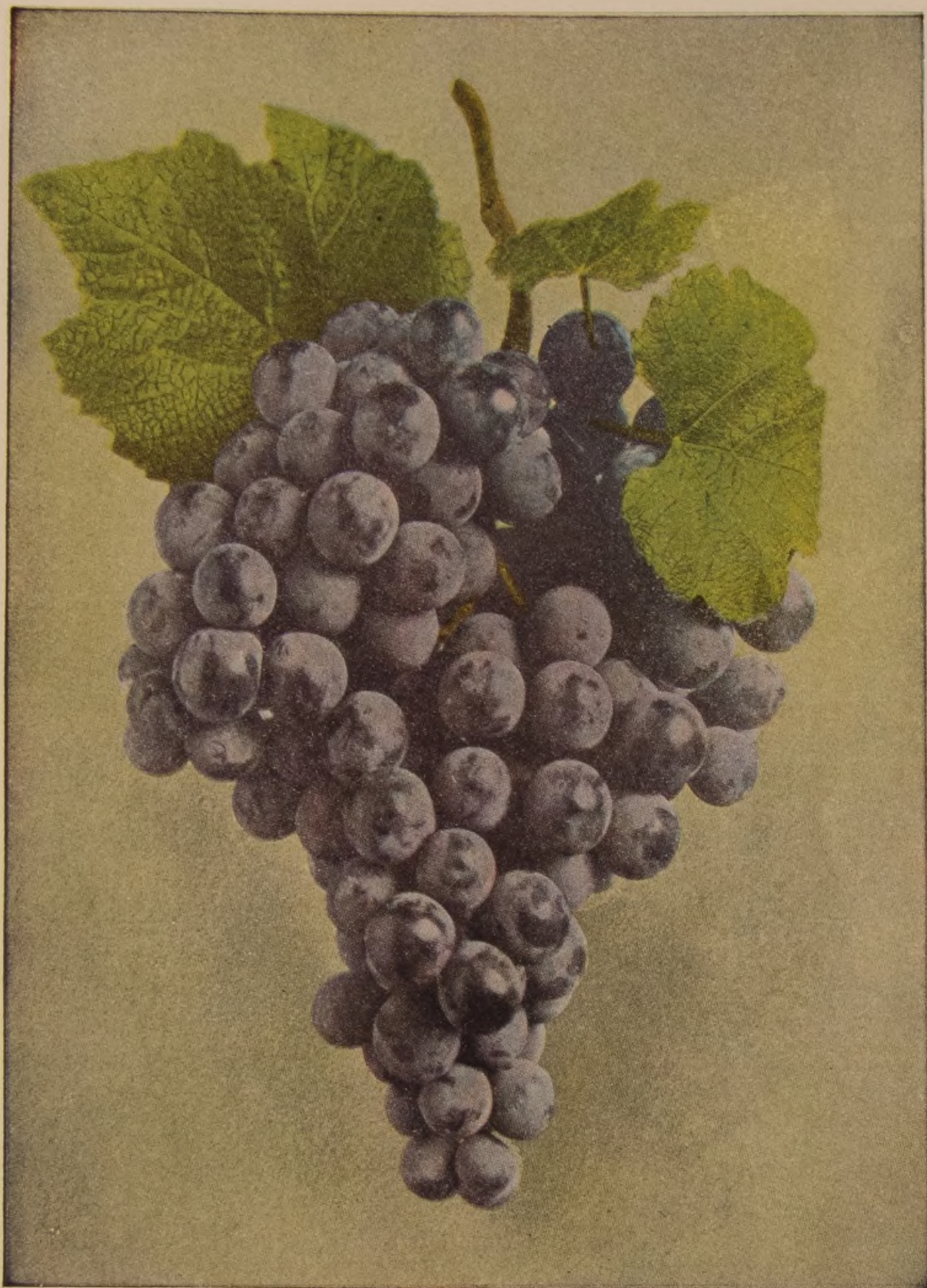
APPLE.

Gentle laxative. Eaten regularly, apples keep the stomach and bowels in good condition.



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OREGON WILD GRAPE (*Berberis Aquifolium*).
Used in leucorrhœa and as a blood purifier. See page 1458



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GRAPE VINE (*Vitis Vinifera*).

Used in dropsy and chronic dysentery. See page 1448.



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ASPARAGUS (*Asparagus Officinalis*).

Used for the kidneys. See page 1414.



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BEET (*Beta Vulgaris*).

Used in gravel. See page 1389.



ONION (*Allium Cepa*).

Used in six diseases. See page 1458.



PUMPKIN (*Cucurbita Pepo*).

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Treatment for worms, retention of urine and inflammation of bladder and bowels. See page 1462.



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TOMATO (*Lycopersicum Esculentum*).
Treatment for Cholera Infantum. See page 1469.



CELERY (*Opium Graveolus*).
Used in Chronic Rheumatism. See page 1392.

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RED PEPPER (*Capsicum*).

Used as a gargle in Scarlet Fever and as a tea in the Grippe. See page 1462.

MEDICINAL PLANTS

PLATE I.

Chittim Bark.—A shrub about seven or eight feet in height, with branches terminating in a sharp spine. The leaves, on short footstalks, ovate and veined. The bark is officinal and the part employed. It stands without an equal in the treatment of constipation in all its varied forms. An infusion of one ounce of the bark to a pint of boiling water; infuse for one hour and strain. Dose: One teaspoonful, morning and evening, according to symptoms or until the bowels are thoroughly regulated.

Stone Root.—This plant is used in numerous complaints in practice. A decoction of the fresh root, one ounce to the pint of water, has been used with advantage in hemorrhoids or piles, catarrh of the bladder, gravel and dropsy. The dose is one tablespoonful four times a day. The leaves are applied in the form of fomentation to wounds, bruises and sores, and in cases of internal abdominal pains.

Santal Wood.—White Sandalwood is a small tree indigenous to India. The volatile oil distilled from the wood is the part used. Given internally in moderate doses of 5 to 10 drops for gonorrhœa. It is sometimes used as a stimulant to the respiratory tract in bronchitis and certain forms of asthma.

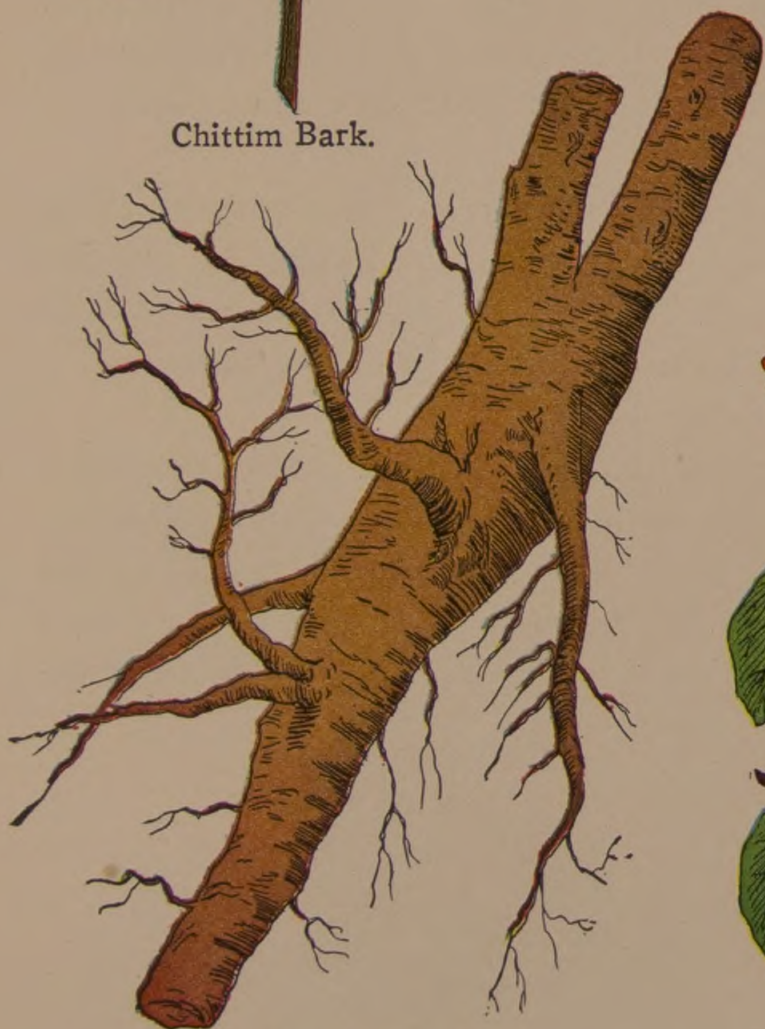
Ague Root.—Height, from a foot to eighteen inches; leaves, pale and smooth; grows mostly in sandy soils. It has proved useful in Dyspepsia and flatulent colic, and is especially useful for the purpose of restoring the activity of the generative organs, giving them vigor and healthy action. A valuable agent to prevent tendency to miscarriage and falling of the womb. The dose of the tincture is from six to ten drops three times a day, and of the powdered root five to eight grains.



Chittim Bark.



Stone Root.



Sandal Wood.



Ague Root.

MEDICINAL PLANTS

PLATE II.

Saffron.—This plant is common in orchards and of a deep orange color. It is used as an infusion (tea); boiling one ounce of leaves in two pints of water. It is a pleasant home remedy in the beginning of scarlet fever, measles and chicken-pox, serving to bring out the eruptions. Dose, from half to a whole wineglassful, three times a day. It is also good as a gargle in sore throat.

Yellow Goat's Beard.—A tea of the root, bark and leaves of this plant is used for diarrhœa in children. Boil one ounce of root in two pints of water. Take two or three tablespoonfuls three or four times a day.

Hedge Mustard.—Used cooked for table purposes as a stimulus to the stomach and to relieve coughing. Also used in the form of an infusion (tea) to cleanse ulcers and wounds. Boil an ounce of seeds, or a quantity of leaves, in a quart of water and wash the sore parts twice a day.

Common Hedge Nettle.—Made into a tea and drunk freely is excellent for hemorrhages of lungs and stomach. In doses of half a wineglassful four times a day it relieves neuralgia. A poultice of the leaves also relieves neuralgic pain and aids in the cure of wounds. Used at times as a tea, and drunk in wineglass doses twice a day, to promote menstruation and kill worms.



Saffron.



Yellow Goat's Beard.



Hedge Mustard.



Common Hedge Nettle.

MEDICINAL PLANTS

PLATE III.

Cathartic Ramno.—A tea of the bark, taken in tablespoonful doses, three times a day, opens the bowels. But caution is needed, lest it lead to purging.

Fennel.—The seeds and leaves in the form of a strong infusion (tea) are excellent for colic. The seeds in form of a powder are also good for cramps. Dose of the tea, a wineglassful, repeated at half-hour intervals, if necessary. Dose of the powdered seeds, ten to twenty grains.

Tansy.—Tansy tea, in doses of a teacupful twice a day, promotes menstruation. In the form of bitters, it strengthens weakened constitutions. Cold tansy tea, drunk freely, is good for dyspepsia.

Wood Sorrel.—A poultice of the leaves was once a popular application in cases of cancer. Sorrel tea, drunk freely, also aids in giving relief to cancerous affections.



Cathartic Ramno.



Fennel.



Tansy.



Wood Sorrel.

MEDICINAL PLANTS

PLATE IV.

Stavesacre or Lousewort.—The crushed seeds, made in a paste and rubbed on the head, is an effective way to kill lice.

Golden Thistle.—A tea of one ounce of leaves or stems to two pints of water will relieve colic. Dose, a wineglassful, repeated every half-hour, if necessary.

Lime-Tree.—The juice of the lime, mixed with water, is a refreshing drink, in frequent sips, for fever sufferers. Lime juice in large quantities is carried on board ships as a preventive of scurvy.

Red-Berried Trailing Arbutus.—A strong tea, made of one ounce of the leaves to a quart of water, and taken in doses of two tablespoonfuls three times a day, is used to relieve bladder trouble. It diminishes the irritation caused by the urine, and the inflammation and pain.



Stavesacre or Lousewort.



Golden Thistle.



Lime-Tree.



Red-berried Trailing Arbutus.

MEDICINAL PLANTS

PLATE V.

Henbane.—This plant, like belladonna, is a powerful poison. It is used in the form of an extract to soothe pain. Dose, one-eighth to one half a grain once or twice a day. It is frequently used in cases of delirium, where opium cannot be used. Great caution is needed in its administration.

Mountain Balm or Calamint.—Make a tea of the root, dilute with water and sweeten. Give in teaspoonful doses at intervals of half an hour to relieve wind colic in children.

Sage or Salvia.—Sage tea, either alone or mixed with vinegar, honey or alum, is an excellent gargle for sore throats. Drunk freely it cures night-sweats. Simmered in lard and taken four or five times a day in doses of two spoonfuls each cures quinsy.

Mustard.—Powdered mustard seeds are used on the table and in medicine. One or two teaspoonfuls in a glass of hot water is used to provoke vomiting. If necessary, repeat the dose till the desired result is reached. Mustard in the form of plasters or poultices soothes pain and promotes circulation. Mustard seeds, in doses of a teaspoonful three times a day, relieves dyspepsia. Mustard plasters, applied to the extremities, serve to bring out again the eruption where it has gone in, in such cases as measles and scarlet fever.



Henbane.



Mountain Balm or Calamint.



Sage or Salvia.



Mustard.

MEDICINAL PLANTS

PLATE VI.

Common Thorn-Apple.—This plant belongs to the same family as henbane and belladonna. Cigarettes made from the dried leaves, and smoked, are good to calm asthma difficulties.

Asparagus.—Used as a table dish gently stimulates the kidneys. In the form of tea, drunk at three or four hour intervals, it promotes a free flow of urine.

Marshmallow.—The powdered root may be used as a poultice in cases of gangrene. A fresh infusion (tea), drunk freely, is of service in children's diseases, and especially in Bright's disease. Marshmallow drops are useful in sore throat, in scarlatina and diphtheria. The dose is indefinite. An infusion, drunk freely, is good for acute gonorrhoea, and all affections of the mucous membrane of lungs and bowels, and inflammations of kidneys and bladder.

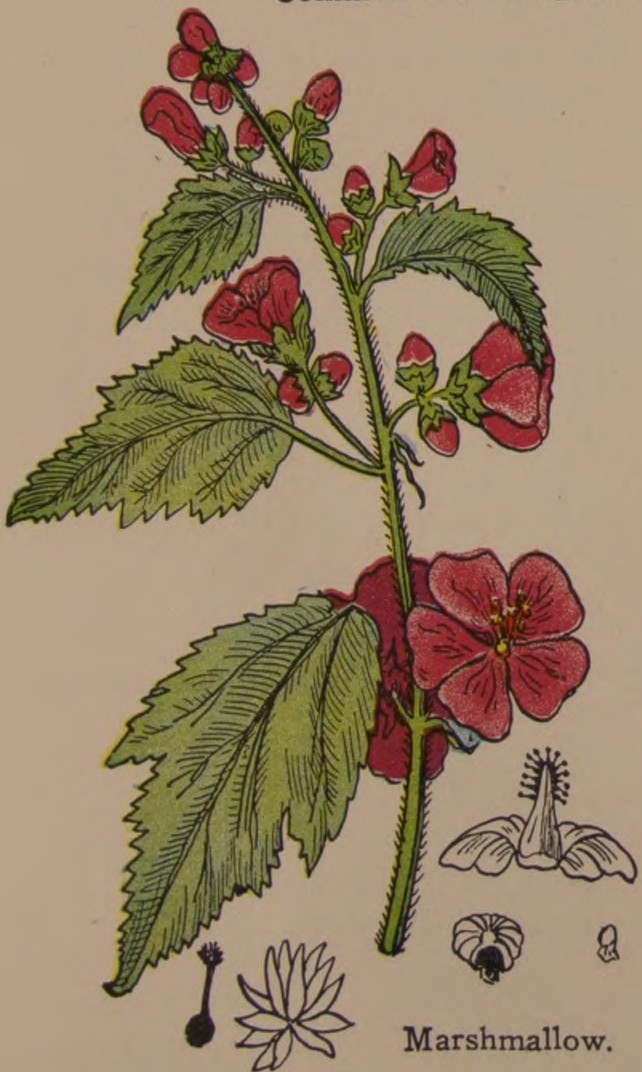
Hops.—The root, used as a powder or pill, soothes the irritation of the urinary organs and pains of gonorrhoea. Infusion of hops, or hop tea, is made by taking a tablespoonful of hops to a pint of water and is given in doses of two to five ounces, twice to three times a day. In delirium tremens hop-tea quiets drink craving and settles the stomach. In insomnia and restlessness it is useful in producing sleep. A hop poultice gives relief in local painful affections. Or the hops may be placed in flannel and moistened with hot whiskey and applied to painful cases, as in toothache or earache, where the warmth and steam are very soothing. The inhalation of the vapor of hops is often attended with good results, especially in diseases of the throat and chest.



Common Thorn-Apple.



Asparagus.



Marshmallow.



Hops.

MEDICINAL PLANTS

PLATE VII.

Common Scurvy-Grass.—This plant is popularly eaten as a salad and is useful in scurvy, chronic rheumatism and chronic malaria. The juice has been used externally for the purpose of stimulating indolent ulcers and, diluted with water, as a mouth-wash for spongy gums and ulcers of the mouth.

Meadow Saffron.—Saffron-tea, drunk freely, is used in domestic practice to bring out the eruption in measles and scarlet fever and to cause sweating. Externally it is used in bruises, rheumatic and neuralgic pains and in the form of ointment for bleeding piles.

Garlic.—Garlic, onion and leek are used in bronchitis and chronic cough. Here it can also be applied to the chest in the form of a poultice, or the oil can be used externally. A garlic poultice may also be successfully employed in convulsions and intestinal and stomach troubles of children. Garlic is also given for worms. It is a domestic remedy in whooping-cough. Syrup of garlic is given in doses of five drops to a teaspoonful, two to three times a day, or oftener, if the coughing spells are frequent and violent.

Horse-Radish.—Used as a tonic for the digestion, and to promote the secretion of the kidneys. Syrup of grated horse-radish and honey or sweetened water, taken in teaspoonful doses every hour, will cure hoarseness. Horse-radish tea, drunk freely, is beneficial in rheumatism and neuralgia.



Common Scurvy-Grass.



Meadow Saffron.



Garlic.



Horse-Radish.

MEDICINAL PLANTS

PLATE VIII.

Common Juniper.—By boiling an ounce of the berries (pounded) in two pints of water an infusion is obtained which stimulates the action of the kidneys. A pint is drunk through the day in Bright's disease with its attendant dropsy. The juice of the berries has been successfully used in doses of two or three teaspoonfuls daily in children to promote the secretion of urine. The oil may be dropped in boiling water and inhaled to produce the same effect.

Currants.—The juice of the berry, boiled and sweetened, and in teaspoonful doses three or four times a day, is binding in infantile diarrhœa.

Common White Hoarhound.—The herb may be used in infusion (an ounce to a pint of water), taken hot and frequently in recent colds to produce sweating. The cold tea, drunk freely, is serviceable in chronic lung affections. Cough-drops are used for sore throat and cough.

Colt's Foot.—The infusion of the dry leaves is used to soften the phlegm in chronic catarrh. It may be drunk freely.



Common Juniper.



Currants.



Common White Hoarhound.



Colt's Foot.

MEDICINAL PLANTS

PLATE IX.

Plantain.—The fresh leaves are pounded in a mortar into a paste and applied to wounds to check bleeding. In sumach poisoning, burns, scalds, bruises, and even erysipelas, it is said to be extremely useful.

Poppy.—By cutting the unripe seed pod a milky fluid is obtained called opium. Powdered opium may be mixed into a paste with water and applied to a beginning boil with relief. Opium is used in medicine in many forms, as laudanum, morphine, paregoric, and so forth. It is given in various forms and quantities to relieve pain and irritation, to relax spasms, to produce sleep, to check secretions, and to influence nutrition. It should be used with great caution.

Pennyroyal.—Pennyroyal tea, or a recent infusion of the leaves and tops, is used in flatulent colic and recent suppression of the menses. The infusion may be drunk in teacupful doses, several times a day. The fresh herb is said to be obnoxious to mosquitoes, and may be hung about the sleeping room, or the hands and face bathed with a recent infusion or a solution of the oil in alcohol (one to ten) in order to keep off these midnight marauders.

Hellebore.—This has been used by some to bring on the menstrual flow by purging, but is now very rarely employed. It causes vomiting and acts on the heart. It also destroys sensation when used locally. This medicine should be carefully used, as it is very poisonous. The dose is four to fifteen grains. A dose of the fluid extract of black hellebore, three to five drops three times a day, is used in dropsy, especially dropsy of the brain.



Plantain.



Poppy.



Pennyroyal.



Hellebore.

MEDICINAL PLANTS

PLATE X.

Peony.—An infusion is made by boiling one ounce of the powdered root in a pint of water. It is good in spasms, whooping-cough and nervous diseases. Dose, half a cup four times a day. Formerly it was considered as a tonic for the nerves and was given for epilepsy and St. Vitus' dance.

Perforated St. John's Wort.—This plant is used as a tea to promote menstruation. It may be taken in wineglass doses, three to four times a day.

Wolf's Bane.—This drug, which is better known under the name of aconite, is very powerful and dangerous. It is given in the first periods of fevers and inflammations, such as pneumonia, erysipelas and rheumatism. A few drops of the tincture are mixed in a tumbler of water and a teaspoonful of this is given every ten, fifteen or twenty minutes. Asthma, especially in children, and preceded by cold in the head, is generally benefited by it. In the form of a liniment it is used in neuralgia. Extreme care must be taken in using wolf's bane.

Lily of the Valley.—In small doses this drug strengthens the heart; in larger quantities it quiets it. It quickly relieves the shortness of breath and palpitation in heart disease, and after having been given for two or three days may be stopped for a week or more without the symptoms returning. It increases the flow of urine and reduces dropsy. An infusion or tea is made by taking one part of the underground stem and rootlets to three parts of water. The dose of the infusion is a tablespoonful to a wineglassful two or three times a day.



Peony.



Perforated St. John's Wort.



Wolf's Bane.



Lily of the Valley.

MEDICINAL PLANTS

PLATE XI

Flax.—Ground flaxseed mixed with boiling water forms flaxseed poultice, which is spread at least half an inch in thickness upon muslin or flannel, and applied as hot as possible in order to relieve pain and congestion in peritonitis and in pneumonia, pleurisy, and so forth, as jacket poultices, renewed every two or three hours. Flaxseed poultices are also applied to boils and abscesses to abort them or to hasten their ripening.

A hot infusion (a tablespoonful to a pint of water) flavored with licorice root or lemon peel is used in colds of the chest, to cause sweating and to loosen the cough. Flaxseed tea, drunk freely, is used as a soothing drink in inflammation of the stomach. Whole flaxseed, in tablespoonful doses, once or twice a day, has been ordered as a laxative in habitual constipation.

The oil of flaxseed, or linseed oil, is an old application to burns.

Wormwood.—An infusion is made with one or two teaspoonfuls of the plant to a pint of water, and in wineglassful doses is used as a tonic or for worms in children. It is a domestic remedy for flatulent dyspepsia and weak digestion. Dose, from one to four tablespoonfuls twice a day. Externally it has been used as a stimulating application to indolent ulcers. A tincture, flavored with aromatics, forms an intoxicating drink called absinthe, used to a large extent in France.

Carrot.—The seeds are ground into powder and used to relieve colic and to increase the flow of urine. The dose is half a teaspoonful to a teaspoonful, twice daily. The root is said to be excellent for poultices. Carrot, used as a substitute for chewing tobacco, has been said to cure kidney complaint.

Horse Chestnut.—The bark is used, the best preparation being a fluid extract with dilute alcohol, although a decoction or tea is also employed. The dose of the fluid extract is twenty drops to a teaspoonful, three times a day. It is said to be a good substitute for quinine in malarial fevers and is also used in neuralgia. A dose of the tincture, three to five drops, three times a day, is a remedy for itching or burning piles.



Common Flax.



Cathartic.



Worm Wood.



Carrot.



Horse Chestnut.

MEDICINAL PLANTS

PLATE XII.

Licorice.—Licorice root is soothing to the throat, loosens cough and is laxative. Licorice is given for cough as Brown mixture and Wistar's cough lozenges. One to two teaspoonfuls of compound licorice powder is given daily in constipation, especially during pregnancy.

Iris (Straw Lily) —The powdered root, when fresh, produces vomiting and is a powerful cathartic; less so after drying. In chronic liver trouble, especially of malarial origin, the preparations of iris are very useful. In dropsy they are also of service in stimulating both the kidneys and bowels. They are also given for worms. The dose of the extract is a quarter of a grain to a grain, and of the fluid extract, half a teaspoonful to a teaspoonful, two to three times a day.

Dandelion.—The root should be gathered in the autumn. An infusion is made by taking two ounces of the fresh leaves or roots to a pint of water, the dose being two to four tablespoonfuls, two to three times a day. The preparations are bitter and probably stimulate digestion and act as a tonic. Dandelion is a laxative and increases the flow of urine. It is also prescribed for jaundice and for a sluggish liver. If the extract be used, the dose is from five to twenty grains three times a day.

Blackberry—Common Bramble.—The bark of the root is used. It is binding and tonic. It is used in diarrhœa, especially after cleansing the bowels with castor oil. The best preparation of the blackberry root is the fluid extract, given in doses of half a teaspoonful three or four times daily. The syrup and the spiced syrup, in the dose of a teaspoonful to a tablespoonful, are also used. Very popular preparations are blackberry cordial and blackberry brandy, of which a teaspoonful to a tablespoonful is taken three or four times a day. Blackberry tea is valuable as an enema in leucorrhœa, gleet and falling of the womb.



Licorice.



Iris (Straw Lily).



Dandelion.



Blackberry.

MEDICINAL PLANTS

PLATE XIII.

Great Mullein.—This plant grows by the roadside and in neglected fields. It is given for catarrh, coughs, dysentery and piles in the form of an infusion made with milk, four ounces of the fresh, or a corresponding quantity of the dry leaves, being boiled for ten minutes in a pint of fresh milk. This quantity is to be drunk thrice daily, while still warm. It has long enjoyed a popular repute in Ireland as a remedy in diseases of the lungs. It has likewise been used in diarrhœa and inflammation of the bladder.

The flowers are said to remove warts. They are applied, while fresh, by pressing and rubbing upon the growth.

Rosemary.—From one and one-half to three teaspoonfuls of the plant, dried and powdered, taken as an infusion (tea), are said to produce decided sweating. The oil of rosemary is used in hair lotions and in an ointment used in neuralgia, chronic rheumatism and lumbago.

Nettle.—The juice of the nettle, in teaspoonful doses every hour, is of great value in cases of hemorrhage of the nose, lungs, intestines and urinary organs. The decoction may be made either with the seeds or with the leaves, and, drunk freely, is excellent for diarrhœa and dysentery.

Belladonna.—The fleshy, creeping root is especially useful, but must be taken from plants at least three years old. The leaves of belladonna or deadly night-shade are also used, the smaller leaves gathered when the plant is in flower being best.

Locally, belladonna is used as an ointment or liniment in neuralgia, chronic rheumatism; also to check sweating and relieve local pain. Internally, it is used chiefly to relieve pain, relax spasm and check over-secretion or bad discharge.

Its power of widening the pupil is used in treating the eye. In giving this dangerous drug the eye should be carefully watched. The dose of the tincture is five to twenty drops, once or twice a day, in cases of neuralgia, spasms and other nervous affections. Great caution is required, as the medicine is a poison.



Great Mullein.



Rosemary.



Nettle.



Belladonna.

MEDICINAL PLANTS

PLATE XIV.

Parsley.—A hot infusion is made by taking an ounce of the fresh root to a pint of water. One to four teaspoonfuls, given three times daily, in cases of scanty menstruation will relieve pain. It is used to increase the secretion of urine in dropsy and gonorrhœa, in the form of a decoction, drunk freely.

Valerian.—The underground stem and roots are used. It is given in the nervous disorders of women, especially nervous headache and hysteria. The various nervous disorders which occur at the changes are relieved by it. In convulsion or St. Vitus' dance in children, due to worms, and in whooping-cough it has been used with success. One to two teaspoonfuls of the tincture is given, three times daily.

Digitalis or Foxglove.—The leaves are gathered from plants of the second year's growth and must be carefully selected. An infusion is made by taking one and one-half parts to one hundred parts of water.

Locally, digitalis is used in joint inflammation. A poultice containing a teaspoonful or two of the leaves is placed over the kidneys in cases of difficult or impossible urination.

Its chief internal use is in heart disease, although it is often given for bleeding. The dose of the infusion is a teaspoonful to a tablespoonful, three or four times a day.

Crow-Foot.—The buttercup plant is sometimes used externally in cases of rheumatism. As it belongs to a very poisonous species, it should be used carefully and only on the prescription of a physician.



Parsley.



Valerian.



Digitalis or Foxglove.



Crow-Foot.

MEDICINAL PLANTS

PLATE XV.

Hemlock.—The full-grown fruit is gathered while yet green. Conium juice is expressed from the fresh leaves, and has half its quantity of alcohol added to it to preserve it. This is given in doses of half a teaspoonful to two teaspoonfuls. The seeds are used in making most preparations. Internally it is sometimes used in nervous affections, but it is a dangerous poison and should be used cautiously.

Poultices of the leaves of hemlock and flaxseed (two parts of the former to six of the latter) with boiling water, have been used as a soothing dressing to painful swellings. A hemlock ointment is made by bruising the leaves with sufficient water and extracting and mixing the juice with lard, and is an excellent local remedy in painful maladies.

Barberries.—The bark of the root has been made into an infusion, but the fluid extract in ten to thirty drop doses is most used. In this form the drug is tonic and stimulates the kidneys. It is valuable in the treatment of blood diseases, dyspepsia, liver trouble, habitual constipation and skin diseases. The tea of the bark may be taken in doses of three to four teaspoonfuls, three times a day.

Elder.—One to two teaspoonfuls of an infusion of the flower, drunk while hot, increases the flow of urine and causes sweating. It may cause vomiting, if given in too large a quantity. The flowers are edible, and are used in scurvy, rheumatism and syphilis. Elderberry jam is laxative.

A decoction is made of the inner bark, which acts on the kidneys and intestines. One or two teaspoonfuls, two to three times a day, is the dose.

Oak-Tree.—A decoction is made of one ounce of the bark to a pint of water and given in doses of half a teaspoonful to a teaspoonful three times daily, for dysentery and diarrhœa. It is occasionally used as an injection or wash in leucorrhœa; also as a gargle in sore throat and catarrh. The powdered bark is used on ulcers. The oak yields tannic acid, in which form it is used as an astringent enema in gonorrhœa, gleet and leucorrhœa.



Hemlock.



Barberry.



Elder.



Oak-Tree.



MEDICINAL PLANTS

PLATE XVI.

Bitter-Sweet Nightshade.—A decoction is made by boiling an ounce of the young branches in a pint of water and given in doses of a teaspoonful to a wineglassful two or three times daily, for jaundice, rheumatism and syphilitic affections. It is believed to be of use in long-standing scaly eruptions. The fresh decoction, drunk freely, is used to produce sweating in rheumatism or acute bronchitis and colds. It is also beneficial in the diarrhœas of children when caused by exposure to cold or damp. The dosage should be small and cautiously given.

Common Chamomile.—The infusion is made with a tablespoonful of the flower heads to a pint of water and is taken freely. In large doses the hot infusion causes vomiting, but in one or two ounce doses it relieves gas in the stomach, favors perspiration and the action of the kidneys. Locally, it may be used as a poultice. It is used principally in domestic practice in the treatment of colds, bronchitis and dyspepsia, and is taken in the form of an infusion in doses of from two to three tablespoonfuls, two or three times daily.

Caraway Seed.—An oil is made from the fruit and used in doses of one to five drops, two or three times a day, for distention of the abdomen due to gas. It is combined with other medicines to lend a pleasant flavor and to prevent griping.

Geranium.—A decoction can be made from the underground stem. It improves the appetite and digestion and promotes nutrition. It is used to stop bleeding. As an injection it is serviceable in gonorrhœa, gleet and leucorrhœa. In diarrhœa in children the decoction may be given in milk, which covers its taste. Dose, one-fourth to one-half teaspoonful, five or six times a day.



Bitter-Sweet Nightshade.



Common Chamomile.



Caraway Seed.



Geranium.

MEDICINAL PLANTS

PLATE XVII.

Common Dill.—The fruit of this plant is warming, stimulating and quiets nervousness. A tea of the plant, in teaspoonful doses, is used in children's colic to relieve the hiccoughs. Occasional use of the decoction by mothers is thought to promote the secretion of milk.

Peppermint.—Peppermint water is given in doses of teaspoonful to a wineglassful; oil of peppermint, one to five drops, and spirits of peppermint, ten drops to a teaspoonful. In neuralgia oil of peppermint may be painted over the painful spot. It may also be used for rheumatism and chronic gout. In the colic of children the spirits of peppermint in hot water is a good household remedy. A warm infusion of mint, taken frequently in teaspoonful doses, is useful for the pains caused by gases in the intestines. A cloth, saturated in a teacup of water to which a teaspoonful of essence of peppermint has been added, applied to head and temples, gives relief from headache.

Mezereon (Laurel).—An ointment is made from the fluid extract of the bark (twenty-five parts), lard (eighty parts) and yellow wax (twelve parts). This ointment is used as an irritant to keep up discharges from ulcers and blistered surfaces. Mezereon bark has been successfully used to relieve toothache.

Common Black Briony.—The root is dried, and half an ounce of it with a pint of boiling water made into an infusion, which is given in doses of a wineglassful three or four times a day. It may be given for dropsy and inflammation of the joints. It is an active purgative, causing large, watery stools.



Common Dill.



Peppermint.



Mezereon (Laurel).



Common Black Bryony.

MEDICINAL PLANTS

PLATE XVIII.

Common Hedgewort.—Liquid extract of the root is used inwardly for catarrh of the stomach, liver, pancreatic and kidney complaints, hypochondriasis and hysteria. Physiological effect is solvent, acid-removing (alkaline) and blood cleansing. Chemical constituents: Bitter extract, resin, sugar, alkaline salts, potash, silicic acid. Taste, very bitter.

Bilberry.—Infusion of the leaves is given internally for dropsy and pleuritic effusions, catarrh, cough, and weakness of the bladder. Physiological effect: slightly astringent. Chemical constituents: Tannic acid, quinic acid, and gum. Taste, herbaceous.

Wild Strawberry.—An infusion of the leaves is given internally for diarrhœa, gout, jaundice, etc. The physiological action is astringent and blood cleansing. The chemical constituents are a considerable quantity of soda salts and silicic acid. The taste is slightly herbaceous.

Periwinkle.—The liquid extract of the herb is used internally for diarrhœa, mucous discharge from the air passages or intestines, hemorrhage; externally, as a gargle and mouth wash for spongy gums. Physiological action: Strengthening, blood cleansing and aperient. Chemical constituents. A very bitter extract and tannin. Taste is bitter and astringent.



Common Hedgewort.



Bilberry.



Wild Strawberry.



Periwinkle.

(Continued from page 1392.)

several times a day of a tea made by boiling celery stalks till they are soft. At the same time celery, cooked or raw, should be used regularly as a table food.

CHAMOMILE (*Anthemis*).

Definition.—The flower heads of *anthemis nobilis* are collected from the cultivated plant. The oil is the active principle.

Use.—The activity of the plant depends upon the presence of the oil. The action of the oil is to act as a sedative to the nervous system; hence its use in checking reflex cough. It also favors free perspiration and free kidney action.

Manner of Using.—Make a drink as follows: Pour a pint of boiling water over an ounce each of chamomile flowers and the leaves and flowering tops of boneset; one-half of this amount is a dose. If the whole amount be taken, emesis or vomiting will be produced, and this will at times be the action desired.

CHITTIM BARK (*Rhamnus Prushiana*).

This is known medicinally as *casacara sagrada*. It is much used by modern physicians for the cure of constipation, and is an excellent home remedy. It is prepared for use by steeping a half-ounce of the bruised bark for half an hour in a half pint of warm water. When cool, take a teaspoonful three times a day. If the fluid extract of the bark is used the dose would be from ten to fifteen drops, three times a day. Sometimes it acts as a physic. In such cases the size of the dose should be diminished.

CHLORAL (*Chloral*).

Definition.—Chloral is a colorless liquid formed by the action of chlorine on alcohol. With water chloral forms a crystallizable compound. Chloral should be kept in well-stoppered bottles as the crystals volatilize slowly.

Use.—Taken internally chloral has a sedative influence on the brain and spinal cord. In cases of restlessness and delirium it produces a quieting influence on the brain and induces sleep. In spasm and convulsion it alleviates this condition. It influences the heart adversely, and in cases of a weak or diseased heart its use is attended with danger.

Manner of Using.—It is best given well diluted in some agreeable syrup. It should not be taken without the advice of a physician.

CHLOROFORM (Chloroformum).

Chloroform is a heavy liquid made by the action of chlorine on alcohol. It is used in the same class of cases as ether, but is preferred to ether in children and old persons on account of the irritation of the bronchial tubes produced by ether in the very young or very old.

CITRIC ACID (Acidum Citricum).

Definition.—Citric acid occurs in the form of colorless crystals. It is obtained from lemon or lime juice and has a sour taste.

Property.—It acts favorably upon the liver in cases of inactivity. By stimulating the glandular secretion of the intestinal tract it improves digestion and nutrition.

Use.—The use of citric acid in the treatment of scurvy is well known and cannot be superseded by any remedy at present under our command, except fresh lemon juice itself. In fevers a drink made of citric acid is very soothing.

Manner of Using.—The best form for administration is the syrup of citric acid, which may be given in doses from a teaspoonful to a tablespoonful.

COCA (Erythroxyton).

Definition.—Coca leaves are taken from a small tree in Peru and Bolivia. The principal constituent of the leaves is cocaine.

Use.—The value of coca lies in cocaine. Cocaine is widely used locally for the relief of pain. It may be applied for the performance of an operation when for any other reason it is not desirable to give a general anesthetic like ether or chloroform.

COCHINEAL (Coccus).

Cochineal is derived from the crushed and dried bodies of the females of coccus cacti. It yields a very brilliant red coloring matter from which carmine is obtained. Cochineal has but little value in medicine in comparison with its use in the arts as a coloring agent.

COD-LIVER OIL (Morrhuae Oleum).

Definition.—Cod-liver oil is a thin, yellow, oily liquid, having a fishy odor and taste. It is obtained from the fresh livers of the cod.

Use.—Cod-liver oil is an easily digestible food. In most cases of poor nutrition it is of value.

Manner of Using.—Cod-liver oil should not be taken directly after a meal. It should be taken about three hours after a meal, when gastric digestion is about complete, from the fact that oil is digested not in the stomach, but in the intestine.

COFFEE (Coffea).

Definition.—Coffee is the seed or berry of the coffee Arabica. It is one of the sources of caffeine.

Use.—Coffee is a stimulant to the nervous system. It increases the capacity for intellectual effort. When taken to excess it is frequently the cause of headaches.

COLT'S-FOOT (Tussilago Farfara)

Parts used—root and leaves.

Its demulcent properties prove its efficacy in chronic coughs, consumption and other affections of the lungs. It is used in the form of a decoction made with an ounce of the plant to a pint of boiling water, of which a teacupful may be given several times a day.

Description.—A perennial herb with a creeping root. The flower, which stands singly, is large and yellow in color. The leaves do not appear until after the flowers have blown. The flowers have an agreeable odor.

COMMON RUSH (Juncus Effusus).

A common plant, growing in water, or in wet soil, with pithy or hollow, rarely branching stems. A decoction of the root—one ounce of root to a pint of water—taken freely three times daily, is good for the kidneys, dropsy, gravel and incontinence of urine. Ashes of the rush, in doses of five to ten grains twice a day, relieves dyspepsia and sour stomach. A tincture of the rush, made by adding a handful of the plant to a pint of alcohol, and taken freely three times a day, is also good for incontinence of urine. The pith may be used as a demulcent drink in fevers.

COPAIBA (Copaiba).

Use.—This balsam comes from a tree in South America. Its principal use is relieving the irritation in inflammations of the urinary channels, especially in gonorrhœa.

CRANESBILL (Geranium).

(See Plate XVI.)

CRANBERRY.

A cranberry poultice is an excellent application to the affected parts in cases of piles. They also serve as a cure when cooked for table use, and partaken of freely at each meal. Pounded cranberries, applied as a poultice, are excellent for removing the pain and inflammation of erysipelas. In doses of a tablespoonful daily cranberry extract is said to afford relief in hysteria.

CREOSOTE (Creosotum).

Definition.—Creosote is obtained from the distillation of wood tar. The best preparation is made from beechwood and is known as beechwood creosote. Creosote is a yellow, oily liquid having a smoky odor.

Use.—Creosote is an antiseptic and local anesthetic. Internally also it is an antiseptic and is used in diarrhœa and dysentery. In consumption its use is often followed by a diminution of all the symptoms and general improvement.

Manner of Using.—It may be given internally in milk, cod-liver oil or wine. It may also be given in capsules.

DANDELION WINE.

A spring drink for cleansing the blood. In a jar containing two quarts of blossoms pour three quarts of hot water. Let stand forty-eight hours, strain and add two teaspoonfuls of dry yeast and a teacupful of white sugar. Flavor with lemon or wintergreen. A wineglassful three or four times a day.

DEADLY NIGHTSHADE (Belladonna).

(See Plate XIII.)

ERGOT OF RYE (Ergota).

Definition.—Ergot is the compact spawn of a parasitic fungus investing the rye.

Use.—The chief action of ergot is upon the parturient uterus, which it contracts. It assists nature. Also used to control hemorrhage.

Manner of Using.—The fluid extract is the preparation most often employed.

ETHER (Æther).

Definition.—Ether is a clear, colorless liquid having its own peculiar odor and a sweetish taste. It is very inflammable, and its vapor mixed with air and ignited explodes.

Use.—When ether is poured upon the skin it produces a sensation of cold from its rapid evaporation. The part may be frozen, and at this time a small operation, such as the opening of an abscess, may be performed. Taken internally ether is a stimulant to the heart. Its well-known effects in surgery, producing the state known as anæsthesia, depend upon the action of the drug upon the brain and spinal cord. It was first used in surgery by Dr. Warren in 1846 at the Massachusetts General Hospital.

Manner of Using.—To produce loss of consciousness the vapor is inhaled, administered with safety only by a physician. For local use the vapor is locally applied.

EUCALYPTUS OIL.

Eucalyptus is a genus of trees indigenous to Australia and Tasmania but now grown in United States and many other parts of the world. The medicinal part is the oil distilled from the leaves. Taken internally it produces a sense of warmth in the stomach and excites the flow of saliva. It is sometimes given for malaria, chronic bronchitis, asthma, gonorrhœa, etc. Dose 10 to 20 minims. It is sometimes used locally in ulcers and chronic skin affections.

FLAXSEED (Linum-Linseed).

(See Plate XI.)

FOXGLOVE (Digitalis).

(See Plate XIV.)



GALLIC ACID (Acidum Gallium).

Definition.—Gallic acid may be obtained from tannic acid, which is found in the galls upon the oak tree. These galls or nodes are lumps caused by insects. Gallic acid is in the form of long needles.

Property.—Gallic acid, like tannic acid, is astringent, but not so powerful as tannic acid.

Manner of Using.—When prompt action is desired it should be used in powder. It is given also in other forms, such as pills, and so forth.

GARDEN ARTICHOKE (Cynara Scolymus).

A perennial plant, cultivated in our gardens. A tincture prepared from the leaves is most efficacious in rheumatic, gouty and neuralgic affections. Dose: A teaspoonful three times a day.

GARLIC (Allium).

(See Plate VII.)

Definition.—Garlic is the dried bulb of the *allium sativum*, a native of Asia and Egypt, but now naturalized in Europe and America. It resembles the onion and leek.

Use.—When added to a cough mixture garlic aids in the expectoration of secretion. For this latter purpose it is especially valuable in the case of children. Taken internally it is also a remedy against scurvy, hence called an antiscorbutic. Applied locally in the form of a poultice to the abdomen it relieves infantile intestinal colic.

Manner of Using.—The odor is quite offensive, and some will prefer other measures on this account. The preparation for internal use is known as the syrup of garlic, which may be used in a dose from ten drops to a teaspoonful.

GINGER (Zingiber).

Ginger comes from various sources, but Jamaica ginger is preferred for culinary purposes, as it has the best flavor. Ginger increases the secretions of the intestinal tract, and acts as a carminative. It is used in various preparations to disguise the unpleasant taste.

GLYCERINE (Glycerinum).

Definition.—Glycerine is a transparent substance obtained by the decomposition of fats or fixed oils. It is a constituent of the waste in the process of the making of soap. It is now prepared in large quantities for commercial purposes.

Use.—Taken internally glycerine is in part absorbed or oxidized and so acts partly as a food. If a large amount, as a tablespoonful or two be taken, it acts as a laxative. Externally applied it acts as an emollient. In the care and treatment of bed sores it is highly useful. The parts should be bathed twice daily with warm water and gently rubbed with glycerine.

GRAPEVINE (Vitis Vinifera).

The vine is too well known to require description. Most useful in dropsy and chronic dysentery. The dried fruit is the part employed, of which an infusion is made, placing about two ounces of the fruit in a pint of boiling water, straining and cooling. Dose: A tablespoonful, in either case, every two or three hours, according to the urgency of the symptoms.

HEMLOCK (Conium).

(*See Plate XV.*)

HONEY (Mel).

Definition.—Honey is a saccharine secretion deposited in the honeycomb by the honey-bee, the *apis mellifica*. The best honey is known as virgin honey. It is obtained by incising recent combs and straining. Clarified honey is made by heating honey, removing the frothy scum and straining. Other products made by the aid of heat are of a darker color and are less pure.

Use.—Honey is to some slight extent a laxative. It is a pleasant, sweet article of food.

HOPS (Humulus).

(*See Plate VI.*)

HOUNDS' TONGUE (Cynoglossum Officinale).

A biennial plant, named from the shape of its leaves. The root is the part employed. It has been found most useful as a sedative in coughs,

catarrh, spitting of blood and dysentery. An infusion is made with one ounce of the root to a pint of water. Dose: A tablespoonful four times a day.

INDIAN HEMP (*Cannabis Indica*).

Definition.—Indian hemp is obtained from the flowering tops of the female plant of the *cannabis sativa* grown in the East Indies. There is a confection known as haschish or gunjah.

Use.—This drug is much used in Eastern countries and is a frequent cause of insanity in these countries. It is taken for the pleasant mental effect produced, though this is but temporary. The first stage is accompanied by exhilaration during which the imagination is actively engaged. The imagination brings up images of its own creation. After a time the pleasant effects are followed by unpleasant and disagreeable effects. Ideas of time and space are perverted. Frequent indulgence in the drug brings about permanent mental change. An impulse to kill has been known to follow the abuse of the drug. For medicinal purposes cannabis is used to quiet spasms and produce mental quietude. In accordance with this use it is employed in treating coughs and the restlessness and delirium of certain diseases. It has been used with benefit in neuralgia.

Manner of Using.—The tincture is the preparation usually employed, though it should never be taken without a physician.

IPECAC (*Ipecacuanha*).

Definition.—Ipecac is the dried root of a plant which is native in Brazil.

Use.—Ipecac is used as an emetic and expectorant. It enters as an ingredient in cough preparations to soften the expectoration of phlegm. It has been used in heavy doses for dysentery.

KEROSENE OIL.

Appendicitis.—Since the theory that this disease is curable by absorption has gained prominence, the use of kerosene oil in connection with the cure has been found useful.

Bunions and Corns.—A continuous application to corns and bunions for a few days will reduce inflammation and pain, and an entire removal of the corn may be brought about.

Burns.—Cloths saturated with kerosene, and applied to burns, exclude the air and bring desired relief from pain.

Cleansing the Scalp.—A little kerosene introduced into glycerine constitutes an ointment that will speedily remove dandruff and contribute to a clean and healthy scalp.

Colds.—Ten to twelve drops of kerosene oil on cut loaf sugar, taken every two or three hours, has been found effective in curing colds, also rub neck and chest.

Consumption.—A cloth saturated with kerosene oil, bound around the chest at night and frequently repeated, will remove lung soreness, and it may be taken inwardly with advantage. Eight to ten drops three or four times a day in sarsaparilla. It has been tried as a cure for consumption.

Croup.—Kerosene has been used in croup with success. It may be taken internally 10 to 15 drops on sugar. Repeat if necessary.

Diphtheria.—Swabbing of the throat, at intervals of two to three hours, with kerosene, has been found effective in destroying the membrane of diphtheria and reducing inflammation.

Quinsy.—External and internal use of kerosene has a remedial effect in this obstinate disease.

Rheumatism.—Petroleum was a favorite Indian remedy for rheumatism. In the purer form of kerosene it is still regarded as a favorite remedy for this painful disease. It may be applied by frequent rubbing.

Toothache.—Cotton saturated with kerosene and placed in the tooth often affords immediate relief.

Vegetable Poisons.—Kerosene is an excellent lotion for the external inflammation resulting from vegetable poisons. It should be applied frequently until relief is had.

LACTIC ACID (Acidum Lacticum).

Definition.—Lactic acid is a colorless syrupy liquid having an acid taste. It is obtained from sour milk.

Use.—As this acid is found in the stomach during the first part of digestion, changes in the amount present cause forms of dyspepsia. When in excess or when it is absent dyspepsia in one form results. Its use in cases of deficiency added to that of pepsin, is followed by beneficial results. Locally it is a mild caustic, and is applied to warts and ulcers, by rubbing it on, with the intent of destroying them.

LADIES' SLIPPER (Cypripedium Parviflorum).

Grows in different portions of our own country, and is marked for its beautiful flowers. The root is the part used. Has been used with

marked success in epilepsy and in various other nervous diseases. A decoction is made with two ounces of the root in two pints of water, boiled to one and a half pints. Dose: A tablespoonful four times a day.

LARD (Adeps).

Definition.—Lard is prepared from the fat of the abdomen of the hog. It is washed with water, melted and strained.

Use.—Care must be taken that the lard used does not become rancid. By the addition of benzoin the lard is prevented from undergoing this change. As an application for burns lard may be used as follows: Wash the lard, beat up with an equal quantity of lime water, and add a few drops of oil of bitter almond or carbolic acid. Lard softens and removes scabs.

Manner of Using.—For medicinal purposes the form of lard used is known as benzoinated lard.

THE LEMON IN MEDICINE.

As an Anti-Narcotic.—In poisoning by narcotic substances, as opium, lemon-juice may be administered after the poison has been vomited or removed from the stomach, to counteract the effects.

Asthma.—The administration of tablespoonful doses of lemon-juice in a glassful of any of the mineral waters, three times a day, has been productive of manifestly good results.

As an Antidote in Alkaline Poisoning.—In cases of poisoning by the alkalies the vegetable acids are their antidotes, and the most convenient, easily procurable acidulous substances are, in general, vinegar or lemon-juice.

Biliousness.—The use of lemon-juice, in doses of one or two ounces diluted with hot or cold water, three or four times a day is an invaluable remedy. It is supposed to act as an eliminator of bile.

Corns.—A slice of lemon held in place by bandage over offending hard corn, or placed between the toes for soft corns for several successive days, is an old, well-tried, standard remedy.

Coughs and Colds, Hoarseness.—The following will be found soothing and healing in most ordinary coughs and colds:

Whole flaxseed	2 ounces
Water (boiling)	1 pint
Juice of two lemons.	
Sugar.	

Pour the boiling water on the flaxseed in a suitable vessel, let it steep three hours, pour off the clear liquid, add the lemon-juice and sweeten to taste. Ice it for drinking. Dose, one ounce.

Diphtheritic Sore Throat and Gangrenous Sore Mouth.—Lemon-juice has been used with striking advantage as a local application (gargle and mouth wash) in these diseased conditions; also in other varieties of gangrene from constitutional causes.

Dropsy.—Mild and sustained diaphoresis is entitled to special favor. The skin must be brought into a state of moderate excitement by external warmth—by hot baths twice a day—at same time administering hot lemonade, after which put patient to bed. Free perspiration will follow, and an improvement in the quantity and quality of the urine, and a material subsidence of the dropsy or edema will ensue.

Erysipelas.—In this affection rest, saline laxatives, low diet and cooling drinks are the elements of treatment in mild and simple cases. A very refreshing and agreeable way of prescribing a cooling drink and at the same time obtaining valuable diaphoretic and diuretic effects is by administering the following:

Take one drachm (60 grains) of bicarbonate of potassium and water four fluid ounces. Make a solution, of which add a teaspoonful to a tablespoonful of lemon-juice diluted with a tablespoonful of water and drink during effervescence every three or four hours.

Fevers.—Next to its use as an anti-scorbutic (a cure for scurvy) lemon juice is most valuable as a drink (in febrile affections) in which the thirst is urgent and the bowels are not disordered. This is usually the case in eruptive and periodical fevers.

Headache.—A remedy which may very often be given with advantage for severe forms of headache is bromide of potassium in five- or ten-grain doses twice daily, followed by an ounce or two of effervescing lemonade, as prescribed under La Grippe (which see). If not very severe the effervescing draught (alone) will be found efficient and secure prompt relief.

Hemorrhages.—It not only assuages thirst, but directly counteracts the tendency to loss of blood. Administered as lemonade in one- or two-ounce doses as cold as possible.

Itching of Anus or Scrotum.—Lemon-juice has been used with advantage as a local application in itching of the genitalia (privates) and anus.

Jaundice.—Lemon-juice in tablespoonful doses several times a day is reputed to be a remedy for jaundice produced by congestion of the liver.

La Grippe.—As a mild diaphoretic and as acting on the kidneys, and to allay restlessness and watchfulness in fever use the following:

Lemon-juice and water, equal parts, enough to make four ounces; bicarbonate of potassium one drachm; water, three ounces.

Make and keep in separate solutions. To be mixed in tablespoonful doses several times daily and taken while effervescing.

Rheumatism and Gout.—Lemon-juice has been used with beneficial effects in acute and chronic rheumatic affections. According to the statement of a noted physician, “the sensible operation of the remedy consists in reducing the force and frequency of the pulse, a mitigation of severity of the attack and in securing an early relief from pain.”

Prescribed in doses of one or two ounces of juice (freely diluted) three or four times a day. This is generally well tolerated, yet sometimes occasions severe griping or diarrhœa.

Scarlet Fever, Malarial Diseases (Chills and Fever).—Lemon juice furnishes a most agreeable and refreshing beverage and proves an admirable refrigerant.

It may be given with sweetened water in the shape of lemonade. This is an old English remedy, formerly called the “King’s Cup,” made as follows:

Add two lemons, sliced, and two ounces of sugar to two pints of boiling water, allowing this to digest till cold, when it is ready for use in ounce doses *ad libitum*. Or lemon-juice may be added to the mildly nutritive drinks, such as gum water, Irish moss tea, barley water, and so forth.

Scurvy.—One of the most beneficial applications of lemon is the use of its juice for the prevention and cure of scurvy. For this purpose ships destined for long voyages are always provided with a supply of the concentrated juice or (its equivalent) lime juice; from one to two ounces should be given every two to four hours diluted with an equal amount of water.

Syphilis.—In some cases of syphilis a cachetic or scorbutiform condition of the blood is apt to obtain, and in such fresh lemon-juice several times daily has been found a valuable adjunct to the regular treatment outlined for this disease.

The Lemon is the fruit of the *citrus limonum*, a native tree of India, but now naturalized in all warm climates. It is supposed that the Greeks and Romans were unacquainted with the lemon, which only became known to Europeans at the time of the Crusades. To-day it is known the world over, and its medical uses are numerous.

To Remove Tan from Face.—Rubbing the half of a cut lemon on face at night or bathing the face with lemon-juice, allowing same to dry, and washing it off carefully with castile soap and warm water every morning, is said to have proved very efficacious.

Vomiting.—The effervescing draught given under Erysipelas (which see) is one of the best remedies for allaying nausea or a tendency to sickness.

LICORICE (*Glycyrrhiza*).

(*See Plate XII.*)

LILY OF THE VALLEY (*Convallaria*).

(*See Plate X.*)

LIVER-WORT.

A strong tea of this plant, called also kindey plant, in teacupful doses four or five times daily, is recommended as an excellent remedy for kidney complaint.

MALE FERN (*Aspidium*).

Definition.—*Aspidium* is the rhizome of plants found in almost every part of the world. The rhizome has a slight odor and a bitter taste.

Use.—Male fern is used in the expulsion of tape worm. It probably kills the worms in addition to expelling them.

Manner of Using.—When it is suspected or known that a person has a tape worm the following treatment should be carried out. The person should either take no food at all for a day or two or the diet should consist of milk only. The drug should then be given in some agreeable form. It may be given in milk or mucilage. A purgative should follow the use of male fern.

MALT (*Maltum*).

Definition.—Malt is the seed of *hordeum distichum*, caused to enter the first stage of germination by artificial means and dried. Extract of malt is made with water at a moderate heat and evaporated to the consistency of thick honey.

Use.—Extract of malt is valuable as a food. It is easily assimilated.

Manner of Using.—Extract of malt may be taken alone or it may be taken in conjunction with cod-liver oil, mixing it with an equal quantity of cod-liver oil.

MARSHMALLOW (Althea).

Definition.—Marshmallow represents a root. It contains a substance called asparagin, upon which its virtues depend.

Use.—Asparagin renders the drug useful as a means of increasing the flow of the urine. Combined with medicinal lard althea makes an effective dressing in skin diseases. It has been employed also in cough mixtures.

Manner of Using.—The syrup is taken internally. For making a poultice the powdered root may be used.

MASTERWORT (Imperatoria Obstruthium).

Part used—the root.

It has been used with such beneficial effects as a diuretic, emmenagogue, stomachic and diaphoretic and in such a wide circle of complaints with so much success that it has gained the title of divine remedy. The dose of the infusion, made with an ounce of the root to a pint of water, is a teaspoonful every three or four hours.

MAY APPLE (Podophyllum).

Podophyllum is a slow cathartic acting upon the liver and the intestinal glands. On account of the smallness of the dose and the slight taste podophyllum is much used in the treatment of constipation of children. A grain may be dissolved in the spirit of ginger and a drop or two given on sugar.

MEADOW SAFFRON (Colchicum).

Definition.—Colchicum represents the corm and seed of a plant.

Use.—The chief use of colchicum is internally in the treatment of rheumatism.

MUSK-ROOT (Sumbul).

Part used—the root.

The virtues appear to be those of a nervous stimulant. It has been used with asserted success in diarrhœa, dysentery and malignant cholera; also in gastric spasm, hysteria, painful menstruation, palsy of the limbs, epilepsy and other nervous disorders. It may be given in infusion or decoction, and may be used very much as we use valerian.

MYRRH (Myrrha).

Definition.—Myrrh is a resinous exudation obtained from a tree. It appears as brownish-red masses.

Use.—Myrrh is slightly astringent and stimulant locally, hence its use as a mouth wash. Combined with other remedies it is sometimes employed as a cough medicine.

NAVY BEAN (Vicia Vulgaris).

A smooth, green bark. Yellow flowers and pods containing the beans are the parts employed. As a remedy for erysipelas it has gained quite a reputation on account of successful cures. It is used both externally and internally. For internal use about one ounce of the dried bark is boiled with one pint of water. Dose: One tablespoonful three times a day. It is a most cooling medicine to the system. For external use a paste is made with the bruised beans and applied to the erysipelatous parts. It rarely fails to relieve all inflammatory symptoms.

NUTGALL (Galla).

(*See Gallic Acid.*)

NUTMEG (Myristica).

Definition.—Nutmeg is the seed of a tree growing in the East Indies, but cultivated also in the West Indies and in South America.

Use.—Internally small doses favor digestion by stimulating the secretion of the gastric juice. It is used to disguise the taste of unpleasant mixtures and as a flavor.

Manner of Using.—The oil or the spirits may be used.

OATS (Avena).

Avena is the fruit of the *avena sativa* and is used as food in the form of oatmeal, gruel or porridge. It is a highly nutritious food and should be eaten with butter or cream. Skin eruptions, such as eczema, have been attributed to the use of oatmeal. Change of diet in these cases produces a cure for the eczema.

OLIVE OIL.

Olive oil is both a food and a medicine. Its nutritive powers are considerable and it acts as a lubricant of the digestive tract. It may also

be used externally in numerous ways. It is not to be considered as a cure-all nor should it be taken in excessive quantities as it imposes extra work upon the liver and may cause biliousness, but used in moderate quantities it has the effect of generally aiding the digestive organs in their work. It is recognized as being an especially effective remedy for gall stones. It is also of considerable value to those who are troubled with constipation, its lubricating qualities making it a healthful and natural regulator. Prospective mothers are almost invariably troubled with constipation; ordinary purgatives are irritant and are often dangerous at this period. A fairly free use of olive oil internally at this time combined with external use in the way of rubbing the abdomen will be found not only to give relief in the matter of constipation but will give an elasticity to the skin which enables it to stretch in such manner that scarring of the skin which so often accompanies maternity, is avoided.

As to the quantity one should take internally this depends upon the individual and also the general diet. Two or three tablespoonfuls per day will generally prove a satisfactory allowance, but those who are fond of it may double this quantity or more. It may be taken before, with or after meals or between meals, according to individual preferences. Larger quantities may naturally be taken where considerable acid fruit is included with the diet than in cases where such fruit is omitted. For those who do not like the taste of the oil it may usually be made palatable by adding a little lemon or other acid fruit juice, or by adding a pinch of salt.

Olive oil has been found of much value as a preventive of appendicitis, and for such purposes may be used advantageously both internally and externally. A few drops in the nose when suffering from cold will soften scabs and have general healing effect. It is also of value in enemas. Used externally it affords relief from aching joints and rheumatic conditions. It is of value for chapped skin and may be used advantageously in rubbing the whole body after a warm bath. In its natural form, however, it is inclined to darken the skin and to avoid this the coloring pigment should be removed by bleaching the oil through exposure to sunshine.

Swimmers find that by thoroughly rubbing the body with olive oil before entering the water, they are enabled to endure much greater cold and withstand fatigue in swimming long distances. It is said to promote the growth of hair, but whether this be so or not, it in any event makes an excellent treatment for the scalp, keeping it in healthy condition.

ONION.

Hardly any plant furnishes more or better home remedies than the onion. Cooked as a sauce and eaten freely it is a cure for constipation. Cut into slices and sprinkled with sugar, a syrup is formed which is excellent in croup, the dose being a teaspoonful every fifteen to twenty minutes, till relief is had. A crushed onion poultice will extract the heat and pain of a burn or scald. The squeezed juice of the onion, mixed with sugar, and given in teaspoonful doses every three or four hours, is highly recommended as a cure for bronchitis.

Boiled and mixed with flaxseed meal and a little vinegar it makes an excellent poultice which, placed across the chest and under the armpits, has been found efficacious in pneumonia. Raw sliced onions placed in a sleeping room where diphtheria, scarlet fever or other contagious disease is present, seem to act as a magnet in drawing the germs of disease. Onion syrup, prepared by sprinkling sliced onions with sugar, and taken in teaspoonful doses every fifteen minutes, until relief is obtained, is a favorite home remedy for croup. Free use of onions on the table is a preventive of constipation. An application of crushed onions to burns extracts the fire and relieves the pain. In bronchial affections onions afford a remedy, in the form of a syrup taken in teaspoonful doses, three or four times a day, or oftener if the case be severe.

OPIUM (Opium).

(See Plate IX.)

ORANGE (Aurantium).

Definition.—The orange represents the fruit of small trees which grow in warm regions of the Eastern and Western Hemispheres. There are two forms, the sweet orange and the bitter orange.

Use.—Like the juice of the lemon, orange juice may be taken in water as a cool drink, and is grateful particularly during the course of fevers. The different preparations of orange are pleasant as flavors. The preparation known as the elixir of orange is an agreeable vehicle for other remedies.

OREGON WILD GRAPE (Berberis Aquafolium).

Where the root cannot be obtained, the fluid extract, which is known as *Berberis Aquafolium*, may be purchased from druggists, the dose being

one-half teaspoonful in water three times a day in Leucorrhœa and also it is recommended as a douche, one teaspoonful in a cup of water being thus used night and morning.

PEACH LEAVES (*Amygdalus Persica*).

Physicians who have tried the virtues of peach leaves as a cure for jaundice speak of them with praise. Steep a handful of the bruised leaves or twigs in enough cold water to cover them. The dose is a fourth of a teacupful three or four times daily. A tea made of peach leaves or bark is purgative and good for worms. It should be given in tablespoonful doses to adults, until it operates. Children should take teaspoonful doses. In two to four tablespoonful doses every two hours it will check the vomiting in cholera morbus and morning sickness.

PENNYROYAL (*Hedeoma-Hedeoma*).

(*See Plate IX.*)

PEPPER, BLACK PEPPER (*Piper*).

Definition.—Pepper is the unripe fruit of the *piper nigra* of India.

Use.—Pepper is a condiment. It is stimulating to the digestive system and to the circulation. Pepper externally is an irritant.

PEPPERMINT.

Essence of peppermint, a teaspoonful to a tumbler of hot water, sipped occasionally, is both a preventive and cure of seasickness. Bruised and applied to the stomach it relieves nausea and vomiting. Given internally it relieves colic in infants.

PEPSIN (*Pepsinum*).

Definition.—Pepsin is one of the elements of the gastric juice. In cases of deficiency of this element there is presented one form of dyspepsia. The object, then, is to assist nature by replacing the pepsin. We therefore look to the lower animals for assistance and select the hog, calf or the sheep. The acid mucous secretion is scraped from the surface of the stomach, spread on a glass and dried in scales. Saccharated pepsin is pepsin obtained from the gastric mucous membrane of the hog mixed with sugar of milk. It is a white powder of a disagreeable odor and taste. A solution of this is made and forms liquor pepsin.

Manner of Using.—The powder may be used, or a rather pleasant liquid preparation called the wine of pepsin may be used.

PERUVIAN BARK (Cinchona).

Uses.—This drug has somewhat lost its former popularity, being replaced by quinine and other alkaloids obtained from the same bark. These alkaloids are the best vegetable tonic, as also the surest remedies in malaria. Quinine is also much used in fevers and inflammations. Many have a certain objection to this drug because an excess causes headache, noise in the ears and other disagreeable symptoms. These are, however, temporary, and should not stand in the way of a careful use of the remedy.

PINEAPPLE.

A tablespoonful of the juice of the pineapple, taken every three hours, is recommended as soothing in sore throat. The same may be used as a gargle after each dose.

PINK ROOT.

This plant offers an old standby for worms. An ounce of the root, mixed with four drachms of senna, should be steeped in a quart of water. The dose is two tablespoonfuls twice a day. If the root is used in the form of a powder; the dose is ten to twenty grains for children, and one to two teaspoonfuls for adults.

POISON NUT (Nux Vomica).

Definition.—Nux vomica is the seed of the *strychnos nux vomica* of East Indies. The seeds are disk-shaped, about an inch in diameter, and covered with silky hairs.

Use.—Nux vomica is one of our best tonics, as also one of the most dangerous poisons. These properties principally belong to strychnine, an alkaloid. It is also a good bitter tonic, which property is especially efficacious in the nervous system. It is often used in the treatment of dyspepsia.

Manner of Using.—The tincture of nux vomica is the preparation usually employed. Strychnine is used advisedly.

POTATO AS A CURE FOR ACHES AND PAINS.

Recent discoveries indicate that the common potato contains properties which, if properly applied, may relieve a number of aches and pains.

The medicinal properties of the potato are contained in its juice, and it is claimed on high medical authority that this juice produces wonderful results in curing swellings and other disordered conditions of the joints and muscles. In connection with the joints of the body there is to be found a fluid known as "synovia," which acts as a lubricant, and if through accident or disease this secretion ceases the joints become dry, feverish and painful and are unable to perform their functions. This condition is well illustrated by what is known as "white swelling" of the knee; the gland in the knee through which this lubricant (synovia) supplies the joint having become injured or diseased, the fluid escapes through the tissues and forms a swelling under the skin. Under ordinary treatment the trouble is not only difficult to remove, but even after the swelling has disappeared it is usually a long time before proper secretions are again set into activity and full use of the joint obtained. Among other instances where the stoppage of the flow of this fluid causes pain and trouble, may be mentioned gout, where the secretion is lacking in the great toe, and lumbago where there has been a cessation of synovial flow in the lumbar region.

The constituent parts of the potato are chiefly starch and potash salts, the curative properties being contained in the potash salts, which are found in the liquid part of the raw potato. Owing to its dense character, considerable pressure is necessary to extract the potato juice; after extraction it must be boiled down to about one-fifth of its original bulk; a small quantity of glycerine is then added as a preservative, in which form it may be used as a liniment or, with a mixture of lard, may be used as an ointment. The juice may be thus prepared at home or can be prepared by any druggist, the pharmaceutical name being *extractum solani liquidum*. The preparation is only used externally, being rubbed over the affected joints or muscles. Before application, hot fomentations should be applied to thoroughly open the pores, being continued until the skin is thoroughly red; the liniment or ointment is then well rubbed in, and in the case of a joint, a protective bandage is applied. This operation should be repeated every three hours until the pain and swelling are relieved. In cases of lumbago the patient should rest in bed until the remedy has had full effect. A sprained ankle or wrist should be kept tightly bandaged for a few days over an application of the ointment.

It is claimed that thus applied, not only does the potato juice quickly relieve pain, but that it so thoroughly re-establishes the synovial flow that

normal condition of the part is so completely secured that there is little likelihood of reoccurrence of the trouble.

PUMPKIN (*Curcubita Pepo*).

The seeds of the pumpkin afford a well recognized remedy for worms, retention of urine and inflammation of bladder and bowels. Oil of the seeds operates as a speedy diuretic in doses of from six to ten drops four or five times a day. If a tea of the seeds be used as a diuretic, it may be drunk freely at intervals of two to three hours. Pumpkin seeds are highly recommended for the destruction and removal of tapeworm. The seeds should be peeled and beaten in with sugar till a paste is formed. Then dilute with milk, and drink freely, always on an empty stomach. In the course of a few hours the patient should take an active cathartic for the removal of the tapeworm, composed of a tablespoonful of castor oil and a teaspoonful of turpentine. The drug-stores now furnish a fluid extract of pumpkin seeds for the destruction of tapeworm, the dose being from a half to a whole tablespoonful every three or four hours, followed, as before mentioned, by a large dose of castor oil and turpentine.

PURPLE WILLOW HERB (*Lythrum Salicaria*).

Part used—the bark and root.

It is demulcent and astringent, and is efficacious in diarrhœa and chronic dysentery. The dose of the powdered bark is about a teaspoonful two or three times a day. A decoction of the root is prepared by boiling an ounce in a pint of water and given in doses of a tablespoonful every two or three hours.

RED PEPPER.

Red pepper is employed with great success as a gargle in scarlet fever. It is prepared by taking half a teaspoonful of the pepper and one tablespoonful of table salt to a half-pint of boiling water. Thoroughly mix and strain, and then add about half a teacupful of vinegar. Use frequently as a throat gargle, and give internally half a teaspoonful every hour to a child, doubling the amount for an adult. Red pepper is also recommended as a cure for the grippe, in the form of a tea of the pod, or of the ground pepper, a teaspoonful to half a pint of water. Place a teaspoonful of the tea in a glass of hot water, and drink slowly every three or four hours.

RED ROOT (*Ceanothus Americanus*).

A small, indigenous shrub, growing in the United States. The root is the part employed. Said to be useful in syphilitic complaints; given in the form of decoction; two drachms of the root to a pint of water. Dose: A teaspoonful four times a day. A strong infusion is useful in aphthous ulcers of the mouth, applied locally several times a day.

RHUBARB (*Rheum*).

Definition.—Rhubarb represents the root of a plant native in Asia.

Use.—In moderate doses rhubarb acts as a purgative and stomachic. In chronic constipation it is an excellent remedy. It is useful in the summer diarrhœa of children.

Manner of Using.—The aromatic syrup is a favorite method of administration. It may be given also in the form of pills.

SALT IN MEDICINE.

As Worm Cure.—For this purpose it is administered in large doses by the mouth, or, when the worms are lodged in the rectum, a strong solution is administered in the form of an enema.

Catarrh.—A warm, weak solution of salt and water (a half to one teaspoonful of salt to a tumblerful of warm water) sniffed up the nose night and morning oftentimes leads to a speedy cure in mild cases.

Cholera Morbus.—Salt solution by the mouth and as enemata is strongly recommended for this disease.

Diarrhœa and Dysentery.—In these affections salt has been satisfactorily administered in combination with lemon juice. A half drachm of salt to a tablespoonful or two of lemon-juice diluted, and repeated every two hours till relieved.

Emetic.—To produce vomiting the dose of salt is one or two tablespoonfuls in a tumblerful of water. A teaspoonful of mustard flour assists its action.

Felon.—Take common salt, roast it on a hot stove till dry as possible. Take a teaspoonful of it, also a teaspoonful of pulverized castile soap and a teaspoonful of Venice turpentine; mix them well into a poultice and apply to the felon. Renew twice daily, and in four or five days the felon will open, release the pent-up matter and get well.

Fits, Apoplexy, Convulsions, and so forth.—Salt placed on tongue dry acts admirably in these affections.

For External Application.—Salt is used for various external applications. Thus, a saturated solution, applied with friction, is employed as a counter-irritant in glandular enlargements and chronic diseases of the joints.

General Administration.—Common salt in small doses acts as a stimulant tonic and anthelmintic or worm cure; in larger ones as a purgative and emetic. It certainly promotes digestion, and the most universal animal appetency for it proves it to be a salutary stimulus in health. When taken in larger quantities than usual with food it is useful in some forms of dyspepsia, and, by giving greater tone to the digestive organs in weakly children, may correct the disposition to generate worms. On the sudden occurrence of hemoptysis or vomiting of blood it is usefully resorted to as an astringent in the dose of a teaspoonful, taken dry, and often proves successful in stopping the flow of blood.

Heartburn.—A few grains of table salt allowed to dissolve in the mouth and frequently repeated will ensure prompt relief.

Hemorrhage.—On the sudden occurrence of bleeding or vomiting of blood it is usefully resorted to to stop the flow, in the dose of a teaspoonful, taken dry.

History.—Salt is a necessary and indispensable seasoning of our food, and as such must doubtless have been known to and employed by the first individuals of our race. The earliest notice of it occurs in the writing of Moses (Genesis xix. 26; Leviticus ii. 13) and Homer (Iliad, lib., ix. 214). It has received various names, such as common salt, culinary salt and chloride of sodium, and so forth.

Hives.—Ordinary salt baths are of great value, promptly relieving the terrible itching. Two ounces of salt are added to about thirty gallons of warm water.

Inward Uses.—It is frequently used as an ingredient in stimulating enemata. The dose, as a tonic, is from ten grains to a drachm; as a cathartic, though seldom used for that purpose, from two drachms to half an ounce. In doses of from half an ounce to an ounce, dissolved in four or five times its weight of water, it frequently proves a prompt and efficient emetic, invigorating rather than depressing the powers of the system. When employed as a clyster it may be used in the amount of from one to three tablespoonfuls dissolved in a pint of water.

Local Application.—Externally applied in solution it is a stimulant, and may be used either locally or generally. Locally it is sometimes

employed as a fomentation in sprains and bruises; and as a general external application it forms the salt-water bath, a valuable remedy as a tonic and excitant in depraved conditions of the system, occurring especially in children, and supposed to be dependent on the scrofulous diathesis. A pound of salt dissolved in four gallons of water forms a solution of about the strength of sea-water, and suitable for a bath.

Malaria (Ague).—In the course of experiments made in Paris, France, common salt in half-ounce doses has been found very efficient and second only to quinine, but the dose being very bulky causes vomiting in many cases. But the suggestion is a valuable one, where quinine cannot be administered.

Purgative.—For producing evacuations from the bowels it is employed in the form of an enema. One or two tablespoonfuls of common salt dissolved in a pint or quart of starch water forms a very useful clyster.

Salt and the Blood.—It serves some important and essential uses in the animal economy. It is employed by the people of all nations, from the most refined to the most barbarous. It is an invariable constituent of the healthy blood.

In moderate quantities it promotes the appetite, assists digestion and assimilation.

Salt a Tonic.—In some diseases the moderate use of salt produces the effect of a tonic. It acts as a stimulant to the mucous membranes, the absorbent vessels and glands.

Sore Eyes.—A small pinch of salt (about three grains) added to an ounce of clear, filtered, boiled water makes a very soothing and beneficial eye-lotion. Apply with a small tube or dropper several times daily.

Sore Throat.—Gargling the throat with a weak solution of salt and water will often cure this difficulty without further treatment.

Sprains and Bruises.—Half fill a bottle with common salt; add good brandy till nearly full. Shake it well and allow to settle. Bathe the part with a soft linen cloth or sponge.

Stimulant.—As a stimulant it is rubbed on the chest in fainting, and so forth.

Stomach Pains or Gastrodynia.—Salt in a teaspoonful dose, dry, is used in some cases with considerable advantage.

Toothache Cure, Infallible.—Pulverize and mix alum and common salt in equal quantities; wet a small piece of cotton and cause the mixture to adhere to it; place in the hollow tooth. A sensation of coldness will be

first produced, which will gradually subside and with it the tormenting toothache.

NEW SALT REMEDY FOR SUNSTROKE.

Symptoms.—Throbbing in head, violent thirst, great restlessness; headache and fullness as if head would burst; red face, increased action of heart.

In extreme cases of sunstroke, where the patient is often in an unconscious condition, with a very weak, rapid pulse, and at times almost imperceptible, the injection under the skin of the forearm of a sterilized salt solution into the vein has been found most efficacious, and has been the means of saving many patients when the temperature has reached $109\frac{3}{4}$.

Treatment.—A vein of the arm is opened precisely as in the manner for bleeding, and a solution made by approximating one teaspoonful of common salt dissolved in one quart of water. This solution to be of the temperature of the blood, viz.: $98\frac{2}{5}$ Fahrenheit.

By pursuing this treatment the blood-vessels are filled, the rapid action of the heart diminished, pulse becomes stronger and regular, and in association with the regulated cold bath or cold applications to the surface of the body, consciousness is restored within a very few hours. Care should be taken that the treatment, especially the cold bath, is not applied to cases of heat exhaustion, where the temperature is frequently subnormal. There is no doubt but what this recently instituted treatment by salt injections has been the means of saving many patients who have been affected with sunstroke. In sunstroke the fluid in the blood-vessels being below the normal quantity, the salt injection takes the place of the lost pabulum.

SARSAPARILLA (Sarsaparilla).

Definition.—Sarsaparilla represents a root from Mexico, Central America and Brazil.

Use.—Sarsaparilla is an alterative. It is also a vehicle to disguise the taste of unpleasant drugs.

SENNA OR SENNA (Sena).

Use.—A violent cathartic, with watery stools, having the disadvantage that it is apt to produce strong colic. Generally given with some aromatic. The most pleasant form is the preparation known under the name of compound licorice powder.

SKULLCAP (*Scutellaria Lateriflora*).

Part used—the leaves.

Very efficacious as a nervine and successfully employed in neuralgic and convulsive affections, St. Vitus' dance, delirium tremens and nervous exhaustion. An infusion of the dried leaves is made with half an ounce of the leaves to a teacupful of water, to be drunk during the day. It has been found useful in epilepsy.

Description.—Its stem is erect, smooth and one or two feet high. The leaves are rather acute, opposite and supported upon long petioles. The flowers are small and of a pale blue color.

SOAPWORT (*Saponaria Officinalis*).

Part used—the root and leaves.

It has been used in venereal and scrofulous affections, cutaneous eruptions, and so forth. It appears to act as an alterative like sarsaparilla. It is given in the form of a decoction which may be taken freely. The expressed juice given in the quantity of half an ounce in the course of a day is claimed to be a specific in the cure of gonorrhœa.

Description.—The root and leaves are inodorous, of a bitterish-sweetish taste. They impart to water the property of forming a lather when agitated, like a solution of soap, whence the name of the plant was derived.

SPANISH FLIES (*Cantharis Cantharides*).

Definition.—Spanish flies represent the dried body of a beetle found in the South of Europe, especially in Spain.

Use.—Internally cantharides is a stimulant to the genito-urinary tract and externally it is employed as a counter-irritant. The tincture of cantharides combined with other remedies is often used in the treatment of alopecia or baldness.

Manner of Using.—When a blister is employed the part may be painted with cantharidal collodion or it may be covered with a rag spread with the cerate. Cantharides requires from six to ten hours to draw a blister, but it is better to remove the drug at the end of four or five hours.

STARCH (*Amylum*).

Definition.—Starch is a fine white powder, and is obtained from the seed of the *zea mays*. It forms a large part of rice, wheat and barley.

Use.—When boiling water is added to starch a very convenient poultice is furnished for local inflammations. Starch, when mixed with water, is a convenient antidote to most corrosive poisons, as it is usually close at hand or can be readily obtained.

Manner of Using.—Starch may be used locally or internally. It may also be used as the basis for an enema to be injected in the bowels.

STONE ROOT (*Collinsonia Canadensis*).

(See Plate I.)

This plant is used in numerous complaints in practice. A decoction of the fresh root, one ounce to the pint of water, has been used with advantage in hemorrhoids or piles, catarrh of the bladder, gravel and dropsy. The dose is one tablespoonful four times a day. The leaves are applied in the form of fomentation to wounds, bruises and sores, and in cases of internal abdominal pains.

SUGAR (*Saccharum*).

Definition.—Sugar is a product of the sugar-cane of sub-tropical countries.

Use.—Syrup which is used as a vehicle for the administration of drugs consists of 85 per cent. of sugar. Sugar of milk is a peculiar crystalline sugar obtained from the whey of cow's milk by evaporation and purified by recrystallization. It is used in pharmacy.

SWEET FERN (*Comptonia Asplenifolia*).

A shrubby plant. Grows in thin, sandy woods in New England. The root is the part used. Most useful in diarrhœa. Given in the form of decoction. Made with two ounces of the root, boiled in one and a half pints of water to a pint. Dose: A tablespoonful several times a day, as required.

TANNIC ACID (*Acidum Tannicum*).

Definition.—Tannic acid occurs in the form of pale yellow scales.

Use.—The chief effect of tannic acid is that of an astringent contracting the tissues and checking secretion. It is used as a chemical antidote in cases of poisoning.

Manner of Using.—As an antidote it is used in powder form, twenty grains being the amount usually given.

TARTARIC ACID (Acidum Tartaricum).

Definition.—Tartaric acid appears as colorless crystals. It is obtained by the decomposition of cream of tartar found in old wine casks.

Use.—This acid is one of the constituents of a Seidlitz powder, which is laxative in its effect. Rochelle salt, also laxative, is potassium and sodium tartrate.

Manner of Using.—The acid or its salts are used in solution in quantities to suit.

TEA (Camellia).

Definition.—This represents an infusion made from the dried leaves of the Chinese tea plant or *Camellia Thea*. It contains a substance known as theine.

Use.—Tea is a stimulant removing a sense of fatigue. While this is the ordinary effect of the use of tea there are some, particularly those of a nervous temperament, who cannot partake of it without ill effects.

TOBACCO (Tabacum).

Definition.—The leaves of the tobacco plant represent the part used. The tobacco plant is indigenous to the southern portions of this country. It was carried to Lisbon by the Spaniards and from there to France by Nicot in 1560.

Use.—When persons not accustomed to tobacco indulge in it emesis or vomiting, with great muscular relaxation, results. It is a stimulant to the salivary and intestinal secretions. Nicotine is a rapidly acting poison resembling hydrocyanic acid in its fatal effects. The power of increasing secretions along the alimentary canal, the stimulation of peristalsis and the function of the kidney are proper arguments in favor of moderate use of tobacco.

TOMATOES (Lycopersicum Esculentum).

The tomato remedy for cholera infantum meets with much favor by those who have tried it. It is prepared by adding sugar to peeled ripe tomatoes. The dose is a teaspoonful every half hour until relieved; then continue with like doses every two or three hours till a permanent cure is effected. Some remarkable cures are mentioned in connection with this simple remedy. Do not give the seed or pulp of the tomato.

TRAILING ARBUTUS (*Eplgæ Repens*).

A small, trailing plant, ovate leaves and small, fragrant flowers. It has been employed with marked success in diseases of the urinary organs and of the pelvic viscera generally. The leaves and stems are the parts used. An infusion is made with two ounces of either to one and a half pints of water, boiled to one pint. Dose: A tablespoonful three or four times a day.

TURPENTINE TREE.

This species of pine yields the oil and spirits of turpentine so useful in the cure of diseases. Application to the back of the neck of a cloth thoroughly wetted with spirits of turpentine will afford speedy relief in cases of fits and convulsions. Five drops of the spirits on a little sugar, swallowed slowly, and once or twice a day will cure sore throat. In cases of dysentery, ten drops on a little sugar taken every four hours usually effects a cure. A turpentine liniment, valuable in cases of sprains, bruises and rheumatism, is made of equal parts of spirits of turpentine and vinegar, to which has been added the yolk of one egg.

UNICORN ROOT.

This is sometimes called star-root. It ranks as an excellent remedy for falling of the womb. Make it into a strong tea, and take half a teaspoonful three times a day.

VALERIAN (*Valeriana*).

(See Plate XIV.)

WAHOO (*Euonymus Atropurpureus*).

Small shrub, which, in autumn, from their rich red color, have obtained for them the name of burning bush. Most effective in the different forms of dropsy. The root is the part employed. Given in the form of decoction, one ounce to the pint of water. Dose: A wine-glassful three or four times a day.

WALL PELLITORY (*Parietaria Officinalis*).

Part used—the bark.

It is used in complaints of the urinary passages, dropsy and febrile affections in the form of a decoction made with an ounce of the bark to a

pint of water, the dose of which is a tablespoonful every three or four hours. The expressed juice is also used and the fresh plant applied in the form of a poultice to painful tumors.

WATER HEMLOCK (*Phellandrium Aquaticum*).

Part used—the seeds.

They have been used moist successfully in chronic pectoral affections, such as bronchitis, pulmonary consumption, asthma, and so forth, and in dyspepsia and intermittent fever. The dose is from five to six grains every three or four hours.

Description.—The seeds have been used for a considerable time in the treatment of disease. They are from a line to a line and a half in length, narrow above, somewhat compressed, marked with ten delicate ribs. Their color is yellowish brown, the odor strong, their taste acrid and aromatic. In over-doses they produce vertigo, intoxication and other narcotic effects.

WAX (*Cera*).

Wax is a concrete substance prepared by the *apis mellifica*. It forms the honeycomb. It is used to give consistency to ointments and suppositories.

WHITE MUSTARD (*Sinapis Alba*).

(See Plate V.)

WHITE OAK BARK.

It has been used successfully to cure the leucorrhœa or whites. Boil an ounce of the root in a pint and a half of water down to a pint. Use as an injection.

Or, employ as an injection one-half ounce of the fluid extract of Canadian pine (*Pinus Canadensis*) to a pint of tepid water. Use this twice a day with a syringe, or white oak bark one ounce to a pint.

WHITE POND LILY.

A tea of this plant injected to the neck of the womb is highly recommended as a cure for ulceration of that organ. At the same time the tea should be taken internally as an accessory treatment, the dose being half a teacupful two or three times daily. If the fluid extract of the plant is used, the dose should range from four to twenty drops three times a day.

WILD INDIGO (Baptisia Tinctoria).

Part used—the root.

It has proved useful in scarlet fever, typhus fever and in that state of the system which attends gangrene or mortification. It is highly recommended as an external application to obstinate and painful ulcers. It is given in decoction made in the proportion of an ounce of the root to a pint of water, of which two tablespoonfuls are administered every four or eight hours.

WILD YAM.

This plant has come into modern favor as a remedy for appendicitis. It is used by mixing a teaspoonful of the extract in a half tumbler of water, and taking a teaspoonful of the mixture every half hour. When relief comes diminish the dose to once every hour or two. This treatment is regarded by some doctors as the best the profession affords.

WINTERGREEN TEA BERRY (Gaultheria).

Definition.—Wintergreen represents the leaves of a small plant growing in North America.

Use.—Taken internally the oil is antiseptic and antipyretic. This latter refers to its property of reducing the temperature. It is used in the treatment of articular or inflammatory rheumatism. Locally the oil combined with olive oil makes a good application for rheumatic pains.

Manner of Using.—The oil is used internally and locally.

WORMSEED (Santonici Semen).

Part used—the seeds.

They contain a volatile oil, to which its virtues have been ascribed. But it owes its efficacy to a peculiar principle which it contains called santonin, used in the treatment of worms. The dose is from one to four grains twice a day. The dose of the powdered seeds is from ten to thirty grains, which should be repeated morning and evening for several days and then followed by a brisk cathartic. It has also been employed with success in intermittent fever.

YELLOW ROOT (Hydrastis Canadensis).

Part used—the root.

Possesses the virtues of the ordinary bitters and popularly employed as a tonic. Used in dyspepsia and stomach affections, and as a topical application to ulcers and sores in the form of a decoction made with a

drachm of the dried root to a pint of water and a syringeful injected three times a day. It is most useful in gonorrhœa.

YERBA REUMA.

Fluid extract of yerba reuma is a favorite cure for catarrhal affections. It is used by pouring a small quantity of the liquid into the hollow of the hand, placing the finger on one nostril and sniffing the liquid into the other nostril. Then do the same with the other nostril. This should be repeated four or five times daily. If the catarrhal discharge is copious, the nostrils should first be cleansed by previous sniffs of warm water; and if the discharge be offensive a half teaspoonful of carbolic acid may be added to the water.

HOW TO PREPARE HERBS.

When a plant has reached the stage of its growth when all its properties are fullest it is the proper time to gather it.

Roots.—The best time to gather roots is before the sap rises in the spring, but they may be taken after the leaves have dried in the fall.

Barks.—Gather in the fall or early spring, and, after removing the outside portion of the bark, cut and put in a dry place.

Berries and Fruits.—Hang in a cool, dry place or spread on tables or shelves.

Seeds and Flowers.—When they have fully ripened, place to dry in a shady place.

Medical Herbs.—Gather any time while blooming, before the autumn frosts, and dry in the shade.

Leaves.—Should be collected when the bloom is on the plant, and hung or spread in a current of air so as to be hastily dried.

All druggists know that tin canisters are the best in which to keep powders, where they can be dry and in a dark place roots in barrels or wooden cases and extracts and tinctures in jars and bottles away from the light.

How to Prepare Herbs for Use.—To make an effusion or decoction, take one to two ounces of the plant, bruise, and add a quart of water. Tinctures are made by taking two ounces of the powdered article and adding a quart of alcohol and letting stand two weeks. Essences are made by dissolving one to two ounces of the essential oils in a quart of alcohol. Infusions or teas are made by taking a half cupful of the herb and allowing to simmer slowly over the fire. Decoctions are made in the same way, only make sure to extract the full strength from the herb.

HOW TO MAKE TINCTURES.

Tinctures, in the pharmaceutical sense of the term, are solutions of medical substances in alcohol or diluted alcohol, prepared by maceration, digestion or percolation.

Only Dry Ingredients.—In the preparation of the tinctures the medicine should be in the dry state, and properly comminuted by being bruised, sliced or pulverized. It is usually better in the condition of a coarse than of a very fine powder, as in the latter it is apt to agglutinate, and this presents an impediment to the penetration of the menstruum.

The Mixing.—When several substances differing in solubility are employed they should be added successively to the splint; those least soluble first, those most so last, as otherwise the menstruum might become saturated with the ingredient for which it has the strongest affinity, and thus be rendered incapable of dissolving a due portion of the others.

The Care Needed.—Care should always be taken to keep the vessels well stopped in order to prevent the evaporating of the alcohol. The materials should be frequently shaken during the digestion or maceration, and this caution is especially necessary when the substance acted on is in the state of powder. The tincture should not be used until the maceration is completed, when it should be separated from the dregs either by simply filtering it through paper, or, when force is requisite, by first expressing it through linen, and subsequently filtering.

Narcotic Tinctures.—Tinctures prepared by adding alcohol to the expressed juices of plants have been long in use. The tinctures of some of the narcotic plants, as those of conium, hyoscyamus and belladonna, are prepared in this manner. To the expressed juice, after it has stood twenty-four hours and deposited its feculent matter, alcohol of .0838 is to be added in the proportion of one part by measure to four of the juice, and after another period of twenty-four hours the liquor is to be filtered. This proportion of alcohol is sufficient for the preservation of the juice, while it causes the precipitation of the mucilaginous matter. But, though these preserved juices are often energetic preparations, yet it is obvious the tinctures prepared from the fresh plant must be still more efficient, as they contain necessarily not only the soluble active matter of the juice but that also which is left in the solid residue of the plant.

Keeping of Tinctures.—Tinctures should be kept in bottles well stoppered in order to prevent evaporation, which, in some instances, might be attended with serious inconvenience, by increasing their strength beyond the official standard.

Doses of Tinctures.—Medicines are most conveniently administered in tinctures which act in small doses, as the proportion of alcohol in which they are dissolved is insufficient to produce an appreciable effect. Those which must be given in large doses should be cautiously employed in this form lest the injury done by the menstruum should more than counterbalance their beneficial operation. This remark is particularly applicable to chronic cases, in which the use of tinctures is apt to lead to the formation of habits of intemperance.

HOW TO MAKE FOMENTATIONS.

A sort of partial bathing by the application of cloths which have been previously dipped in hot water or in some medicated decoction. They act chiefly by virtue of their warmth and moisture, except in the case of narcotic fomentations, where some additional effect is obtained.

A Dry Fomentation is a warm, dry application to a part, as a hot brick wrapped in flannel, a bag half filled with chamomile flowers made hot, and so forth.

Fomentation of Herbs.—The herbs ordinarily sold by the apothecary for this purpose are southernwood, poppy heads, chamomile flowers, each two parts; bay leaves, one part. Four ounces of these to six pints of water.

HOW TO MAKE COMPRESSES.

Folded pieces of lint or rag so contrived as, by the aid of a bandage, to make due pressure upon any part, according to their shape, direction and use. Compresses have been called long, square, triangular, split, uniting, cubiform, and so forth.

The compress of the hydropathists is a cloth well wetted with cold water, applied to the surface near the supposed seat of disease, securely covered with a dry cloth, and changed as often as it becomes dry. It is sometimes covered with a layer of oiled silk to prevent evaporation.

HOW TO MAKE DECOCTIONS.

Decoctions are solutions of vegetable principles obtained by boiling the substances containing these principles in water. Decoction is preferred to infusion as a mode of extracting the virtues of plants when the call for the remedy is urgent and the greatest possible activity in the preparation is desirable. The process should be conducted in a covered

vessel, so as to confine the vapor over the surface of the liquid, and thus prevent the access of atmospheric air which sometimes exerts an injurious agency upon the active principle. The boiling, moreover, should not as a general rule be long continued, as the ingredients of the vegetable are apt to react on each other, and thus lose to a greater or less extent their original character. The substance should, if dry, be either powdered or well bruised; if fresh, should be sliced, so that it may present an extensive surface to the action of the solvent.

All vegetable substances are not proper objects for decoction. In many the active principle is volatile at a boiling heat, in others it undergoes some change unfavorable to its activity, and in a third set is associated with inefficient or nauseous principles, which, though insoluble or but slightly soluble in cool water, are abundantly extracted by hot liquid at the boiling temperature, and thus injure the preparation. In such cases infusion is preferable to decoction. Besides, by the latter process, more matter is often dissolved than the water can retain, so that upon cooling a precipitation takes place and the liquid is rendered turbid. When the active principle is thus dissolved in excess, the decoction should always be strained while hot, so that the matter which separates on cooling may be mixed again with the fluid by agitation at the time of administering the remedy.

As a general rule glass or earthenware vessels should be preferred, as those made of metal are sometimes corroded by the ingredients of the decoction, which thus becomes contaminated. Decoctions, from the mutual reaction of their constituents as well as from the influence of the air, are apt to spoil in a short time. Hence they should be prepared only when wanted for use, and should not be kept in warm weather for a longer period than forty-eight hours.

BOOK XIV

Treats of Alcohol and Narcotics. Alcoholism and the Tobacco and Drug Habits are fully discussed and the newest and best cures given.

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Book XIV

ALCOHOL AND NARCOTICS

ALCOHOLISM—ITS TREATMENT AND CURE.

Use of Alcohol.—The habitual and excessive use of alcoholic beverages is harmful in the extreme to the moral nature. Startling facts corroborate this opinion. They are historic. Scarcely a community is exempt from the evils of intemperance. One result most common is the loss of self-respect. Men addicted to this vice descend to the grossest immoralities. Before the taste and burning desire for liquor was acquired they were decorous and dignified; but, degraded by the demoralizing appetite, they present the most pitiable spectacle of self-humiliation, all moral excellence disowned or lost. Nor is this result common to men of moderate talents or low extraction.

Degrades Genius.—Some of the brightest geniuses have exiled themselves from the social circle of which they were ornaments, or have been banished therefrom, because of their violation of the courtesies and conventionalities of polite life. They have deliberately forfeited that conservative element in human nature on which are based true dignity and manliness.

Destroys Social Affections.—This baneful habit makes fearful inroads on the social affections. Friendships of long standing have been broken up because of the unreasonable exactions on patience and sympathy demanded by the inebriate. Drunken husbands have exercised a tyranny over refined, cultured and amiable wives till, after long years of endurance, the sufferer has gone down broken-hearted to the grave. These are not cases confined to a few families; they are numbered by the thousands.

Crushes Paternal Feeling.—The paternal relation has been made the occasion of untold pain to children who have become under the rule of

an intemperate father the heirs of privation, cruelty and neglect. The paternal feeling has gradually been crushed out. There are records of feminine frailty of like character where the mother-instincts have been so far obliterated that one shudders to think of a degradation so abject being possible to the womanly nature.

Loss of Ambition.—*Loss of manly ambition* is one of the sad results of this habit. The foe has invaded the precincts of the bar, the senate-chamber, the sacred desk, and hurled down to the dust brilliant men, who sacrificed honor, purity, holiness, popular affection and flattering possibilities of wealth and fame at the shrine of this evil. This is a melancholy page in the history of many great names.

Stifles Conscience.—The great moral monitor, *the conscience*, often is made to hush its admonitions and become silent or dead. Acts the most abhorrent to men sober, by men drunk are committed without shame. Inflamed by a species of madness produced by drink, men perpetrate the darkest deeds. In fact, criminals have fortified their failing courage by repeated draughts of liquor to nerve them to the commission of some premeditated crime. Our civil tribunals are tortured with cases which would never be brought into court but for crime committed by men in a state of intoxication. So enormous, so brutal, have been some offences against the rights of society, and of individuals as well, that serious doubts arise whether the criminal has a conscientious scruple. The wreck of this high moral authority and guide is a sad monument of depravity.

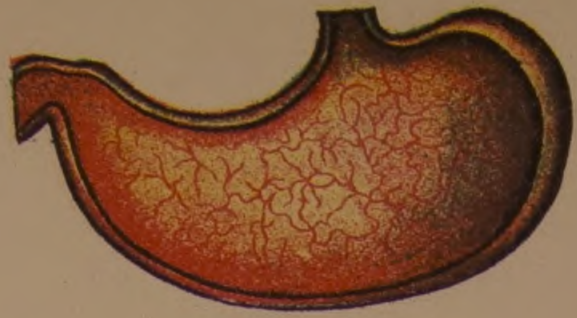
Destroys the Will.—There is another great moral force which is not exempt from the ravages of intemperance—*the will*. This power is the crowning glory of human nature. It is a gift of imperial authority with which man is dowered. When that is enfeebled or destroyed, the creature is unmanned, the sceptre falls from his hands. This regal quality may be enslaved by the vice of intemperance, and then the fate of the unfortunate victim is sealed. There is then no prospect, no promise, of reformation. The farther the victim goes, the greater the momentum toward the inevitable doom. The facility of wrong-doing and the tendency grow in a fearful ratio, until he that was a strong man in will-power is enslaved, and is impelled along on the down grade to the last asylum, the grave.

General Evil Effects.—Thus we trace the effects of a habit that has been a problem to physician, philosopher, jurist and minister. It is a question interesting to all students of human nature. The humanitarian is startled at the ruin the evil entails on the moral nature. The philan-

ACTUAL EFFECT OF ALCOHOLIC LIQUORS ON THE
HUMAN STOMACH AND INTESTINES.



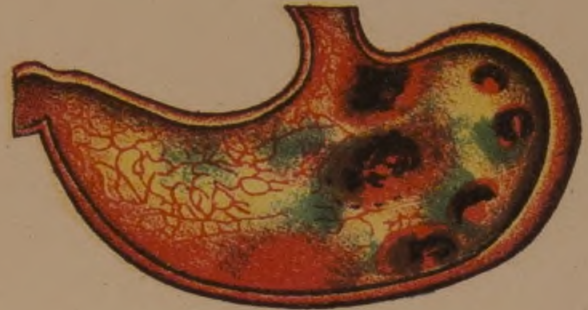
A healthy stomach



Effect of a few glasses of intoxicants



A stomach after ten or fifteen days
continuous drinking.



Last stages of an ulcerated stomach of
an habitual drinker of intoxicants.



Last stages of delirium tremens



Effect of intemperance on the
intestines.

thropist cannot contemplate unmoved the arena of disaster on which scenes so terrible transpire. The ravages of the monster are universal in their extent and complete in their character. The keenest moral sense is deadened, ennobling aspirations are extinguished, moral beauty is eclipsed. Chastity is ridiculed, virtue defamed, honesty despised, honor debased. Passions reign, selfishness is supreme. All excellence loses its lustre. These and many others are the bitter fruits of this appalling evil.

Growth of the Habit.—Young and brilliant minds, noble and generous natures, yield most easily to the pressure of high artificial stimulation. At the beginning of the formation of the habit the effect on body and mind is invigorating and inspiring for a season. Life becomes during the delusive inflation a delirium of delight. The victim feels richer, more generous, more genial. The present is radiant and rosy, the future aflame with an aureole of glory. To these ignitable souls drink seems the elixir of life, the fabled nectar of the gods. But at the last, when the chains of habit are riveted, the victim, no longer free, but a slave, experiences all the horrors of remorse and self-condemnation. But his will is too enfeebled to break the shackles or resist the wand of the enchantress. He is numbered with that vast army, nearly one hundred thousand strong, who annually hasten to that dreary domain where the drunkard's journey ends.

Hereditary Effects.—These unfortunates often leave behind to their offspring a legacy of mental and moral derangement. In a work entitled *A Physician's Problems* the history of four generations of a family is given to illustrate this theory of heredity. The facts are related as corroborative of the opinion that mental and moral tendencies and characteristics of the offspring are in a large measure affected by the vicious habits of intemperate parents. Homicidal and suicidal inclinations, melancholy, disordered affections, gross impulses, were tracked along down to the fourth generation, when, fortunately, the race terminated. The reader is referred to the collection of facts in the book named as of great scientific import on this subject.

Other Food Sufficient.—There are those who have never experienced in themselves the dreadful effects of intemperance, having never used intoxicating liquors. The abstinence in these persons—and they are numerous—appears to favor the impression that except in disease no other stimulus is needed for a full mental, moral and physical manhood than that which food, rest, occupation and pure air supply. The moral

well-being of the human race would no doubt be best subserved by plain diet, pure emotion and high thought.

THE GOLD CURE FOR DRUNKENNESS.

The Gold Cure for drunkenness, including the Keely Cure and some other systems, has many ardent advocates and unquestionably has made some wonderful cures. Without claiming for it all that these advocates do, we give below what we believe to be the most approved Gold Cure formula, and also state the claims of its supporters.

Formula of the Cure.—While the treatment of nervous exhaustion, alcoholism, and so forth, is more particularly hygienic and dietetic, yet it is often impossible to dispense entirely with drugs. Recently the following formula has been widely recommended in such cases:

FORMULA.

Arsenious acid	19 grains
Tribromide of gold	14 grains
Bromine water	sufficient
Distilled water	sufficient

Ten minims of this solution for injection equals one-thirty-second grain of gold tribromide. In this form it should be given by a physician.

The physiological action of this remedy is most remarkable. It is an active tonic, powerful sedative and destroys the appetite or cravings for alcoholic stimulants.

Its Effects on the System.—In those forms of dyspepsia caused by indulgence in alcoholic stimulants, which are associated with the formation of gases, acid eructations and fermentative action in the contents of the stomach, in fact, where there is a retention or over-production of noxious products, the indications are to prevent the absorption of poisonous material or to destroy this poison within the organism by stimulating the liver and to eliminate the poison through the skin, kidneys and intestines. This the cure accomplishes in a most marked degree, and many claim will give entire relief.

Combating the Evil.—Our knowledge of the method in which drugs remove the cause of disease and counteract its effects greatly increases our power of lessening suffering, but we require something more. We must combat the evils produced by disease at all points of attack.

Administration of the Cure.—The more full our knowledge of the

mode of action of the new agents, the better our information about their effects upon the organs and tissues, the less likely our judgment concerning them goes astray. Knowledge of the action of drugs must be combined with careful observation of their curative influence. Therefore, having secured the right drug, it must be administered as the old painter mixed his colors, "with brains." The question of age, sex, constitution, dosage, and so forth, must all be considered. Individuals of susceptible nervous temperament will require minute doses, frequently repeated. If we are treating a local lesion we apply our remedies right to the spot. So drugs have their affinities, and, given in the proper indications, go straight to the diseased area. So with the cure, in nervous prostration from excesses it relieves because it is a diffusible, non-reactive stimulant, keeping the threadbare areas constantly bathed in fresh blood and giving them an opportunity to recuperate.

Effect of Alcohol.—We know that the presence of alcohol in the blood directly lessens the efficacy of respiration in proportion to the quantity present. In other words, it produces that condition in which we have a congested state of the brain. It is manifested by headache, delusions, mania, and so forth.

Accessory Treatment.—For the persistent retching and vomiting, or for the headache and wakefulness following a debauch, teaspoonful doses of fluid extract of coco, with a little elixir valerianate of ammonia, in conjunction with the cure, will be found a palatable, prompt and uniform restorative.

The Most Modern Cure.—It is claimed by its advocates that this system is the most modern, scientific and rational, and the most eminently satisfactory method of destroying the craving and appetite for alcoholic stimulants which has yet been discovered and that it permanently reinvigorates the functions, and, in fact, all the functions of the body.

Cures Even Last Stages.—It is claimed by its advocates that this treatment takes a person suffering with the drink crave or habit, even if he has reached the stage of delirium tremens, and within three or four weeks restores him to perfect health without loss of time from business or work, and effectually destroys all appetite for liquor to which he was a slave before commencing the treatment.

Take Regularly.—It is to be emphasized that the medicine is to be taken regularly four or five times a day. After a few days' use an improvement in the general health should be noticeable. The medicine if scientifically administered produces no ill effects. On the contrary, it

builds up the system, tones up the nerves, improves the appetite and strengthens every function of the body and will destroy the diseased appetite for alcoholic stimulants, whether the patient is a confirmed drunkard or a "tippler"—or a social drinker.

Perseverance Necessary.—One of the greatest obstacles in using this remedy is the over-confidence of the patient who discontinues the medicine when he begins to feel all right. It is a fatal mistake to imagine he is cured then. His system is by no means free from alcohol. If he were to die at this stage of the treatment—that is, a couple of weeks after using the medicine—and his brain be removed, it would be found so saturated with alcohol that it would burn with a blue flame, as an alcohol lamp does when a lighted match is applied. Not only is the body still impregnated with alcohol, but the nervous organism is not sufficiently restored to withstand the temptation which is sure to rise up as an evil spirit before him and lure him again to destruction.

Benefits from the Start.—The benefit of the medicine is felt from the beginning, and the patient is afforded relief at once. After three days he refuses liquor voluntarily, and each day the desire decreases until a complete cure is effected.

TEMPERATE AND INTEMPERATE LIFE CHANCES.

An intemperate person's chance of living is—

At 20 years of age	= 15.6 years.
At 30	“	= 13.8 “
At 40	“	= 11.6 “
At 50	“	= 10.8 “
At 60	“	= 8.9 “

A temperate person's chance of living is—

At 20 years of age	= 44.2 years.
At 30	“	= 36.6 “
At 40	“	= 28.8 “
At 50	“	= 21.25 “
At 60	“	= 14.28½ “

The average duration of life after beginning the habit of intemperance is—

For laboring men, mechanics, etc.	18	years.
For merchants, traders and commercial men	17	“
For professional men	15	“
For females	14	“

TOBACCO HABIT AND CURE.

The use of tobacco in one form or another is so universal that to decry its use is apt to meet with well-fought opposition by a large section of the world's inhabitants. Nevertheless there are many and strong arguments against its use. It is true that it has the power of increasing secretions along the alimentary canal, the stimulation of peristalsis and the function of the kidneys when used in moderation, and it is also undeniable that many users of tobacco remain healthy and live to old age. Yet the arguments against its use are many, and those which follow are worthy the consideration of both users and nonusers.

Nicotine.—There is no deadlier poison in nature than Nicotine. A drop or two of nicotine is sufficient to cause death. Like all poisons it is highly stimulating for the instant, soon to be followed by its death-like effects. It is the peculiar poison which tobacco in any and all of its forms yields. The tobacco chewer, snuff taker, cigar smoker, and cigarette fiend, no matter what his or her reason be for indulgence in the weed, is simply administering poison to the vitals.

Excuse for the Habit.—To be sure, the administration of poison to oneself through the agency of the plug, cigar, cigarette or snuff is not immediately dangerous. Many excuse such unwise administration on the plea that tobacco calms their nerves and conduces to sleep and comfort. Others say it is a sedative that conduces to thought. It is generally supplied to soldiers on the theory that it keeps them contented in camp, enables them to better withstand the fatigue of long marches, and in a limited sense supplies the lack of food. But most, if not all, of these claims are imaginary. They are made, as a rule, by slaves of the habit, and as a justification of their folly.

Tobacco Facts.—The boy or girl who uses tobacco before reaching maturity is sure to wreck the nervous system and take a long step toward idiocy or insanity. Perfect, clean, energetic and acceptable manhood or womanhood is impossible for a youthful tobacco poisoner. No matter how slow the administration of the poison may be, it is relatively quicker

in its action than upon older people, because young nerves are the more tender and sensitive, more easily affected. As between the user and non-user of tobacco the latter is preferred every time. The youth who uses tobacco before maturity is his own greatest enemy, and readily ranks as a crass fool.

Adult Tobacco Users.—It is to be doubted whether any sane adult ever deliberately learned the tobacco habit. They either imitate others, lest they appear odd, or the habit has crept insidiously on them. Again, it is to be doubted whether a sane man exists who does not deprecate the habit and wish he were rid of it, and this deprecation exists in spite of the fact that he is ready for excuses for indulging the habit. In this respect tobacco users are open to the charge of inconsistency.

The Force of Habit.—Habit is a hard master, a veritable tyrant. It gloats in its triumphs and laughs while its slave writhes. So tyrannical and brutal is it that, as in the case of alcohol, it causes such degeneracy of tissues and organs as to take rank with actual disease, that of alcoholism. This is in some sense true of the tobacco habit. The difficulty of ridding oneself of it leads to the belief that it really weakens the will power and those forces which contribute to moral self-control.

Uselessness of the Habit.—No non-user of tobacco ever felt the worse or expressed regret over his abstention. No user of tobacco ever denied that the habit is—

1st. A filthy one, in that it begets frequent spitting of stained saliva by chewers, sickening smoke odors by smokers, and discharge of discolored mucous by snuffers. Add to this the disgustingly odorous smoke of the cigarette fiend, and then wonder what worse in the way of filth can be realized.

2d. No matter what the natural constitution or the excuse, the habit is a dangerous one. It grows by what it feeds upon, and leads to gradual and insidious wreckage of the finer sensibilities and active nerve forces.

3d. It is an expensive habit, often entailing poverty, and always diminishing the recompense of labor. In the families of those who earn meagre support its expensiveness is almost the equivalent of robbery of wife and children. Destitution lies in the wake of tobacco almost as surely as in that of alcohol.

4th. It is an inconvenient habit and very often interferes with work, however much some may claim that it increases the ability to work.

Is There a Cure?—Yes. But not outside of the man's self. To introduce tobacco substitutes is not a cure, for very often the whole to-

bacco habits consists in the mere presence of a mere quid in the mouth or a cigar in the mouth. To keep the nervous system up to the tobacco tone by means of drugs would be to introduce into the system something which might lead to worse results than nicotine poison. It is all with the man. He should bring his mightiest will-power to bear upon the habit. He should never forget all the inconveniences and harmful results of indulgence. Bear them in mind; magnify them, if possible. Shape up every fibre to combat the situation. Resolve to be a free man. Persevere in the resolve. Weaken at no point of conflict nor at any time. Two or three weeks of abstention will brace the will-power. It will feel encouraged by triumph, will grow stronger and stronger, and finally rejoice in entire mastery of the habit.

ONE DOZEN GOOD REASONS WHY A BOY SHOULD NOT USE TOBACCO.

1st. Cigarettes or tobacco in any form hinder the growth and injure the nerves and health.

2d. Cigarettes foster the tobacco habit, and may make any boy a slave to it.

3d. The cigarette habit does not help a boy in his lifework, and may prevent him from obtaining a good position in business.

4th. Most all reliable business establishments refuse to employ boys who smoke cigarettes.

5th. The following are among the poisons and drugs used in the manufacture of cigarettes: Arsenic, Creosote, Nicotine, Opium, Saltpetre, Tonca flavoring and Rum, all of which are harmful.

6th. Cigarette smoking makes a boy dull and stupid, impairs his memory and prevents his advance in school.

7th. Smoking creates an unnatural thirst, which may lead to drinking intoxicating liquors.

8th. Smoking is a selfish habit which may cause annoyance, discomfort and distress to others.

9th. Tobacco affects the eye, ear and nose, or sight, hearing and smelling, and also the heart.

10th. It costs more than most boys can afford to pay to have their nerves and health ruined.

11th. Smoking is a useless and expensive habit, and always does harm in a greater or less degree.

12th. It is also a filthy habit and defiles the body, and anything

that defiles or injures the body is a sin against God, who created man in His own image.

THE DRUG HABIT.

Narcotics in General.—The most common narcotic in use is probably tobacco, but cases which demonstrate its injury to the morals are so few that no dogmatic opinion can be given, except that its excessive use in the cigarette form, as also in the ordinary ways of chewing, smoking and snuffing, has a tendency to foster in the young inclinations destructive of a high moral tone. Hasheesh, opium, chloral, when used habitually and excessively, have been known so to injure the health and disarrange the mental action that the moral sense protests against their use. Under the prescription of a physician they may be used to allay pain or produce sleep in restless invalids, but the unprofessional use of them is extremely fatal to mind and morals, dulling and stupefying one and producing erratic action in the other. The excessive habitual use of these artificial stimulants creates a morbid moral state unfavorable to the promptings of duty, and promoting a condition unsuited to meditation on moral subjects, especially where the victim is deprived temporarily of the stimulus. The longing, the irrepressible sense of uneasiness, the restlessness, which the sufferer, deprived of his habitual ration, endures, indicates a moral as well as a mental state unhealthy and perverted.

At a conservative estimate there are to-day from three to five thousand Americans—male and female—who are incurably addicted to the smoking of opium twice a day, and this is only one item in a startling list, for irrefutable statistics prove that from New York to San Francisco, and from Canada to the Gulf of Mexico, there is a steady increase also in the consumption of acetanilid, acetphenetidin, antipyrin, phenacetin, caffeine, codein, dionin and heroin.

There has been a steady increase also in the use of other drugs that are almost if not quite as destructive to mind and body as opium. Of cocaine, the most insidious of known narcotics, a drug that wrecks its victim more swiftly and surely than even opium, there is an enormous quantity being used in this country. Despite the enactment of drastic laws looking to the suppression of illicit traffic in cocaine, it is estimated that between 125,000 and 175,000 ounces are annually consumed in this country. The drug has many legitimate uses, but of the vast quantity annually consumed, it is estimated that over fifty thousand ounces go to wreck the bodies, minds and souls of its unhappy victims.

Hundreds of thousands of Americans are constantly using "head-ache powders" that contain acetanilid, a dangerous drug, other thousands cannot sleep without swallowing a quantity of chloral hydrate, which is the "knock-out drops" of the professional thief. It is not too much to say that any girl, if she be so minded, can obtain opium, morphine, cocaine, or any other of the habit-forming drugs as easily as a factory girl can buy her cheap and fiery spirits. Nor is the statement exaggerated that in boudoirs there are far more drugs consumed than there are alcoholic beverages in smoking rooms.

The sanitariums are crowded with drug victims. The American, by incessant work, and by the continual strain on the nervous system necessitated thereby, frequently finds himself run down, and suffering from dyspepsia, neuralgia, and various other ills and pains—sure symptoms that the body is rebelling against its abuse. Instead of endeavoring to recuperate by rational and sane methods, the sufferer drugs himself into insensibility with some pet "cure." Apparently he does not understand that pain and lassitude are the red flags hung out by Nature to show that there is danger ahead.

It has long been known to the medical profession that colic cures, children's anodynes, "infants friends," teething concoctions, etc., contain habit-forming drugs, but the majority of mothers have been and still are "ignorant" of this fact! Lest any suspicion or fear should be aroused in the mind of the mother by the fact that the presence of opium, morphin, chloroform, cannabis indica, or some other harmful drug is declared upon the label, the manufacturer or dealer endeavors to allay such fear by statements of the following character: "Contains nothing injurious to the youngest babe." "Mothers need not fear giving this medicine to the youngest babe, as no bad effects come from the continued use of it."

Notwithstanding the fact that these representations have been eliminated or modified so as to comply with the letter of the Pure Food Law, mothers, because of past representations and the fact that the false impressions left by them have not been corrected, believe that these soothing remedies are neither harmful nor habit-forming, and give them with a feeling of security, with the result that in many instances the baby is put to sleep never to awake again. Numerous cases of this character are on record. In some instances in which the remedy is freely used, there is developed a case of infant drug addiction. As soon as the effect of one dose passes away, the child becomes irritable and fretful, with the result that another dose is administered. The craving is met and the child is

quiet, a condition which is similar in every respect to drug addiction among adults.

The chief agents of soothing syrups are well known to be opium, morphin, heroin, codein, chloroform, and chloral hydrate in some combination. A serious element of danger in the use of soothing syrups is the fact that the nurses often use them, unknown to mothers, for putting children to sleep.

The head of a big wholesale drug house in New York testified in court some time ago that samples of a certain catarrh "cure" were being given away in New York City with the object of creating an appetite for them, and thereby increasing their sale at the expense of the moral, mental, and physical health of the community. The vaunted values of patent medicines offered as remedies for asthma, catarrh, coughs, colds, consumption and hay fever depend in nearly every case upon the presence of certain powerful drugs, such agents as cocaine, chlorhydrate, codein, heroin, morphin, opium and nicotine being present.

The medical profession, State boards of health, pharmacy boards and others interested in the public welfare have instigated a vigorous crusade against the indiscriminate sale of cocaine or mixtures containing it, but there are many ways found by the unscrupulous for evading the law. Another difficulty is that street vendors obtain these poisons in various ways and peddle them. The ingenuity and cunning of these peddlers is astonishing. For example, one was discovered carrying about a supply of morphin and cocaine in a book hollowed out for the purpose. The edges of the leaves and one of the covers were glued together, and the body of the pages cut out, thus leaving a book-like box, which was innocent looking and well adapted for the devilish business.

There are on the market to-day over thirty "mail order treatments" for drug victims, whose cunningly worded advertisements have lured fortunes into the pockets of their unscrupulous vendors. It is usually represented by the exploiter of these "treatments" that the habit can be successfully treated at home, by the particular treatment advertised, and its composition is a profound secret, known to him alone. *In most instances they contain the very drug or drugs for which the treatment is advertised and sold.*

BOOK XV

Describes the various schools of medicine and methods of healing. It is divided into eleven chapters, each chapter being as complete as it is possible to make it in a book of this character.

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Book XV

MEDICAL SCHOOLS

PART I.

HOMOEOPATHY

The father of homœopathy, Samuel Christian Friedrich Hahnemann, was born at Meissea, Germany, on the 10th of April, 1755, and died in Paris on the 2d of July, 1843.

In 1790, while engaged in translating into German the *Materia Medica* of Cullen, a Scotch physician, he was struck with the similarity between the recorded effects of cinchona (Peruvian bark) and some of the symptoms of Fever and Ague. After careful experimentation upon himself and many others through a period of six years, he announced in 1796 as a curative law that medicines act upon the principle of *similia similibus curantur*, or in other words that the symptoms of disease in an individual may be best removed by medicines which cause similar symptoms when administered to healthy persons. It naturally follows that remedies administered upon this principle must be given in small or minute dosage or else the patient's condition would be made worse. Hence the practice of attenuation of remedies by dilution or trituration.

The employment of serums, bacterias and vaccines which at the present time is more or less popular, is also a vindication of homœopathic principles. Homœopathic physicians are in accord with all that tends to the improvement of the curative art and the prevention of disease. Their broadmindness and cultural requirements are probably best shown by quoting the definition of an homœopathic physician as officially adopted by the American Institute of Homœopathy:

“A homœopathic physician is one who adds to his knowledge of medicine a special knowledge of homœopathic therapeutics. All that pertains to the great field of medical learning is his by tradition, by inheritance, by right.”

ADMINISTRATION OF THE MEDICINES AND REPETITION OF DOSES.

Doses for Adults.—The medicines may either be administered dry, by placing them on the tongue, or dissolved in water. In most cases four or five globules should be placed dry on the tongue.

Infant Doses.—For infants one globule will be amply sufficient for a dose. If the tongue is dry add a few drops of water. Even new-born infants are able to swallow that.

Dosage in Solution.—Where repeated doses of the medicine at short intervals are required the appropriate remedies should be administered in solution, in water. Fill a tumbler half full of pure water, put eight or ten globules—or, if a trituration, as much as will lie on the point of a penknife—of the medicine into the water and mix it thoroughly. When thus prepared, a dessertspoonful to adults, or a teaspoonful to children, may be given at a time.

Following Symptoms.—If the patient is worse after the first or second dose the symptoms are either the same, but worse, or there are new symptoms instead of, or in addition to, the former ones. In the latter case give *another* remedy. In the former case when the medicine aggravates the symptoms and makes the patient *temporarily* worse (which is, nevertheless, a good sign) the patient should *cease taking it*, and wait for the effects. Should the aggravation be violent it may be relieved by smelling camphor or sweet spirits of nitre.

Relieving Pain.—It sometimes happens that the most violent pains are increased very much by the smallest dose of the suitable remedy. In such cases give a spoonful of black coffee, and as soon as the aggravation has ceased repeat the remedy. If made worse again repeat the coffee, and so on until the improvement is permanent.

Tincture and Lotion.—With regard to the external application of the tincture of arnica, ruta, and so forth, a lotion of sufficient strength for most purposes may be made by putting five or six drops of the tincture in half a tumbler of water. It may be applied to the injured part three or four times a day, or as often as mentioned under each particular case.

DISEASES AND THEIR HOMŒOPATHIC TREATMENT.

The diseases are given in their alphabetical order, so that they may be referred to quickly.

Homœopathy differs from the other regular schools of medicine merely

in the treatment of the disease, in that it treats the individual patient and not the disease *per se*.

Consequently, as the cause, symptoms and diagnosis of each disease are given elsewhere in the book, in this chapter we will confine ourselves to the homœopathic treatment.

Abscesses.—An acute abscess should not be poulticed with warm bread and milk or linseed poultices, except in extreme cases. It is much better to use nothing but warm or cold water. Hepar or mercurius hasten the suppuration.

If the suppuration should continue for a considerable length of time use silicea. When hard places remain, mercurius will be useful. For hard and swelled glands on the neck and under the chin and ears use mercurius, dulcamara, calcarea carbonica, and so forth.

Anus.—Intolerable itching, rathania; cracked or fissured, graphites; burning, aloe; red or sore, arsenicum; moist and itching, petroleum.

Arms.—Numb feeling, ignatia; covered with purplish spots, pain in axillary gland, kali carb; rheumatic pain in joints, ledum; elbow or wrist hot and swollen, mercurius; arms and shoulder lame in wet weather, rhus tox.; painful on motion, bryonia; eruptions at bend of elbows, sepia; offensive sweat in arm pits, silicea or sulphur; herpes at elbow, thuja; involuntary jerking, agaricus; wrist as if sprained, bryonia or rhus tox.; cramp and dead feeling, calcarea carb.

Apoplexy.—Bleeding is sometimes practiced. If the pulse is slow and full, face red or purple, give opium; put a few globules of it upon the tongue and use some globules dissolved in a pint of water as an injection, if the pulse is very weak give lachesis in the same way.

If it was preceded by nausea, or if the patient vomits when he recovers, give antimonium tartaricum; if not better in half an hour, use a solution of the same remedy as an injection. Acon., bell., nux vom., etc. may also be required.

Asthma.—Ipecacuanha will be indicated where there is a feeling of constriction about the chest, accompanied by nausea or vomiting.

Arsenicum for the most violent attacks, especially those occurring in consequence of suppressed catarrh, or in persons with weak lungs.

Bryonia or apis are of great benefit, particularly when exercise aggravates the disease, and when it arises from suppressed or tardy eruptions. Bryonia when the paroxysms come on at night and are attended by pain in the bowels. Apis if the neck feels as if it were compressed.

Nux vomica and *lachesis* are often beneficial when the patient is forced to sit stooping forward.

Belladonna is most suitable when the attacks are made worse by motion.

Arnica is indicated when not only exercise but even speaking or blowing the nose aggravates the symptoms.

Cepa and *euphrasia* if children awake suddenly in the night with a suffocating cough.

If the chest feels constricted give *glonoine*.

Cinchona when there is whistling and wheezing in the chest.

Coffea in very sensitive persons who are liable to attacks of asthma in consequence of mental emotions. *Aconite*, *pulsatilla*, *nux vomica*, *ignatia*, *chamomilla*, and *stapisa-gria* are also given in these cases.

Chamomilla is also serviceable when there is frequent inclination to cough.

Rhus when there is very labored breathing.

Sulphur for short, wheezing, obstructed respiration with fear of suffocation.

Bed Sores.—Applications of cold water are often beneficial.

When water alone will not effect a cure, dissolve in it a few drops of *arnica* tincture.

If there appears to be danger of mortification, give *cinchona* and wash the spots with the same medicine dissolved in a little water.

Bladder.—See Inflammation of Bladder, Hemorrhage of Bladder.

Bleeding.—See Hemorrhage.

Boils.—*Arnica* will lessen the pain and inflammation.

Sulphur in cases where there is a frequent return of boils.

Belladonna if it present a fiery-red appearance.

Hepar where the suppuration is too slow and scanty.

Mercurius if the suppuration is profuse and the swelling remains.

Lachesis for very painful boils which become bluish and form rapidly.

Bronchitis.—*Aconite* when the skin is hot and dry and pulse hard and frequent.

Pulsatilla if there is less heat and more coldness of the hands and feet.

Tartar emetic in all cases when the rattling of phlegm in the chest is remarkable from the first.

Belladonna when there is severe headache, aggravated by coughing, and oppression of the chest.

Lachesis if short, hurried respiration and anxiety with dry, fatiguing cough.

Bryonia if cough is dry, with pain in head and chest.

Phosphorus if the respiration continues oppressed.

Bruises.—Apply to injured parts cloths dipped in cold water, and administer arnica internally.

In very severe cases, followed by fever, give aconite.

A lotion of arnica tincture, in the proportion of half a teaspoonful to a tumbler of water, may also be used.

Should suppuration ensue, hepar must be given.

Burns.—Apply heat, wet or dry. Bicarbonate of soda will remove pain. Soap is a good remedy. Lime water and sweet oil or linseed oil and lime water in equal parts is effective.

Back.—Severe pain as if it would break, belladonna; lumbago, bryonia and rhus tox.; crick or stiffness in the back, rhus tox.; lame back with piles, aesculus hip.; pain in small of back, carbo veg.; pain as from long stooping, pulsatilla.

Blood Poisoning.—Lachesis.

Bones.—Diseased, silicea; syphilitic decay of, aurum; bone pains, eupatorium perf.

Cancer.—Arsenicum; from blow, conium.

Carbuncle.—Arnica given at the very first may lessen the pain. If so, nux vomica will remove the remaining symptoms. Arsenicum as soon as it is spreading. Hepar if the patient is weakened by the copious discharge. Silicea for pain and moderate burning. Lachesis if bluish spots or blue blisters appear.

Catarrh in the Head.—Camphora tincture, in drop doses every half hour for a few hours, may abort the cold. Mercurius is the principle remedy in influenza. Hepar if the symptoms have been better and become worse again. If ineffective, give belladonna. Cepa for ordinary catarrh. Lachesis in catarrhs of the severest kind. Arsenicum when the nose feels stopped up and yet runs. Nux vomica when the above shows no improvement in twelve hours.

Catarrh of the Stomach.—Ipecacuanha should be given first, and then, if necessary, one of the following remedies: Rheum if there is diarrhœa of a thin, slimy character. Veratrum when the symptoms are violent and accompanied by vomiting of bile, and so forth. Capsicum if accompanied by burning in the throat.

Chest.—Stitches, bryonia; tightness, phosphorus, stannum.

Cramps.—Of calves, plumbum; with diarrhœa, veratrum alb.; in fingers, feet, toes, etc., cuprum.

Chicken-pox.—This disease rarely requires medical assistance. When, however, there is a considerable degree of fever, aconitum may be given. When there is much headache, belladonna.

Chills and Fever.—See malaria.

Cholera Inantum.—Antimonium crudum where the tongue is coated white or yellow; dryness of mouth with thirst; nausea with vomiting; offensive, slimy stools and so forth. Arsenicum if the child is very weak, pale and emaciated. Bryonia where the diarrhœa comes on in hot weather. Ipecacuanha if given in the commencement of the disease will often arrest its progress at once.

Cholera Morbus.—Ipecacuanha if the attacks of vomiting predominate. Nux vomica where there is anxiety, pain in the abdomen, tenesmus and so forth. Veratrum should the disease grow worse with cramps, weakness, shriveling, cold, clammy perspiration, and so forth.

Cold.—See Catarrh.

Colic.—Chamomilla is suitable for children, also for grown persons when blue circles appear around the eyes. Nux vomica when there is constipation. Mercurius for violent, twisting colic. Pulsatilla when there is stinging pain in the bowels. Colocynthis is the principle remedy for colic. It is to be given when the pains are very violent, constant, or only cease for a short time, and then recommence with greater violence. Cinchona for flatulency.

Constipation.—Nux vomica in persons of sedentary habit. Bryonia in warm weather. Lachesis when there is a feeling of weight and oppression. Natrum muriaticum in tedious cases.

Consumption.—Treat in the beginning according to the symptoms that arise. (See Cough and Hemorrhage of the Lungs.)

Cough.—When catarrh is accompanied by cough, or when a dry cough remains after the first symptoms have disappeared under the action of other medicines, give nux vomica. If the cough is dry and excites retching or vomiting, ipecacuanha. If it is hollow and causes vomiting, carbo vegetabilis. If accompanied by tough expectoration, chamomilla. If it is moist or loose, ferrum phos or pulsatilla.

Croup.—If children waken suddenly at night and begin with a choking cough, give antimonium tartaricum. Where there is great agitation, give aconite every ten, twenty or thirty minutes, according to the urgency of the case. Spongia is indicated if the voice is rough and the cough hol-

low. Hepar if the voice is only lisping and the cough crowing. Phosphorus and carbo vegetabilis have saved life when all else has failed.

Diarrhœa.—Ipecacuanha in children with screaming, tossing and uneasiness. Chamomilla for children when they want to be carried constantly. Pulsatilla for watery and offensive diarrhœa with burning pain and soreness of the anus. Sulphur for green, slimy diarrhœa. Antimonium crudum for watery diarrhœa with disordered stomach. Rheum for sour, thin, fermented diarrhœa, common with children. Cinchona in all kinds of diarrhœa occurring in debilitated persons.

Diphtheria.—Bryonia when patient is quickly prostrated and complains of pains everywhere. Belladonna when patient is restless and complains of sore throat. Lachesis when, after belladonna, by next evening there is no marked change for the better.

Dropsy.—Dropsy may be due to disease of the heart, lungs, liver, kidneys or peritoneum. The treatment of the various forms is given under the different diseases causing it.

Dysentery.—Mercurius when there is an urgent desire to evacuate. Nux vomica if much straining before and during stool, but relief afterward. Mercurius sublimatis when first much bile is discharged, and then blood or slime. Cinchona for epidemic and periodic dysentery. Veratrum if the discharge is watery, with bloody mucus and flakes swimming in it. Colocynthis for extreme pain in the bowels. Sulphur in all protracted cases.

Dyspepsia.—Nux vomica if caused by dissipation and late hours. Chamomilla when there is a bitter taste in the mouth, bitter eructations, vomiting of mucus or bile. Antimonium crudum when the patient feels sick at the stomach and the tongue is coated or blistered. Bryonia when the stomach is disordered and the patient feels cold and chilly. Ipecacuanha when there is a catarrhal state of the stomach.

Ear.—Oozing raw and sticky behind the ear, graphites; bloody discharge, petroleum; green discharge, mercurius or pulsatilla; growths, polypi in ear, thuja; hearing defective, calcarea carb.; earache, pulsatilla; chronic discharge of blood and matter (ororrhœa), capsicum; redness, burning and itching as if frozen, agaricus; ichorous discharge, arsenicum.

Eczema.—Dry and scurfy even in hot weather, alumina; humid and sticky, graphites; chronic eczema, bran-like, arsenicum; after ointments and external applications have been used unsuccessfully, hepar sulph.;

itching intensely, mezereum; scabby, easily bleeding after vaccination, thuja; burning, sulphur; watery, rhus tox.

Eyes.—Tired from overwork, ruta; corner of lids raw, graphites; twitching of eyelids, agaricus; puffy swelling, apis; inflamed, aconite; hot and burning, belladonna; blinking, watery, red and inflamed, euphrasia.

Face.—Scaly herpes on cheek, anacardium; pimples and pustules, antimonium crud.; puffy and swollen under the eyes, apis; burning pimples, arsenicum; moist, scurfy eruptions, calcarea carb.; eczema, moist around mouth and on chin, graphites; lips cracked and bleeding, ignatium; fiery red eruptions, hypericum; itching tetter around nose and mouth, ledum; raw spots from scratching, mezereum; itching and pimples on forehead, sarsaparilla; yellow tetter around mouth, yellow across nose, sepia; blood boils, silicea; dry itching eruption, staphisagria; "black-heads," sulphur; greasy skin, thuja or natrum mur.; rough skin, acne, berberis.

Felon.—At the beginning, mercurius; follow with arsenicum; to allay the pain, ammonium carb.

Feet.—Itching, ledum; sweating, silicea; stinking feet and arm-pits, sweaty and sore, petroleum; feet waxy and swollen, apis; pain in heel, cyclamen; very painful callosities, lycopodium; bunion, hypericum; frost bitten or feeling as if, agaricus; cramp in, sulphur; fidgety, zincum; sole painful and hard, baryta carb.; cold and damp, calcarea carb.; cracked skin of, hepar sulph.; tender and sweaty, petroleum.

Grippe.—With dry fever, restlessness and racking cough, aconite; sudden onset of the disease with alarming prostration, arsenicum; shivers, prostration, bone pains, aching, eupatorium perf. and gelsemium, alternately; frontal headache, sneezing, fluent coryza, rheumatic pains, limbs heavy, indisposition to move, dry cough, chest painful, bryonia (a good remedy); for lingering effects, chronic grippe, lycopodium.

Tardy Menstruation.—Pulsatilla especially for females of a mild, easy disposition. Cocculus when the patient suffers from nervous symptoms. Belladonna if there is a rush of blood to the head. Apis if flow is irregular. Nux meschata for women with an irregular, scanty, black flow. Phosphorus for women of a delicate constitution. Arsenicum in cases with great weakness.

Suppression of the Menses.—Aconitum when it arises from fright. Bryonia for unmarried women.

Too Copious Menstruation.—Ipecacuanha for too great a flow. Crocus

particularly when the discharge is dark colored. Platina when attended with bearing down pains. Chamomilla with thirst, coldness of the extremities and sometimes fainting. Nux vomica when the menstruation continues too long or returns again.

Painful Menstruation.—Belladonna when there is severe pain in the back with a rush of blood to the head. Chamomilla when the pains resemble labor pains. Coffea for nervous excitement.

Erysipelas.—Aconite in cases with much fever. Belladonna with acute shooting pains, heat and tingling. Rhus if small or large blisters appear. Bryonia when the disease attacks the joints. Arsenicum and sulphur in cases terminating in ulceration.

Fainting.—If it arises from fright, coffea, opium or aconitum. From loss of blood, a few drops of wine and afterward cinchona. When produced by sudden emotions, ignatia or chamomilla. If preceded by nausea, ipecacuanha.

Gout.—Nux vomica for first attack. Aconitum for violent fever. Arnica when the pain in the joints resembles that of a spasm. Pulsatilla when pain flies quickly from one joint to another. Calcarea when the attacks return at every change in the weather. Colocynthis if limbs remain stiff afterward.

Headache.—Glonoine when the attack comes on suddenly. Aconite when the pain is very severe and over the whole head. Belladonna when the pain is deep seated. Pulsatilla when pain is dull and oppressive. Rhus when there is burning, throbbing pain.

Heartburn.—Nux vomica often helps. Cinchona if it comes especially after eating. Carbo vegetabilis if cinchona does not help. Capsicum if none of the above give relief.

Inflammation of Bladder.—Aconite for the most common causes when there is painful urging. Pulsatilla if there are pressing, cutting pains. Belladonna if pains are piercing. Colocynthis if the urine becomes sticky and gelatinous.

Inflammation of the Bowels.—Aconite at the commencement. Ipecacuanha when the pains are worse in front. Bryonia when the pain and fever are violent. Chamomilla if the pains are dull.

Jaundice.—Opium, mercurius, cinchona, hepar, sulphur, lachesis and chamomilla have all been used with good results.

Leucorrhœa.—Calcarea carbonica when the discharge is milky and often attended by itching. Pulsatilla when the discharge is thick like

ercam. *Cocculus* if the discharge is mixed with blood. *Natrum muriaticum* when the discharge is copious. *Sulphur* for inveterate cases when the discharge is yellowish.

Lumbago.—*Aconitum* if accompanied by much fever. *Bryonia* when the patient walks in a stooping posture. *Nux vomica* when the affected part feels as if bruised.

Malaria.—*Cinchona* as soon as you feel unwell. *Ipecacuanha* if no better after twelve hours. *Arsenicum* when the different stages are not distinctly marked. *Arnica* when the cold stages come on early in the morning. *Veratrum* when there is external coldness with internal heat. *Sambucus* when sweating is very profuse. *Belladonna* and *hyoscyamus* when two or more attacks occur in the twenty-four hours.

Measles.—*Aconite*, the chief medicine, is especially indicated when the fever is violent. *Pulsatilla* and *euphrasia* when the catarrhal symptoms predominate. *Belladonna* when the throat becomes sore. *Ipecacuanha* for arresting vomiting. *Bryonia* when the eruption is imperfectly developed.

Morning Sickness.—*Ipecacuanha*, *nux moschata*, *veratrum* and *phosphorus* have all proved beneficial in the nausea and vomiting of pregnancy.

Mumps.—*Mercurius* is the principal remedy. *Belladonna* or *hyoscyamus* if the swelling is very red.

Mind.—Fear, dread, *aconite*; fixed thoughts, *iodium*; suicidal thoughts, *aurum*; well known things and places seem strange, *gloucinum*; silent grief, *ignatia*; hears voices, *anacardium*; delirium with bright eyes, *belladonna*; to prevent "stage fright," *anacardium*.

Mouth.—Sore mouth, *borax*; parched, *bryonia*; ulcerated, *kali chlorium*; teeth loose, gums spongy, *mercurius*; bitter taste, *bryonia*, *nux vomica*; blistered, *staphisagria*.

Neuralgia.—*Aconitum* if there is redness and heat of the face. *Belladonna* if the pain is most violent under the eye. *Platina* for boring, cramp-like pain. *Colocynthis* for rending and darting pain. *Arnica* for heat and throbbing. *Bryonia* for heat and pressing pain.

Nose-Bleed.—*Arnica* when caused by a blow, fall and so forth. *Pulsatilla* for women. *Aconite* for plethoric individuals. *Carbo vegetabilis* when nose bleeds frequently and from slight causes. *Rhus* when brought on by great exertion.

Neurasthenia.—Nervousness following fever, *ambra*; coldness of back and shoulders, *ammonium mur.*; sensation as if one could not breathe, *asafoetida*; great exhaustion in the morning, *calcarea carb.*; weakness,

antimonium crud.; acrid discharge, arsenicum; ulcerated, fœtid, aurum;

Nose.—Red, pointed, cracked, alumina; sore, cracked, crusty nostrils, in farm room, pulsatilla; swollen and painful chronic inflammation, phosphorus; dirty, bloody, fœtid, nitric acid; red, swollen, shining, painful to touch, mercurius.

Palpitation of the Heart.—Aconite, chamomilla, veratrum, coffea and opium, when caused by mental emotions. Nux moschata when accompanied by fainting. Cinchona for persons with a sour stomach.

Pain.—Bruised like, arnica; bones ache, eupatorium perf.; burning, arsenicum; slowly increase and decrease, stannum; periodical, shifting, wandering, pulsatilla; worse by motion, bryonia; must move for relief, rhus tox.

Palsy.—Wasting palsy, plumbum; argentum nit.; shaking palsy, tartanula hisp.

Piles.—Aconite when blood is discharged. Nux vomica when there is a burning, pricking pain. Apis for small stinging, biting tumors. Capsicum when the tumors are much swollen. Ignatio for violent stitches which penetrate deeply. Chamomilla, when the blood flows freely.

Pleurisy.—Aconite is the chief remedy. Bryonia for acute, shooting pains in the chest.

Pneumonia.—Aconite in the beginning. Bryonia for cough with rusty-colored sputum. Mercurius for profuse sweats. Antimonium tartaricum when there is oppression of the chest. Sulphur for frequent, weak faint spells, and so forth. Arsenicum when there is great prostration with anxious restlessness.

Quinsy.—Hepar in the beginning. Mercurius when the tongue is furred and flabby. Lachesis when there are white or gray patches on the throat.

Rheumatism.—Aconite if there is high fever, dry, hot skin, thirst and redness of the cheeks. Belladonna when the pain is chiefly in the joints. Mercurius and pulsatilla when the pains are worse at night. Rhus for red and shining swelling of the joints. Cinchona for pains which are aggravated by the slightest touch. Aconite, bryonia, calcarea carbonica, dulcamara, mercurius or sulphur, in chronic rheumatism for pains which are excited or made worse by the slightest chill. Calcarea carbonic, dulcamara, rhus toxicodendron and hepar sulphuris in chronic rheumatism when the attacks are assisted by bad weather.

Scarlet Fever.—Aconite at the beginning. Belladonna and mercurius in the simple forms when the eruption is bright red. Bryonia when the

eruption does not come out well. Pulsatilla for great restlessness. Lachesis and lycopodium, when the eruption is dark in color and scanty. Arsenicum when the ulcers in the throat turn livid about the edges and emit an offensive odor.

Sleeplessness.—Coffea, opium, aconitum and ignatia when due to exciting events. Pulsatilla when due to excess of coffee and tea. Chamomilla when due to complaints of the bowels.

Small-Pox.—Aconitum if there are congestions to the head and lungs. Belladonna if there is delirium with headache. Bryonia if the eruption is delayed. Variolinum is the most important remedy.

Sore Nipples.—Tincture of arnica previous to confinement will prevent them. Arnica internally and bathing the nipples with a solution of ten drops of tincture of arnica to a half tumbler of water several times a day.

Sore Throat.—Aconite for difficulty and pain in swallowing and speaking. Ignatia, nux vomica and pulsatilla when there is a constant feeling as if there were a lump in the throat. Bryonia, rhus and capsicum when the throat is painful on being touched. Sulphur for frequent or constant sore throat.

Spasms.—Chamomilla if there is convulsive jerking of the limbs, and so forth, followed by drowsiness. Belladonna when the child starts suddenly from sleep with pupils dilated, and so forth. Ignatia when the cause is unknown. Coffea in weak and nervous children. Ipecacuanha in asthmatic children.

Typhoid Fever.—Baptisia, bryonia, rhus tox., phosphoric acid, arsenicum and hyoscyamus are chiefly used.

Toothache.—If in decayed tooth, mercurius; in sound teeth, spigelia; intense throbbing and redness, belladonna; when relieved by cold water, coffea; in recently filled teeth, arnica.

Ulcers.—Arsenicum when they burn greatly. Carbo vegetabilis when they smell offensively. Lachesis when they spread.

Urinary Difficulties.—Pulsatilla, belladonna, cinchona, silicea or stramonium in inability to retain urine during pregnancy. Aconite, pulsatilla, arnica, nux vomica, belladonna, mercurius, hepar, colocynthis, apis, cepa and opium for difficulty and pain in making water.

Vertigo.—Aconite, when nausea, eruptions and vomiting are present. Pulsatilla or antimonium crudum, if there be a disordered stomach. Nux vomica, chamomilla, pulsatilla, rhus or coculus if it occurs while eating or after a hearty meal.

Varicose Veins.—Hamamelis, internally and externally; tending to ulcerous condition, carbo veg.

Whooping Cough.—Aconite at the commencement. Dulcamara if brought on by a severe cold. Pulsatilla for loose cough with vomiting. Nux vomica, belladonna and hepar when the cough is dry. Ipecacuanha, veratrum, carbo vegetabilis, cina, caprum, metallicum and arnica give good results.

Warts.—Warty, fungous excrescences, fig warts and polypi, thuja; warts on nose and eyebrows, etc., causticum; in pale, nervous unhealthy persons, staphisagria; in great crops of warts on hands, ferrum picricum.

Women.—Delayed menses, pain in back, pulsatilla; with yellow color of skin, etc., sepia; with cramps, cuprum; with fever, belladonna. Painful with headache and chilliness, calcarea carb.; with nervous excitement, coffea; writhing pain, nux vomica; sour stomach, heaviness, wants open air, pulsatilla; too soon, every two weeks, hysterical, ignatia; headache, shivering, calcarea; irregular, pulsatilla; with sick headache, sulphur; too scant, pulsatilla; yellow color of skin, excoriating, sepia; chilly, milky discharge, calcarea carb.; vertigo, throbbing headache, belladonna; from stooping, staggering blindness, numbness, headache every other day or one-sided, pulsatilla; bitter taste, bilious, nux vomica.

Worms.—Ipecacuanha, carbo vegetabilis, pulsatilla, cinchona and nux vomica are useful remedies. Aconitum, cina, mercurius, belladonna and lachesis for colic caused by worms. Sulphur and calcarea for tape worms.

MEDICAL SCHOOLS

PART II.

OSTEOPATHY

In a consideration of this subject it is well to have in mind that it is not something which may be practiced off hand after cursory study, even though the works studied be the best extant. No layman of intelligence, no matter how much he might have read about surgery, would attempt to cut off a man's leg except under the most dire circumstances and the securing of a surgeon were impossible. Surgery requires years of study and years of practice to make proficient, and in osteopathics years of study and practice are quite as essential in so far as the obtaining of results is concerned. So thoroughly is this fact now recognized that already in a large and growing number of states the professional practice of osteopathy is by law restricted to those who have taken a regular collegiate osteopathic course and received their degree of Doctor of Osteopathy (D. O.). Taking the Philadelphia College of Osteopathy (governed by the laws of the State of Pennsylvania) as an instance, the course is four years, the matriculation and first two years of the course being practically indetical with that of the medical profession, the last two years, however, materially differing in that while the medical student largely devotes his time to the study of medicines and their effects, the time of the osteopathic student is most chiefly given to the study of higher anatomy and physiology, the nerve centers and their branches, the nervous cells themselves, the muscles and fibres and the minutest co-relation of all of them with the spinal cord and vertebra, in dissection of the human cadaver with relation to these matters and in practical work on the living body with the object of being able to recognize normal and abnormal conditions by a feeling with the hands.

The high place and professional standing of the properly licensed osteopathic physician is thoroughly recognized by the medical profession and it is of daily occurrence for the most eminent physicians and surgeons to refer their patients to osteopaths of proper qualifications. But, as in the medical profession there are "quacks," so in osteopathy there are those who are not professionally qualified and when such men undertake the curing of all diseases and declare that osteopathy is the alpha and omega in the treatment of all disease, they not only do detriment to the science of osteopathy, but they become a menace to society.

It will be apparent from the foregoing that no mere chapter, such as the present, can furnish sufficient information to enable the reader, without further study, to proficiently undertake the exercise of osteopathic practice, even in its simpler forms. It is intended to outline here simply the salient features. To do more would require a large volume devoted exclusively to the subject, after the study of which much practice in actual manipulation would be essential.

The science of osteopathy was discovered by Dr. A. T. Still, of Kirksville, Mo., and was first propounded in 1874. There have been innumerable definitions of osteopathy, but it may be briefly referred to as the science and art of curing without the use of knife or drugs. One of the best descriptions given has been that of J. Martin Littlejohn, M. D., D. O., Ph. D., LL. D., F. S. S. C., F. R. S. L., etc., in an address before the Royal Society of Literature, London. Dr. Littlejohn said:

"Osteopathy is based on an accurate knowledge of the anatomical structure and physiological functions of the body organism. Nature has placed within the body certain vital forces, vitalized fluids, and vitalizing processes and activities, which, in harmonious accord with one another, maintain the equilibrium of the body mechanism; any disturbance of these forces, fluids or processes and any interference with their activity, circulation or distribution involves the absence of harmony and interference with the body order. Osteopathic manipulation aims to restore these to their normal condition, so that the body may regain its normal functional equilibrium and form. In this way osteopathy claims that life is revitalized and strengthened by vital forces, vitalizing fluids or processes, disease being removed or overborne by getting rid of an abnormal structural alignment that produces disharmony in the body and prevents normal functional activity."

Before taking up the subject of Osteopathy in detail it may be well

to define certain words which will be used in this article and which, except professionally, are not in common use:

Atlas—The first vertebra of the neck, articulating immediately with the skull, thus sustaining the globe of the head, whence the name.

Ganglia—Plural of ganglion.

Ganglion (*pl. ganglia*)—(a) A mass or knot of nervous matter, including nerve cells, usually forming an enlargement in the course of a nerve; (b) a node or gland in the lymphatic system, as a lymphatic ganglion.

Pia Mater—The delicate and highly vascular membrane immediately investing the brain and spinal cord.

Plexus (*pl. plexuses*)—A network of vessels, nerves or fibers forming a distributing center.

Pneumogastric—Of or pertaining to the lungs and the stomach and here used as respects the pneumogastric nerve.

Splanchnic—Of or pertaining to the viscera; visceral.

Subluxation—This word belongs peculiarly to osteopathy and chiropractic and is seldom used in other systems of therapeutics. "Luxation" means a dislocation and consequently subluxation means a partial or minor dislocation.

Viscera—Plural of viscus.

Viscus—One of the great organs, as the brain, heart or stomach, in the great cavities of the body—especially used in the plural (*viscera*) and applied to the organs contained in the abdomen.

Vasomotor Center—The chief dominating or general center which supplies all the unstriped muscles of the arterial system with motor nerves, situated in a part of the medulla oblongata (posterior part of brain connected with the spinal cord); a center of reflex action by the working of which afferent impulses are changed into efferent—vasomotor impulses leading either to dilation or constriction of the blood vessels.

We shall now briefly consider the requirements of and the claims for osteopathy:

Requirements of Osteopathy.—Osteopathy demands an exact and most thorough knowledge of the anatomy or structure of the human body. It requires an intimate acquaintance with the physiology and functions of the various tissues, fluids and organs. Add to this a comprehensive study of psychology or the workings of the mind. It also includes a knowledge of the chemistry and physics of the human mechanism.

Nature Herself Can Cure.—By study and experiments, osteopathy

claims to have discovered certain laws of nature and methods of cure within the body itself. By the application of these methods, according to osteopathic practice, nature, herself, may remove the disease and cause the body to again regain its health and strength. This occurs not from any stimulation caused by drugs, but in accordance with certain mechanical principles residing in the body itself.

The Body a Machine.—Osteopathy regards the body as a wonderful mechanism, and treats it as an intelligent machinist would treat a complicated machine with which he was perfectly familiar.

The Human System Perfect.—The human system is regarded as being perfect. Man is believed to have been created complete, having within himself the power to regain health and vigor. Were such not the case, it is argued, the human body would be incomplete, and man would have to look outside for the relief of disease.

By an exhaustive study of the anatomy or structure, and the physiology or functions of this human body, it is observed that man is a complete being, capable of performing his own physical and mental acts when in health.

Disease is regarded as simply disorder. To restore health, the disordered parts must be corrected.

Drugs Harmful.—Osteopathy believes the giving of drugs for the cure of human ills to be both unreliable and unscientific. It absolutely denies the curative properties of drugs. It so regards the whole system of drug treatment as unnatural and destructive to health.

Disease Not an Entity.—The osteopath does not look upon disease as a definite enemy which must be attacked by some foreign force. Disease is regarded as a disorder of the normal structure of a part, causing some disorder of the normal function of the body.

The Human Body a Perfect Machine.—The human body is looked upon as a perfect machine. Order is considered the first law of health. If in order, the human machine will do its work properly and run its allotted time.

What Osteopathy Does.—Osteopathy endeavors to discover and correct all mechanical disorders in the human machine, and to direct the recuperative power of nature within the body to the cure of disease. It claims that if there is an unobstructed nerve and blood supply to and from all parts of the well-fed man, the effects called disease will surely disappear.

Treatment.—The treatment is by manipulation. According to Dr. A. T. Still, exciting the nerves causes muscles to contract and compress

venous flow of blood to the heart. The bones can be used as levers to relieve pressure on nerves, veins and arteries. Treatment is chiefly by manipulations of the spinal column and adjustments of subluxated vertebra.

Object of Osteopathy.—The object of osteopathy is to permit a perfect freedom of all fluids, forces and substances pertaining to life. It endeavors to restore the harmonious action of all the parts, which must ensue when they are unirritated by any cause. It aims to maintain the complete circuit of the motor, sensory and sympathetic nerves.

Cause of Disease.—The cause of the disease, according to osteopathy, may be dislocated or subdislocated bone, ligament, cartilage or muscle, causing inhibition or irritation of a nerve fiber or an obstruction of an artery, vein, lymphatic or some fluid of the body to which the affected nerve or vessel is distributed or connected.

These osteopathic disorders are not necessarily surgical dislocations, but are parts out of line, out of proper adjustment. They comprise slight displacements of various structures, chiefly bones and ligaments, with muscular contractions, little adhesions, contractions from cold, irritation or other outside influences, causing unnatural pressure upon vessels or nerves.

Osteopathic Examination.—The patient is examined from the physical standpoint. In the eyes of the osteopath he is a machine out of order. By his knowledge of the details of the human machine, when in health, the osteopath feels able to detect the disorders that are present in disease.

Through a highly developed sense of touch and a knowledge of anatomy, the osteopath claims to be able to discover the slightest anatomical disorder. The conditions present and the symptoms shown are used as clues to find the cause of the disease. By means of these signs and symptoms the nerve supply of the diseased part is traced to its origin and the course of the blood channels is followed from the parts diseased to the exact region where the abnormal condition is caused. When the primary lesion, or the point where the disease is caused, is located, treatment begins.

Dr. Littlejohn is authority for the following:

Diagnosis.—“Osteopathic diagnosis is reduced to the discovery or attempted discovery of the cause or causes of a disease. Conditions may be summarized under the heads:

“(1) Misplacements of bone, cartilage, ligament, muscles, membrane or organs of the body;

“(2) Disturbances in the fluids of the organism, including the blood, the lymph and other secretions of the body; and

“(3) Disorders or derangements by tension, impingement, thickening, induration, and so forth, of the nervous system, including its centers, ganglia, plexuses and fibres.

Therapeutics.—“Following up this line of physiological thought, the osteopathic therapeutics is simplified and will consist of the correction or the removal of the cause or causes of disease.

“Corresponding with the diagnostic points, we find:

“(1) Scientific manipulations that aim to correct displacements in the bony and other tissue structures of the body, in its membranes or organs;

“(2) Scientific manipulations that are designed to rectify the disturbances in the circulation of the body fluids and to restore them to their normal condition, especially blood conditions and defects in the blood circulation and distribution; and

“(3) Scientific manipulations that utilize the nervous system with its fibers, ganglia and centers with the view of correcting the nervous disorders, toning up the general system or its local parts, promoting trophic conditions of the nerves and muscles and stimulating a normal correlation of the physic with physiological and vegetative functions of the human system.

The Essential Principles of Osteopathy.—“The essential principles of osteopathy may be set down thus:

“(1) Health is natural; disease and death between the time of birth and old age is unnatural;

“(2) All bodily disorders are the result of mechanical obstruction to free circulation of the vital fluids and forces, and the continuity of nerve forces.

“(3) The impediments in the way of free fluid circulation and uninterrupted nerve force are found in osseous displacements, contracted muscles, ruptured ligaments, constricted or dilated vessels, hypertrophied tissue substance or congested conditions of the tissues.

“(4) These abnormal conditions represent not only the change in structure or function on the part of particular portions of the organism, but also produce physiological disorganization of the vital forces of the body, producing an irritable condition either of overstimulation or in-

hibition resulting in excessive activity, partial activity or inactivity of the vital forces and processes.

“(5) In the restoration to the normal the main purpose in operative manipulation is to co-ordinate the vital forces, to restore harmony in the vital functions and thus aid nature in the elimination and checking of disease conditions.”

The Nervous System.—The nervous system occupies a very important place in the study and practice of osteopathy. For convenience of reference it is commonly divided into the cerebro-spinal nervous system and the sympathetic nervous system, but in fact they are parts of one whole, each cell only being capable of perfect life so long as it is able to reciprocally communicate with all other cells through the central nervous system, all thus connecting with the spinal cord in the vertebral column. A thorough study of the chapter on Anatomy and Physiology will show the relationship of the nervous system to the whole body, but in respect of osteopathy it is necessary to delve still deeper and understand the working of every nerve cell. In the so-called sympathetic system, especial attention is drawn to the *ganglia*, the *plexuses* and the *communicating fibers*. The lateral chains of ganglia are placed one on each side of the vertebral column and are connected with the cerebro-spinal nerves by well-marked cords. The visceral ganglia are found between the coats of viscera and are known as the peripheral apparatus. The principal plexuses are four in number, but there are many branches or subsidiary plexuses. The first of the four, the pharyngeal, is situated around the larynx and pharynx; the second, or cardio-pulmonary, lies in the thorax; the third, or solar plexus, encircles the coeliac axis and superior mesenteric artery; and the fourth is the pelvic plexus, which governs the generative organs and rectum. The ganglia and plexuses are all intimately connected with each other by numerous nerve fibers, and the whole constitutes the sympathetic nervous system. “The function of the sympathetic system is to control the calibre of blood vessels, the plain muscle fibers and the actions of the secretory and excretory glands.” (Tasker.) “In general it may be said that the sympathetic presides over involuntary movements, nutrition and secretion, holds an important influence over temperature and vaso-motor action, and is endowed with a dull sensibility.” (Robinson’s *Abdominal Brain*.) It has been scientifically demonstrated that the sympathetic system may in a certain sense have an independent action, “but it is to be borne in mind that under normal conditions the cerebro-spinal nerves can influence these activities, either repressing or augmenting them.

The ganglia of the sympathetic contain (a) nerve cells, (b) afferent fibers, (c) efferent fibers,—and are, therefore, governing centers. They are able to receive sensation and transform this into motor impulses, and hence are, in a measure, independent. The cervical portion of the gangliated cord contains three ganglia, which are designated as superior, middle and inferior, according to position. These ganglia are important to the osteopath because they are in a measure affected by direct manipulation, *i. e.*, pressure can be transmitted to them through the soft tissues over them.” (Tasker.)

The plexuses are of such importance in osteopathic practice that they deserve especial mention, particularly the cardiac, the pulmonary and the solar:

(a). **The Cardiac Plexus.**—This consists of a superficial and a deep division, and is situated at the base of the heart and in the concavity of the arch of the aorta. It is formed by fibers from the pneumogastric and cervical cardiac sympathetics; also cardiac branches from the second, third and fourth dorsal segments of the spinal cord. The cardiac nerves form the cervical sympathetic chain all entering the cardiac plexus, but with variable distribution. The superficial cardiac plexus receives the “left superior cardiac nerve of the sympathetic and the left inferior cervical cardiac branch of the pneumogastric.” (Morris’ Anatomy.) The deep cardiac plexus receives all the other cardiac nerves.

(b). **Pulmonary Plexus.**—“The anterior pulmonary plexus is formed by a branch of the pneumogastric and the sympathetic. Its branches enter the lung on the posterior aspect of the bronchus.” (Tasker.)

(c). **Solar Plexus** (Sometimes called the Abdominal Brain).—“The coeliac or solar plexus supplies the viscera in the abdominal cavity. It consists of a great network of nerves and ganglia, situated behind the pancreas and the lesser peritoneal cavity and in front of the aorta and crura of the diaphragm. It surrounds the coeliac axis and root of the superior mesenteric artery, extending downward as low as the pancreas and outward to the suprarenal glands. This plexus and the ganglia connected with it, receive the great, the small and the least planchnic nerves of both sides, and some filaments from the right vagus (pneumogastric) nerve. It distributes filaments which accompany, under the names of plexuses, all the branches from the front of the abdominal aorta.” (Gray’s Anatomy.) The branches of the abdominal aorta, as subsidiary plexuses, take their names from the arteries they accompany—as, the *phrenic* or *diaphragmatic plexus*; the *suprarenal*; the *renal*; the *sper-*

matic and ovarian; the gastric; the splenic; the hepatic; the superior mesenteric; the aortic; the ultimate distribution of the branches being to the muscular and secretory tissues of all the abdominal viscera, and to the muscular coat of the arteries supplying these viscera. The solar plexus is the greatest of all the plexuses. "It is connected with almost every organ in the body, with supremacy over visceral circulation, with a control over visceral secretion and nutrition, with a reflex influence over the heart that often leads to fainting and may even lead to fatality." (Byron Robinson's *Abdominal Brain*.)

The Vertebral or Spinal Column.—It is held by osteopaths that through the general nervous system and its accessories the spinal vertebra is in direct relation with all parts of the body and that if the anatomy of the body be thoroughly understood and there be full knowledge of all the nerves, nerve cells, muscles, cords, etc., and their accessories, as also of the nature of their respective reflex actions, disease in any and all parts of the body may in most cases be checked and cured by a proper manipulation of the vertebra, arteries, nerves and muscles; or in some cases of other points, such as the shoulder, etc., but primarily the vertebra, for it is a fundamental principle of osteopathy that a perfect adjustment of the spinal vertebra is essential to healthy organism and therefore not only is special study given to the vertebra, the spinal cord and the nerves emanating therefrom, but in treatment of all disease especial care is given to manipulation of the spine and to perfect adjustment of the subluxated vertebra.

Many authenticated instances are given in osteopathic works of effects produced on different organs by manipulation of certain parts of the vertebra. Referring to some of these cases, J. Deason, Sc. B., M. S., Ph. G., D. O., Director of the A. T. Still Research Institute, says: "The secretions of the kidneys can be increased from 25 to 100 per cent. by stimulatory treatment applied to the eleventh and twelfth thoracic segments of the spine. The secretion thus produced often remains increased for two or three hours or longer, during which time the water content of the body is greatly reduced. The significance of such treatment is apparent. If the toxin content of the blood can be materially reduced, as experimental evidence shows it can be, this is a very efficient method in infectious fevers."

Subluxations.—A subluxation may be very slight, yet be the cause of serious physical disorders, directly, indirectly or reflexively. Dain L. Tasker, D. O., D. Sc. O., Professor of Theory and Practice in the Pacific

School of Osteopathy, says: "In order to get at a true understanding of what subluxation is we must make a careful study of the structures which form a joint and their vital manifestations. The bones of the skeleton are bound together by ligaments and muscles. The opposing surfaces of bones forming movable joints are covered with cartilage. The muscles execute and the ligaments or soft parts around a joint limit the motions of the articulation. All movable articulations have their bony parts maintained in their normal relations either by the form of the bones and cartilages attached to them or by the equal tension of all the controlling muscles. Enarthrodial joints (*i. e.*, ball and socket joints) have freest movements and yet are the least dependent on muscles for retention of their normal position. Air pressure and the form of the bones are responsible for the integrity of these joints. These joints are less frequently subluxated than those possessing more limited motion. Arthrodial joints (*i. e.*, semi-flat or qualified ball and socket joints) depend upon the equal tension of their governing muscles to keep the opposed surfaces in their proper relations. Co-ordination of the muscular tension is usually so perfect that the joint surfaces are perfectly opposed to each other. The disturbance of this nicely balanced muscular tension results in the drawing of one or both bony surfaces away from their true relations; not entirely but sufficiently to make it possible for the physician's fingers to note the change." Dr. Tasker then refers to subluxations of the atlas, or first vertebra, and continues: "The complete dislocation of this bone from the occiput means death; intermediate positions, subluxations, mean both irritation of nerves direct, and both direct and indirect disturbances of circulation; direct disturbance by pressure exerted on arteries and veins, indirect disturbance by excitation of vaso-motor nerves."

PRACICAL OSTEOPATHY.

In etiology, symptoms and prognosis osteopathy does not materially differ from the other schools. It is in diagnosis and treatment that osteopathy stands alone.

Osteopathic Treatment.—The mode of treatment is a scientific manipulation by which the dislocation is reduced. The manipulation is based on the physical laws governing the actions of the human machine.

The osteopath not only applies the mechanical principle which is indicated in each separate case, but adopts other scientific agencies. Every move made by him in treatment is with the definite purpose of correcting the anatomical disorders.

MEDICAL SCHOOLS

PART III.

MASSAGE AS A TREATMENT OF DISEASE.

General Description.—Massage is a method of treating abnormal conditions by various manipulations whereby the muscles, nerves and blood-vessels are treated by scientific rubbing, rolling, kneading, moulding, thumping, squeezing, pinching, slapping, etc., the blood thereby being hastened along its course.

The treatment has been abused by many unscrupulous impostors, and in consequence there is a prejudice against massage with many people. Of its therapeutic value, when judiciously used, there can, however, be no doubt, but it is unwise as a rule to use massage without the advice of the family physician. Massage is not applicable in pregnancy, it is not permissible where there is a collection of pus, in acute inflammations of the joints, inflamed veins, fragile arteries, wounds of the skin, nor, generally, may it be used in those conditions in which it is not desirable to increase the circulation or where for any reason the patient cannot bear handling. In cases such as we have cited, it may have injurious and even dangerous effects. In short, while massage, if properly applied, is of undoubted value in the treating of certain ills, nevertheless it must not be used haphazardly.

In respect of such ills as massage is applicable to, the effect of the manipulations is to promote nutrition, either general or local, to relieve congestion, to aid in the removal of waste products, and in the absorption of effusions and abnormal deposits. In the main, the influence is felt in the cutaneous, muscular and nervous structures, upon the digestive and the nutritive functions, and upon certain of the internal organs.

By alternate contraction and relaxation, the muscles are exercised as fully as possible without exhaustion, and the blood is propelled with greater activity, thus permitting its life-giving qualities to reanimate and restore vitiated and worn-out tissues.

Respiration and secretion are likewise increased and proper action

of the intestines promoted. By reflex action on the nerves of sensation, massage frequently gives relief from pain. A rise of temperature usually accompanies a treatment by general massage, and where confined to a limited area, a local rise of a number of degrees may occur.

Methods of Massage.—Any knowledge of the technical details of massage which can be obtained from text-books or lectures is at best but superficial and theoretical, for the manual dexterity essential for the proper application of massage requires long and continued practice on the human body, and its intelligent execution also requires a proper knowledge of anatomy and physiology.

There are a number of methods of giving massage, but those generally in use may be classified as coming under the Swedish, German or French systems. The Swedish is vigorous, bracing and literally followed is only applicable to strong, muscular, hardy people. It exercises the muscles to the bone, and is supposed to give the same benefit at each treatment as would a walk of several miles, yet without producing like fatigue. The German treatment is really a modification of the Swedish system, some of the exercises being omitted and substituted by baths. The treatment is much more gentle than the Swedish and is suitable for most patients unless they have been reduced to a weakened condition by long illness. The French system is merely a delicate manipulation, chiefly used by French ladies in what is sometimes called "Beauty Culture," being designed to keep the skin free from wrinkles and blemishes. The French treatment as a rule is confined to the face, neck, arms and hands. It undoubtedly advantageously develops the parts treated and enables ladies who systematically make use of it to retain their beauty to an age that will rarely happen without. French massage is not of any special value in the treatment of disease but it sometimes is of benefit to invalids by giving them a refreshed feeling from the manipulation of the skin.

There can be no question as to the need of having some regular system—that is to say, in treating any one patient there should be some regular system followed out in the same way on each occasion when treatment is given. Just which system to use must depend upon the condition of the patient. It would be absurd to give the strong, vigorous Swedish treatment to one convalescing from a long illness. The full Swedish treatment even to the ordinary well man would be apt to bruise his muscles and therefore do more harm than good, yet to a football player or other athlete whose muscles were strong and hard the Swedish treatment would be of value. Common sense and consideration of the condi-

tion of the patient must be factors in deciding what to do in each case. With those who are weak or delicate the treatment must at first be very light from day to day, as the muscles become accustomed to the treatment, the pressure may be increased and more force used in manipulation.

Manipulation.—The room in which massage is given should be warm and free from draughts and care should be taken that the patient is really in condition to receive treatment. For instance, it is usually dangerous to give general massage in typhoid fever, owing to the tender condition of the bowels, and in cases of weak heart the increase in circulation from a vigorous massage might prove disastrous. Do not massage a moist skin. If the patient has been perspiring, first give a cooling sponge bath of alcohol or alcohol and water. Each part of the body before and during massage should be rubbed over with olive oil, vaseline, or cocoa butter. If there be a heavy growth of hair it may be advisable to shave, as otherwise manipulation may give pain and irritation of hair follicles, resulting in abscesses. If for any reason it is undesirable to shave, then extra precaution must be taken in connection with each and every treatment that irritation is not caused at the hair roots. Do not rub such parts in the opposite direction from which the hair grows. In giving massage over the breasts or navel use a circular motion from left to right. There need be no fear of getting too near the bone in massaging deep muscles, yet be very careful that the manipulations over the bowels and vital organs are not excessive. There is an erroneous idea with many people that the patient should always be rubbed toward the end of the fingers and toes. On the contrary the rubbing should be toward the patient's heart, because the veins which carry the impure blood back to the heart and lungs to be freed from impurities lie near the surface, and by rubbing toward the heart the desired return of the poisoned blood is accelerated.

The patient should be placed on a raised couch or table, narrow enough to permit of manipulation from either side. The patient should lie flat on the back with all muscles relaxed. The patient should draw his knees up when the abdomen is being treated, as this relaxes the abdominal muscles. After treating all parts of the front of the body, the patient should lie with the face downward and the muscles of the back receive their treatment.

Begin with the head and using the finger-tips rub the scalp in a brisk, energetic manner, so as to induce circulation. The face should be massaged with a rotary motion, commencing with the chin and working upward toward the ears until a healthy glow is obtained. The neck should

then be treated in the same manner. The arms are next in order. Commence at the tips of the fingers and make a few strokes upward to the shoulder in order to start circulation. This also prevents chilliness and should be followed in respect of each part of the body as it may be exposed. Now commence the regular massage of the hands and arms, starting with the tips of the fingers and rubbing each finger joint separately with a circular movement. Work in the direction of the palm, following the palmar bones to the wrist, carefully manipulating each joint. It is at the wrist that the real work of massaging the long muscles begins. Grasp the arm with the two hands and manipulate the thumb sides away from each other, as if dividing or parting the muscles from the bone. This should be carried out through the entire length of the arm. This same parting manipulation applies also in the treatment of the legs and all parts where there are long muscles.

The next movement is that of wringing or twisting the muscles more or less in the same way that one might wring a wet cloth. The effect of this is to drive the blood from the muscles and stimulate the nerve centers. The next manipulation is that of kneading the muscles. Place one hand on the under side and one on top, and grasping with a firm grip of the hands use the balls of the thumbs to roll the muscles with a slow rotary motion from left to right. This manipulation should be repeated in respect of each and every muscle. Now go back to the tips of the fingers and commence a series of squeezes, working on each muscle with quick, firm grasps. This has a tendency to accelerate the flow of blood to the heart. The elbow joint should be given very careful attention and every spot thoroughly exercised. Now whip or flay the arms with finger-tips, using a light staccato stroke, which is best obtained by shaking the hands from the wrist. Before treating the larger muscles in this way they should be pounded with the sides of the open hands, the fingers extended. The motion is just as if one were chopping or hacking. The same procedure is carried out with the shoulder and hip joints, care being taken to work in as deeply as possible.

To massage the chest, the hands are laid flat, greater weight being placed on the thumb sides. Manipulation should be rotary from left to right. Little or no pressure should be given over the nipples. Now, using the thumbs and index fingers, grasp the flesh near the short ribs and by rolling motion work the muscles upward. Do this several times.

Work That is Necessary in Treatment of the Abdomen.—The patient having drawn the knees up to relax the muscles, the hands should be

placed flat on the bowels near the hips, and using wrist force, the hands rolled firmly but gently forward to the tips of the fingers. In doing this use a rotary motion from left to right. Thorough manipulation should be given over the liver and if properly treated great benefit frequently ensues in cases of torpid liver, constipation and similar troubles, but in treating the abdomen it is better to err on the side of gentle manipulation than to run any risk of doing injury by severe work.

The legs are treated in the same manner as the arms, but because of deeper muscles, extra force is necessary. Each movement should be gone over several times when treating the legs and the large, deep muscles will stand thumping, hacking and slapping with the open hand to an extent that is not possible with the arms.

The patient should now turn on the face and the back of the body and the limbs treated in a similar manner to that just described. Commence with the back of the head and neck. Massage the base of the brain and all down the spinal column very thoroughly, the idea being to stimulate the nerve centers which are located here. The treatment of the back generally is the same as that of the chest. The spine should be flayed until it has a reddish glow, but do not use undue force.

In general massage the extremities should be treated first, the motion always being in the direction of the long axis of the bone and extending from the ends toward the body or trunk. After general massage has been given as above described, it will usually be found beneficial to use a few simple movements such as the following:

Commence with the hands. Rotate each finger from right to left four times, then the same number of times in the opposite direction. The wrist should be treated in the same way. Then raise and straighten the forearm, having the patient use slight resistance. Then grasp the wrist and elbow and extend the arm to its full length, and then move it in a large circle—four times one way and four times in the opposite direction. Treat the feet and legs in a similar manner. These movements are refreshing to the patient after the somewhat fatiguing manipulations of the general massage.

The duration of a single treatment should be from forty to sixty minutes for general massage. Local treatment of course takes less time. The main movements employed, as will be seen, are stroking, pounding, kneading and percussion. The tips of the fingers and the balls of the thumbs are principally, though not exclusively employed, and the action

is a free one from the wrist. After treatment a period of rest of at least an hour should be observed.

It is sometimes asked whether massage may not be given through thin clothing without exposing the body. Such treatment is of course possible, but to gain the full benefit of manipulation it is essential to work directly upon the body.

Local massage is found very beneficial in many ills, and is recommended for congestion of the liver, gall stones, neuralgia, headache, nervous prostration, paralytic affection, St. Vitus' dance, writer's cramp, muscular rheumatism, stiff joints, sprains, curvature of the spine, obesity and various other troubles.

While massage is recommended for sprains, it is necessary to make sure that there has been no fracture. Having ascertained that there has been no fracture and that the bones are all in proper place, massage treatment may be used. Raise the ankle and massage evenly and lightly for half an hour or more, the idea being to drive the blood away from the spot, where it would be likely to settle because of torn ligaments. If properly executed, massage of a sprain will relieve pain and reduce swelling. Massage with the back of the thumbs, using a circular motion, also gently use the parting movement already described. In the case of a bruise the idea in massage is to thoroughly drive the blood through the bruised part until new circulation is established. Both in respect of sprains and bruises the part should be bathed and subjected to hot fomentations after the massage and then properly bandaged. In the case of a bruise after-discoloration will often be avoided by binding a piece of well-pounded raw beef over the part for a few hours.

In the foregoing description of general massage some particulars are given as to massaging the face, but this is not intended as indicating the manner of using massage to retain or increase the beauty of the face. In the chapter entitled "Self Care for Women" there will be found a description of massage for these purposes, and which is quite distinct from the use of massage in treatment of disease as described in this present chapter.

MEDICAL SCHOOLS

PART IV.

CHIROPRACTIC

Chiropractic was discovered by Dr. D. D. Palmer at Davenport, Iowa, in 1895.

This science is based upon the fact that all disease is due originally to a condition in the individual, rather than to external influences. This condition is recognized by all schools of medicine as the "predisposition" or "lack of resistance." To illustrate: Thousands of persons continually inhale the germs of tuberculosis, yet only a small per cent. contract the disease. Scientists have answered this by showing that the germs only affect those who have weak lungs or a lack of resistance. Any physician will tell you that germs do not affect healthy people.

If this statement can be accepted, then why bother so much about the germs that do not affect 99 per cent. of the people when it is admitted that there is a condition existing in the other 1 per cent. that makes them predisposed to disease and easily affected. Why not find out and correct the cause of this condition or predisposition and so allow nature to use her natural protection against these baleful external influences.

Chiropractors, therefore, feel that this condition of predisposition is by far the most important part of all disease, and their work is confined solely to its correction, for even after a disease has fully developed, if this condition can be eradicated, nature can readily restore normal health.

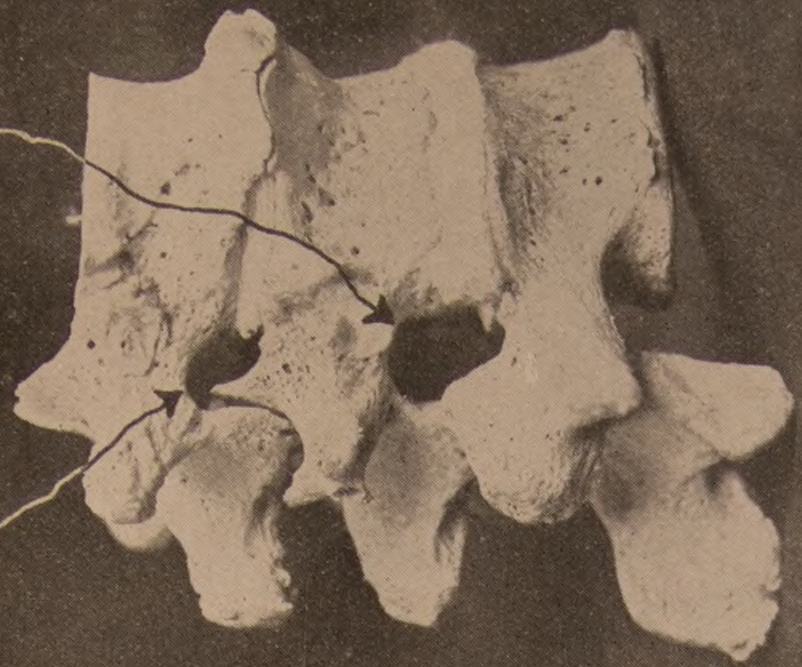
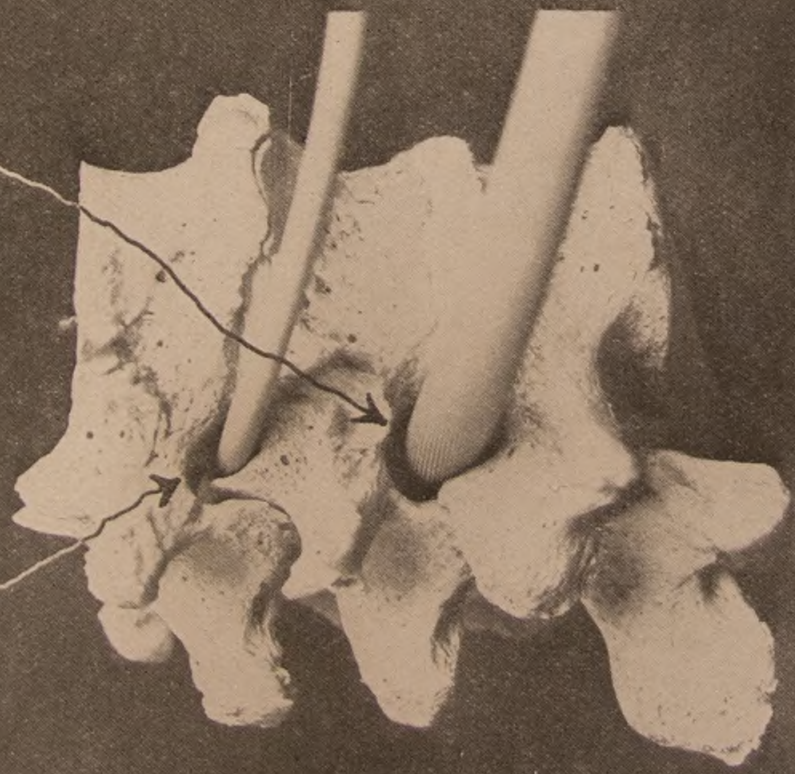
While this condition of predisposition has been recognized by medical practitioners for many years, there is nothing in medical literature that will tell you what this condition really is.

Dr. B. J. Palmer, a son of Dr. D. D. Palmer, has been the greatest factor in the development of Chiropractic as a science, and was the first

Pinched nerve,
causing disease.

Opening for Nerve
too small.

Proper sized
nerve opening.



to discover the real fundamental cause of disease. He maintained that the predisposition was simply a lack of function and that it was due to a partial displacement of a vertebra, with the result that the spinal nerve emitting from the cord would be "pinched," thereby interfering with the flow of nerve impulses.

Dr. G. H. Patchen, of New York, who has done a great deal of research work in Chiropractic, state the basic principles of this science as follows.:

1st. That all nerves originate in the brain, converge at its base, forming the spinal cord which passes out of the skull, through an opening called the foramen magnum, into and through the center of the spinal column. From the spinal cord nerve filaments emerge, on each side of the spinal column, through a small opening between each consecutive pair of vertebræ, from whence they proceed to the parts and organs into which they severally terminate.

2d. That the vitality and activity of every organ, tissue and cell of the body is maintained and controlled by an inherent force or energy, which is transformed or individualized by the brain, and then transmitted to these respective parts, in the form of mental impulses, through the channels provided by the nerves.

3d. That when the transmission of mental impulses is normal both in volume and rapidity of delivery, or, in other words, when 100 per cent. of mental impulses reaches each organ and tissue in the body in a normal speed, all functions are perfectly performed, with a result which is known as health. But when the normal flow of mental impulses is interfered with, in any manner, the vital activities of the tissues and organs which these mental impulses severally maintain is either increased or diminished according to the degree of interference, the result in either case being a condition which is recognized as some form of disease.

4th. That the only place where interference with the flow of mental impulses to a degree sufficient to cause deranged functional activity, or disease, *can* occur, is at the intervertebral foramina, the little openings between the vertebræ, on either side of the spinal column, already mentioned. At any of these places a slight misalignment or subluxation of a vertebra may so press upon the nerves passing out through it as to interfere, more or less seriously, with their conductive power.

5th. That Chiropractic affords an exact and scientific method of determining the location of any vertebra which, on account of its misalignment, is responsible for nerve compression, and also an original, unique

and most effective manner for correcting this abnormal condition, by means of the hands alone, using either the spinous or transverse processes of the vertebræ as handles or levers.

Chiropractors correct these vertebral displacements by placing their patient on a divided bench and giving with their hands what they term an "Adjustment."

MEDICAL SCHOOLS

PART V.

HYDROPATHY WATER-CURE OR HYDROTHERAPY.

History.—The use of water in the treatment of disease was practiced by the most skilled of all the Greek physicians, Hippocrates, 400 years before the time of Christ. Zechariah spoke of Christ as the healing fountain, and, in the thirty-sixth Psalm, David speaks of the fountain of life, showing that water was considered a healing agent even at that time. It was very extensively used by the Romans at the time of their highest development. During the middle ages it fell into disuse, along with many other rational agents. From time to time, however, men of more penetration than their fellows tried to restore it to general use, but usually only succeeded in arousing interest for a short time. Dr. James Currie, well known as the editor of an edition of Burns' poems, who practiced in Liverpool from 1780 to 1805, was the most prominent advocate of hydrotherapy during the eighteenth century. He published a book entitled "Medical Reports on the Effects of Water, Cold and Warm, in the Treatment of Fevers."

Father of Modern Hydrotherapy.—But it was a German farmer, named Priessnitz, who must be called the founder of modern hydrotherapy. In the year 1840 nearly sixteen hundred persons visited Graefenberg to be treated by him. His patients came from all parts of the world, and when cured they became missionaries of the new treatment. Schools were started not only in Europe, but in this country also. There is every reason to believe that the water-treatment has now secured a permanent place among the remedies used in combating disease. Professor Wilhelm Winternitz, of Vienna, is to-day the leading advocate of this method of treatment.

Definitions.—Hydrotherapy is not a good term, since it is derived from two Greek words, which mean respectively, *water* and *to suffer*. It would therefore, mean strictly water-suffering. The term water-cure is a good one, but may not be considered entirely scientific. Hygienic medicine is another term sometimes used for this method of treatment, but it is not

sufficiently distinctive. A far better name, however, is Hydrotherapy, which means *healing by water*. This expresses with entire correctness the end sought by those who practice this form of medication. It is not confined to the use of *cold* water only, as some have supposed. That idea may have arisen from the fact that Priessnitz was a special advocate of cold water.

Hydrotherapy.—*Hydrotherapy includes the application of water, internally and externally, in any form and at any temperature.* It may vary from solid or fluid to vapor; from ice to steam. Mineral waters are not used in hydrotherapy. They are not needed. There is however, no objection to such waters being used if they are available.

Physiology.—The effects of water upon the body are produced by its heat or cold and the manner in which it is applied. In order to understand this action it is necessary to consider the structure of the skin or outer covering of our bodies. It is an exceedingly complex and sensitive part of us.

The Human Skin.—The skin is very elastic, and this is due to the presence of a network of elastic fibres in its deeper parts. Many very small muscles are also present in the skin. When they all contract at once the appearance known as “goose-flesh” is produced. Great numbers of tiny glands are present, and their openings on the surface are called pores. But more important than any of these are the fine blood-vessels and nerves which are so numerous that it is impossible to pass the finest needle point into the skin without causing pain and bleeding. Through these the application of water can affect the entire system most profoundly.

FUNCTIONS OF THE SKIN.

Nerve Endings.—The fine nerve endings in the skin guard the body like an army of sentinels. They warn us of too great heat or cold, or draughts or threatened injury. Wherever these nerves are the more numerous there the sense of heat and cold is the more acute.

Skin Excretions.—The chief materials given off by the skin are watery vapor and urea, both of which are contained in the sweat; also a gas known as carbon dioxide. Urea, however, is more freely removed from the body by the kidneys. The amounts of these several constituents can be increased or decreased in a wonderful degree by applications to the skin of water at varying temperatures.

Skin a Heat Regulator.—The human body is remarkable in its power

to live under conditions so exceedingly variable. It can exist amid the burning heat of the tropics, or surrounded by the icy blasts of Greenland. The skin is one of the main agents in making this possible. So remarkable are its powers that in a hot climate it helps to cool the body, while in cold climates it prevents the waste of heat.

PROPERTIES OF WATER.

Value of Water.—The value of water as an agent in treating bodily ills rests in: First, its power of absorbing and transmitting heat and cold; one pound of water will absorb eight times as much heat as a pound of iron, and yet not be any hotter than the iron; second, its flexibility; water can be used in the solid, liquid or gaseous state; its volume increases seventeen hundred times in passing from ice to steam; third, its fluid form enables us to control it so easily and well that we can apply it at pleasure to any portion, or all of the body, as we desire, and for any length of time; fourth, the ease with which pressure can be applied to any part of the body through the force of the stream used. Any or all of these properties can be used at the same time in treating diseases by hydrotherapy.

Action of Water in Health.—The most important means employed in hydrotherapy is the application of water to the skin surfaces. It acts upon the nerve endings by heat, cold and impact. The nerves transmit the effects to the brain, where it may be switched off and sent to any part of the body. Thus the amount of blood at the body surface can be increased or decreased. The speed of the blood current can be altered and the blood itself improved. More blood can be sent to the brain, thus securing greater mental activity; or less blood being sent there sleep will follow. The pulse can be increased or decreased in force. The breathing may be increased in frequency and depth. The muscular system, too, is affected by the increased activity and the kidneys do more work. The body temperature can be directly affected. It is raised by hot and lowered by cold water. Three conditions, however, will be found to modify the last statements; these are the degree of temperature used, the length of time it is allowed to act and the manner in which it is applied.

THE PRACTICE OF HYDROTHERAPY.

Ablution.—This is the simplest and most widely-used method of applying water. It is effective in many diseases and is a good introduction to the other more active measures.

Definition.—Ablution is the application of water by the hand, without or with a bath-glove or washcloth. Sponges are not rough enough. The bare hand or a rough cloth can be made to produce just as much friction as is desired.

Method of Applying.—Have ready several vessels of water at the temperatures desired. In acute fevers with a temperature above 101 degrees Fahrenheit, first the patient should be stripped completely and covered with a blanket, remove the pillow, roll the patient upon his left side in the portion of the bed away from the one where you desire to work; lay upon the bed a rubber sheet or oil cloth, covered by a blanket. This should be so placed that its near edge will overhang the bed, while the remainder is tucked against the patient's back. He is then rolled over again toward the nurse, while the rubber sheet and blanket are smoothed out on the opposite side of the bed. The patient can now be rolled upon his back, and you are ready to begin the bath. If the patient is a child he can be lifted from the bed, wrapped in a blanket, while the rubber sheet is being adjusted. Beginning with water at 65 degrees, first wash the face, dip the hands into the water and rapidly but gently apply it to the part, using gentle friction; next go to the chest, forearms, back, abdomen and legs as far as the knees. Repeat the process in the same order, but with water at a lower temperature, and so on until water at a temperature of 50 degrees is used. The ablution is continued until slight chilliness is produced. When the effect is sufficiently marked the patient is dried and allowed to remain perfectly quiet, with only a sheet or light blanket over him. Do not attempt to replace the nightgown until reaction is fully established. If sleep follows let the patient remain undisturbed until he awakes.

In vigorous persons with high temperatures the effect may be made more pronounced by not drying the parts, but by simply spreading a sheet over the patient and allowing him to dry gradually. Care must be taken not to produce chilling.

In Chronic Affections.—Ablution is useful as a beginning treatment. It may be used in the following way: A bed is prepared as described above; the patient is then stripped and laid upon the under blanket, with the arms raised above the head. The blanket is then folded over the body and between the limbs, hugging the surfaces closely at all points. The arms are now brought down close to the sides and the other side of the blanket laid over all and tucked in around the neck and under the feet. This should be done in a warm room and the patient given sips of cold

water to drink at intervals of a few moments to promote sweating. More covers may be used if needed. After a half to one hour the patient's face is bathed in water at 50 degrees Fahrenheit. The blankets are now loosened and each part—arms, chest, back, abdomen and limbs—bathed in turn in water at 80 degrees. They are then dried and replaced under the blanket. A dry rubbing with hands or a towel follows and a short period of exercise is then ordered if the patient is able. If unable to exercise he should remain in bed and take a cup of warm liquid food. Morning is the best time for this procedure, but is useful whenever it can be had.

General Ablution.—The next step in the training is a general ablution. The patient stands in twelve inches of water at 95 degrees, and is quickly washed from head to foot by pouring water upon him and rubbing at the same time. The heat of the water will vary with the patient and his length of training, from 80 degrees to 50 degrees. The great importance of care in these measures cannot be too deeply impressed upon all who undertake them. In chronic conditions the patient must be wooed back to health slowly, realizing all the while that a very small accident may destroy the results of weeks of patient care. It is not sufficient to advise a sick man that he should bathe in cold water every day. He must know just how, when and where, and also how long the bathing should proceed, and what changes are needed and when they should be made.

When May Ablution be Used?—General ablution may be used in febrile diseases to reduce fever and at the same time prevent its rise. In mild cases of infectious fevers like measles it may be all that is necessary throughout the attack; typhoid fever, in which the temperature does not go above 102½ degrees; in severer cases more extended baths are indicated. In chronic cases of anemia and chlorosis, which are due to poverty of the blood, tuberculosis of the lungs, rheumatism, gout and loss of nervous tone. In the most severe cases of the last class it is a good introduction to more severe treatment.

The Half Bath.—How applied: Into an ordinary bath-tub enough water is run to cover a patient's hips and limbs. The temperature may vary from 85 to 70 degrees. The patient enters the bath, or, if too weak, is placed in it. A wet towel is wrapped about his head and the nurse proceeds to bathe his face and then dash the water over his body with a ladle. At the same time the patient's back is rubbed by the attendant, while the patient himself rubs his own chest and abdomen. Cold water is added gradually and the process continued until the patient shivers. He is then

removed before chilling ensues and dried before returning to the bed. This is a more stimulating procedure than ablution.

When Used.—In chronic diseases, after the wet pack or procedures yet to be described, the half bath naturally follows to insure the closing of the pores and general reaction. It should continue from five to ten minutes. The patient should be rapidly dried, and in fever cases this may be done in bed.

Affusion.—Definition: Affusion is a bath by pouring.

How Applied.—The patient may sit or stand in an empty tub or lie upon a rubber-covered cot while water is poured upon his head, shoulders and body in a stream from a bucket, pitcher or basin. The temperature of the water may be varied from 65 to 50 degrees, and may be poured from different heights. The stimulation will vary with the temperature and height. The reclining and sitting postures are used for acute cases and the standing for chronic.

Indications for its Use.—When patients are unconscious or delirious and seem absolutely exhausted, ablutions will often result in very surprising improvement. In advanced fever cases, when collapse is threatened, instead of injuring the heart action, they help it materially. In the collapse of children's diseases a warm half bath, with affusions over the head and chest, will often restore completely. In diseases of the lungs, when breathing is difficult; in scarlet fever, with very high temperature, they will bring relief when all other methods fail. They are a better stimulant to the circulation than the most powerful medicines. In brain fever or meningitis, sunstroke and the brain symptoms of pneumonia they are the most useful agents known.

The Sheet Bath.—Method of applying: Protect the bed by a rubber sheet, spread a blanket upon it, have ready several linen sheets, a basin, a tub of water as cold as desired, 50 to 80 degrees, and nearby on a chair place a cup and sponge. The patient should be undressed and ready, wrapped in a blanket or woolen gown. Wash the face with cold water and wrap a cold wet towel about the head. A sheet is now quickly wrung out of the water selected and spread evenly upon the bed. On this the patient is laid, and while he holds his arms up over his head one side of the sheet is brought over and tucked in on the opposite side and between the limbs. The arms are then brought down, and the opposite edge of the sheet is carried over and tucked in around the patient's neck and feet. In feeble patients the arms may be left out and bathed separately during the process. The first effect of this procedure will be a shock to the surface

nerves by contact with the cold wet sheet. For a moment the breath will come in gasps and some shivering may follow. These quickly pass away as the nurse begins to rub the body by passing the open palms swiftly over all parts of the body and limbs. As soon as reaction follows, begin to pour water at 50 or 60 degrees temperature from the cup or squeeze it from the sponge over the body, rubbing at the same time with the other hand. Keep this up until the patient is cooled as much as desired or until he is on the verge of a chill. The combination of friction and cold water application through an enveloping sheet is an admirable way of securing the abatement of fever. To increase or prolong the effect allow the patient to remain in the cold sheet, covered by a blanket, from a half to one hour. If he sleeps do not disturb him until he awakes. When it is desirable to end the bath, remove the sheet, dry the patient quickly, place him in a dry bed and cover lightly.

Drip Sheet Bath.—How applied: This is applied while the patient is standing. The room should be at 70 degrees or over. Place the patient, completely stripped, in a foot-bath of water at 100 degrees Fahrenheit and six inches deep. A sheet is now removed from a bucket of water at 70 degrees and rapidly wound about the patient in the following manner: The right arm is held above the head while the edge of the sheet is placed upon the right breast. The sheet is then carried backward under the arm, which is now lowered, and serves to keep the sheet in place. The edge is now carried over the left shoulder, across the breast, over the right shoulder, and tucked in snugly about the patient's neck. As soon as it is in place the nurse proceeds to stroke the body rapidly from head to foot over the sheet and slap it more or less vigorously. Water at 60 degrees is poured upon the head at intervals of a few moments and the rubbing continued between the dashes of water. The process is kept up from five to ten minutes, according to the condition of the patient and his requirements. At first it should be very short in order not to weary him; gradually it can be lengthened as the power to react increases. After the bath dry rapidly, then rub with a warm towel or sheet. This bath is applied once a day and best during the afternoon.

Uses of the Drip Sheet Bath.—Many chronic ailments are benefited by it, such as chlorosis, anemia, neurasthenia, intestinal catarrh, melancholia, neuralgias, pulmonary and bronchial diseases. Its application can be varied in a great variety of ways.

The Cold Rub.—Definition: This is a modification of the drip sheet

and is generally applied immediately after the patient arises in the morning and while he is still warm.

Application.—A coarse linen sheet is wrung out of water at 60 to 75 degrees and quickly wrapped about the patient in the manner described above. Friction is now applied rapidly over the sheet, accompanied by slapping, the object being to produce a definite reddening of the skin. This is only a short process, and when finished the sheet is dropped and the patient quickly dried. After dressing and drinking a cup of hot milk or cocoa the patient should take a walk in the open air.

Uses.—In anemias of feeble patients, tuberculosis of the lungs, any case lacking in blood.

The Wet Pack.—How applied: The method is very similar to that described in the preparation for ablution. The body is, however, first enveloped in a wet sheet in the manner described, so that it will lie in contact with every part of the body. The sheet should be wrung out of water at 70 degrees, or even as low as 60 degrees. Over this a blanket is folded so snugly that all outside air is excluded. A wet towel is folded about the head like a turban. If the patient feels cold more blankets are placed over him. He should remain in the pack from a half hour to an hour. It should be followed by some form of cold application to restore tone to the skin. A half bath, heat bath or cold ablution will serve this purpose.

Uses.—If it is desired to abstract heat the sheet should be 60 to 70 degrees. When it has become warm replace by one a few degrees colder on a fresh bed, and so on until the desired body temperature is reached. It is estimated that five baths, each of ten minutes, will equal a full bath of fifteen minutes' duration. With temperatures varying between 100 and 103 degrees this is an excellent procedure. When used to quiet restlessness and promote sleep the higher temperature of water is used, say 70 degrees, and the patient is allowed to remain in the pack until he awakes; he is then given a rapid cold ablution. The wet pack is useful in most of the acute fevers at the outset. The addition of salt or other medicines to the water is sometimes advised.

In Chronic Diseases.—In these cases the pack should not be quite as low in temperature. The cold stage lasts longer, reaction comes on more slowly, but when it does the soothing and refreshing effect is very evident. The whole body is in a sort of water poultice. It is valuable in functional nervous diseases, hysteria and some heart troubles. In tuberculosis of the lungs, with fever, it is found very effective. In diabetes, rheumatism,

gout and digestive disorders, anemia and chlorosis it has proved very effective.

The Wet Compress.—This is probably the most extensively used of all hydropathic procedures. It is in fact a local wet pack.

Method of Use.—Several folds of old linen or cotton, gauze or cheesecloth, sufficient to cover the part to be treated, are wrung out of water at the proper temperature and placed upon the part. A dry flannel or piece of oiled silk or rubber band sufficient to cover the compress follows, and over this a retaining bandage.

The Head Compress.—Take a linen towel wrung out of water at 60 to 75 degrees and apply it like a turban to the head. This is used to prevent congestion of the brain and during all hot baths and wet packs.

The Throat Compress.—It should be made and applied as follows: A piece of flannel, 8 x 24 inches, is made ready; then a compress of soft linen, four inches wide and long enough to reach from one ear under the chin to the opposite ear, is soaked in water at 60 degrees and laid upon the throat; the flannel bandage is next placed on it and drawn up snugly over the head, to be fastened by pins. A slit for each ear to be cut in the flannel if it is uncomfortable. Two bandages are made so that one can be dried while the other is in use. In children it is wise to first put a band around from the back of the head to the forehead, to which the upper bandage can be pinned at the intersections.

The Chest Compress.—Make two jackets out of three folds of old linen. They should be large enough to reach from the neck to the waist and entirely around the chest. At the points, by measure, where the two arm-pits will come cut a deep slit so that the arms may sink in far enough to allow the ends to be pinned over the shoulders from front and back. Cut two pieces of closely-woven flannel of the same shape as the jackets, but about an inch larger in every direction. Roll up one of the compresses and wring it out of water at 60 degrees. Spread it upon one of the flannel covers and roll them up together halfway. Now, with the patient gently turned on to one side, spread the unrolled portion on the bed behind him, so that he can be rolled back upon it in just the right place, to fit. Now unroll the remainder and bring the ends together across the chest, fastening them with safety pins. Also pin the portions at the top over the shoulders. This compress should be changed every half hour when the temperature is 102 degrees or over, hourly when the temperature is below that and down to 99½, when it should be stopped. Always have the fresh compress entirely ready before loosening the first. Thus, one movement

of the patient will be sufficient to remove the old and apply the new compress. Use fresh water at 60 degrees each time and always rinse the compress between using to keep it clean. Continue the changing night and day unless the patient is asleep. By being so thorough and careful the patient's chest will never be without a compress except at the brief moment when one is being rolled from and the other being unrolled upon his body. If stupor and low muttering delirium are present, use water which is colder than 60 degrees, also throw a few dashes of ice water on the chest before placing the fresh compress. When insomnia is marked use water slightly warmer than 60 degrees. These methods are used in croupous and broncho-pneumonia.

The Hot Fomentation Compress.—Two or three folds of flannel, as large as desired, are wrung out of boiling water, making it as dry as possible. The part should be anointed with vaseline and the hot flannel applied as quickly as possible, so as not to lose any of its heat. Surround the patient with a dry blanket over the compress. It may be necessary to lead up through several temperatures before the very hot compresses can be used. These compresses should be renewed every ten or fifteen minutes until the patient sweats. After the pain is relieved the body may be carefully uncovered and quickly rubbed dry or washed with water at 75 degrees, accompanied by friction. In sciatica nothing exceeds this method of treatment. In lumbago and other muscular rheumatisms a hot fomentation each night will soon result in relief.

The Heart Compress.—Wring out a piece of linen from water at 40 degrees and lay it upon the heart. On this place a rubber coil and pass ice water through it. A flannel binder will keep all in place. This is especially useful in irregular heart action, due to nervous conditions, in rapid heart action in some very weak patients. It will also be effective even when digitalis has failed. It can be used in a course of severe fevers, such as typhoid.

The Cold Full Bath.—By this is meant the placing of the entire body in water 10 to 30 degrees below the normal body temperature for from five to twenty minutes. It is this form of bath which has revolutionized the treatment of typhoid fever. Its application varies with the ends in view. In acute cases it should be applied as follows: A movable bath-tub is provided, if possible, and rather than use the ordinary house bathroom an improvised bath apparatus is advisable.

Method of Applying a Tub Bath.—When the tub is ready the patient is stripped and a breech-cloth applied, or he may be left enveloped in a

sheet. A stimulant is then given, either hot coffee or half an ounce of whiskey. Two attendants then lift him carefully from the bed and place him directly in the bath. A towel soaked in cold water is bound about his head. The head is supported by a strip across the tub or a rubber cushion. If neither of these are available one hand of the attendant must support the head while the other is employed in the rubbing process. Both attendants vigorously rub the patient from head to foot. From time to time fresh cold water is poured upon the head and face. The rubbing is an absolute necessity in this form of bath. There is always some shock when a patient is placed in cold water, but under brisk rubbing the surface is warmed and stimulated, so that there is a continuation of little shocks and reactions. As rapidly as the surface is cooled the blood is pushed forward and fresh hot blood from the deeper parts takes its place and is in its turn cooled. The process continues thus until the temperature falls sufficiently or the bath is continued long enough, or the danger of severe chill makes it wise to end the bath. The bed in the meantime has been spread with a blanket and dry linen sheets; the patient is lifted from the bath and placed upon the bed. The sheet and blanket are then folded over from one side under the raised arm and tucked between the limbs, then the other half over the arms, so enveloping the whole body. Very frequently he will fall asleep. If shivering is prolonged it is an evidence that the bath has been too cold or too long, and a change should be made at the next application. If reaction does not come on promptly hot water bottles or bricks should be placed to the feet and between the limbs. Friction must always be used in the cold bath treatment. If it is neglected the bath will really be a cause of increasing the fever by closing the pores and contracting the surface blood-vessels.

The Warm Full Bath.—The warm bath is one in water a little below the normal body temperature. Hot baths are those with the temperature above the normal body temperature. These baths should be arranged so that the temperature may be increased after the patient is in the water, either by kettles of hotter water or by gradually increasing the water from a hot faucet. They should last from five minutes to an hour, according to the object sought and the conditions being treated. Their general effect is soothing, although the very hot baths are stimulating; for example, those of the Japanese at 130 degrees Fahrenheit. Warm baths are useful in relieving pain and nervousness, reducing temperature, the latter especially in children and infants. Care should be taken to dry thoroughly after baths and protect from draughts.

The Hammock Bath.—The hammock bath is a means of applying the effect of water through long periods of time. An extra deep tub is used, the patient is swung upon a strong sheet which is fastened to the edges of the tub or to a framework over it, so that the water surrounds him up to his neck. Constant renewal, by the inflow of water at a given temperature.

The Douche.—This is the application to parts or the whole of the body of a stream or streams of water at varying temperatures. Moreover, the stream should be under different degrees of pressure. When the stream is made to take a form which is broad and flat it is called a fan douche. This is made by partially closing the outlet or nozzle by the thumb or finger. The shower bath is another form. In this the pressure ought to equal the fall from a cistern fifty feet above the outlet. The needle or circular bath is one in which the water is forced against the body in fine jets from all sides at once. The ascending or bidet douche is one in which a jet is directed upward from below, usually while the patient is sitting, and is used in rectal treatment to overcome piles.

The Hip-Bath.—The hip- or sitz-bath, as its name implies, is one applied to the lower part of the body only. The bath is first prepared, then the patient stripped, a wet towel bound about the head and a warm blanket about the feet. Sometimes it is wise to add a hot-water bottle with the foot blanket. When the patient is in the bath the under side of the knees should not rest upon the tub; if they do a stool should be placed under the feet. Rapid friction should be used over the parts in the water by an attendant and also the patient himself. When the bath is over dry the patient and have him return to bed for a short rest, or, if an invalid, remain there. Hot baths are 104 to 110 degrees Fahrenheit, cold baths as low as 50 degrees. All grades between these are used. The duration of hip-baths may vary very greatly. Hot hip-baths are used to overcome pain in the abdomen and pelvis, to reduce inflammation of the pelvic organs, to cure cystitis, urethritis, uterine hemorrhage, diarrhœa and dysentery, and especially vesical straining.

Uses.—Cold hip-baths of short duration are stimulating and are used to overcome muscular paralysis or loss of tone, in prolapsus of the rectum, spermatorrhea, prostatorrhœa, impotence, weakness of the uterine ligaments, prolapsus of the uterus, the leucorrhœa of chlorosis, stoppage of the menses, passive bleeding, constipation and flatulency.

Steam.—Vapor of water, with or without medicines, has been used for softening the mucus in case of croup, laryngitis, false-croup and

diphtheria. A tent or canopy is arranged over the patient and the steam conducted under this from one or more kettles kept heated by alcohol lamps or any other available method. When nothing else can be found heat some bricks or stones and drop them into buckets of water under the tent until sufficient steam has been generated. Steam is also used to check bleeding by some surgeons; also as a cleansing agent in some operations for cancer.

The Turkish Bath.—This, as its name implies, has come down to us from the Turks, and they obtained it from the Arabians. It consists first of a sojourn for a considerable time in a hot-air chamber, with a temperature from 105 to 125 degrees. The patient remains in this room until he is in a thorough perspiration; he is then laid upon a table and an attendant rubs him thoroughly with his hands and kneads the flesh from head to foot. The attendant scrubs him with soap and water, using a brush, and finally washes him off with warm water. After another short stay in the hot room the patient stands for a few moments under the shower bath and is then wiped dry. He then passes to what is known as the “cooling off” room, where he lies quietly upon a cot; the temperature of this room is usually 80 degrees. A quiet sleep will often follow the bath, and after it the patient should be rubbed with alcohol and take a cup of coffee or chocolate before dressing and leaving the bath.

Russian Bath.—This bath differs from the Turkish in that the first chamber is filled with steam instead of dry air, and the final process before drying is a cold plunge into a tank or swimming pool. The latter may be replaced by pouring cold water over the bather. The last two methods are used to reduce flesh, particularly in corpulent individuals. In well-nourished, rheumatic and gouty patients, in neuralgic affections, in persons of this same class, these baths will be especially beneficial.

HYDROTHERAPY IN SPECIAL DISEASES.

Typhoid Fever.—The following methods may be used in treating this disease:

1. Ablutions and compresses until the temperature has reached 103 degrees, or when the cold baths are impossible.
2. The cold bath; a bath at 65 degrees, lasting fifteen minutes, whenever the temperature rises to 102½ degrees, in the rectum.
3. If this method is not advisable the Ziemssen half-hour baths may be used, where the water is reduced gradually from 90 to 70 degrees.

4. In very weak, nervous patients, coming under treatment in the second week or later, only five- or ten-minute baths at 88 to 95 degrees, followed by short cold effusion, or a wet pack, should be risked. The temperature and duration of the bath can be altered with the improvement of the patient.

5. The hammock bath, as described above, can be substituted in treating very timid patients.

Measles.—With a temperature at 103 degrees a bath of ten minutes in water at 95 degrees is very soothing. It should be repeated every four hours and the water temperature reduced five degrees each time until the desired effect is produced. The patient generally falls into a quiet sleep after such a bath. When the full bath cannot be given ablution may be used rapidly, but without friction. Cerebral symptoms should be overcome in this way. The half-bath can be very successfully used in measles. This may be repeated oftener than the full bath. Do not wait too long before beginning the water treatment. If the patient's nervous tone is kept high by the above methods there will be less likelihood of any lung complications beginning.

Scarlatina.—In the early stages, before the diagnosis is sure, a warm full bath at 100 degrees, for a few minutes, will quiet the patient wonderfully. If the heart action is feeble, the bath should be followed by a few dashes of cold water over the shoulders and chest, or the latter method may be used without the full bath. In urgent cases an effusion may be used every hour until reaction is sufficient and the heart is relieved by bringing the blood to the surface. When the eruption is well out and the mind clear there is not much need for treatment; but when temperature is high or mind clouded and congestion evident ablutions with water at 90 degrees, gradually reduced to 75 degrees, are very effective. The time occupied in a single ablution should be short, as it is the nervous system that we wish to affect more especially. The number of ablutions will depend upon the result obtained. It may be necessary to have them repeated every hour.

Pneumonia—1. In Children.—Begin bathing when the temperature reaches 103 degrees, or earlier if nervous symptoms are marked. The bath should begin at a temperature of 95 degrees and last for ten minutes. They should be repeated every four hours, and the temperature of the water decreased two degrees each time until 80 degrees is reached. Never omit friction. Between the baths, in bad cases, use the chest compress every one or two hours. If alarming symptoms appear, or heart failure

is feared, place the child up to the waist in a bath at 100 degrees and dash several basins at 75 to 65 degrees over the shoulders. Follow this with rapid friction and drying. Repeat this process as often as every two hours if necessary. Crying and coughing are caused and they are a wonderful help in relieving the congestion. In less severe cases, wet packs, ice jackets or cold sponging may be sufficient.

2. In Adults.—The greater difficulty in applying baths to adult patients and the fact that practically as good results can be secured in another way, have led to the adoption of the latter plan, which is the chest compress. The full bath can be reserved for the more urgent cases. The warm half-bath and cold effusion to the chest are also exceedingly valuable in emergencies.

The Chest Compress.—This has been described in the foregoing pages. Do not neglect the careful observance of all the details. Usually a temperature of 60 degrees is best, but in cases with stupor or muttering delirium a lower temperature will be needed. Dashes of ice water can be used when the compress is being changed. If there is sleeplessness or excitability allow the compress to remain for two hours, or even longer, without changing; this will increase its soothing effects.

Acute Cholera Infantum.—The element of shock in this disease is so decided that the attacks resemble sunstroke. The internal temperature is often very high indeed. Reaction must be secured quickly or it will be too late. It is sometimes necessary to proceed with these measures before attending to any of those which logically precede, as indicated above. Prepare a bath at 90 degrees, wrap a cold cloth about the child's head and have it supported by an assistant. Lower the child's body into the bath, holding it by the hands and feet. Begin gentle friction over the different parts of the body, arms and legs to the elbows and knees. Have another assistant remove water from the bath and replace it with ice water until the temperature falls to 80 degrees. Continue the bath ten minutes, or if shivering occurs before that time remove the child. If the temperature has been very high follow the bath by a wet pack and a blanket over that. Put hot bottles to the feet and keep the head cool. If the symptoms are not so urgent a wet pack alone may secure the desired reaction.

Sunstroke.—Put the patient upon a rubber-covered cot, cover him with a sheet, dash upon him, at intervals, dipperfuls of cold water, in the meantime keeping up constant friction over all parts of the body and limbs. Keep an ice-bag or cold cloth upon the head, and occasionally pour ice water upon the forehead from a height of six feet. The friction

must not be neglected under any circumstances. When the rectal temperature has fallen to 104 or 103 degrees wrap the patient in dry blankets, with hot bottles to the feet and limbs. Usually the patient will fall asleep and break out in a gentle sweat. If reaction does not occur and the temperature again rises repeat the above treatment. Continue thus until the temperature remains down. As soon as the patient can swallow give small drinks of ice water at frequent intervals.

Anemia or Lack of Blood.—Here we must distinctly understand that we are not to abstract heat from the body. On arising in the morning the bath should be taken as follows: In a room the temperature of which should not be lower than 68 degrees. Let the patient stand in water at 100 degrees and pour over him water at 80 degrees and at the same time have him rubbed thoroughly and let him rub himself. Reduce the temperature of the water 2 degrees each day. Dry rapidly after the bath, dress and let the patient take a short walk in the open air. In weak patients the dry pack may precede the ablution.

Consumption.—To give a consumptive patient full benefit of the water treatment it should be begun and carried out systematically. If the body is already well cared for the treatment can begin at once, if not, a good warm water and soap bath must be given on the first day, and then the following day proceed thus: Strip the patient entirely naked, wrap him in a blanket, cover him with other blankets and give small drinks of water at short intervals, say every ten minutes. During this dry pack the windows may be wide open even in winter. After an hour has passed wash the face with quite cold water and dry. Have a basin ready with water at 75 degrees, remove one arm from the covers and wash it briskly with the wet hand or with the hand covered by a bath glove. Rub well and then dry and replace. Do the same with the other arm, then the different parts of the body successively. At the end rub the entire body with a rough towel. Repeat this treatment daily until, by reducing the temperature 2 degrees daily, the water is used at 60 degrees.

Neuralgia.—In this trouble great relief has resulted from the various water methods of treatment. Especially good results have followed when rapid contracts of temperature have been used like that obtained in the Scotch douche. In sciatica this treatment has been wonderfully successful.

Chronic Rheumatism and Gout.—These cases may be divided for treatment into two classes:

1. **The Well-Nourished Subjects.**—These should be given full baths for from eight to fifteen minutes, in water at 95 degrees, gradually raised to as high a temperature as can be borne; gentle massage to be given during the bath. Allow the patient to drink large quantities of water both during and between the baths. The bath should be followed by sweating between blankets. These baths should be given daily, or less often according to the patient's condition and progress. Between the baths cold wet compresses at 65 degrees can be bound upon the affected parts and allowed to remain until almost dry. Such compresses may be used during the night. A sweat in the cabinet for five to fifteen minutes followed by the douche at 100 degrees, reduced to 90 degrees during the progress of the bath, will be found very useful after the above courses.

2. **The Poorly Nourished.**—Hot baths must be used very cautiously and infrequently in this class of treatment. Once or twice a week will be found sufficient. Ablutions gradually decreased in temperature are most effective. Scotch douches to the joints, followed by cold compresses, should also be used. As the patient becomes more used to lower temperatures the baths may be made more stimulating. More food will be taken, digestion improved and the patient gradually increase in weight and strength.

Dyspepsia.—Catarrhal and nervous types of this diseases are recognized. The treatment is similar to that for anemia. As a local stimulant the Scotch douche over the region of the stomach is very effective. The hygienic rules must be carefully remembered during the treatment of this condition. The daily cold plunge bath, or its equivalent, will be a great help.

THE INTERNAL USE OF WATER.

Effects.—Drinking cold water slows the pulse and makes it stronger and fuller. Hot water weakens and makes it rapid. Cold water is the best diuretic, warm water the best diaphoretic or sweating agent.

Acute Infectious Diseases.—The method of using cold water externally in the treatment of acute diseases has been detailed in the previous pages, but the good effects of that treatment will often be lost unless enough cold water is given internally. At least a glassful of cold water should be drunk every two hours by a patient suffering with fever. The drinking of so much water insures a good flow of urine and increases the perspiration.

Gastric Catarrh.—A pint to a pint and a half of water, taken a half-

hour to an hour before meals so hot that it cannot be drunk but only sipped, will cleanse the stomach and prove an excellent stimulant to the muscular walls of that organ. This method of treatment has been very widely employed, but has often failed because the water was not drunk at a sufficiently high temperature. The administration of water to babies has already been mentioned.

MEDICAL SCHOOLS

PART VI.

ECLECTIC MEDICINE.

Name and Principle.—The name eclectic means choosing, and it refers directly to the means used for treating disease. It implies a selection of methods and remedies from all other systems of practice. “The great principle upon which eclecticism is based is: *that disease, wherever met, and in whatever form manifested, is an impairment of vitality; that causes of disease are depressing and, whilst they exist, lower vital powers.* The corollary from this is, *that all agencies employed in the treatment of disease should act in one of two ways—removing the depressing cause, and increasing the vital powers for better resistance and subsequent restoration of structures and function.*”

Belief.—The eclectic schools of medicine believe in the curative power of nature. They claim that medicines can be useful only as they aid nature in her endeavors to cure the diseased condition.

All the remedies known as antiphlogistic are discarded: bleeding, mercurials, antimony, and so forth. They avoid the use of mineral poisons for medical purposes. They seek to remove the cause of disease through the natural outlets of the body, and foster those measures which result in a better renewal of life. They treat the cause rather than any special symptoms which result from its presence.

CONDITIONS OF HEALTH.

1st. A general bodily expression of vigor, the face being the chief indicator.

2d. No painful or unpleasant sensations should be present.

3d. The bodily heat should be 98.4 degrees Fahrenheit.

4th. A pulse of 72 beats each minute, regular in force and time.

5th. A good appetite and digestion, with a daily bowel movement.

6th. The skin and kidneys should be acting normally.

7th. Well-balanced nervous system and a clear eye.

CONDITIONS OF DISEASE.

Any deviation from the condition just described would constitute disease, but we do not usually speak of a condition as disease until it has been in existence long enough, or become strong enough, to make its

presence inconvenient or troublesome to the patient. The following are some of the conditions which indicate disease:

1st. The face of the patient, his position and actions show signs of suffering.

2d. The temperature may vary widely from the normal. It may fall to 95 degrees or lower, or rise to 107 degrees or more. The presence or absence of fever can be discovered to some degree by the hand, but far better with a thermometer.

3d. The pulse may be increased or decreased in frequency; may become harder or softer than normal; may be irregular in rhythm or force.

4th. The stomach and bowels may be disturbed, and this will be indicated by the condition of the tongue.

5th. The urine and discharges from the bowels may be very much altered. The skin will be rough and harsh to the touch, and during fever hot and dry.

6th. The nervous system may present a great variety of symptoms. The eye will be dull and heavy except in special diseased conditions.

ECLECTIC DIAGNOSIS.

A consideration of the symptoms present in a given case leads to a conclusion regarding its character. That is called making a diagnosis.

Diseases are known by their features in the same way that we know our friends and relatives by their features.

ECLECTIC TREATMENT.

The medicines and methods used in caring for a sick patient are termed the treatment. These will be indicated in connection with each condition as it is described later. One thing only need be said here: *“Never give medicine unless you are positive that it will relieve present discomfort and shorten the duration of disease.”*

FEBRILE DISEASES.

Fevers are of two classes: 1st. Those which have a local cause in one or more of the organs of the body; 2d. Those in which no such local cause is found, but in which the fluids of the body are involved in disease.

Phenomena of Fevers.—The advent and course of a fever is, in general, as follows: 1st. A period of gradual approach called the *incubation*

period or *onset*. It is known by the feeling of weariness, dry skin, cold hands and feet, loss of appetite, with headache and disturbed sleep.

The Cold Stage.—2d. This is usually known by the chill which occurs. Severe headache and backache. The hands and feet become icy cold, the lips are blue and the face very pale. This stage may last only a few minutes or may be prolonged to several hours.

The Hot Stage.—3d. At this time the pulse becomes rapid. The color returns to the face and is increased. The body heat rises, sometimes very high. The skin remains hot and dry. The length of this period varies greatly in different fevers. Following it we have

The Stage of Decline.—4th. This leads to recovery. The various symptoms become less and less severe. The skin becomes moist. The secretions begin again and gradually all the functions resume their normal course.

Fevers are divided into two classes according to their course: intermittent and continued.

INTERMITTENT FEVERS.

Treatment.—This class of fevers is the result of poisoning by malaria. In the stage of onset they may be aborted by a brisk purge, an emetic and a sweat. In the cold stage the patient should be treated by a hot mustard foot-bath and then placed in bed, well covered by blankets, with hot bottles or bricks to the feet and limbs, and given frequent drinks of *ice* water or very hot coffee or water. During the hot stage cold drinks should be administered; the body frequently sponged with cold water, and then lightly covered and protected from draughts.

Between attacks the patient should remain in bed if he is at all prostrated. He should be given quinine in large enough doses to cause the ears to ring. It is best given in solution. The following prescription is a good one:

R.—Quinine 2 drachms
Water 1 ounce

Give half a teaspoonful in a glass of water every three hours. A double dose should be given about two hours before the time of next expected chill.

When the stomach will not retain quinine it may be used in an ointment:

R.—Quinine 1 drachm
Lard 2 ounces

This should be rubbed into the skin, especially the parts under the arms and on the inside of the thighs. The amount above indicated should be used every day if the patient is an adult. It will be sufficient for four days in a child five years or under.

When Quinine Fails.—When quinine fails, or is too slow in its action, the following may be used:

R.—Strychnine 2 grains
Dilute muriatic acid 2 ounces

Water enough to make half a pint. Give one teaspoonful every three hours to an adult. Another remedy is common salt:

R.—Salt 3 ounces
Powdered alum 3 drachms
Boiling water $\frac{1}{2}$ pint

Give a teaspoonful every two hours during the absence of the fever.

CONTINUED FEVERS.

Febricula or Little Fever.—This may be caused by a single cold, by constipation (especially in children), catarrh, simple sore throat, indigestion and slight congestion of the lungs.

Treatment.—Relieve the bowels, if necessary, by an enema. Place the patient in a full warm bath, rub briskly after it, and follow with a hot mustard foot-bath. Place him in bed between blankets and give frequent cold drinks until he sweats. Allow him to sweat for half an hour, then rub dry and remove all but the lightest blanket. Allow him to go to sleep and he will probably wake up entirely recovered.

TYPHOID OR ENTERIC FEVER.

There are three conditions of this fever which have received separate names: 1st. Those which are so mild that they are not usually considered to be typhoid at all, and known as synochal fever; 2d. Those that are somewhat more severe, but run a shorter course than most cases of typhoid,

and are called synochoid fever. They are, however, all caused by the same poison and should be classed with (3d) *Typhoid Fever*.

Typical Typhoid.—A typical case of typhoid fever has a stage or period of onset covering about one week. The usual symptoms of that stage will be present, but the gradual daily increase of fever will be quite apparent. The face will acquire a dull, spiritless aspect and the patient may be somewhat drowsy. About the eighth day a few fine, so-called, rose spots will appear upon the abdomen. Their distinguishing feature is that they do not disappear entirely when the skin upon which they rest is stretched. This fever is self-limiting, so that the treatment is nearly all comprised within the field of good nursing.

Diet.—Certain rules, however, must be adhered to very strictly. No solid food should be given at any time during the illness. Liquid food should be given every two or three hours, according to the needs of each case. At times it is necessary to awake the patient during the night to give nourishment. Milk, beef tea, albumin or white of egg, the entire egg raw, and beef extracts will be found useful.

The Bath.—Plenty of water should be given if the patient desires it. A soap and water sponge bath should be given daily. As often as the temperature goes above 102 degrees Fahrenheit an ice-water sponge bath, with friction, should be given. If these do not prove sufficient to keep the temperature under control full tub baths should be used. The water should be 85 degrees Fahrenheit when the patient is placed in it. Ice is then added gradually until the water is only 65 degrees Fahrenheit. Rubbing should be employed during the entire bath, which should continue for 15 or 20 minutes, or until the patient's teeth are beginning to chatter. He should be lifted out and quickly dried, then laid on the bed with a blanket over him until reaction follows. The blanket is then replaced by a sheet and the patient allowed to sleep if he desires. Usually a stimulant is given before each tub bath. This may be half an ounce of whiskey or brandy.

Disinfection.—All urine and bowel discharges should be disinfected before being thrown out. Probably the best thing to use for this purpose is a saturated solution of *Chlorinated Lime* or Bleaching Powder. Use a tablespoonful to each pint of the discharges, mix it well and allow the mixture to stand for five minutes before emptying.

The giving of medicine in this fever ought to be under a doctor's care, and there are so many possible complications that may arise that it is always wise to have a physician in charge of the case.

TYPHUS FEVER.

Symptoms.—This is sometimes called camp fever. It is a well-recognized form of disease, running a definite course, and is due to a special infective poison. Its onset is shorter and more severe than that of typhoid. There is severe pain in the head and back, the former is often retracted in the same way that it is in meningitis. The skin becomes a dusky red and about the sixth day a distinct papular eruption appears.

MEASLES OR RUBEOLA.

This disease is marked at the outset by redness of the eyes and free flow of mucus from the nose. There is usually some sore throat and slight cough, but the throat trouble is not as severe as in scarlet fever.

Treatment.—1. When the above signs appear begin the treatment by bathing the feet in hot water for half an hour; then place the patient in bed and give frequent doses of an infusion or tea made of lobelia and asclepias leaves, equal parts of each. This should be stopped as soon as there is produced any tendency to vomit. Such treatment favors the outbreak of the eruption. After it is fully out continue the same medicine but in smaller doses to relieve cough and quiet any lung symptoms which may be present. Plenty of water should be given and a liquid diet.

2. When the fever is high sponging with tepid water is very soothing and will often quiet a restless patient and produce sleep.

3. For troublesome cough an infusion or tea made from the ordinary red clover hay will be found very useful.

Accessory Treatment.—1. When the chest symptoms are bad a tent may be made over the bed and steam passed under it from a kettle, the water in which has a teaspoonful of the tincture of lobelia to each pint. A cloth spread with carbolized vaseline may be placed on the chest to aid in soothing the symptoms in that region.

2. Care should be taken to protect the patient from danger of taking fresh cold during at least two weeks after all the fever is gone. If care is not exercised in this regard chronic nasal catarrh may result. See that the clothing is sufficiently warm and that the feet are kept dry.

Treatment in Severe Cases.—1. Whenever a case of measles is apparently severe at the outset, the treatment should begin with the following:

Tincture of belladonna	20 drops
Tincture of aconite	15 drops
Water	4 ounces

Mix and give a teaspoonful every hour until the skin is relaxed and the pulse less strong.

2. Whenever the eruption is delayed a wet pack will usually bring it out. If this cannot be given an emetic of salt or mustard water will be found effective.

3. For very severe cough following or even during the attack a teaspoonful of the tincture of drosera in a wineglassful of water every four hours will afford great relief.

SCARLET FEVER OR SCARLATINA.

Treatment.—1. The sooner the eruption appears the shorter the disease; treatment therefore should first be directed toward that end. We accordingly begin at once with the following:

Tincture of aconite	15 drops
Tincture of belladonna	20 drops
Water	4 ounces

Mix and give a teaspoonful every hour.

2. Bathe the body frequently in water in which a little soda has been dissolved. These measures will hasten the appearance of the eruption and can be gradually decreased as the fever subsides.

3. For the throat conditions the fumes from vinegar and water (one part of the former to three of the latter) will be found useful. Also a flannel soaked in equal parts of vinegar and water should be bound around the throat and renewed every hour or half hour during the worst part of the attack and then gradually discontinued as the trouble subsides.

4. In the early stages of very severe cases veratrum may be substituted for aconite in the prescription given above. If the nervous system is much affected replace the belladonna by gelsemium. When the glands of the neck swell badly the following preparation may be painted on the outside every four hours:

Tincture of lobelia	2 ounces
Tincture of aconite	$\frac{1}{2}$ ounce
Tincture of arnica	$\frac{1}{2}$ ounce

Or, make a poultice of wheat-bran and a strong tea of lobelia and apply it to the neck. One of the best gargles for patients old enough to use this method is made by adding one-half a teaspoonful of permanganate of potassium to a pint of water.

CHICKEN-POX OR VARICELLA.

Treatment.—1. Give a sponge bath followed by a hot foot-bath and hot drinks until sweating follows. If the bowels are costive it would be well to give a dose of castor oil or a seidlitz powder at the very outset.

2. If the fever is high give the following:

Tincture of veratrum	10 drops
Tincture of asclepias	½ ounce
Water	3 ounces

Mix and give a teaspoonful every hour to a child five or six years old.

3. For itching of the skin bathe with the following:

Glycerine	5 ounces
Rose water	5 ounces
Subnitrate of bismuth	30 grains

DIPHTHERIA.

Treatment.—1. First give an emetic if the attack is severe; if not, use the prescription with aconite given under the head of Measles and add veratrum if the fever is high. In the latter condition also we should use the general bath in addition to the hot foot-bath. The bath may be made more effective by adding salt or pepper or mustard to the water. If the feet become cold at any time a hot mustard foot-bath may be used.

2. For the sore throat give every hour a teaspoonful of the following:

Potassium chlorate	3 drachms
Water	4 ounces

If the mouth and throat remain dry use the following:

Dilute muriatic acid	½ ounce
Simple syrup	2 ounces

Mix and give a teaspoonful in water as a drink every two hours.

3. When the aconite has reduced the force of the disease so that the skin becomes soft and moist, stop it and give quinine, one grain every hour until the pulse is full and strong. If the patient is old enough to gargle, any of the following may be used: Chlorate of potash ten grains to the ounce of water; infusion of baptisia; infusion of witch hazel; dilute tincture of phytolacca; or the solution of permanganate of potash thirty grains

to the pint of water. The last can be used as a spray or on cotton swabs. Use vinegar and water compresses to the outside of the neck constantly.

POISONOUS BITES AND STINGS.

Treatment.—Give aromatic spirits of ammonia in two-drachm doses in water every hour until reaction follows the shock. Strong coffee is also useful for the same purpose. Slices of raw onion may be bound on the point of injury or sting. Another very good external application is the permanganate of potash solution two drachms to the pint of water.

A COLD OR CORYZA.

Treatment.—Whenever a cold is suspected it may be broken up by giving a half drachm of the tincture of gelsemium and allowing the patient to sleep for a couple of hours. If this cannot be done give a hot mustard foot-bath, place the patient in bed and give hot drinks until a good sweat is secured. If more rapid means are desired give an emetic. Another good method is a wet sheet pack. Give a brisk purge in nearly all cases.

INFLUENZA.

Treatment.—Usually the plan just given for treating a cold will be found equally useful for influenza. If there is fever, or further treatment is needed, give teaspoonful doses of compound tincture of Virginia snake-root every two hours until the patient is well.

TONSILLITIS.

Treatment.—Use the following spray to the part during five minutes every four hours:

R.—Aconite tincture	1 drachm
Water	¼ pint

This will usually cut short the attack. Do not allow the patient to swallow the spray. If an atomizer cannot be had apply the medicine on cotton. Equal parts of vinegar and water may be used in place of the above. Apply on the outside flannels moistened with stillingia liniment. If the aconite spray does not cure in two days stop it and paint the tonsils with fluid extract of witch hazel.

ACUTE LARYNGITIS OR CROUP.

Treatment.—This may be the same as that just outlined for tonsillitis, but usually more active measures are needed. The hot foot-bath, steam inhalations and frequent small doses of tincture of lobelia or sanguinaria in simple syrup should be given until free sweating and flow of mucus occur. Prompt relief will then follow. Dry cups on the outside will be necessary in severe cases. A good free purge should always be secured early in the treatment.

ACUTE BRONCHITIS.

Treatment.—1. Begin the treatment by an emetic of lobelia or mustard water; after it acts give a purgative—the compound jalap powder or compound cathartic pill; follow that with a hot foot-bath and warm drinks until the patient sweats freely, then dry quickly and place in bed. If the attack is not completely averted by this treatment give the following until recovery is complete:

R.—Tincture of gelsemium 1 ounce
 Acetate of potash ½ ounce
 Water up to 4 ounces
 Mix and give a teaspoonful every two hours.

2. If a stronger expectorant or cough mixture is needed the following may answer:

R.—Syrup of lobelia 2 ounces
 Syrup of senega 2 ounces
 Syrup of althea 2 ounces
 Tincture of hyocyamus ½ ounce

Mix and give a teaspoonful every two hours. (It is well to give quinine and iron as a tonic during convalescence.)

CHRONIC BRONCHITIS.

Treatment.—1. This is often the result of neglect in the course of an acute attack. Its treatment is therefore the same as that used in later stages of acute bronchitis. Cough is usually the most troublesome symptom, and the following mixtures have been found useful in combating it:

R.—Balsam of fir 1 ounce
 Balsam of tolu 1 ounce
 Balsam of peru 1 ounce

Oil of anise ½ drachm
 Tr. Cannabis Indica 1 drachm
 Honey 2 ounces
 Jamaica rum, to make one pint.

Mix, and take 1 or 2 teaspoonfuls every three or four hours. Shake well before using.

2. Or,

R.—Balsam of copaiba 1 ounce
 Balsam of fir ½ ounce
 Sweet spirits of nitre ½ ounce
 Honey ½ ounce
 Mucilage of acacia, to make 4 ounces.

Mix, and take a teaspoonful every four hours.

Inhalations of creosote are also useful—a drachm in a pint of boiling water three times a day.

ASTHMA.

Treatment.—1. Chronic cases have been cured by the following:

R.—Sulphur ½ ounce
 Bruised anise seed 2½ drachms
 Confection of senna 6 drachms
 Syrup of tolu 6 drachms

Mix, and take freely every day; or, one or two teaspoonfuls three times a day, or sufficient to keep the bowels moving easily.

2. Or,

R.—Sulphur ½ ounce
 Anise seed ½ ounce
 Senna 1 ounce
 Cream of tartar 1 ounce

Mix, and give a teaspoonful every night, or oftener if required.

Bathing and hygiene should be very carefully attended to.

WHOOPING-COUGH OR PERTUSSIS.

Treatment.—1. Begin with the following medicine as soon as the diagnosis is made:

R.—Fluid extract of belladonna 10 drops
 Alum 1 drachm
 Simple syrup 4 ounces

Mix, and give a teaspoonful every three hours to a child two years old. The amount of belladonna in the prescription should be increased five drops for every added year of age in the patient,

2. Another good mixture is:

R.—Clover hay 2 ounces

Boiling water $\frac{1}{2}$ pint

Mix and let stand for half an hour, then strain and add 1 ounce of sugar.
Give 2 teaspoonfuls every three hours.

INTESTINAL WORMS.

Treatment.—To drive out stomach worms give five and a half grains of santionate of soda on two succeeding nights; follow on the second morning with sufficient compound jalap powder to give a free purge. Give tonics afterward and keep the bowels regular.

Pin Worms.—Keep the bowels regular and the person clean, also take daily injections of cold salt water in the strength of a tablespoonful of salt to the pint of water.

Tape Worms.—1. For tape worms give the following:

R.—Oil of turpentine $\frac{1}{2}$ ounce

Castor oil 1 ounce

Honey 1 ounce

Yolks of 3 eggs.

Beat the ingredients together and take it all, in divided doses during an hour, before retiring at night.

2. The ethereal oil of male fern is also an efficient remedy. The dose is from a half to one and a half drachms according to the age of the patient, given in milk or mucilage at night and followed in the morning by a purgative of compound jalap powder.

DYSENTERY.

Treatment.—Give the sulphate of magnesia in teaspoonful doses in as little water as will melt it every hour until the blood is stopped. Follow that by an astringent, or opium if there is pain. The subnitrate of bismuth will rapidly check the succeeding diarrhœa; give half a drachm every two hours until the bowels are checked. The patient should go without food for a day and then begin very cautiously with liquid diet and gradually increase until full diet is again reached.

MEDICAL SCHOOLS

PART VII.

JAPANESE CHARACTERISTICS AND THEIR VARIOUS DISEASES AND TREATMENTS.

THE SKIN.

The skin of the Japanese is of light yellow, which on the one hand transits into an European white, while on the other hand it goes down into deep yellow or light brown. Exceptionally, it is light bronze colored as if they came from Ceylon.

Skin of Upper Classes.—The people of the upper class are mostly lighter in color than those of the lower stratum. Some Japanese are not distinguishable from Caucasians in color, and apparently lighter than many of the Spaniards or Italians. The northern Japanese people are lighter in color than those of southern Japan, where they resemble somewhat the Malaysians in color. Differences between sex is very slight. It is caused by the difference of the mode of life. Japanese men are more exposed to weather and sunshine than the women, half of whose lives are lived inside of the house.

Skin of Children.—Children are not lighter than the adults, and toward their teeth-changing age they become somewhat flushed with red color.

Babies.—A new-born baby is called *akambo* in Japanese, which means “red baby.” It is remarkably red compared with that of the white race, but the redness does not continue longer than a few days after birth. Babies of higher class people are also lighter in color than the lower, while in other respects infants coming from robust mothers are frequently lightly rose-colored in the cheek, and are not as beautiful as the lighter child for European eyes.

THE CAUSE OF COLOR.

Skin Pigments.—The yellow color of the skin of Oriental people depends upon the presence of pigment particles within the skin stratum. So we find yellow or brown pigments in these people while it is black in the negro. But by careful examination of the lighter-colored skin of the Japanese there is a very small amount of pigment, though it may be larger in amount according to the intensity of the color. Of course the amount of the pigment found in Japanese differs only quantitatively, not qualitatively. In children just born, or in fœtus, the distribution is very uneven and the amount is also scarce.

Mixed Breeds.—Mix breeds of European and Japanese are mostly



Japanese Ladies—(Upper Class.)



Japanese Lady—(Middle Class.)

must be gently rose-color before marriage.

very beautiful, their skin resembling north Europeans, or sometimes the inhabitants along Mediterranean Sea.

Skin of the Abdomen.—Local pigmentation is not without interest. The pigmentation of the middle line of the abdomen is oftentimes noticed in yet young maids who have no relation to pregnancy at all, whereas European women have it only during their pregnancy. In rare cases we meet with pigmentation of male subjects.

Nipples.—Nipples of unmarried girls are darker than those of the blonde European women, which in the latter

Lips.—Lips and eye-balls are generally about the same as Europeans are, but sometimes there are some who have circumscribed blueish-grey coloration along the conjunction of external skin and mucous membrane.

Tattooing.—Beside these congenital characteristics, Japanese did tattooing in greater extent. But tattooing on the skin is not accepted by the higher class or educated people, it is controlled exclusively by the lower layer of the people, such as coolies or the same. Under the law these barbarous customs were already forbidden and now we see them very seldom among the old coolies.

CARE OF THE SKIN AMONG JAPANESE.

Japanese Cleanliness.—Japanese are strict lovers of individual cleanliness. Every family has a bathroom, whether in the city or the village cottage, from the wealthy to the poorer classes. Those who have no bathrooms of their own may find everywhere public baths, which are scattered throughout the cities or towns. These public baths stand under inspection of the sanitary police.

Daily Baths.—Above the middle-class people, Japanese take baths every day; even the laborers never omit baths over three days at longest.

Change of Clothing.—Underwear, stockings or other clothes are sent once a week to laundries, while well-to-do families take more frequent care of the clothing. Japanese women are more careful than the men, so if any woman omits a bath over two days she is spoken of as dirty by the others.

Bath Temperatures.—The temperature of the bath is generally very high in the city, while it is about the same as in other lands in the country.

THE HAIR.

Types of Hair.—Speaking generally, Japanese have the same features of hair as the other folks of the Malayo-Mongolian race. There are, however, at least two kinds of Japanese distinguishable by their hair, one is of the thin hair type, with long face; another is of the thick hair type, which reminds us of resemblance of the Albino race. In this latter type we observe pretty coarse hair on various parts of the body.

THE HAIR OF THE HEAD.

Color of Hair.—Development of hair of Japanese is thick and strong. The color of the hair is seemingly dark, but absolute black is very seldom seen. If we examine the hair carefully it is darkish-brown, or frequently red-brown; true blonde hair being seen rarely in the Japanese, it being somewhat abnormal, as the hair of the Albino is among Europeans.

Hair of Children.—The hair of children is far lighter in color than that of adults. Under four years the children rarely have dark hair.

Women's Hair.—The hair of women appears a more brilliant black than that of the men. The length of the hair is preserved pretty long, for æsthetic purposes, and some reaches to the heel, when they untie their pompadours. Japanese women's hair is generally straight. Curling is seldom seen. Japanese women detest curled hair, and unmarried girls are quite unhappy when they have curled hair.

THE BEARD.

The beard of the Japanese is very thin and scarce. It makes its appearance comparatively later in life than with the Europeans. The color is generally dark-brown to red-brown, and sometimes lighter brown.

CARE OF THE HAIR.

Pompadours.—No woman in the world, from admirable society ladies to the negresses in a wild part of Africa; from ancient Egyptians to the present Hottentots, have failed to take care of their precious hair. So it is also the case with Japanese women. As you read and see, the Japanese women form very peculiar pompadours with great earnestness and skill.

Perfumes.—They use some perfuming oily materials to make the hair fragrant and brilliant.

Hats.—The European hat is never used by Japanese women. They use an oblong square piece of various cloth. In a short walk they use no cover except a handy parasol. On the other hand, most of the laboring class women use cloth covers over their heads.

NOSE AND EYES.

Nose Peculiarities.—One glance is enough to judge what nationality is in question, when anybody notices the nose and eyes of the Japanese. The difference of the nose of Japanese from Caucasian lies in the anatomical difference as to the attaching point of the root of the nose to the frontal bone. Where the Caucasian's stretches out directly from the same plain in front the Japanese nose starts from far deeper portion of the frontal bone. This peculiarity gives a further characteristic appearance to the face of disagreeable flatness. Exceptions to this common character are frequently seen.

The Eyes.—Japanese eyes are very different from those of the European, as the latter have the depression between the orbital arch and lid-rim, while the former lack this depression and have folds in the lid-rim and inner-angle of the eyes. The opening also is narrower in Japanese. All these differences depend upon the position of the eye-balls. The European has eye-balls situated more forward.

Color of the Eyes.—Japanese have dark eyes; among one hundred, ninety-five being brown, five black. But in Japan true black eyes are rarer than in Southern Europe. New-born infants have bluish-black to greenish-black colored eyes, which after several months become gradually a brown color.

Eyebrows generally grow very thick and broad and of black color.

Ears.—Ears are not built shapely in many cases as we notice in Europeans.

Cheek.—The cheek is also pretty prominent, which represents an Asiatic characteristic. This is only remarkable in one type of Japanese; while in another the long-faced type is not much noticeable.

MOUTH AND TEETH.

The mouth of fine type is usually small, and the lips fasten shapely; while the lower type has a comparatively wider opening, which is disagreeable to look at. Teeth are of good quality when grown normally. In the lower class, however, there is a more prognathic mouth, owing apparently to the ignorance about the proper care of the children during their second dentition. Dental diseases seem to be rarer than in this country. Oral hygiene is regarded as important by the Japanese, and children are taught to get a regular habit of cleaning the mouth at home as well as at school.

INFECTIOUS DISEASES.

Measles (Mashin or Hashika).—Preventive measures are taken strictly. Isolation of the sick children from healthy. When one of a family falls a victim, all dejecta of the sick child is mixed with antiseptica, such as five per cent. carbolic acid, or one one-thousandth corrosive sublimate lotion, and so forth. For the disease itself, baths, packs—especially carbol ointment, milk, eggs, expectorants and sometimes antipyretics.

Scarlet Fever (Shiokownetz).—Preventive measures are the same in all infectious cases. Baths, douches, packs, gargles, lemonade, stimulants and symptomatics. In Japan no epidemic of this disease has been experi-

enced, and I have treated only one case. Some authors believe that Japanese are immune to scarlatina.

Small-Pox (Howsow).—Before the introduction of Jenner's vaccination, small-pox was regarded as if a life-tax which everybody born in Japan must pay once in a lifetime.

Vaccination.—Since vaccination has been imported people believe in it unanimously, and thirty years ago the government put forth vaccination laws. It is compulsory every three or seven years. The treatment is by baths, symptomatics, stimulants, prophylactics.

Chicken-Pox (Futow).—Children suffer only slightly, and unless complications follow the physician is not usually called in. But medical officers of health notify the case.

Mump (Zikasenin).—Generally mercuric ointment rubbing is enough. If the case is grave, the leech, purgatives, light diet and incision are resorted to.

Whooping-Cough (Hiakunichigai).—Isolation of children from patient. Change of air; much out-of-door life; moist packs; cold ablution. Each fit attended with vomiting should be followed immediately by the administration of nourishment (milk, egg, broth, and so forth). Bromoform from three to ten drops, sometimes beneficial. Internally, some narcotics, such as bromide or belladonna. There are many children who become true patients from imitating their comrade-patients. Parents lack care when such a comic accident occurs.

Cholera Nostra (Kakuran).—This is much dreaded by parents, and also in adults in the summer months.

Treatment.—Opium, calomel, bismuth, astringent wine, soup, poultices, stimulants.

Dysentery (Sekiri).—Japan was losing her inhabitants at a dreadful rate annually, and the cause was discovered by Dr. Shiga, who started his serum-therapy treatment about three years ago in behalf of the government. The result of this special treatment decidedly diminished the mortality. Dr. Flexner, professor in University of Pennsylvania, discovered the same cause in his expedition to the Philippines.

General Treatment.—Besides this special treatment, castor-oil, calomel, opium, suppositories, saline infusions, mucilaginous enemata, concentrated liquid diet, stimulants, hot packs, isolation, notification, disinfection, and so forth.

Canine Rabies (Kiokenbio).—Preventive inoculation, or commonly

spoken of as Pasteur's treatment. Cauterization of wound, narcotics (chloral, morphine), stimulants.

The Plague (Pest or Kokushibio).—The recent invasion of plague gave Japan a severe blow, and government as well as people were in utmost alarm, and every effort was made to subdue this obstinate disease. At present no case in Japan. The preventive measure is very strict; burning down infected places, ships and trains quarantined, house-hunting and arrests in suspicious cases.

Special Treatment.—For special treatment, Yersin's healing and preventive inoculation; Kitasato's serum therapy; Oiber's symptomatic treatments.

Yellow Fever (Ohnetz).—No cases in Japan.

The Rheumatic Diseases (Riumatisu).—Salicylic acid and its salts, salophen, salol, colchicum. Wet packs, baths (iodine, bog-mud), massage, and so forth.

Croupous Pneumonia (Haiin).—Ice-bag, cold drinks; diet with milk and eggs; cold packs, mustard-plaster, digitalis and stimulants.

Epidemic Cerebro-Spinal Meningitis (Riu-kow-sei Now-sekizuimaku-in).—Occurs seldom in Japan.

Treatment.—Rest, cold pack, ice-bag, blood-letting from mastoid region, calomel, cantharoidal blister to the nape of the neck, mercurial inunction, antipyretica and narcotica.

Erysipelas (Tandoku).—Serum therapy in first place, and then ordinary symptomatic treatments, such as poultices, sustained nourishment, cold baths, stimulants, injection of 3 per cent. carbolic acid to surrounding inflammation.

Relapsing Fever (Kaikinetz).—Quinine or other antipyretica stimulants and tonics. This disease was introduced by soldiers at the end of China-Japanese war, but no cases at present.

Malarial Fever (Kwanketsunetz).—Quinine sulphate in various doses before the expected attack—usually six hours. In protracted cases, arsenic and iron administered, and baths directed.

TUBERCULOUS DISEASES (Kekkaku-bio).

Pulmonary Tuberculosis (Hai-kekkaku).—Digestible diet (milk chiefly recommended, eggs, soft-boiled rice, cod-liver oil, young poultry), cool rubbing of skin, open-air life, country residence, treatment in sanatorium; arsenic, creosote, guayocole, myrtol. solveol, and so forth; mineral waters.

Expectorants (pectoral tea, senega, apomorphine, chloride, and so forth). For cough—codeine, opium, belladonna, morphine. For night-sweats—atropine, agaricine, and so forth. For hemorrhages—rest, ergotine, morphine, ice-bag, lead acetate. For marasmic fever—antipyretics. Individual spittoon, disinfection of linens, encouragement of the patient.

Sanatorium Treatment.—Beside these ordinary treatments in Japan a special serum therapy is in popular favor, or new-tuberculin injection in sanatorium, where patients are provided with free air, sports in various styles and medical attendance.

Glandular Tuberculosis (Rui reki).—Cod-liver oil with lime, iron, iodide, arsenic, nutrition; sometimes surgical operation. Japanese believe that glandular tuberculosis is a forerunner of pulmonic tuberculosis, and they come to get it extirpated by surgeon.

Intestinal Tuberculosis (Cho kekkaku).—Opium, poultices, bismuth, astringents, mucilaginous drinks, decoction of salep or colombo.

Tuberculous Peritonitis (Fukumaku-kekkaku).—Beside symptomatic treatments, laparotomy undertaken with brilliant results.

Typhoid Fever (Chotyphus).—Serum therapy is used as a special remedy with good results. Diet: milk, broth, eggs, beef juice or chicken. Calomel at onset. Cold baths at 20 degrees Centigrade, and antipyretics in febrile stage. Later, digitalis and stimulants. Prevent bed-sores by alcoholic applications or air bed.

Diphtheria and Croup (Dixteria Croopu).—Serum therapy in every case. As other methods for preventing complications, gargle or inhalation of dilute solution of carbolic acid (rarely used), iced milk, stimulants. In suffocating stages, emetics, intubation or tracheotomy. In such grave cases combination of antitoxin serum and surgical operation are preferred.

Grippe (Riu kow sei Kanbo).—Isolation and disinfection of the patients, but in widespread epidemic these preventive measures are scarcely to be carried out. For patient, rest in bed, good ventilation, lightly digestible food and medicaments. Among medicines, chinine is very effective, or antipyrine and salicylic acid are recommended for fever. Expectorants, gargles and stimulants according to the condition of the patient.

Asiatic Cholera (Kolera).—Strict quarantine and disinfection. Cholera cadavers always cremated.

Serum therapy against cholera was and is used by government institute, but we have not many cases to determine its real value. Calomel,

opium, ice-pills, hot-packs, stimulants, infusion of saline solution are symptomatic medicines.

Leprosy (Rai-bio).—Preventive measure is the most important, inasmuch as we have no special treatment. In a plain, near Mountain Fuji, there is one lepra village under government expense, where any patient who desires to spend his poor life apart from the community is allowed to live, furnished with necessary staffs.

Among medicaments for leprosy, natrium salicylicum has good reputation and ointments of ichthyol, aristol and hydroxylamin are recommended.

Gonorrhœa (Rinbio).—As preventive measure, strict inspection of public girls thrice a month by sanitary inspectors. Some use condoms and wash local part with 2 per cent. carbolic acid, after intercourse.

Medicinal Treatment.—Among medicines, sulphate of zinc followed by iodoform is most used; garbolmol came in general use quite recently. Internally, balsamum copaivæ (0.6 in gelatine capsule, five to ten times a day), balsamum peruvianum, balsamum toltanum, oleum terbenthinæ, fructus cubebæ, and so forth. Dietary care is very important, as light coffee, milk, tea, avoiding strong coffee, tea or spices. Patient must be confined to bed, no speaking, no pictures which may cause sexual excitement; against erection and pollution; early supper, many hours before sleep, and a pulver consisting of bromide potash, lupulin and camphor.

For annoying urination (repeated in short time) suppositories of opium or morphine used (but not belladonna).

For chronic gonorrhœa we decline to meet urethral strictures, which want bougie treatment or surgical operation.

Tetanus (Hashofu).—Serum therapy used in general. Beside thorough incision and washing of the infected wound, if discovered. Among symptomatic remedies narcotics are the only medicines to lessen patient's trouble.

Chancre (Nansei-gekan).—When ulcers appear many abortive treatments offered, such as washing with concentrated nitrate silver, sulphate zinc, caustic potash, caustic paste or galvanic cauterization.

After these methods, application of thin layer of iodoform, aristol, calomel, bismuth, dermatol or euphorine, and covered with fat-free cotton moistened with carbol vaseline. Liquors avoided as well as sexual intercourse. For complications, often surgical treatment wanted.

Syphilis (Baidoku) or Acquired Syphilis (Kowten baidoku).—Prophylaxis, being the same as gonorrhœa. When syphilitic patients may marry.

It is considered as harmless if they marry after three years from their first infection. But this, of course, depends upon the patients, whether they had taken proper antisyphilitic treatment during that period or not. After marriage, they should consult physicians every two or three weeks for first six months whether any sign of return appears or not.

Syphilitic Stages.—If a man is infected with syphilis, the first symptom is hard chancre, which wants mercury treatment. From this primary stage to secondary period mercury cure is the chief treatment. The patient is forbidden to indulge in *baccho et venere* during this treatment. Cold is harmful for the patient taking inunction cure, so cold baths or douches not allowed. Dietary care is also important. Some physicians recommend combination of inunction and internal administration of iodide potash. For the broad condylomata on the external skin, washing with saline solution and calomel pulverization proves beneficial. When recidive occurs, sometimes condylomatous eruptions appear in mouth. In such case internal use of mercuric preparation is prescribed.

Third Stage of Syphilis.—When syphilis proceeds to the third stage, iodide of potash is prescribed as a special remedy. By this treatment, if patient be persevering enough to maintain full effect, almost all of the syphilitic symptoms disappear.

Iodo preparations combined with iron serve as an effective remedy against subsequent cachexia and amyloid degeneration. Mineral baths (sulphur) are recommended also. Sometimes subcutaneous injections of mercuric preparations are directed.

If gummata affects various parts they are treated surgically.

Nose Syphilis.—When syphilis is located at nose, mercuric plaster is used for ulcerative part of skin. For the destruction of internal part of nose, we treat it with nose-douche, washing with carbolic acid (2 per cent.), corrosive sublimate or thymol, followed by snuffing of calomel or iodoform. After the destructive process ceases to progress, the deformation is repaired by a plastic operation.

Other Syphilitic Forms.—Other forms of syphilis are treated under general antisyphilitic remedies and special methods according to the location.

For syphilitic affection of nervous system, electricity or massages are recommended sometimes beside general antisyphilitic cure.

Hereditary Syphilis (Senten baidoku).—Prophylactic measures are most important, so nobody should marry within the course of three years after infected with syphilis. If a woman becomes infected with syphilis

during her pregnancy, a strict antisyphilitic remedy must be taken. If it was in the course of the latter half of pregnancy, the baby is expected to be born healthy. But in such a case, the baby is to be nourished with cow-milk or by a wet-nurse exclusively. But if syphilis had rooted deep in the parent before pregnancy, the baby also inherits the formidable virus with its life, and then the baby is preferably nourished with its mother's milk. But the mother is treated with iodide potash in order that the specific medicine may be secreted through mammalian glands into the milk. For the disease itself, use mercuric pills in favorable forms for the stomach.

Treatment of Mothers.—During treatment the mother should take care of cleaning oral cavity every day. Bath containing corrosive sublimate (3.0), 28 degrees Réaumur, is directed every day. In my country the bathtub is made of wood generally, and it suits for the use of mercury bath.

DISEASES OF RESPIRATORY ORGANS.

Laryngeal Catarrh (Kowtow katarrh).—Priesnitz's pack around neck, hot milk, codeine for acute. Inhalation of saline water, tannin-alum solution; painting with nitrate silver (3-10 per cent.) for chronic. Baths are not recommended much.

Bronchitis (Kikwanshi katarrh).—For acute form, mineral water, milk and tea, wet packing, warm baths, codeine, expectorants. For chronic form, marine life or warm southern climate, wet packs, rubbing skin, expectorants. Inhalation of mineral water is especially recommended.

Asthma (Zensoku).—Treatment of eventual nose diseases, marine life. In paroxymata, iodide potash, morphine, inhalation of pyridin vapor, and so forth.

Pulmonal Emphysemata (Haikishi).—About same as asthma or bronchial catarrh. Iodide potash or digitalis, gymnastics of lungs, pneumatic chamber, compression of thorax, and so forth.

Pleurisy (Kiomaku-irr).—If the quantity of exudate reaches up to second intercostal space soon, it is drawn by puncture. But there must be several pauses during the whole operation, as it will cause cerebral anemia from sudden loss of blood-pressure. Before and after treatment of the operation must be strictly aseptical. Besides, contra-irritation, wet pack, ice-bag, diuretics, anti-rheumatics and morphine.

DISEASES OF CIRCULATORY ORGANS.

Endocarditis (Shinzonaimakuin).—Rest, ice-bag, salicylic preparation or eventually digitalis, strophanthus.

Cardiac Insufficiency (Shinzo-benmaku-heisafuzen).—Digitalis infusion (0.8—1.2/00) is the chief remedy in meeting the disturbance. Other auxiliary medicaments are diuretics, stimulants, morphine.

For the hydropsy from heart disease: Calomel combined with digitalis, taking care of stomatitis at the same time. Then the diuretics such as acetate potash, diuretics, scilla, tartarus boraxatus, and so forth.

Treatment by Massage.—Massage, high position and enveloping of the swollen parts is recommended. Puncture for strong hydropsy is rare. During compensated stage care is directed not to use strong body moving or alcoholic beverages, while patient should take nourishing, assimilable food. Bath-cure (cold baths) is also advisable.

Nervous Palpitation (Shinkeisei Shinki-kowshin).—First affair is to improve patient's general condition; iron, quinine or strengthening diet for anemic subjects, while bitter waters or bath-cure prescribed for the full-blooded. Among internal remedies nervines or sometimes narcotics are used. Cold compression and ice-bags often act beneficially.

Angina Pectoris (Kyoshinsho).—Irritation of skin (mustard), application of hot or cold compression, morphine injection and other narcotics such as chloralamid, nitro-glycerine, and so forth.

Pericarditis (Shinnow-in).—Quiet, rest, digitalis, strophanthus, ice-bag or mustard-paste. In large exudate, puncture with aspirator; in pus accumulation, surgical operation.

Aneurism of Aorta (Daidowmyakuriu).—Iodide of potassium, ergotine, compression, electric cauterization, and so forth. But no remedy proves effective.

DISEASES OF DIGESTIVE ORGANS.

Inflammation of the Mouth (Konai-iu).—Including various forms of stomatitis. Cleanliness, care of gums; gargle with tannin, alum, borax, and so forth, according to the condition, antiseptics also used such as hypermanganate of potassium (0.1 per cent.), chloro-potash (2 per cent.), hydrogen dioxide solution (2 per cent.), tincture myrrh, tincture ratani, or lapis cauterization in grave cases.

Acute and Chronic Gastric Catarrh (Kuissei and Mansei-I-katarrh).—Treatment of the acute same as here. For chronic forms it depends upon

the nature of the causal diseases. At first, treatment of causal diseases; regular dietary, avoiding fatty indigestible foods. Sometimes cold rubbing upon the stomach region, massage over stomach, regular evacuation (using oil or glycerine enema), sea-water baths, hot spring cures.

Gastric Ulcer (I-kwaiyo).—Bed-rest, warm poultice applied intermittently, fluid diet (milk, eggs, soups). Internally, administer sodium bicarbonate with bismuth, the latter used alone in large doses in some cases.

Cancer of the Stomach (I-gan).—Internally, only symptomatics, sometimes hydrochloric acid and extract of condurango used with good results. Eventually, when the cancer is located near the pylorus it is removed by surgical operation.

Dilatation of the Stomach (I-kakuchō).—Regular washing of the stomach in evening daily; massages, electricity; cold rubbing over gastric region. Fluid diet, regular evacuation with purgatives or enema, morphine, chloral hydrate, and so forth. Surgically, early extirpation of the tumor.

Nervous Dyspepsia (Shinkeisei-shokafurio).—Cold rubbing, strengthening diet, massage, electricity, baths and mental therapy.

Intestinal Catarrh (Chokatarrh).—Dietary regulation, opium and tannin, tannigen, and so forth. For acute form, artificial Carlsbad salt, packs, massage, digestible food and regular evacuation. Alcoholic liquors forbidden.

PARASITES OF THE INTESTINES (CHOKISEICHIU).

1. **Tape-Worm.**—Extract *flic maris* 2.0 in capsules (in 5-6 pieces) taken in one-half hour. Three hours later one spoonful of castor oil given. Sometimes we use thymol, one-half grain, instead of extract *flic*, as the latter may eventually cause amourosis. Chloroform is also used with success.

2. **Ascarides (Round Worm).**—Santonin, one grain several times a day.

3. **Oxyuris (Seat Worm).**—Naphthalin, 4 x 0.15—0.4; castor oil or calomel.

Ascites (Fukusui).—Treatment of causal diseases, digitalis, diuretics, calomel, puncture.

Jaundice (Oudan).—Artificial Carlsbad; dietary direction; no fat stuffs.

Biliary Calculi (Tanaeki).—For paroxysm apply cataplasm, narcotics internally or hypodermically. Carlsbad-cure, salicylic and bicarbonate sodium given later.

SOME HINTS FROM JAPANESE TREATMENT

Taking the Pulse.—The little finger can be used in taking a delicate pulse when it would be impossible to readily recognize it with the fingers ordinarily used.

Curing Convulsions.—Convulsions may be frequently cut short like magic by turning the patient on his left side.

Increasing Warmth.—When chilly from exposure breathe very deeply and rapidly, and the increase in bodily warmth will be surprising.

A Cure for Burns.—Crude petroleum poured upon a burned surface and covered loosely with cotton will subdue the pain almost at once.

Poisonous Wounds.—Strong spirits of ammonia applied to the wounds of snake bites or rabid animals is better than caustic. It neutralizes the poison.

Carbolic Acid Poisoning.—Carbolic acid poisoning can be quickly cured by giving cider vinegar diluted with equal parts of water in half tumblerful doses every five or ten minutes for a few times.

Morphine Poison.—Permanganate of potash is an efficient antidote if taken while morphine is in the stomach. Grain for grain will completely decompose it.

Infantile Colic.—A towel dipped in boiling water, wrung out rapidly, folded to proper size and applied to the abdomen, with a dry flannel over the hot towel, acts like magic in infantile colic.

Pregnancy Nausea.—Vomiting and nausea of pregnancy, a 20 per cent. solution of menthol in sweet oil; use ten drops on sugar when nausea appears.

Rheumatic Joints.—Wrap a swollen rheumatic joint in cloths wrung out of ice water and the pain will almost instantly cease.

Snake Bites.—Saltpetre is a specific for snake bites. The dose is a teaspoonful for a child and a tablespoonful for an adult in a glass of cold water, applying it also to the bite.

Cure of Opium Habit.—The most effective treatment and cure of the opium habit consists of the administration of bromide of soda. The drug is given one drachm every two hours for the first two days and one-half drachm on the third day. Two ounces seldom fail to effect a cure. See index.

MEDICAL SCHOOLS

PART VIII.

GERMAN HOME MEDICAL TREATMENT.

The Kneipp Cure.—Natural healing has been developed in Germany mainly by Priessnitz, Schroth, Kneipp, Kuhne, Bilz and others, a feature common to all their cures being the extended application of water. Especially the Kneipp cure has found in recent years a great many friends.

Principles of the Kneipp Cure.—The principal remedy is cold water. Regarding its judicious application the following general rules may be given:

1. The shorter the bath or the application of water, the better the result.
2. The colder the water, the shorter must be the bath and the quicker results the wholesome reaction in the body. Weak persons ought to begin, however, with mild temperatures, say, first 60 degrees (Fahrenheit), later 55 to 50 degrees and finally cold water.
3. Before the application of the cold water is made the body should be as warm as possible; otherwise one must begin with a warm water treatment.
4. When the application of the water has been made, do not dry the body, but dress yourself quickly and make first quick movements and then slower ones, in order to produce the reaction in the body. Should the reaction not set in and the patient be very weak, he should go to bed to get warm.
5. Hardening the body is the best means against all diseases. Nothing is better for this purpose than cold water.

Kneipp Knee Shower-bath.—With a hose sprinkle cold water on the leg of the patient, from the foot to the knee. Begin with the front of the leg; start with the right foot; go up to the knee and then back to the right foot; go then over to the left foot, up to left knee and back; do this until the legs become red. Then turn the patient and treat in the same way the back part of the legs.

The knee shower is applied mainly against rush of blood to the head; to make the blood circulate from the head to the lower parts of the body.

The Kneipp Head Shower-bath.—The whole head is uniformly sprinkled over with water by means of a sprinkling can; one sprinkling can full of water is sufficient. For weak persons take the can only one-half full. The head shower-bath is applied with success, especially against diseases of the eyes, ears, nose and head. Take care to dry the hair carefully after the bath.

Walk Barefoot in the Damp Grass.—Besides the regular baths of the whole body or of parts of the body, this is the most simple and natural means of hardening the body. Persons who suffer with rush of blood to the head or with diseases of eyes, ears, throat and nose, ought to walk daily barefoot in the damp grass for ten to twenty minutes with excellent success if the weather is not too cold.

Natural Healing in Special Diseases.—Special applications of the Kneipp cure in different cases will be found in the following articles on special diseases, in which also the methods of treatment of other German representatives of natural healing are considered.

CHICKEN-POX.

Treatment.—Keep the body warm, take good care of the skin by taking daily a full or three-quarter full bed steam bath (see the description below). After the bed steam bath take a bath of 86 degrees Fahrenheit, or rub the whole body with water of 72 degrees. The inflamed portions of the skin may be powdered now and then with rice-flour. Avoid stimulating food, go much into the fresh air, and if necessary use a syringe when bowels are constipated.

The Bed Steam Bath.—This bath may be taken in two forms: either as a full bath or as a three-quarter bath. In the full bath the body is wrapped up to the chin, in the three-quarter bath the arms are free. The method of wrapping up the body is the same in both cases. The wraps are a woolen blanket, and a damp linen cloth, which has been put into water between 64 and 77 degrees and has then been wrung out. The woolen blanket must be larger than the damp linen cloth. Put the woolen blanket first into the bed on the mattress, put the damp linen cloth above the blanket, put the entirely nude patient above that and then wrap him up. The patient must be covered entirely by the damp linen cloth, and this must be again wrapped up in the woolen blanket, so that at the outside there is nothing but the woolen blanket. Hot water bags may often be used to advantage in connection with this bath; four bags may be applied:

one at the bend of the knee, the second at the soles of the feet, and the other two at both sides of the legs, outside of the wrapping. Sometimes the two bags alone are sufficient.

These baths are not only good against chicken-pox, but may be applied also in other diseases, as will be noticed in the following articles.

WORMS.

Treatment.—Avoid irritating food. The best food is bruised wheat-bread, pumpernickel, fruits, figs and carrots. Place every night, or every second night, a bandage around the abdomen at 77 degrees (see the description below), and rub the whole body in the morning with water of 55 degrees. If necessary, use a small syringe twice daily to make the bowels move; use water of 77 degrees.

Kneipp's Worm Remedy.—Kneipp recommends the following remedy against worms: Mix wermuth with twenty-five ground seeds of pumpkins, and drink this tea for several weeks, and the worms, which cannot stand the bitter tea, will soon disappear.

The Bandage Around the Abdomen.—This bandage is not only useful for the above purpose, but is somewhat like a universal remedy; it acts often in an admirable manner; it renders very good service against cold in the head, headache, toothache, loss of appetite, dizziness, etc.; it is especially useful against female ailments.

How to Apply the Bandage.—There are required for this bandage some woolen cloth or a long woolen shawl or a piece of flannel of sufficient length and width to make a bandage twice around the abdomen. There are further required two towels of coarse linen, which are put into water between 66 and 75 degrees, and are then thoroughly wrung out. These towels are placed upon the flannel or woolen bandages, which are spread out ready for use. The flannel or woolen bandages must be larger than the towels, so that the flannel or wool have to show from either side the width of two or three fingers. The bandage, fixed in this way, is then placed around the abdomen of the patient.

BRIGHT'S DISEASE.

Treatment of Acute Form.—Take daily a bed steam bath (see the description in the article on chicken-pox), with extra bandages at the back in the neighborhood of the kidneys, also extra bandages on the heart,

until perspiration takes place freely; after that take a bath of 88 to 90 degrees, and a shower-bath with the water of 81 to 84 degrees, and rub the skin thoroughly. If necessary, extra bandages of shorter duration may be made on the kidneys, around the legs, and so forth, also during the night. Patients who do not stand well the bed steam baths should be treated by mildly washing and rubbing the whole body several times daily. Avoid irritating food; don't drink much. The best to drink is milk which is not too cold; strictly avoid all alcoholic drinks. Take care that the bowels move regularly; if necessary use a syringe; go much into the fresh air. Improvement can be obtained by this treatment in one or two weeks, but sometimes it takes several months, until the urine becomes clearer and lighter and begins to flow in greater quantities.

Treatment of Chronic Form.—The chronic form develops itself from the acute form; often the patient is not aware of the development itself until the disease is in a critical state: Take daily a bed-steam-bath, after that a bath of 88 degrees or warmer, say 61 to 63 degrees, for eight to ten minutes. Bandages may also be applied during the night. Avoid irritating food; take much sweet milk. Drink water in moderate quantities, take care that the bowels move regularly. Above all, rest in the bed.

Kneipp's Cure.—Against Bright's disease Kneipp warmly recommends lemon juice. According to Dr. Siebert one patient ate in three months three hundred lemons, daily three or four, and the urine was free of glair. The patient was dismissed as cured. Kneipp's baths must be of course also applied in connection with the treatment.

ITCH.

Treatment.—Separate the sick person from the healthy people, because this disease is contagious. Give the patient a steam-bath of 15 to 25 minutes, and after that let him take a bath in a bathtub at 97 to 104 degrees, for ten to fifteen minutes; rub the body thoroughly with soft soap, to which may be added some sand in order to scratch the itchy spots open. After the bath, rub soft soap thoroughly in the itchy spots (without sand) and give the patient a "dry-wrapping" (see description below) for three-quarters of an hour to an hour. Finally let the patient take a cleansing bath at 88 degrees. Repeat this treatment daily for four to five days. Let the patient change the underwear every day. One may also leave out the steam-bath and begin at once with the warm bath. One may also rub the itchy spots with kerosene before retiring in the evening;

when rising in the morning let him take a bath and clean the body with soap. Repeat this treatment for three or four days.

Description of the Dry-Wrapping.—Place on the mattress a large woolen cloth and above that a large linen bed-spread, put the patient on these cloths and wrap the same around him, first the linen bed-spread and around that the woolen cloth; wrap the bed-covers (the blankets) around and tuck them in all about so that no air can come through, and the heat which is developed inside cannot escape. The patient will soon begin to perspire.

The dry-wrapping is of great value for the most chronical diseases, but may in single cases be of advantage. One should always observe whether a patient stands better a dry-wrapping or a bed-steam-bath (see the description of the latter in the above article on chicken-pox) and one should choose what is more advantageous to him.

CANCER.

Treatment.—The prospect of a thorough recovery of the patient is not very great. To produce relief, give the patient daily a warm bath of 59 to 61 degrees, and sprinkle softly the sick portions of the body; further avoid all irritating food, use a diet without any meat (among the original inhabitants of the East Indies, who are vegetarians, and live on vegetables and fruits, the disease of cancer is entirely unknown); finally let the patient go much into the fresh air and let him sleep at open windows.

The cancerous spots of the body should often be cleansed by rinsing them with clean water or with decoctions of camomile; also soothing or exciting bandages (see the descriptions below) should be applied. During the first period of the disease let the patient take weekly three or four full steam-baths following with full-wrapping baths and baths in the bathtub with shower-baths; or, instead of that full bed-steam baths (see the description in the above article on chicken-pox) with following bath. Sometimes it is of advantage to apply daily warm compresses on the sick spots, which are afterward sprinkled softly with water of 81 to 86 degrees and are then covered with a compress, moistened with water of the same temperature.

Description of Soothing and Exciting Bandages.—Both bandages are applied only at special sick portions of the body, that is on the cancerous spots. An “exciting” bandage heats the sick portion of the body and dissolves and diverts the disease. It is applied in the following manner.

Dip a piece of linen into cold water of 64 to 73 degrees, wring it out and place it in two, four, six or more layers on the sick spot; place above it a thick dry woolen patch which must be larger on all sides than the moist linen. This compress must be tight and well fixed so that the heat formed below it cannot escape; the compress must be larger than the sick spot on all sides by several inches. This compress is left on the sick spot for two, three or four hours, or for the whole night; in general as long as the patient does not want it removed; it should not annoy the patient. After the compress has been removed sprinkle the sick spot with cold water.

The Soothing Bandage.—A “soothing” bandage is applied for relieving the pain. A piece of rough linen, folded up in four to eight layers, is dipped into water of 77 to 86 degrees, slightly wrung out, placed on the sick portion of the body and covered with a woolen patch. This compress is mostly applied for 30 to 45 minutes and in general as long as they produce agreeable feelings to the patient.

CATARRH.

Treatment.—The first point to aim at must be to remove the special causes to which the increased separation of phlegm is due. Avoid irritating food, rub the whole body daily with water of 73 to 77 degrees, or take a bath of 88 to 91 degrees, after which the body must be thoroughly rubbed until it is dry. During the night a bandage around the abdomen (see description in the above article on worms) is to be applied. Further different forms of wrappings, bandages and bed-steam-baths are often advantageous. Keep quiet and rest. When the organs of breathing are affected, keep the body uniformly warm, and breathe mild, clean air which is not too dry. Take care that the bowels move daily. As the different forms of catarrh are produced by different causes, they must be also treated in a different way, and the treatment should always be of such a kind that it suits the special patient. The above remarks give the general rules.

CHOLERA MORBUS.

Prevention of Cholera Morbus.—In case of epidemic cholera morbus in a town, everybody must take great care to keep his body in such a condition that it cannot be affected by the disease. The best means of accomplishing this are as follows:

The Blood.—Take care that your blood is good and healthy. For this purpose breathe good, clean air. Everybody who can afford it should be daily in the fresh air for some time; in the fresh air take repeatedly deep breaths. Air thoroughly the rooms where you live and sleep. If one is confined to the house and must breathe bad air, breathe through the nose and rinse afterward mouth and nose with fresh water and strengthen the lungs in the best air which is at disposal.

Diet.—Avoid irritating food, don't eat meat, don't drink alcoholic drinks, avoid spiced and sour dishes. When one does not want to avoid meat entirely (which would be the best), one should take care at least that meat does not amount to more than one-fifth of the meals, while four-fifths are vegetables, rice, noodles, barley, Indian meal, farina, legumen, and everything in the way of potatoes. A sudden and thorough change in the custom of eating and drinking may, however, have disadvantageous consequences, hence be cautious during the change. Drink good water.

The Skin.—Before all other things take good care of the skin. Rub the whole body daily with water by means of a rough linen towel, dry the body, rub it thoroughly with a dry towel until the body is dry; begin with the legs and arms and proceed then to neck, head, chest, abdomen and the back. The clothing should not be too thick but comfortable.

The Gargle.—To strengthen the pituitary membranes, gargle daily with cold water and rinse the nose, afterward take a few drinks of water.

While eating, chew well the meals; "well chewed is half digested," is of great importance in this case. Keep the house and the rooms very clean.

The Bandage.—The life should be very regular. Keep the abdomen warm. He who thinks that he needs a woolen bandage around the abdomen should wear it not below but above the linen or cotton shirt.

The Bowels.—Take care that the bowels move regularly every day. In cases of diarrhœa, as well as of consumption, take a clyster with a syringe containing about one-fourth pint (*i. e.*, one gill) of water at 59 to 66 degrees; also apply during the night a bandage around the abdomen (see the description in the above article on worms), the water used for this purpose having a temperature of 72 degrees. (While most people and even physicians think that a clyster—injection—is only good to make the bowels move, it is a fact that one may also cure diarrhœa with it.)

Who lives according to these rules may be sure that he does the very best to prevent cholera morbus and should not be afraid. To be afraid is disadvantageous.

Treatment of Cholera Morbus.—1. Cholera morbus never attacks a healthy person unexpectedly; there are always before symptoms of the developing disease. If the symptom is a light diarrhœa, sometimes with an unpleasant feeling in the abdomen, rub the whole body at once thoroughly with water of 66 to 73 degrees (one part of the body after the other, while the body is warm), place a bandage around the abdomen (see the description in the above article on Worms), and put a hot-water bag at the feet; keep the bandage on for about an hour; but if it should become hot quicker, replace it repeatedly. As soon as the feet get warm, wash them with cool water and repeat this four or five times during this hour. When the bandage has been taken from the abdomen, rub again the body with water and apply a small injection with the syringe, the water having a temperature of 68 degrees. These injections should be given especially after the bowels have moved. If this treatment does not help apply a steam-bath in a suitable form, following with cooling bath, shower-bath or rubbing of the whole body. After that massage of the body and exercises or a good walk.

2. When the symptom of the developing disease consists in constipation apply injections with the syringe, about half a pint or one-fourth pint, with water of 73 to 90 degrees; repeat the same every hour or every second hour if the bowels do not move; and if this is not successful give the patient a "sitz-bath" (see the description below) at 68 to 86 degrees for five to ten minutes, while the body is kept warm and a hot-water bag is placed at the feet. Don't apply this bath when the patient feels cold, nor when he has a disease of the heart or the lungs, nor when he is nervous. Avoid any irritating meals.

Description of the Sitz-Bath.—The sitz-bath may be taken in the bath-tub or any large vessel. The water may reach up to the navel. This sitz-bath is not only good in the case of cholera morbus, but may also be applied against indigestion, rush of blood to the head, diseases of the abdomen, hemorrhoids and female diseases. These baths are often very important and their success becomes often apparent after a short time only. According to the disease and to the condition of the patient, the temperature of the water may be 66 to 73 or 82 or even more; it should be taken for five to fifteen minutes and in special rare cases for twenty-five to thirty minutes. Kneading, rubbing and massage of the abdomen during the sitz-bath are often advantageous.

GONORRHEA.

Treatment.—Keep quiet and avoid irritating meals, eat dishes seasoned very mild only, avoid all alcoholic drinks, avoid meat, drink much fresh water and enjoy the fresh air; avoid all opportunities which would cause an excitation of the genitals.

Take daily a half-steam-bath or a half-bed-steam-bath (this is a bed-steam-bath as described in the article on chicken-pox, but reaching up to the navel only, three hot-water bags, wrapped up in damp cloths, being placed at the feet), put a special damp compress, moistened with water of 73 degrees, on the genitals. Take afterward a bath of 88 degrees.

Take daily two or three sitz-baths in water of 77 degrees for fifteen to twenty minutes. During the night place a bandage around the abdomen (see the description in the article on Worms). In case of constipation make injections with the syringe. Instead of the sitz-baths, three or four partial baths of the genitals in water of 82 to 86 degrees may be taken, each for ten to twenty minutes; perhaps also repeated washing of the genitals with water of 77 degrees. Drink much water in order to dilute the urine. If one wants to inject water of 82 degrees into the urethra, this must be done very softly by means of a small syringe with rounded (not sharp) mouth; such injections may be made several times daily, especially after having made water. In the meanwhile also soothing or exciting bandages (see the description in the article on Cancer) may be made on the genitals, with water of 73 to 77 degrees, the compress being all wrapped up in a woolen cloth. To prevent inflammation of the scrotum, or when it has become inflamed, protect it by a suspensory, which is to be buckled on in a careful and suitable manner.

AGUE.

Treatment.—For cases of ague or fever-shivering, rub the patient thoroughly (dry or wet) and then give him a dry-wrapping or a bed-steam-bath (see the descriptions in the articles on Itch and on Chicken-pox). When he perspires, let him take later a bath of 86 to 89 degrees. Should this treatment cause prickly-heat on the body, looking like measles or small-pox, and so forth, this should be regarded as a good sign, because in this way the morbid matter is removed from the body. To remove it thoroughly the patient should take some more bed-steam-baths, or exciting

bandages, as described in the article on Cancer, should be applied, in order to make him perspire moderately. A bath has to follow.

BOILS.

Treatment.—In all cases which have been caused by bad blood a “restorative cure” should be used (see the description below). Further put soothing or exciting bandages (as described in the article on Cancer) on the sick portions of the body, the wet linen being folded up in six to twelve layers and moistened with water of 72 to 100 degrees, according to the nature of the boil. This compress must be well covered with a woolen patch much larger than the boil; when the compress begins to get dry it is to be renewed. These compresses cool, dissolve the boil and suck out the morbid matter. It is further important to clean each boil thoroughly by washing and dipping out with lukewarm water.

The Restorative Cure.—This cure is not only good in the treatment of boils but should be applied generally in all chronic diseases, as the body needs to be first strengthened in general. This cure will always give good results whatever the special disease may be. A natural, not irritating diet is required: bread, vegetables, milk, anything made of milk and of eggs, oatmeal, fruits, now and then a soft-boiled egg is allowed. Meat should not be eaten in too large quantities; strong coffee, all alcoholic drinks, tobacco, spiced dishes, and so forth, are entirely forbidden. Drink mainly water, drink it often, especially before taking a walk, and before retiring at night a drink of water is to be recommended; lemonade, cocoa, malt-coffee are also allowed. The diet should be moderate; when the patient begins to feel better he should not stuff at once his stomach. The patient should enjoy the fresh air as much as possible and should take good care of the skin by daily washing or rubbing once or twice the whole body with water of 82 to 95 degrees; the applications described in the article on the Kneipp Cure are also to be recommended.

CONSUMPTION.

Treatment.—The principal object to aim at is the production of a healthier and purer blood; this requires a simple, digestible, nourishing and not irritating diet and plenty of pure and fresh air. The patient should sleep at open windows and exercise the lungs by uniform and slow breathing in and out in good fresh air. The patient should not work as a tailor, seamstress or in an office, in general not in such a pro-

fession or trade where he must sit continually. As long as the disease is still in the beginning period, light work in the garden, done cautiously, renders excellent service. In cases in which the disease has already made more progress the patient should begin with washing the upper part of the body with water of 86 degrees. When he has accustomed himself to these washings he should begin to wash also the lower part of the body; for this purpose he should use water of 73 to 77 degrees. Two points are to be kept in mind: first the patient must be comfortably warm while he is washed, and should afterward take care to dress himself quick and get warm by means of motions; second, while the patient is washed he should sit still, the washing and later the drying should be done by an attendant. Who has no attendant at his disposition should not do these washings at all. When the patient feels cool and uncomfortable, or when the weather is cool and rainy the washings should not be performed. As long as the patient is strong enough he should take walks in pure and sunny air as much as possible.

COLD.

Treatment.—Any disease which might arise from a cold is best prevented by a cure producing a strong perspiration so that the interrupted activity of the pores of the skin is restored. Take a bed-steam-bath (as described in the article on Chicken-pox); a rubbing of the whole body or a bath follows. See also the remarks in the articles on the Kneipp Cure and on Ague.

DIPHThERIA.

Treatment.—The patient is to be separated from the healthy people. The windows of the room where he rests should be open. He should be covered with one or two woolen blankets which must be aired several times daily, if possible, in the sun. The floor of the room is to be cleaned daily. The following special treatment is very successful: A full bed-steam-bath (as described in the article on Chicken-pox), combined with a cool bandage around the neck, which is applied as follows: Put a towel into water of 54 to 56 degrees, wring it out moderately and place it around the neck of the patient so that it reaches up to the ears. The upper half of the bandage is now covered with a woolen cloth. The duration of the bed-steam-bath is 45 minutes to an hour. Should the patient become uneasy the wrapping is to be removed earlier. If necessary this packing is to be repeated twice or three times during twenty-four hours. Afterward the body is to be washed

with water of 73 to 86 degrees. Further, the mouth is to be cleaned repeatedly by gargling; one-fifth of a lemon per glass of water. Only when the patient wants to eat give him buttermilk, apple-marmalade, fruits, oatmeal, and so forth.

DYSPEPSIA.

Treatment.—The patient should take only small quantities of easily digestible food. After any meal his body and mind should rest. Anything that is eaten should be well chewed. The best food is rice, fruits, stale rolls, and now and then a drink of water; begin first with very small quantities of water, so that the stomach can warm it, and drink gradually more and more water. Rub daily the whole body with water or take a bath, also rub repeatedly the abdomen; the sitz-bath (described in the article on Cholera Morbus) is a very good remedy in all cases of indigestion and dyspepsia.

CROUP.

Treatment.—As soon as the suspicious cough makes its appearance the patient gets a full wrapping or three-quarter wrapping (as described in the article on Chicken-pox); the linen cloth in which he is wrapped must contain much moisture; the temperature of the water used is 82 degrees; a hot-water bag, which is covered with a wet cloth, is placed at the feet; the duration of the wrapping is one and one-half hours. After that a bath of 91 degrees, while at the same time the neck is poured over with water of 59 to 73 degrees. This treatment is repeated after five or six hours. Should the condition of the patient become worse the treatment is to be repeated at once. Besides this bandages around the abdomen every two hours with a water temperature of 82 degrees, the bandages around the calves with water of 73 degrees, also every half hour soothing bandages around the neck with water of 73 degrees (as described in the article on Cancer) are to be recommended. Enjoy the fresh air by opening the windows, drink fresh water, avoid irritating food, and in case of constipation use the syringe to make the bowels move.

FELON.

Treatment.—Take often a “hand steam-bath” by holding the hand for some time over a pot filled with boiling water, the hand and pot being wrapped up in such a way that the steam cannot escape. After that.

bathe the hand in lukewarm water. During the night exciting bandages around the hand (as described in the article on Cancer), with separate compresses on the sick fingers, are to be applied. Every other day, and later every third or fourth day, let the patient take a bed steam-bath (as described in the article on Chicken-pox), also with separate compresses on the sick fingers. The sick fingers should be thoroughly kept clean and care should be taken to protect them from cold.

SYPHILIS.

Treatment.—Before all other things the food for the patient should not be spicy, nor should he eat meat; further he should enjoy the fresh air as much as possible and should sleep at open windows. The patient should daily take a steam-bath of about fifteen to twenty minutes, after that he should be wrapped up, and should later take a bath of 88 degrees. Instead of that daily, a full steam-bath or a three-quarter steam-bath (as described in the article on Chicken-pox), with following bath of 86 to 88 degrees can be applied. Bad cases have been cured by this treatment, combined with a strict diet, as mentioned above. Further, let the patient take, if possible, daily, two or three sitz-baths at 73 degrees (as described in the article on Cholera Morbus), each bath for fifteen to twenty minutes. When the genitals are inflamed, separate compresses are to be applied. In case the scrotum is inflamed, a suspensory is necessary. Points which discharge matter must be covered with wet linen, and above that a woollen patch is placed. The moist compresses are to be renewed, when necessary, day and night. The sick portions of the body get a bath twice or three times a day and must be carefully washed and kept clean; cleanliness is of the utmost importance. To strengthen the body, the rules of the restorative cure should be applied, as described in the article on Boils.

GOUT.

Treatment.—Avoid any irritating food, the best is that the patient accustoms himself gradually to a vegetarian diet. He ought to drink plenty of fresh water; also the juice of lemons dissolved in water. He should enjoy the fresh air as much as possible and sleep at open windows. He should take care that the bowels move regularly every day; otherwise he should use the syringe. When a painful attack of gout occurs, soothing bandages which contain much moisture (as described in the article on

Cancer) are placed around the aggrieved bones; when the bandages have been removed, wash the skin lightly with bare hands, afterward massage, first in a soft manner and gradually in a more and more effective way, then again soothing bandages. When the pain is great, the bandages should be made rather moist, so that they may be left on the skin for a longer time in order not to trouble the patient too much. During the free pauses, the patient should be brought daily to perspiration by means of a bed steam-bath of one and one-half to two hours (as described in the article on Chicken-pox), afterward a bath in water of 88 degrees, or instead of the bath, the whole body is rubbed off with water of 73 degrees. During and after the bath massage of the painful portions of the body is to be recommended. Sun-baths have also been applied to good advantage against gout.

Description of a Sun-Bath.—This bath has a very good influence in many diseases; when the patient is nervous, it should, however, be applied only with much caution. One form of a sun-bath is as follows: On a warm summer day the patient is laid upon a mattress upon which the sun shines, but at a place where there is no breeze or air, he is covered with a light cloth only and his head is protected by a parasol. He will soon begin to perspire; he lies first on the back and then on the stomach. After he has perspired, he is sprinkled with lukewarm water on the hind part of the head, the shoulders, the breast, the back and the legs; or the whole body is rubbed off with water. For some patients it may be of advantage to use cold instead of lukewarm water.

JAUNDICE.

Treatment.—Avoid any irritating food; the best is that the patient should live for some time on a strictly vegetarian diet, vegetables, fruits, bread; no meat, fat or eggs. Much fresh air, the windows of the sleeping-room being kept open; daily two to four bandages around the abdomen, with water of 73 to 83 degrees (as described in the article on Worms), each bandage for about two or three hours. Further, the whole body should be rubbed off once or twice daily with water of 73 degrees, or instead of that a bath in water of 91 degrees. One may also apply for some time bed steam-baths (about three per week) with following bath of 91 degrees or rubbing off of the body with water of 73 degrees. In more serious cases the rules of the restorative cure (see the article on Boils) should be considered. In case that gall-stones are present the patient must drink

plenty of water. Further, when there are symptoms of inflammations, compresses should be placed near the liver, the temperature of the water being 78 to 82 degrees. These compresses are to be replaced or removed according to the wishes of the patient.

MUMPS.

Treatment.—When the swelling of the glands is due to bad blood the principle of the cure must be to help nature in bettering the blood. Just the glands are used by nature for purifying the blood and removing morbid matter. Therefore, the activity of the glands should be supported by steam-baths, baths in the tub, wrapping, washing, and so forth; further the circulation of the blood should be regulated by suitable massage; finally the quality of the blood should be bettered by good and healthy, but not irritating food, and by fresh air at day and night.

For acute mumps the following rules of cure may be given: Daily a bed steam-bath (as described in the article on Chicken-pox), with separate compresses around the neck, for one hour or for an hour and a half, and besides extra compresses around the neck with water of 68 to 73 degrees, well covered with woolen cloth. When they become hot so that the patient feels uncomfortable (about every thirty or forty-five minutes), they are to be replaced. Afterward the whole body is rubbed off with water of 73 degrees. A vegetarian diet is to be recommended.

RHEUMATISM.

Treatment of Acute Rheumatism.—Daily a bed steam-bath (as described in the article on Chicken-pox) for one hour or an hour and a half. Before this bed steam-bath massage first of the sound, then of the sick portions of the body with warm hands, moistened with fresh water. After the bed steam-bath the whole body is rubbed off with water of 66 degrees, with massage of the sick portions. The latter also receive often soothing bandages (as described in the article on Cancer); when they are removed cold rubbing and massage of the sick portions with bare hands. Take care that the bowels move regularly. Apply during the night a bandage around the abdomen (as described in the article on Worms). In case the inflammation and the pain are very great it is better not to use massage in the first time.

Avoid irritating food, strictly vegetarian diet is to be most recom-

mended. Avoid all exciting drinks, such as coffee and alcoholic drinks. Breathe fresh air in the house and outside; sleep at open windows. Drink often water and lemonade in large quantities.

SCARLET FEVER.

Treatment.—Separate the patient from the healthy people. Take care that the formation of the scurf on the skin goes on regularly so that the body is supported by the treatment in removing the morbid matter. Bandages around the middle part of the body and around the legs with water of 73 degrees (as described in the article on Cancer). When the patient has a high fever, wrap up the body (as described in the article on Chicken-pox) and put a moist towel around the neck (as in the case of diphtheria); also a bath of 86 to 91 degrees. To support the body in removing the morbid matter, apply bed steam-baths with following lukewarm baths (as described in the article on Chicken-pox). Avoid irritating food, eat much fruit, drink much fresh water, take great care not to catch cold, especially during the time the scabs fall off; but fresh air is to be brought continually to the room by opening the window. In case of constipation, apply the syringe to make the bowels move. Be careful for some time after the patient has recovered in order to prevent a relapse.

SMALL-POX.

Treatment.—Separate the patient from the healthy people. Take care to have fresh air in the room where the patient lies. Greatest cleanliness, frequent change of the underwear, daily washing of the whole body. Avoid any irritating food. Drink often fresh water, also lemonades of fruit juices. Further three-quarter or full packing (as described in the article on Chicken-pox), the water used for this purpose has a temperature of 68 to 86 degrees. Further an extra compress around the middle part of the body. This packing is made up as follows: On a mattress is placed a large woolen cloth, above that a large linen cloth which had been put into water of 68 to 86 degrees, and had been well wrung out. These two cloths are for the three-quarter or full packing. On the large linen cloth, where the middle part of the body will lie, place a large towel which has been moistened in the same water and is used as extra compress.

Put above this the patient. Wrap the towel around the middle part of his body, then the large moist linen cloth around his body, and wrap him finally up in the large woolen cloth. The duration of this packing is

one hour or an hour and a half or even more, in general as long as it is comfortable to the patient. Afterward a mild washing of the whole body or a bath of 86 to 91 degrees with a following shower-bath. After this the patient is dried and brought to bed, or he is not dried, but, wet as he is, he is covered by a dry linen cloth, brought to bed and well covered with the blankets. As soon as the fever has again increased, this treatment is to be repeated. To prevent as much as possible the formation of scabs in the face, put continually compresses of 66 to 73 degrees on head and face.

WHOOPING-COUGH.

Treatment.—Separate the patient from the healthy people, as the whooping-cough is contagious. Daily one to two lukewarm (82 to 93 degrees) three-quarter bed steam-baths (as described in the article on Chicken-pox), with an exciting bandage around the shoulders (as described in the article on Cancer), of a duration of one and a quarter to one and a half hours; afterward a bath of 88 to 91 degrees is given or the whole body is rubbed off with water of 73 degrees. During the night a bandage around the abdomen (as described in the article on Worms) is applied; the water used for this purpose has a temperature of 82 degrees; the bandage must be very well covered with a woolen cloth. It is also to be recommended to take a small drink of moderately cold water after every attack of cough. Fresh air day and night; the windows of the sleeping-room should be open. Vegetarian diet, in which all irritating food is avoided. Let the patient eat fruits and slimy food, such as water gruel, barley-water, and so forth; further, let him drink lemonades of fruit juices. Meat should be avoided. Change of air, or the removal of the sick child from the town where there is an epidemic of whooping-cough, is also to be recommended.

MEDICAL SCHOOLS

PART IX.

ELECTRICITY IN MEDICINE.

Application.—At first electricity was thought to be useful for only that class of diseases due to the nerves and it was generally applied by means of the galvanic battery, which was made in various forms for home use. But the treatment has grown to embrace a variety of diseases.

Dyspepsia.—Electricity is found to be an excellent treatment for dyspepsia on account of the relief it affords to both the physical and mental conditions that accompany the disease. It gives tone to the appetite, cures sleeplessness, removes distress after eating, strengthening the powers of digestion and drives away despondency and gloom.

Fits, Epilepsy, Falling Sickness.—These diseases being nervous in character yield satisfactorily to the electric treatment. Any nervous disease is more readily reached by electricity than by other remedies and some remarkable cures have been placed to its credit.

Anemia.—This means want of blood and the patient becomes pale and weak. The disease is a general condition, and as a cure electricity is found efficacious. It stimulates the same as oxygen, produces more red corpuscles in the blood, imparts increased vital energy to the blood currents and does away with languidness and depression.

Consumption.—When this disease is traceable to catarrhal inflammations, faulty secretions and impaired nutrition, electricity is found beneficial as a purifier of the blood, a quickener of circulation and a preventive of the tuberculous deposits in the lungs. It is even claimed that by its stimulating effects on nutritive functions it builds up that part of the system which has gone to decay.

Catarrh.—Those skilled in electric-healing claim that electricity is almost a specific for the cure of this disease and they have placed many cures to its credit. The grip and hay-fever, being catarrhal in their nature, are also treated effectively by electricity.

Nervous Debility.—This is produced by a constant drain upon the nervous forces and fluids of the system. Its symptoms are loss of memory, dimness of sight, constipation, gloominess, impoverished blood, and



X-Ray plate showing fracture of the forearm.



Application of Electric Massage to the Face



Treatment of Abdomen with the Electric Battery

so forth. The modern electro-therapeutic treatment is applied with great success in this distressing disease and many permanent cures are claimed.

Neuralgia.—This painful nervous disease yields to but few treatments, but it is claimed that the electric treatment can be relied on in all cases, acute or chronic, to give almost instant relief and effect a cure.

Sciatica.—This is only another form of neuralgia and is also amenable to treatment by electricity.

Rheumatism.—In modern electro-therapeutics it is found that rheumatism yields readily to the electric treatment, the claim being that the disease is due to a storing of waste material in the body which can only be removed through the circulation, a process which electricity effects when skilfully applied.

Diabetes.—In this terrible and baffling disease the electrical treatment has been found efficacious, not only arresting the disease but producing cures. The claim is that it stimulates the system and so fortifies nature that the disease is finally overcome.

Kidney Diseases.—In diseases of the urinary tract producing weakness of the organs, extreme nervousness, milky or cloudy urine, pain in the back, frequent, scanty or painful urination, the electric treatment is found to have a powerful tonic effect on the organs, enabling them to reassert their functions and in the end eradicate disease.

Paralysis or Palsy.—This disease, due to an overworked or debilitated nervous system, is amenable to the electric treatment, and it has been found that such treatment is about the most effective that can be used.

Conclusions.—It will be seen that while many of the diseases curable by electricity are outside of the strictly nervous class, yet all are more or less associated with that class, so that after all, the merits of the electric treatment may be said to rest largely on its stimulus to and power over the nervous system.

THE X-RAY

An astounding electrical revelation came during the last years of the nineteenth century through the discovery of the **X**, or unknown, or Roentgen, rays. In 1894 Hertz showed that the cathode rays of the Geissler tubes would penetrate thin sheets of metal placed within the tubes. Subsequently Paul Lenard showed that the cathodic ray could be investigated as well outside of the tube as within it, and secured some photographic effects. Professor Roentgen took up the subject, and, in 1896, fairly set the scientific world aflame with the announcement that the cathodic, or **X**, ray would not only penetrate solid substances. **but**

deposit solid substances within or behind those other substances. He invented a photographic instrument to take advantage of his discovery, and by means of it, electricity was turned to the account of photography, pictures being possible of the interior of the human body, and of any foreign substance therein.

The discovery and application of the X-ray has proved of immense value to medicine and surgery. By its means the physician is enabled to carry on far-reaching diagnoses, and to ascertain with certainty the whole internal structure of the human body. Fractures, dislocations, deformities and diseases of the bones may be located, and their character and treatment decided upon. In dentistry the teeth may be photographed by means of the X-ray, even before they come to the surface, and broken fangs and hidden fillings may be located. Foreign objects in the body, as bullets, needles, calculi in the bladder, etc., may be located, and the surgery for their safe removal greatly simplified. The beating of the heart, movement of the ribs in respiration, and outline of the liver and other organs may be exhibited to the eye. It has even been suggested that the X-ray may become an agency for destroying the bacilli which produces disease in the human body. Verily the X-ray opens the field for the grandest of electrical possibilities.

MEDICAL SCHOOLS

PART X.

MENTAL HEALING

No medical work is complete that deals only with drugs. Many theories of healing deal with the mind alone. The mind, which tells us of all our sufferings, is the path along which relief and recovery often travel.

Mesmerism.—This is a peculiar nervous condition in which the body and mind of an individual are supposed to be influenced by a mysterious force emanating from another person.

Hypnotism.—This is a condition artificially produced in which the person is apparently asleep and yet acts in obedience to the will of the operator as regards both motion and sensation.

Mind Cure.—This is the cure of disease by means of the mind alone.

Christian Science.—This teaches that those who really follow Jesus should follow Him in healing, which can be done through the mind.

Telepathy.—This is a power of mental vision or of mental hearing, or of a mental production of other sensations, by which the individual becomes aware of events happening in another part of the world from where he is, or can tell of the existence of objects which could not affect at any time any of his bodily senses.

HISTORY OF MENTAL HEALING.

It is natural that the apparent power of influencing the bodies and minds of others should attract much attention and be eagerly sought after for purposes of gain, or from love of the wonderful and supernatural, or for the cure of diseases. So, while many have studied mental healing in a scientific spirit, more have done so as quacks and charlatans for the mere purpose of making money.

Modern Study of Mental Healing.—Recently, however, physicians and other scientists have set about investigating the subject and giving it

much study and attention. The result has been that animal magnetism, as this power is sometimes called, has been put on a level with other sciences and has helped in relieving the sufferings of humanity.

Ancient Mental Healing.—In all ages there have been certain persons who could cure disease by a touch of the hand and who could communicate a healing virtue to the sufferer. Among the Chaldeans, the Babylonians, the Persians, the Hindus, the Egyptians, the Greeks and the Romans many of the priests effected cures or threw people into deep sleeps in the shades of the temples. During these sleeps the sleeper sometimes had prophetic dreams. Ofttimes they could produce effects like those now referred to animal magnetism.

Supernatural Influence.—Such influences were held to be supernatural, and they added greatly to the power of the priests. In the middle of the seventeenth century there appeared in England several persons who said they had the power of curing diseases by a stroke of the hand.

King's Evil Cure.—Valentine Greatrakes, in the County of Waterford, Ireland, attracted great attention by his power of curing the king's evil or scrofula. Thousands of sufferers crowded to him from all parts of the kingdom. About the middle of the eighteenth century John Joseph Gassner, a Roman Catholic priest in Swabia, claimed that the majority of diseases arose from demoniacal possession, and could only be cured by exorcism. He believed his power to be altogether supernatural and connected with religion.

MESMERISM.

The Name.—Mesmerism was named in honor of one of its early investigators. Friedrich Anton Mesmer was born at Weil, on the Rhine, on May 23, 1733. He studied medicine at Vienna, took his degree and commenced to practice.

Mesmer's Belief.—He was always very much interested in astrology, and he believed that the stars exerted an influence on beings living on the earth. At first he thought this supposed force was the same as electricity. Afterward he believed it to be identical with magnetism. From this he deduced the theory that stroking diseased bodies with magnets might bring about a cure. He published his first book in 1766. Ten years later, while in Switzerland, with Gassner, he observed that the priest effected cures by manipulation alone, without the use of magnets.

Cure by Touch.—This led Mesmer to discard the magnets and to try

to cure without them. He found he could relieve suffering by the mere touch of his fingers. He therefore supposed that some kind of occult force resided in himself by which he could influence others. He held that this force permeated the universe and more especially effected the nervous systems of men.

Marvelous Cures.—In 1778 he moved to Paris, and in a short time the whole city was thrown into a state of great excitement by the marvelous effects of mesmerism. Mesmer made many converts.

Paris Inflamed.—Many controversies arose, however. The whole medical faculty of Paris rose in indignation and stigmatized him as a charlatan. But still the people crowded to him. He was offered 20,000 francs by the French Government for the disclosure of his secret, but he deliberately refused the offer. He received private rewards of large sums of money.

Mesmer's Office.—Everything about his office was enveloped in mystery. His consulting apartments were dimly lighted and hung with mirrors. All was quiet and still, save for the soft strains of music that occasionally were heard. All sorts of odors were wafted through the room.

Mesmeric Methods.—The patients sat around a kind of vat, in which various chemical ingredients were concocted or simmered over a fire. Holding each other's hands, or joined by cords, the patients sat in expectancy. Then Mesmer, clothed in the dress of a magician, glided amongst them, affecting one by a touch, another by a look, while he made passes with his hand at a third. The effects of this differed greatly, but all were benefited. Nervous ladies became hysterical or fainted. Some men were seized with convulsions and palpitation of the heart.

Franklin's Investigation.—The French Government appointed a commission of physicians and members of the Academy of Sciences to investigate these phenomena. Benjamin Franklin, the great American philosopher, diplomat and scientist, was a member of this commission. Franklin and his fellow commissioners drew up an elaborate report. They admitted many of the facts, but they contested Mesmer's theory that there was an agent called animal magnetism. They believed the effects were due to physiological causes.

Mesmer's Fate.—While Mesmer himself was honest in his belief, he had many imitators who brought the science into disrepute. They were a lot of impostors who fooled the people for the sake of gain. Even Mesmer himself was denounced as an impostor and a fraud. He finally had

to leave Paris, and died at Meersburg in Switzerland, on the 5th of March, 1815.

The New School of Mesmerism.—Mesmer left many disciples who investigated the subject in a scientific spirit. Chief among these was the Marquis de Puysegur. This nobleman revolutionized the art of mesmerism. He showed that many of the phenomena might be produced by gentle manipulation, causing sleep, and without the mysterious surroundings that Mesmer, himself, employed.

Spread of Mesmerism.—Since that time mesmerism has been studied by many. Each year more and more is known of it and greater use made of this knowledge. The power of mesmerism is no longer confined to France and Switzerland, nor is it exercised only by Mesmer's followers. There is scarcely a town in this country that does not contain at least one inhabitant who can heal by the stroke of the hand. Few, indeed, are those who have not seen or heard of one possessing this peculiar power.

The Mesmeric Power.—All who exercise this influence do not have power in the same degree. Some, of course, are noted for their magnetism and travel from city to city curing hundreds by their touch. Many, however, are not known outside their native village, where their gentle stroking is eagerly sought for by those suffering from terrific headaches, which nothing else can relieve. Not a few possess this power in a small measure without recognizing it as mesmerism. Many a throbbing, fevered brow has been soothed by a gentle mother's hand. How often has the touch of magnetic fingers done more than all the medicines the doctor has ordered.

Mesmerism in the Household.—Those who find that they possess this soothing property of animal magnetism, in ever so slight a degree, should endeavor to cultivate and increase that power by proper exercise. When one discovers that a light touch of the hand will cause an electric thrill which seems to drive away pain and suffering, that person must try again and again and find what strokings will bring about the best results.

Electricity in the System.—Some are born with more electricity in their system than is possessed by the average mortal. This can be seen by combing one's hair in the dark, when bright sparks will fly. Often rubbing the ends of the fingers together will bring a spark large enough to light a gas burner. If this electricity or magnetism is developed in the proper channels it will make its possessor one of the most sought after of mortals.

Mesmerism in Disease.—There are many diseases that medicines cannot cure. Some to whom medicines give no relief can be cured by the current from the electric battery. But many sufferers are turned away with the terrible verdict that nothing can be done for them. In not a few of these cases animal magnetism or mesmerism has effected a cure.

Mesmeric Cure of Headache.—In those cases of sick headache where drugs have only increased the agony, a few light touches of a magnetic hand have caused the pain to disappear, and sweet, refreshing sleep to take its place.

HYPNOTISM.

Name and Principle.—In the year 1841, a surgeon in Manchester, England, James Braid, began the study of what he called the pretensions of animal magnetism or mesmerism. He started without believing in it at all, calling himself “a complete skeptic” regarding all its phenomena. While investigating this subject he discovered that by a fixed and abstracted attention of the mind and sight on one object he could artificially produce a peculiar condition of the nervous system. To this condition he gave the name of neuro-hypnotism or nerve sleep; from the Greek *ζευρον*, nerve and *υπνηοζ*, sleep. Later the part neuro was dropped and the term hypnotism came into general use.

Hypnotism Explained.—At a meeting of the British Association in Manchester, on June 29, 1842, he read an essay on the cure of disease by hypnotism. In the following year his book came out, in which he reported a great number of cases in which he had successfully applied hypnotism in the relief and cure of disease.

Hypnotism a Science.—Since Braid started his investigation scientists in every country have studied the subject until now hypnotism is considered one of the national sciences.

Generally Taught.—In every college of the land hypnotism is taught and in every large city that art is practiced. It is not astonishing that this subject has caused such study among the scientists and has excited such wonder among all who have witnessed its workings.

Phenomena.—To think that by holding up a bright object or by waving a hand one person can put another so completely in his power that the victim not only acts but even thinks as the operator desires. If the operator tells his patient to walk across the room the patient shrieks in terror at what he believes is a wild beast.

HOW HYPNOTISM IS PRODUCED.

Manner of Hypnotizing.—The usual method of inducing the hypnotic state is to cause the person operated on to stare fixedly at a bright object, such as a glittering piece of glass, or a polished watch charm, or the shining steel of a penknife. This object is held at from eight to fifteen inches from the eyes in such a position above the forehead as will strain the eyes and eyelids.

Effect on Eyes.—The operator may stand in front of, to one side of or behind the patient. As the patient strains to see an object so near it will be noticed that the pupils, the little round dots in the middle of everyone's eyes, are at first very small. You can see this whenever a person tries to look at a near object.

Enlargement of Pupils.—In a short time, however, the pupils will begin to grow larger. It is then that the operator makes a few passes over the face without touching it. The eyelids then close. Or the operator may gently close them with the tips of the fingers, at the same time very gently stroking the cheeks. Often a twitching of the eyelids may be observed when they are closed. The eyes may afterward become widely opened.

The Hypnotic State.—The patient is now in a sleep-like condition. The limbs often remain in almost any position in which the operator may place them. At the same time the patient may now be caused to make movements in obedience to the commands of the operator. He must also act according to the ideas suggested to him.

Hypnotic Illusions.—Thus, he may eat a raw potato with relish, apparently under the impression that it is an apple. He may make wry faces on drinking a glass of water when told that what he is taking is castor oil. He may ride on a chair or stool as in a horse race. He may fight with imaginary enemies or show tolerance of affection to imaginary friends. In short, all kinds of actions, even of a ridiculous and degrading character, may be done by the patient at the command of the operator.

Effects on Muscles.—Another class of phenomena consists in the production of stiffness or rigidity of certain muscles or groups of muscles, or even of the whole body. For example, on stroking the forearm it may be rigid while bent or stretched out. The knee may be strongly bent with the muscles stiff, hard and immovable. The muscles of the trunk may become as rigid as to allow the body to rest like a log with the head and heels on two chairs. In this position it is so stiff and rigid that it can bear the

weight of the operator sitting upon it. The patient may be made to hear sounds that don't exist and to see colors and feel various sensations which exist only in the patient's mind.

Waking Up.—The patient may remain in this condition for an hour or more. He may then be roused by holding him for a few minutes and blowing gently into the eyes; sprinkling water, making upward passes or simply saying "wake up" are other methods employed for awakening.

After the State.—Usually the patient has a vague recollection, like that of a disturbed dream. Sometimes, however, the patient distinctly remembers all that has happened and even feels ashamed at having been compelled to do ridiculous actions.

Who May Be Hypnotized.—Certain persons are more readily hypnotized than others. It has also been observed that, once the condition has been successfully brought about, it can be more easily induced a second time, a third time more easily than a second, and so on. Finally the patient may be so under the will of the operator that a fixed look, or a wave of the hand, may throw him at once into the condition. M. Liégeois has hypnotized some of his subjects by telephone. Children under three or four, on the other hand, and insane persons, especially idiots, are unusually hard to hypnotize.

THE SYMPTOMS OF THE TRANCE.

Loss of Memory.—In the earlier stages of hypnotism the patient remembers what has happened, but with successive sittings he sinks into a deeper condition, which is commonly followed by complete loss of memory. On waking he can recall nothing at all.

Return of Memory.—But just as we may be reminded of a dream by meeting persons or objects that figured therein, so on being prompted the hypnotic subject will often remember what happened in his trance. One can often make them remember by merely telling them during the trance that they shall remember.

Suggestibility.—The patient believes everything his hypnotizer tells him and does everything the latter commands. The patient may do things over which the will has normally no control. He will redden, turn pale, sneeze, become hot or cold, and so forth.

Effects on Motion.—Tell the patient that he cannot open his eyes or mouth, cannot unclasp his hands or lower his raised arm, and he will be immediately powerless to do so. Say his arm is paralyzed and it will fall limp at his side.

Hallucinations and Delusions.—You can make your subject think he is freezing or burning, itching or covered with dirt, or wet. He can be made to drink a cup of vinegar for a glass of champagne and may become drunk in consequence. A chair will be a lion, a broomstick a beautiful woman. The subject can be made to believe that his personality is changed into that of a baby, of a street boy or of Napoleon. He may even be transformed into a beast or an inanimate thing like a chair or a carpet.

Sensation Abolished.—Legs and breasts may be amputated, children born, teeth extracted and the most dangerous operations undergone without the patient feeling any pain. In the same way neuralgias, toothaches and headaches may be cured. In one case the sensation of hunger was abolished and the patient took no nourishment for fourteen days. A subject may be made blind to a certain person, and to everything pertaining to him. What he says is not heard and his contact is not felt.

Acuteness of the Senses.—The sense of touch is so delicate that a subject after simply poising on her finger tips a blank card drawn from a pack of similar ones can pick it out from the pack by its weight. A coin from the operator's pocket has been repeatedly picked out by the subject from a heap of twenty others by its greater weight. A subject may be made to hear a watch tick or his operator speak in a distant room.

Changes in the Tissues.—In certain subjects a congestion, a burn, a blister, a pimple or a bleeding from the nose or skin may be caused by a mere suggestion.

After-Hypnotic Suggestions.—These are given to the patient during the trance to take effect after waking. They succeed with a certain number of patients, even though the act is to be performed months or even a year after the command is given. In this way one can make the patient feel a pain or be paralyzed, or be hungry or thirsty, or do something ridiculous after coming out of his trance. In these cases he forgets that the suggestion was given him in a previous trance. He thinks he is acting of his own free will.

MIND-CURE.

The Mind and Disease.—It is well known that the mind has a great influence on matter. Physical changes have been wrought by mental states. Diseases have been caused and have been cured by the influence of the mind. Many instances can be quoted illustrating this fact. Persons have been shot dead with blank cartridges. An Edinburgh criminal died from

a supposed loss of blood when it was only warm water that was made to trickle over his arm after it was badly pricked by the surgeons.

A Case in Point.—Dr. Moore mentions the case of a lady who died with every symptom of hydrophobia under the mistaken notion that she had been bitten by a rabid dog when it was demonstrable that the animal had only torn her dress.

Another Illustration.—One of the most instructive and satisfactory experiments on record showing the influence of the mind in the generation of fatal diseases is that tried upon four Russian criminals who had been condemned to death for political offenses. The cholera was raging at the time in Russia, and the criminals, while ignorant of the fact, were made to occupy beds on which patients had recently died with the disease. Although thus exposed to the contagion not one of them exhibited the least symptom of the malady.

The Second Experiment.—After this they were told that they must sleep on beds that had been occupied by persons who had been sick with the cholera. But in fact the beds were entirely new and had never been used by anyone. Their fear proved to be a more powerful influence than the contagion, for three out of the four took the disease in its most fatal form and died in four hours after the attack.

Effect of Faith.—The influence of faith in the cure of disease is well illustrated by a fact mentioned in Paris's *Life of Sir Humphrey Davy*. In the early period of his scientific career, Davy was assisting Dr. Beddoes in his experiments on the inhalation of nitrous oxide. Dr. Beddoes, thinking the oxide must be a specific for paralysis, a patient was selected for trial and placed under the care of Sir Humphrey. Before administering the gas, wishing to ascertain the temperature of the palsied man's blood, a small thermometer was inserted under his tongue. The paralytic, wholly ignorant of the process to which he was to be subjected, but deeply impressed by Dr. Beddoes with the certainty of its success, no sooner felt the thermometer between his teeth than he concluded that the talismanic influence was at work, and in a burst of enthusiasm declared he felt its healing power through his whole body.

Carrying on the Experiment.—Here was an opportunity to test the influence of the mind in the cure of palsy that was not to be lost. The gas was not used, but on the following day the thermometer was again employed with equally marked effects, and at the end of two weeks the patient was discharged cured, no remedy of any kind having ever been

used except the thermometer. His faith made him whole, not by accident, nor by a miracle, but by an invariable law of our being.

The Power of Faith.—Faith is a spiritual force that has accomplished wonders. It is an actual psychological or spiritual force. To believe that we can do a thing, especially if that faith is the result of an understanding of nature's laws, empowers us to do it. To believe that we are well, or that we are becoming so, excites a spiritual force within us, that goes far toward making us so.

Faith in Remedies.—If we firmly believe that a certain remedy will cure us of a diseased condition, though it has no chemical adaptation to the removal of the disorder, we shall be benefited by it. Disease has often been cured by faith alone in the patients.

The Bible Instance.—The familiar case of the woman mentioned in the Gospel history, who had suffered for twelve years from a dangerous uterine hemorrhage, baffling the skill of various physicians, is known to all.

Requisites in Mind-Cure.—There are two things in a patient necessary to the mind-cure. One is a desire to get well. The other is a faith in the efficiency of the remedial agency.

How Mind-Cure Acts.—Through the grand system of sympathetic nerves each organ in the body is connected with every other, and the whole with the mind. There is no part or function which cannot be affected just as certainly, though perhaps not so sensibly, by the will-force, as the muscles of the arm.

The Nerve Conductor.—The pneumo-gastric nerve, according to Evans, which is distributed to all the organs within the cavity of the trunk, is the appointed conductor through which the mental force is communicated to them and influences their action. We have only to concentrate the mind's force upon any of the internal organs, as the stomach, liver or intestinal canal, and through the pneumo-gastric nerve its workings will be influenced.

Mind-Cure in Indigestion.—If the stomach has become exhausted of its nerve force so that it fails to do its work and the food in it is a motionless and fermenting mass, according to Evans, it can be made to obey the command of the sovereign mind. Concentrating the mind upon it, bringing our spiritual force to a focus, we may calmly and powerfully will it to proceed to business and attend to its proper work, and it will obey us as readily and as promptly as a good servant yields to the order of his employer. The same effect may be produced upon the action of the intestinal canal.

Mind-Cure for Cold Extremities.—Mental-curists claim that if the

blood and vital heat do not circulate through the extremities, which feel a deadly coldness, it is because the spiritual life does not permeate the tissues. We may send the spiritual principle there, by the will force, to distribute to the negative parts their share of the vital flame.

Every Man His Own Physician.—A little practice, according to Evan, will render the mind-cure easy and natural, and we can become our own physician and healer without the use of actual medicine.

TELEPATHY.

Mind-Sight.—We know that the somnambulist or sleep walker, in the darkness of the night, with his eyes closed, can climb dizzy heights and walk along dangerous precipices with ease and apparent safety. This power thus exhibited, according to Prof. Barnes, is evidence that there is a medium adapted to the sight of the mind which enables it to see things beyond the sense of ordinary sight. Many instances have occurred where persons in a natural state have discovered that they possess the power to divine the thoughts of others.

Division of Telepathy.—Telepathy or clairvoyance may be considered under two heads, namely, sympathetic and independent.

Sympathetic Telepathy.—A sympathetic clairvoyant takes on the feelings of the one with whom he is in sympathy. He very often feels, sees, hears, tastes and smells that which the other party does.

Telepathy in Disease.—He is sometimes able to locate pain and disease immediately through this wonderful faculty. Barnes gives the following examples of sympathetic telepathy: "I blindfolded a gentleman, placed my hands in contact with his, while the third party pricked me at various points with a sharp instrument. The subject would feel the pain immediately at the point upon his own body corresponding to the exact location where the instrument was being used upon me.

"I know a dentist in Western New York who is so sympathetic that he suffers whenever his wife does. He has the same feelings and never improves until she begins to recover. A pupil of mine, a contractor, who is exceptionally strong, told me that the above condition existed between himself and wife, and that the distance made no difference, as he was hundreds and sometimes thousands of miles away from home."

Independent Telepathy.—Independent clairvoyants are able to get information independently of any sympathetic relation, apparently. They are able to separate the soul from the body, as it were, and to travel to

foreign countries. Time and distance seem to cut no figure with them. Prof. Barnes recites many startling instances of this kind of telepathy.

Practical Application of Telepathy.—The usefulness of telepathy lies in the knowledge of its practical application. Understood and applied, it is a most valuable and valued instrument in the hands of the learned physician or in any of the walks of life.

CHRISTIAN SCIENCE.

Mortal and Divine Mind.—In Christian Science a great distinction is drawn between mortal mind and the Divine mind. Mortal mind is part of our material being, it belongs to matter, and it gives us our feelings of pain, sickness, error and sin. The Divine mind is spiritual. It is part of that Divine Spirit that fills the universe. It is God. Inasmuch as the Divine mind is God and fills the universe, it is good and truth. There can be no sin or sickness in divinity.

Nature of Sickness.—Sickness is merely a false impression conveyed by erring mortal mind. The way to cure both sin and sickness is by substituting the Divine mind for mortal mind. This can be accomplished by a proper realization of the Scriptures in their true meaning, according to Christian Science, until the seeker after truth separates the material from the spiritual, and thereafter is ruled by the Divine mind.

Principles of Christian Science.—The fundamental propositions of Christian Science as laid down by Mrs. Eddy in book "Science and Health," are summarized in the four following, to me, self-evident propositions. Even if read backward, these propositions will be found to agree in statement and proof:

1. God is all.
2. God is good. Good is mind.
3. God, Spirit, being all, nothing is matter.
4. Life, God, omnipotent good, deny death, evil, sin, disease.
Disease, sin, evil, death, deny good, omnipotent God, life.

The evidence of the physical senses often reverses the real science of being and so creates a reign of discord, assigning seeming power to sin, sickness and death; but the great facts of life, rightly understood, defeat this trend of errors, contradict their false witnesses and reveal the Kingdom of Heaven, the actual reign of harmony on earth. The material senses' reversal of the science of soul was practically exposed by the demonstrations of Jesus nineteen hundred years ago, yet this so-called

sense still makes mortal mind tributary to mortal body, and ordains certain sections of matter, such as brain and nerves, as the seats of pain and pleasure, whence matter reports to this mind its status of happiness or misery.

Revelation of Christian Science.—The revelation of Christian Science consists of two parts:

1. The rediscovery of the Divine science of mind-healing, through a spiritual sense of the Scriptures and through the teachings of the Comforter, as promised by the Master.

2. The proof, by present demonstration, that the so-called miracles of Jesus did not specially belong to a dispensation now ended, but that they illustrate an ever-operative Divine principle.

Prayer and Healing.—“The prayer of faith shall save the sick,” says the Scripture. What is this healing prayer? A mere request that God will heal the sick has no power to gain more of the Divine presence than is always at hand. The only beneficial effect of such prayer for the sick is on the human mind, making it all more powerful on the body through a blind faith in God.

Right Prayer.—In order to pray aright we must enter into the closet and shut the door. We must close the lips and silence the material senses. In the quiet sanctuary of earnest longings we must deny sin and plead God’s allness. We must resolve to take up the cross and go forth with honest hearts to work and watch for wisdom, truth and love. We must “pray without ceasing.” Such prayer is answered, inasmuch as we put our desires into practice. The Master’s injunction is that we pray in secret and let our lives attest our sincerity.

Method of Treatment.—Mrs. Eddy advises the following mode of treatment:

“Always begin your treatment by allaying the fear of patients. Silently reassure the patient as to his exemption from disease and danger. Watch the result of this simple rule of Christian Science and you will find that it alleviates the symptoms of every disease. If you succeed in wholly removing the fear your patient is healed.”

Winning the Battle.—The great fact that God wisely governs all, never punishing aught but sin, is your standpoint, whence to advance and destroy the human fear of sickness. Plead the cause for science and in truth, mentally and silently. You may vary the argument to meet the peculiar or general symptoms of the case you treat; but be thoroughly persuaded in your own mind and you will finally be the winner.

MEDICAL SCHOOLS

PART XI.

HUMAN SCIENCE

PHRENOLOGY, PHYSIOGNOMY AND PALMISTRY.

“If any science, art or work has for its beginning, its object and its end the improvement of humanity and the advancement of the race, then that work, art or science deserves the encouragement and recognition that is its due.”—*Cheira*. There is more in this science than may at first sight appear.

Phrenology.—We know that certain bumps upon the head indicate certain characteristics of human nature.

Physiognomy.—The color of the hair and eyes, the form of the mouth, of the chin and nose, the shape of the ears, afford certain and infallible indications of temperament.

Palmistry.—The shape of the hand and fingers relates to the hereditary influence of character and disposition; the lines and markings of the palm to the event of past, present and future.

OBJECT OF HUMAN SCIENCE.

“Know thyself” was the grand motto of the ancients.

It is still the watchword of a modern and progressive world.

By the knowledge of self we may master self, and by the improvement of self we may also improve mankind.

Mentality.—Mentality is the ultimate aim and goal of men and of all things on earth. Mental science, therefore, constitutes the embodied summary of all science.

Uses of the Science.—It is the purpose of this article to give the latest results of the researches of scientists in the subjects of phrenology, physiognomy and palmistry. Only by the study of these great subjects

can we thoroughly know ourselves. Without it we can never understand the natures of our children. Ignorance of it means ignorance of mankind.

Opponents of Human Science.—Ignorance is the father of opposition. No new discoveries were ever made that did not meet with opposition, and this opposition was strongest in those that knew the least about the new discovery. Columbus was bitterly persecuted for daring to suggest that the earth was round. Galileo took his opponents to the famous tower of Pisa and let fall at the same moment from its top two weights, a small and a large. Although these men saw both weights reach the ground at the same instant they refused to believe their eyes, and held fast to the old Aristotelean theory that the heaviest of two bodies would always drop to the ground first.

Opposition Without Weight.—The men who are the first to oppose a new science are those who are learned in another science, and because they are known to be wise, their opinion has great weight, although they may have devoted no study at all to the new science. Physicians, especially, are treated in this unreasonable way by the ordinary populace.

Readings of Character.—A man sees, perhaps, a strange experiment in hypnotism or he may have his character accurately read from his head, his face or his hand. He goes to his physician, and because that physician, who probably has never devoted five minutes' study to any of these subjects, pronounces such things impossible, the patient also refuses to believe in them. So he goes away and tells his acquaintances to pooh-pooh the idea, because Dr. So-and-so does not believe in it.

Human Mysteries.—It is recognized by all physicians that there are hundreds of mysteries in medicine as yet unfathomed. How much more is this so in regard to the mysteries of life and nature, which few have penetrated?

Growth of Hypnotism.—Not a great many years since almost every physician declared that hypnotism was impossible. To-day the medical profession recognizes hypnotism as one of its most important studies.

Importance of Palmistry.—For years doctors ridiculed palmistry. To-day they admit that diseases are indicated in a marvelous manner by the hand. Almost all medical men admit now that the different formations of nails indicate different diseases, and that it is possible from the nails alone to predict that the subject will suffer from heart disease, paralysis, consumption, and so on. So it is with physiognomy.

Detecting Ailment.—A disease often has what physicians call its

facies, an expression by which the trained eye can detect the character of the ailment.

Cheira says: "I respect doctors as a body of educated men; but I do not respect the idea that they should be the appointed judges of such matters as telepathy, mesmerism, clairvoyance, and so on, without any other qualification but that of having M. D. to their names."

What Doctors Can Tell.—How a doctor treats his patient and the way a phrenologist or palmist treats his client.

In the first place a doctor has a recognized science to go by. He has the experience of thousands of years back of him. Scientific instruments of precision and the most modern improvements are at his command. Yet how many can tell the patient what he is suffering from, unless the patient first tells the doctor all about himself and his symptoms? Even then the physician must often listen and feel and pound before he will express an opinion. And after all that, how often can the doctor arrive at a correct diagnosis? If the doctor makes a mistake, not much is thought of it, as we are all human and no man is infallible and no science is perfect.

What Phrenologists and Palmists Can Tell.—In the case of a phrenologist or palmist, however, the client, without giving his name, without telling his occupation, or whether married or single, simply exhibits his head or holds out his hands. The phrenologist or palmist then has to tell the past events in his life, present surroundings, health, past and present. Having, by accuracy only, gained the client's confidence, he proceeds to read the future from the same materials that he has told the past.

Now, if the palmist or phrenologist should make one mistake he is immediately considered by his client to be a charlatan and a fraud, and the science of mentality is regarded as a delusion and a snare.

Having, we hope, convinced our readers that it will be to their advantage to consider the subject of descriptive mentality we will now take up in detail each of its departments.

PHRENOLOGY

Organ of Love of Young.—Let the reader feel along the middle line, at the back part of the head, toward the base of the skull, and he will recognize a small bony projection. Below this point lies the organ of amativeness. Immediately above it, and on each side of the middle line of the head, lies the organ of the love of young, forming, generally, a single protuberance occupying both sides of the line. When very large it gives to the back of the head a drooping, overhanging appearance.

Development of the Organ.—Some people are very fond of children and others cannot abide them. Some abhor even their good-natured prattle, while others show toward them the utmost forbearance, and soothe their fretfulness with admirable patience and gentleness. Now, in all these cases, the strong manifestation of the feeling is accompanied by a large development of the organ, and a feeble manifestation of the faculty by a small development of the organ, the manifestation and the development being proportional.

Principles of Phrenology.—Gall established the following principles:

1. That the mental faculties are innate.
2. That the brain is the organ of mind.
3. That the form and size of the brain are distinguishable by the form and size of the head or skull.
4. That the mind possesses distinct faculties, and that the brain is composed of distinct organs, and that each mental faculty is manifested through a distinct organ of the brain.

5. That the size of each organ can be estimated during life; and that size, other things being equal, is the measure of power.

6. That each organ, when predominantly active, impresses the body with certain uniform attitudes and movements, called its natural language.

Grouping of the Organs.—The first division of the faculties of the mind and the organs of the brain is into three grand classes:

1. The propensities of animal organs;
2. The intellectual faculties, and
3. The moral or spiritual sentiments.

Location of the Groups.—These groups are so placed that the location of each indicates its work in the graded scale of functions.

Propensities.—The propensities are placed next to the spinal column, in the base of the brain and in close connection with the body.

Intellect.—Rising above these we come to the region of intellect.

Morality.—Above that, in the very top of the head, are the moral or spiritual sentiments, through which we are brought into relation with God.

Function of the Propensities.—The propensities give force and efficiency in all our actions, adapt us to our fellows, and lead us to take care of ourselves.

Function of the Intellectual Faculties.—The intellectual faculties enable us to obtain knowledge of men and things; to compare and arrange facts; and to invent and construct what we need for the practical application of our knowledge.

Function of the Moral Sentiments.—The moral or spiritual sentiments are meant to control all the rest by subjecting them to the tribunals of kindness, justice and the Divine Law.

Classes Divided Into Groups.—The grand classes of faculties and organs are divided into groups as follows:

Propensities.—1. The social group. 2. The selfish group.

Intellectual Faculties.—1. Group of the external senses. 2. The perceptive group. 3. The reflective group. 4. The literary group.

Moral Sentiments.—1. The selfish group. 2. The semi-intellectual group. 3. The religious group.

Social Group.—The social group has for its collective function the manifestation of those affections which connect us with country and home, and attach us to relatives, conjugal companions, family and friends.

Selfish Group.—The office of the selfish group is to make proper provision for the animal wants, and to secure the preservation of life, the defense of the person and the accumulation and protection of property.

The External Senses.—The external senses have for their appropriate work the conveying to the brain of intelligence concerning the world of material things outside of the brain itself, acting, therefore, in direct co-operation with the perceptive faculties.

The Perceptive Group.—The perceptive group, through the senses, brings man into direct communication with the physical universe, gives a correct judgment of the properties of things, and leads to the practical application of the knowledge obtained.

The Reflective Group.—The function of the reflective group is to analyze, compare and classify the facts collected by the perceptive and to philosophize, contrive, invent and originate ideas.

The Literary Group.—The literary group imparts memory, and the ability to communicate ideas and feelings by means of written or spoken words.

The Group of Selfish Sentiments.—The group of selfish sentiments gives regard for character, love of distinction, self-reliance, independence, stability and perseverance. They have an aspiring and governing tendency.

The Semi-Intellectual Group.—The semi-intellectual group has for its function self-improvement, and the love and production of whatever is beautiful. It is elevating and chastening in its influences, and acts in co-operation with the strictly religious group, to which it is closely allied.

The Religious Group.—The religious group has the highest office of all, and tends to elevate man into fellowship with angels, and beget aspira-

tions after holiness and heaven, while making him at the same time meek and humble—even as a little child—toward God. When large and active, and holding the leading place which belongs to it, all the other groups are sanctified through its action.

Division Into Organs.—Each of these groups is again divided into organs, designated by name and location on the head, and each indicative of some characteristic of the man or woman. Space will not permit a full classification and description of each organ as thus subdivided, but the general principles of phrenological science may be learned from a consideration of the organs of a single group; say, The Social Group.

Organs in the Social Group.—1. Amativeness. 2. Philoprogenitiveness (love of young). 3. Adhesiveness. 4. Inhabitiveness. 5. Continuity.

Amativeness.—“Be fruitful, and multiply, and replenish the earth, and subdue it.”

Definition.—Love between the sexes; desire to marry.

Location.—Feel on the middle line toward the base of the skull, at the back part of the head, and you will feel a small, bony projection called the occipital process. Below this point and between two similar protuberances (the mastoid processes) behind the bottom of the ears lies the organ. Its size is indicated by the extension of the occipital swellings backward and inward of the mastoid processes, and downward from the occipital process.

Function.—The function or use of amativeness is to manifest sexual feeling, and give the desire to love and be loved and to marry.

Philoprogenitiveness.—“Can a woman forget her suckling child?”

Definition.—Regard for offspring, pets, and so forth.

Location.—About an inch above the occipital protuberance. When large it gives fullness to the back-head above amativeness.

Function.—To impart love for the young, and particularly for one’s own children. It also leads to a fondness for pets generally. It gives a softness of manner in treating the feeble and the delicate, even in advanced life.

Friendship.—“The soul of Jonathan was knit with the soul of David, and Jonathan loved him as his own soul.”

Definition.—Adhesiveness; sociability; love of society.

Location.—At the posterior edge of the parietal bone just above the lambdoidal suture. It projects at the posterior and lateral part of the head,

on each side of inhabitiveness, and a little higher than philoprogenitiveness, and when very large produces two annular protuberances there.

Function.—This organ gives the instinctive tendency to attachment and delight in the return of affection. It causes one to seek company, love society and indulge friendly feelings. Those in whom it is strong feel an involuntary impulse to embrace and cling to any object which is capable of experiencing fondness. It gives ardor and a firm grasp to the shake with the hand.

Inhabitiveness.—“The Lord forbid it me, that I should give the inheritance of my fathers unto thee.”

Definition.—Love of home and country.

Location.—Between parental love and continuity, on the back part of the head. Where it is very large and continuity moderate, an angle is formed near the union of the lambdoidal sutures, between which and the occipital bone there will be considerable distance.

Function.—To give love of home and country, a desire to have a permanent abode, and attachment to any place where one was born or has lived.

Continuity.—“Let every man abide in the same calling wherein he was called.”

Definition.—One thing at a time; consecutiveness.

Location.—Next above inhabitiveness and below self-esteem. When large it gives a general fullness to the region; and when moderate or small, a marked depression will be perceptible.

Function.—To give connectedness to thought and feeling, and thoroughness in elaboration of ideas or the working out of the details of any plan. Concentration.

Other Organs.—Among the other organs located and functionally described, and whose location, description and function go to make up the complete system of phrenology, are combativeness, destructiveness, acquisitiveness, approbation, self-esteem, firmness, hope, spirituality, benevolence, ideality, imitation, mirthfulness, individuality, form, size, weight, order, calculation, locality, time, and so forth.

PHYSIOGNOMY.

The real science begins with Camper. He discovered the famous facial angle which, to our own time, has served as a criterion and a measure to determine the rank of the human face. Many scientists since Camper

have devoted great study of physiognomy. Darwin, Mantegazza and many others have written famous works on the subject of expression.

Racial Expression.—It is interesting to note how the expression varies in different races and even in the same races. In the same races pastoral and agricultural people are less expansive in their expression; while the warlike, seafaring or trading nations have more mobile and expressive facial muscles because their life is less simple and less contemplative.

The Different Types.—Everyone knows the tranquil expression of the Oriental people, who await everything from God, and do not know the feverish activity of the Europeans.

The expression of the Frenchman is concentric, rapid and gay.

That of the Englishman haughty and stern

That of the German heavy, benevolent and always ungraceful.

The Spaniard and Portuguese gesticulate little; their faces remain impassive.

Many Russian and Hungarian people do not look one steadily in the face, and have a very false expression.

The expression of the Scandinavian is hard and without grace.

Professional Expression.—Often on seeing a stranger we exclaim to ourselves, "This man must be a pharmacist! I bet that this is a priest or a disguised soldier! This other can only be a carpenter!" Many times these hazarded suppositions have been correct. The profession has a modifying influence on the expression of the face, and even on the character, on the health and many other inner and outer things.

The professions which most profoundly modify expression are those which daily exert a particular mode of muscular movement or of brain work. It is because of this that I recognize the druggist, the doctor, the carpenter, the priest and the soldier more readily than other members of society.

Judgments on the Face.—After looking at a human face we can nearly always formulate certain judgments relating to one of the five great problems which a human face presents.

1. Condition of health or of sickness.
2. Degree of beauty or ugliness.
3. Moral worth.
4. Intellectual worth.
5. Race.

The Healthy Look.—The healthy look is not difficult to detect. We all take great satisfaction at the sight of a picture of perfect health.

The Unhealthy Look.—The unhealthy look, on the other hand, may appear in a great variety of forms. Many times the outer aspect of the invalid, and especially of his face, suffice to make the nature of the evil guessed, and to put us on the way to a good diagnosis.

Special Functions.—There are some special functions where the particular nature of the sufferings is so faithfully inscribed on the face that it at once suggests to the observant doctor the diagnosis before any examination of the patient. The tuberculous, the asthmatic, the hypochondrical, the cancerous have a characteristic physiognomy and expression which everyone can recognize.

The Good Face.—The two most certain signs of a good face are the permanent expression of benevolence and the absolute absence of all hypocrisy.

Never to express either hatred, or cruelty, or passion, or rancor, or envy, or luxury, or debauchery—this is enough that a face may indicate a great fund of benevolence.

The good man is happy, and he expresses his serenity, his content in loving and being loved by a perpetual smile.

Another almost constant character of the physiognomy of goodness is to be frank, open to every emotion, incapable of hiding anything.

The good man, in fact, never distrusts others; he does not feel the need of withdrawing himself from an inquisitive observation.

The Evil Face.—The habit of hatred and of all vices which debase man and reduce him to the beast, impress sadness on the face, discontent, which reveals continual displeasure and a perpetual state of war against self and against others.

The contempt, the antipathy which the wicked excite, increases in them the rancor, the secret and incessant desire for vengeance which gives to the features of their face a sad expression.

A wicked face is always false. The cheat avoids the looks of others in his invincible fear that they may read within him.

The Intelligent Face.—Large head, beautifully oval. Wide, high and prominent forehead. Eyes large rather than small. Ears small or medium and beautiful. Eace small and not very muscular. Not very prominent jaws. Large and prominent chin.

The Stupid Face.—Small head or very irregular. Narrow, retreating, smooth forehead. Eyes rather small. Large and ugly ears. Large and very muscular face. Prominent jaws. Retreating and small chin.

The Amative Face.—A prominent if not massive chin; a full neck;

breadth and fullness of the lips. Redness of the lips indicates present activity of the function. Absence of color indicates inactivity.

Face of Friendship.—Friendship (adhesiveness) holds fast, clings, adheres and is represented by the round muscle which surrounds the mouth and draws together or closes the lips. When this muscle is large and strong it produces slightly converging wrinkles in the red part of the lips, sometimes extending slightly into the white part.

Small perpendicular wrinkles in the red part of the lips indicate a smaller degree of friendship, but not a deficiency.

The Combative Face.—There is generally a marked enlargement of the neck below the back of the side-head. Prominence of the ridge of the nose is another sign.

The Acquisitive Face.—Persons noted for their love of gain and ability to acquire property are observed to have, as a general rule, massive noses, and it is believed that thickness of the nose above the wing is the true facial sign of acquisitiveness.

Face of Firmness.—The facial sign is the perpendicular straightness or convexity and stiffness of the centre of the upper lip.

This faculty has also one of its most striking indications in the size and strength of the bones of the neck and in the perpendicularity of the neck itself.

Face of Hope.—Hope elevates the centre of the eyebrow, opens the eyes wide and turns them upward. It gives an open and pleasant expression to the whole countenance.

The Spiritual Face.—Large and active spirituality gives a singularly elevated expression of countenance.

The Face of Benevolence.—The inner extremities of the brows are elevated, sometimes causing, when strong, short horizontal wrinkles in the centre of the forehead.

Face of Mirthfulness.—Mirthfulness shows itself on the face in a graceful turning upward of the corners of the mouth.

Language Face.—A large development of language is indicated by prominent eyes. Sometimes the eyes not only project but are also depressed, when the under eyelid presents a sort of sack or roll or appears swollen.

PALMISTRY, OR LANGUAGE OF THE HAND.

Divisions.—Palmistry should really mean the study of the hand in its entirety. It is, however, divided into two sections: the twin sciences of chiromny and chiromancy.

The first deals with the shape of the hand and fingers and relates to the hereditary influence of character and disposition.

The second deals with the lines and markings of the palm and relates to the events of past, present and future.

Chiromnomy.—There are seven types of hands, each of which may again be subdivided into seven varieties. The seven types are:

1. The elementary or the lowest type.
2. The square or the useful hand.
3. The spatulate or the nervous active type.
4. The philosophic or the knotty hand.
5. The comic or the artistic type.
6. The psychic or the idealistic hand.
7. The mixed hand.

Elementary Hand.—This hand naturally belongs to the lowest type of mentality.

Description.—In appearance it is coarse and clumsy with large, thick, heavy palm, short fingers and short nails. There are also very few lines to be seen on the palm.

Interpretation.—The people possessing such a type have very little mental capacity, and what they do possess leans more to the order of the brute. They have little or no control over their passions. Love of form, color and beauty does not appeal to them.

Thumb.—The thumb of such hands is short and thick with the upper part of nail phalanx heavy, full and generally square. Such people are violent in temper, passionate but not courageous. They possess a certain low cunning, but the cunning of instinct, not reason. These people are without aspirations; they but eat, drink, sleep and die.

The Square Hand.—The square hand means the palm square at the wrist, square at the base of the fingers, and the fingers themselves square. Such a type is called the useful hand because it is found in so many walks of life. With this type the nails as well are generally short and square.

Interpretation.—People with the square hand are orderly, punctual and precise in manner, not, however, from any innate grace of nature, but more from conformity to custom and habit.

They respect authority, they love discipline. They have a place for everything and everything is kept in its place, not only in their household but in their brains.

In work they have great application, force of character and strength

of will. They are sincere and true in promise, staunch in friendship, strong in principle and honest in business.

The Spatulate Hand.—The spatulate hand is so-called not only because the tip of each finger resembles the spatula that chemists use in mortars, but also because the palm, instead of having the squareness of the preceding type, is unusually broad either at the wrist or at the base of the fingers. When the greater breadth of formation is at the wrist the palm of the hand becomes pointed toward the fingers. When, on the contrary, the greatest breadth is found at the base of the fingers the shape of the hand slopes back toward the wrist.

Significance.—When hard and firm the spatulate hand indicates a nature restless and excitable but full of energy of purpose and enthusiasm. When soft and flabby it denotes the restless but irritable spirit. Such a person works in fits and starts but cannot stick to anything long. The peculiar attribute that the spatulate hand has is its intense love of action, energy and independence.

As a rule it is a large hand with fairly long, well-developed fingers. The most striking characteristic of all is the singular independence of spirit that characterizes individuals possessing such a development.

No matter in what grade or position in life these spatulate hands find themselves they always in some form strike out for themselves and assert their right to possess a marked individuality of their own. It is from this hand that we get not only our great discoverers and engineers, but also the whole army of men and women we are pleased to call cranks, simply because they will not follow the rut made by the centuries of sheep that have gone before them. They will break all rules of precedent, not by any means for the sake of eccentricity, but simply because they have an original way of looking at things, and their sense of independence inclines them to resent suiting their brain to other people's ideas.

The Philosophic Hand.—This shape of hand is generally long and angular with bony fingers, developed joints and long nails. People with such a type are, as a rule, students, but of peculiar subjects. They study mankind. They like to be distinct from other people and they will go through all kinds of privation to attain this end. Such people love mystery in all things. In character they are silent and secretive. They are deep thinkers, careful over little matters, even in the use of little words. They are proud with the pride of being different from others. They rarely forget an injury but they are patient with the patience of power. They wait for opportunities and so opportunities serve them. Such hands

are usually egotistical, which is in keeping with the life they lead. When in any excess of development, they are more or less fanatical in religion or mysticism. With these hands it must be borne in mind that the developed joints are the peculiar characteristic of thoughtful people, while the smooth, pointed fingers are the reverse.

The Conic Hand.—The conic hand is medium-sized, the palm slightly tapering and the fingers full at the base, and conic, or slightly pointed, at the tip or nail phalanx.

The main characteristics of the conic hand are impulse and instinct. There is a great variety in connection with this type but it is more usually found as a full, soft hand with pointed fingers and rather long nails.

Such a formation denotes an artistic, impulsive nature, but one in which love of luxury and indolence predominate.

The Psychic Hand.—The most beautiful but the most unfortunate of the seven is what is known as the psychic hand. It is in formation long, narrow and fragile looking, with slender, tapering fingers and long, almond-shaped nails. Individuals with the psychic hand have the purely visionary, idealistic nature. They appreciate the beautiful in every shape and form. They are gentle in manner, quiet in temper. They are confiding and they instinctively trust anyone who is kind to them.

They have no idea of how to be practical, business-like or logical. They have no conception of order, punctuality or discipline. They are easily influenced by others.

Color appeals to this nature in the highest possible way.

This type is unconsciously a religious one. It feels what is true but has not the power to seek truth.

These individuals have the intuitive faculties highly developed.

The Mixed Hand.—The mixed hand is so-called because the hand cannot be classed as square or spatulate, and so forth; the fingers also belong to different types.

The mixed hand is the hand of ideas, of versatility and generally of changeability of purpose. A man with such a hand is adaptable to both people and circumstances, clever but erratic in the application of his talents.

He will be brilliant in conversation, be the subject science, art or gossip. He may play some instrument fairly well, may paint a little, and so on. But rarely will he be great.

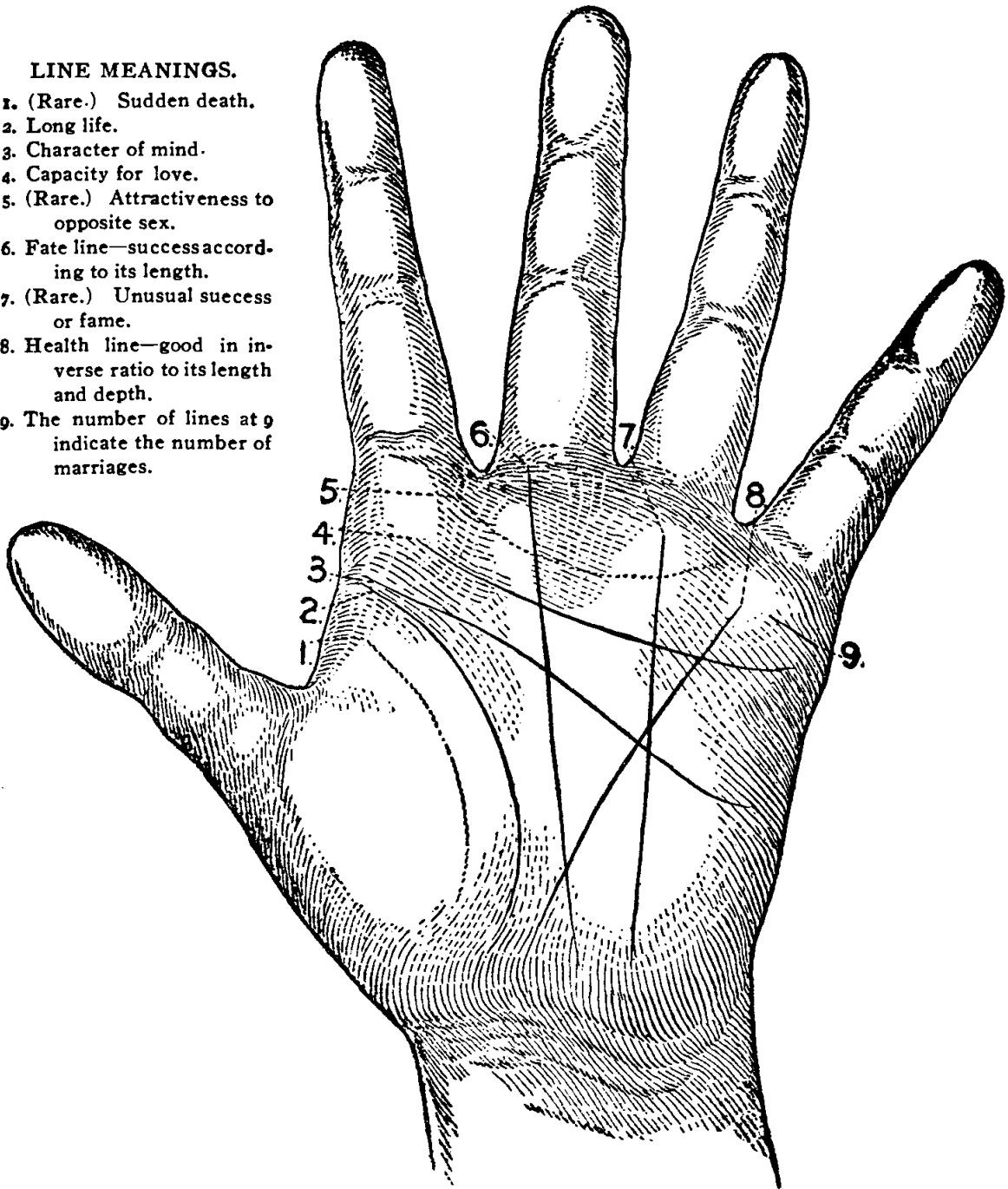
When, however, a strong line of head rules the hand, he will, of all

his talents, choose the best and add to it the brilliancy and versatility of the others.

Such hands find their greatest scope in work requiring diplomacy and tact.

LINE MEANINGS.

1. (Rare.) Sudden death.
2. Long life.
3. Character of mind.
4. Capacity for love.
5. (Rare.) Attractiveness to opposite sex.
6. Fate line—success according to its length.
7. (Rare.) Unusual success or fame.
8. Health line—good in inverse ratio to its length and depth.
9. The number of lines at 9 indicate the number of marriages.



CHARACTER LINES OF THE HAND.

They are so versatile that they have no difficulty in getting on with the different dispositions with which they come in contact.

Their most striking peculiarity is their adaptability to circumstances. They never feel the ups and downs of fortune like others. Almost all classes of work are easy to them.

They are generally inventive, particularly if they can thereby relieve themselves of labor. They are restless and do not remain long in any town or place. As they are always changing and unstable as water, they rarely succeed.

The Thumb.—The long, well-formed thumb denotes strength of intellectual will. The short, thick thumb brute force and obstinacy. The small, weak thumb, weakness of will and want of energy.

The Fingers.—Long fingers give love of detail in everything. Short fingers are quick and impulsive. They cannot be troubled about little things. They take everything *en masse*. They generally jump at conclusions too hastily. They do not care so much about appearances or for the conventionalities of society. They are quick in thought and hasty and outspoken in speech. Fingers thick and clumsy as well as short are more or less cruel and selfish.

When the fingers are stiff and curved inward, or naturally contracted, they denote an excess of caution and reserve and very often indicate a cowardly spirit.

When they are very supple and bend back like an arch they tell of a nature charming in company, affable and clever, but curious and inquisitive.

The Palm.—A thin, hard, dry palm indicates timidity and a nervous, worrying, troubled nature.

A very thick palm, full and soft, shows sensuality of disposition.

When the palm is firm and elastic and in proportion to the fingers it indicates evenness of mind, energy and quickness of intellect.

When not very thick, but soft and flabby, it denotes indolence, love of luxury and a tendency toward sensuality.

Lines of the Hand.—There are seven important lines on the hand and seven lesser lines. The important lines are:

The Line of Life, which embraces the Mount of Venus.

The Line of Head, which crosses the centre of the hand.

The Line of Heart, which runs parallel to the above, at the base of the fingers.

The Girdle of Venus, found above the line of heart and generally encircling the Mounts of Saturn and the Sun.

The Line of Health, which runs from the Mount of Mercury down the hand.

The Line of Sun, which rises generally on the Plain of Mars and ascends the hand to the Mount of the Sun.

The Line of Fate, which occupies the centre of the hand from the wrist to the Mount of Saturn.

The seven lesser lines are:

The Line of Mars, which rises on the Mount of Mars and runs within the Line of Life.

The Via Lascina, which lies parallel to and outside of the Line of Health.

The Line of Intuition, which extends like a semi-circle from Mercury to Luna.

The Line of Marriage, the horizontal line on the Mount of Mercury.

The three bracelets found on the wrist.

BOOK XVI

Treats of Beauty Culture and Self Care for Women,
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Book XVI

SELF CARE FOR WOMEN

HEALTH IN RELATION TO BEAUTY.

The Cultivation of Beauty.—It is natural for every woman to desire to be beautiful and attractive. This desire should not be frowned upon as an indication of vanity or frivolity, for it is the expression of a sound and healthy instinct. It is not only right and proper that women should desire to be beautiful, but it should be the duty of every woman to be just as attractive as her physical and mental endowments will permit.

Beauty is normally an indication of health. It means a wholesome state of body and mind and this in turn means fitness for wifehood and motherhood. It is a part of the great plan of Nature that women should be attractive.

But is beauty a matter of cultivation? Can it be developed? We are told that poets are born and not made. Is the same true of the quality of beauty? Or can all women make themselves attractive and fair to look upon?

There is no question that some are more favored by nature than others. It would be folly to deny this. It should be said, however, that the differences between women in this respect should be simply a difference in the degree of beauty rather than the difference between beauty and ugliness. Ugliness is entirely foreign to the nature of woman. The truth is that Nature intended all women to be attractive, even though there may be differences in the degree of comeliness. Beauty depends upon various factors in the way of contour, coloring, skin texture, the expression, the mental state and the suggestion of vitality in the features and body as a whole. All of these factors may be lacking in a given case, and may always be improved by cultivation of the right kind. In short,

beauty is a potentiality in the case of every woman and needs only to be developed and realized by proper cultivation of the different factors and qualities upon which it depends.

Beautiful Features.—There is one factor that goes to determine the beauty and outlines of the face which is practically beyond our power to control, and that is the fundamental conformation of the skull and face giving us our characteristic features. There is no question that some are naturally gifted with greater symmetry in this respect than others. In one case the outlines are perhaps more harmonious than in another, but beyond this question of features it can hardly be said that any one has any important natural advantage over another in the matter of personal appearance.

Furthermore, when one stops to analyze the part played by the features in determining facial beauty, it immediately becomes apparent that even this factor is greatly over-rated.

For the features alone do not make for beauty. It is only the touch of health, vitality and good coloring that can make them attractive; and where there is health, vitality and intelligence, all features and all faces are attractive or even beautiful.

Just how little the features amount to as a means of giving one beauty will be seen from a study of the same face under conditions of health and ill-health. In the latter case the appearance may be drawn, haggard, hopeless and altogether unattractive, while under conditions of health the features will be properly filled out, smoothly modeled and well colored, with the expression animated in such a way as to provide that elusive quality which we term beauty. Consider the features in youth and in age. On the one hand we have the bloom and glory of youthful beauty, and at the other extreme we have the withered, faded and altogether ugly aspect of age. Note that the features remain the same. It will be seen, therefore, that the question of beauty depends not upon the features, but upon the manner in which they are “dressed up” by flesh and blood. Good features without health and coloring signify nothing. On the other hand, the features of any woman that lives, when marked by the bloom of health, suggestive of vitality and youth and bodily vigor, and expressive of intelligence and personality, will become both attractive and beautiful.

Health the Foundation of Beauty.—From what we have just said it will already have been made clear that the one indispensable factor in the cultivation of beauty is health. Men may strive for fame and fortune, and may fail; but the woman who strives for beauty and follows

the proper natural methods for attaining health, will succeed. Beauty expresses internal harmony and well-being. Beauty means pure, rich blood, a condition of internal bodily cleanliness, active circulation, good nutrition as a result of faultless digestion, and perfect bodily functioning. In short, beauty is a quality that necessarily follows upon a condition of strength and physical efficiency.

The woman who would make herself attractive, therefore, in the very beginning cannot do better than make a careful study of the section on "Physical Development for Women." She should avail herself of every possible means of building increased vitality; she should particularly get as much sleep as she can; she should spend as much time as possible out-of-doors; she should keep her blood pure through wholesome food and the drinking of plenty of pure water; she should dress sensibly and healthfully; and last but not least she should maintain a serene state of mind. There is no question that the mind has an important influence not only upon the health, but especially upon facial beauty. And particularly a woman's usual or prevailing attitude of mind, being an expression of personality, has everything to do with making her attractive or the reverse.

Youth and Beauty.—It is a matter of common observation that youth is a period of beauty, and that beauty fades with advancing years. This only emphasizes the great truth that beauty is really a matter of health and vitality. The fact is that to preserve beauty it is simply necessary to preserve the condition of youth. Youth is a matter of condition rather than of years, and if one will maintain the vitality, physical energy, good circulation, healthy red blood and vivacity of youth, she will retain with it the attractiveness of youth. When a woman gazes sorrowfully into the mirror at a plain and unattractive face, now faded, it simply means that she has suffered in the way of physical deterioration. She has lost her youthfulness or is rapidly losing it. What she needs is not cosmetics. She cannot buy beauty in a bottle. She must restore the condition of vitality, good nutrition, active circulation and pure blood, and this is entirely a matter of physical culture, sleep, fresh air, sufficient rest and freedom from nerve-destroying influences.

When your friend tells you that you are "looking good," she really means that you are truly "good looking," for the health that is manifest in your appearance has made you at the same time pleasing to look upon.

CONTOUR OF FACE AND BODY.

We have already referred to the uselessness of good features as a factor in beauty when they are not properly covered by healthy flesh. The first essential to beauty, even more important than the texture of the skin, is a pleasing contour. The bodily structure and the facial conformation must be properly filled out with good, healthy flesh. This means, in the case of the body, a normal, muscular development made smooth with a moderate covering of fatty tissue. The same thing applies to the face. There are muscles of the face which should be healthy and well developed in order to give character to the face. These muscles are well developed in the case of children and healthy young people, and they give not only character but firmness to the flesh. These muscles are covered by a smooth distribution of fatty tissue, and just beneath the skin there is a considerable amount of connective tissue which helps to give the skin firmness and smoothness. It is largely the breaking down of this connective tissue that produces wrinkles, although the loss of fatty tissue in age is likewise still further conducive to the formation of "lines." All of these tissues in youth and health are properly built up and give the face that harmony of outline and delicacy of contour which make for beauty.

A fat face is not attractive; only a firm plumpness of the cheeks is desired. Well-modeled features mean a condition of vigor, good nutrition and good circulation, and anything that is conducive to health would improve one in this respect. The haggard appearance of one suffering from the results of disease, overwork or dissipation is directly due to the breaking down of many cells, imperfect circulation and the weakening of the muscles, as a result of which there is a sagging down of the flesh. The characteristic of age is not so much the formation of lines, but the sagging down and shrinking of the structures of the face. One may have many fine lines and still retain the appearance of youth, so long as this drooping of the muscles and tissues of the face is not in evidence. Or one may have very few lines and yet the aspect of age is given unmistakably by this very sagging down of the cheeks and other parts.

Facial Massage.—Massage is usually the first measure advised by the beauty specialist as a means of improving the face. Naturally, massage affects not only the skin itself, but the underlying structures. There is no question as to the value and effectiveness of massage of the body. It promotes the circulation and yields a form of passive exercise. It is in-

dispensable in certain cases where exercise is impossible. But in the treatment of the face the value of massage is not so apparent. It may produce gratifying temporary results because of the improved circulation and momentary coloring induced. There is no question, also, that for the time being it tends to remove "lines" to some extent and improve the appearance. At the same time, facial massage is likely to be ultimately detrimental for the reason that it involves too much the breaking down of the connective tissue underneath the skin. By pulling and stretching the skin and the flesh one way and another, the connective tissues are weakened or partially destroyed and the result will be the formation of more lines and a tendency toward sagging of the flesh. Therefore massage cannot in all cases be recommended and particularly not for those who have already passed the years of youth, or, if employed, massage should be very carefully and intelligently administered.

The greatest mistakes in facial massage are too much stretching and pulling down of the tissues. There should be no downward strokes employed upon the face, and there should be no movements which tend to place the skin upon stretch to any extent. The most satisfactory form of facial massage, accordingly, would be something in the nature of pressure applied with the finger tips or with the heel of the hand or ball of the thumb, especially in the form of small, circling movements. This pressure should be applied for a few moments only and then relieved. The relaxation of the parts will permit a new supply of blood to flow into the tissues, whereupon the massage may be continued. A rotary movement of this kind covering a circle not larger than that of a ten-cent piece would be very satisfactory. In massaging the forehead, the finger tips may be used satisfactorily. For the cheeks, the eyes and directly underneath the eyes, an effective treatment would be to press the ball of the thumb upon the skin for a moment with a slight circling movement. Where there is already a tendency toward the sagging of the flesh, upward strokes may be used.

Where there are wrinkles, massage should take the form of strokes in line with the wrinkles. By massaging across the wrinkles, one only tends to make them deeper.

Facial Exercise.—Of greater value than massage in most cases is facial exercise or, in other words, the active use of the muscles of the face. These muscles are used in laughing, in crying and in all expressions of the face. A system of exercises for the face, therefore, may be devised by simply "making faces" at yourself in front of a looking glass, just as you sometimes liked to do when you were six years old. It sounds very foolish,

but it is the most effective means of regularly and thoroughly bringing into play the facial muscles. The improvement in these muscles and the better circulation helps greatly to beautify the face. Children whose faces are often wrinkled and distorted in laughing and crying have beautifully smooth faces. Actors and actresses whose facial muscles are continually employed in the expression of simulated emotions of various kinds, frequently retain their facial attractiveness and even youthful appearance far beyond the age at which most other men and women commence to look old. Clergymen and orators whose facial muscles are used in forcible expressions are often exceptionally good-looking men.

Once each day, therefore, it will profit one to take five or ten minutes during which to concentrate on facial exercises. The muscles of every part of the face should be brought into action, stretching them, contracting them, opening the mouth wide or yawning, then pinching the lips together, opening the eyes wide, then squeezing them together, raising and lowering the eye-brows to the limits of possible motion and drawing the mouth first to one side, then far to the other. Thrust the tongue into the cheek on each side, assume laughing and crying expressions, simulate horror and express as great a variety of other emotions as possible. Finally, simply make faces at yourself in the glass, just as children do, and you will find when you are finished that your face partakes of a sensation of life and energy. If persisted in, these facial exercises will accomplish a great deal.

Sleep.—There is nothing in the world that will take the place of sleep as a beautifier, and especially sleep in the early part of the night. There is a good reason why the term “Beauty Sleep” has been applied to the hours before midnight. Pay no attention to the theorist who tells you that many people sleep too much. If you sleep in the fresh air, either outdoors or with windows wide open, and without too much covering, it is impossible to sleep too much. There is nothing that you can do in the form of beauty culture that can possibly be of value if you do not allow yourself sufficient sleep.

CARE OF THE COMPLEXION

Improving the Skin.—A beautiful complexion depends chiefly upon two factors, the coloring and the texture. Fortunately in most cases the same measures are effective in improving the skin in relation to both color and texture. A perfectly healthy skin is smooth as satin and pleas-

ing in color. Local care of the complexion is of great value and the suggestions we are offering will be very helpful in all cases, but it must be understood that constitutional measures are far more important than any local care. In other words, a good complexion depends upon the state of health and of the blood. A good complexion is indicative of health and is seldom possible without good health. Vigorous digestion, active circulation and rich, red blood are conducive to beauty of the skin, and without these fundamental requisites one cannot accomplish much by external means.

Granting, however, that the health is fairly good and the blood supply normal, a great deal can be done to improve the condition of the skin by proper care. Do not be misled into the notion that you can buy beauty at the drug store. Highly advertised cosmetics are of little value and in some cases are actually dangerous. The more simple home remedies used in the days of our grandmothers are far more effective and reliable than the innumerable highly priced and widely advertised preparations recommended by the druggist. Infinitely better results, if one wishes local applications, can be secured by the use of buttermilk, lemon juice, fresh milk, mutton tallow and other articles of common household use. Cold water offers a cosmetic infinitely superior to anything that has ever been placed on the market. Paints and powders are not only injurious in many cases, but they fail to produce the appearance of a healthy and beautiful skin. No matter how skilfully applied, there is always the artificial aspect of the skin, and the face so treated never can compare with a beautiful natural complexion.

Washing the Face.—There is nothing so good for the complexion as cold water. Use plenty of it. Use it several times a day.

There is nothing worse for the complexion than hot water. Never use it.

Hot water and soap, while producing a temporary effect that may be gratifying, will invariably be detrimental in the long run. The heat relaxes the blood vessels, causing them to lose tone, and especially opens the pores. Furthermore, heat stimulates the secretions of the oil glands or sebaceous glands, and in the case of an oily skin or one subject to blackheads and pimples, hot water is particularly detrimental. Steaming the face, a method commonly used by beauty specialists, is likewise detrimental for the same reason.

Strong soaps should never be used. A pure castile soap is usually to be preferred, and the face should be washed with luke-warm or cool

water, using a very small amount of the castile soap. It should, further, be very thoroughly rinsed with cold water, so that all traces of the soap will be completely removed. Do not pull and stretch the skin too much when washing, but use a soft cloth and wash the face gently, with mild friction.

Cold compresses may be advantageously applied to the face, using a small towel for the purpose or a wash cloth and using water just as cold as possible. This is a tonic of great value.

In drying the face, do not rub too vigorously with the towel but gently pat the skin until dry. The reason for this is the same as the objection to massage, namely, that too much pulling and stretching weakens or loosens the connective tissue beneath the skin.

Ice as a Cosmetic.—If cold water is valuable for improving the complexion, ice is even more effective in most cases. It has a wonderful tonic effect and not only closes up the pores, but improves the circulation and the general health of the tissues. It will pay one to take a piece of ice and move it about over the face for two or three minutes, at least once each day. The result will be a glow which will last for hours in some cases, and you will enjoy a feeling of life in the skin that will be gratifying. If the bare ice seems a little too severe, a cloth or towel can be wrapped around it. Do not try it if subject to neuralgia.

For one who lacks color, a treatment of this kind is much more satisfactory than an attempt at "painting." In certain "beauty parlors" a temporary glow of the skin has been produced by the application of a chemical preparation which leaves the skin red for some time afterwards. This, however, is only a state of inflammation accomplished by a poisonous irritant, and needless to say such methods are very destructive in the long run. The ice treatment will produce better results without any injurious after-effects. If one is particularly lacking in color, the alternate use of hot and cold water, with a final application of ice, will be particularly effective in this direction, but, except for an emergency, the hot water should not be used in this way. In many cases, however, a woman may thus secure a pleasing color which will endure throughout the entire evening at some social affair.

Oily Skin.—Many women complain of oiliness of the skin. This is the result of excessive activity of the oil glands or sebaceous glands. These must not be confused with the sweat glands. The sebaceous glands are located chiefly on the face, neck, shoulders, chest and back, and it is consequently mostly on these parts that pimples and blackheads are located.

These glands usually do not become active before puberty. Up to the age of twelve or fourteen the skin is smooth and clear. In the case of some women the sebaceous glands never become very active and they retain the "baby skin" through maturity. From puberty on, however, and especially in youth, all of the glands of the body are very active, including the sebaceous glands, and an oily complexion is often the result. In such cases hot water should be avoided except to the extent that one takes a full warm bath once or twice a week followed with a cold sponge. Cold water and ice tend to check the activity of the sebaceous glands and also to contract their pores or ducts.

Blackheads and Pimples.—When the pores or ducts leading from the sebaceous glands to the skin are clogged or closed in such a way that the oil cannot be poured out upon the skin, the oil accumulates, forming what is known as a "blackhead" when the duct is clogged and blackened with dirt, as is frequently the case. When squeezed out, the blackhead appears in the form of what is often called a "flesh worm," but it is really only the hardened and accumulated secretion of the gland. When there is inflammation at the same time, a pimple is formed. "Acne" is the technical name of the so-called disease represented by a large number of pimples. A pimple is usually the result of a mild infection which travels down the duct of a sebaceous gland or sometimes down the root of a hair.

Any treatment tending to overcome oily skin would likewise tend to overcome blackheads and pimples. Cleanliness is of great importance, especially in preventing the infection and mild inflammation which causes pimples. Cold water and ice are of great value, while some harmless astringent such as lemon juice, borax or benzoin is often quite helpful.

Squeezing and pinching blackheads is not advisable because of bruising the tissues and leading to inflammation and the formation of pimples. A small blackhead remover, which you can buy in a drug-store, will be much better, or one may use an old-fashioned watch key, pressing around the blackhead until it slips out with the least possible irritation. In a serious case of blackheads, a preliminary steaming of the face, or washing with hot water and soap to open the pores, may be permitted, whereupon the blackheads can be more easily removed. Thereafter, however, no hot water or steam should be employed. A solution of common washing soda, a teaspoonful to a pint of water, will soften the blackheads for removal, but it is very irritating to the skin, and should be thoroughly sponged off immediately, afterward applying cold milk. A gentle friction of the skin with the dry bare hand, improving the circulation, and a

plentiful use of cold water for improving the skin generally, are particularly recommended in the case of pimples or acne. In opening a pimple, the part should always be thoroughly cleansed with an antiseptic. Peroxide of hydrogen is fairly satisfactory, although listerine and other standard antiseptics will answer the purpose.

Enlarged Pores.—Enlarged pores are usually found in connection with an oily skin and particularly require persistent treatment with cold water or ice. These are not the sweat-pores. Cold creams are especially undesirable in such cases. A good astringent to help close the pores would be a tablespoonful of tincture of benzoin to a quart of water. Lemon juice sponged upon the skin is also very effective, but should be washed off with cold water or sponged off with milk in two or three minutes. Although we have mentioned astringents, they should be used simply as an emergency treatment and not habitually. Their continued use will always prove detrimental.

Dry Skin.—An unusually dry skin is the result of a lack of oil or inactivity of the sebaceous glands. When much soap is used in such cases, abstracting the limited amount of the natural oil, the condition becomes aggravated. The use of hot water with soap is highly detrimental. Those having a very dry skin should be extremely careful in the use of soaps, and even more than usually careful not to use patented preparations for the skin, many of which are irritating and astringent in character. The possessor of a dry skin should use just as little soap as she possibly can, and use only cold water for cleansing purposes. The use of a little cocoa-butter or refined olive oil might even be advantageous to supply the deficiency.

It is in cases of this kind that a real "cold cream" would be unobjectionable, but it is not wise to buy it in the open market because of the various unsatisfactory formulas used. A cold cream that is a real "grease" cream, and especially if it has mutton tallow as its basis, would be advantageous, but those containing mineral oils are detrimental and might cause the growth of hair. The use of the original mutton tallow, a good, old home-remedy, would be infinitely better than any perfumed cream. Many so-called "cold creams" are not cold creams at all, but astringent preparations, and should be carefully avoided. This usually applies to so-called "peroxide" creams. The theatrical cold cream, although cheaper in price, is usually a real grease cream and probably superior to the high priced preparations sold for cosmetic purposes. The

theatrical cold cream is used simply to protect the face from the grease paint and powder used in "making up."

Cold Cream for Cleansing Purposes.—Those having very dry skins and who cannot therefore use much soap, will find the use of a pure cold cream or theatrical cream advantageous for cleansing purposes. Simply rub the cream well over the face and then rub off thoroughly with a soft cloth. This will remove the dirt with the cream. Never use a rough cloth for the purpose.

Chapped Skin.—Dry skins, when improperly cared for, are liable to become chapped, especially when too much soap is used and when the skin is exposed to harsh winds and cold weather. The best preventive of chapping is to thoroughly dry the skin after washing, before going outdoors. Mutton tallow is especially recommended for this condition, though olive oil and cocoa-butter are both excellent. A half and half mixture of glycerin and rose water, with a bit of benzoin added, is always an effective treatment for chapped lips or chapped hands, to be applied before going to bed.

Sun and Air.—The effect of sunshine and air upon the skin is generally beneficial. Those who are anemic or whose complexions are pale should especially get a certain amount of sunshine every clear day. Sunshine stimulates the formation of red blood corpuscles. Besides the effect of the sunshine in tanning the skin or developing pigment, it actually increases the undertone of red coloring which indicates health.

In the case of very thin and delicate skins, however, too much wind and too much sunshine may be detrimental from the standpoint of the complexion, even though the air and sunshine may be beneficial to the general health. The blonde and thin-skinned man or woman too much exposed to the sunshine acquires a dried and wrinkled appearance of the face along with the heightened color. While one cannot get too much outdoor life, yet such persons should protect their complexions from too much direct exposure to the summer sun in the middle of the day.

Flesh Brushes.—One of the most beneficial treatments of the skin that can be suggested is the use of a soft flesh brush, by means of which to give the face a gentle friction. The brushes should be sufficiently soft to be comfortable on the face and to avoid scratching. Such friction of the entire body is of great health value, but when applied to the face it tends to develop a soft, smooth texture.

Itching Skin.—In most cases itching skin is simply an aggravated condition of dry skin, and the annoyance usually follows a bath in which

too much soap is used. It can be relieved by rubbing the skin thoroughly with a very little olive oil or cocoa-butter following the bath. Air baths and friction baths are especially valuable. The use of buttermilk is often advantageous.

Red Face.—A red face, although usually accompanied by a thin-skinned condition, in most cases represents imperfect circulation. Where the circulation is properly distributed, this condition never appears. Plenty of muscular exercise, improved digestion, the use of less meat, more fruit and the drinking of more water will usually correct this tendency. Outdoor life is advised. Frequent washing of the face with cold water will be beneficial.

Red Nose.—This condition, like redness of the face, indicates imperfect circulation. Exercise and improved general health are necessary. Massaging and rubbing the nose, together with application of ice, will be helpful. It is entirely a question of improving the circulation.

Pale Face.—The lack of color in the face indicates an anemic condition and calls for the building up of the general health. More sunshine is especially necessary, together with outdoor life in general, long walks, games and exercises, plenty of sleep and improved nutrition. The use of eggs, milk and fresh meats in the diet, balanced by a liberal use of fruits and green vegetables, can be recommended.

Wrinkles.—The formation of wrinkles is due usually to the breaking down of connective tissue beneath the skin, although lack of nutrition generally and the distortion of the face through the expression of various mental states are important factors. Improved health and better nutrition cause these lines to disappear. Massage is suggested, rubbing in the same line as the wrinkles themselves, but never across them. The flesh brush may be used the same way. The improved circulation due to the use of cold water or ice on the face, tends to overcome these lines. A serene mental attitude has a great deal to do with them.

As a local application, the most effective treatment will be to use strips of soft linen cloth, dipped into the raw white of an egg. These should be placed upon the face where the wrinkles are located, smoothed out carefully and allowed to remain for some time. Another suggestion is to mix equal parts of alcohol and the white of an egg, spreading upon the forehead and binding with a bandage or compress.

Freckles.—Although sometimes undesirable, freckles are not abnormal and are usually indicative of vigorous health. It is better to have freckles and have the good health that goes with them, than to be deprived

of sunshine. Chemical preparations for eradicating freckles are not only unreliable but injurious, and should never be used.

The most effective treatment for freckles is lemon juice. This should be removed with a little milk after five minutes to relieve any irritation. Buttermilk is sometimes useful for the same purpose. Peroxide of hydrogen may be used. A lotion consisting of one ounce of lactic acid, one ounce of glycerin and six ounces of rose water may be applied with cotton two or three times a day.

Sunburn.—There is probably nothing better than plain olive oil to relieve ordinary cases of sunburn. Cocoa-butter may likewise be used. In extremely severe cases, probably the best treatment will be the use of cold wet compresses. To prevent the compresses from becoming dry, cold water may be sprinkled upon them frequently.

Cosmetics and Powders.—Every woman should prefer a good natural complexion to an artificial complexion. The use of cosmetics of all kinds, even if they were temporarily effective in improving the appearance, which usually they are not, inevitably have the result of injuring the complexion. The woman with an originally good complexion will find in a few years that she has ruined it.

The only excuse for anything of the kind is to be found occasionally in the case of an oily skin, in which instance the use of a little powder to overcome this condition, especially so far as the nose is concerned, is not objectionable. Many powders, however, contain injurious and poisonous ingredients. Many of them are seriously irritating. The best application, therefore, is pure rice-powder, and it would be well if the application of this were confined to the nose itself.

Following are a few remedies of special value in the way of natural cosmetics:

Milk.—Either fresh milk or sour milk may be used for washing the face, with the very best results. Fresh cream is infinitely superior to any "cold cream" ever devised. Buttermilk makes a very good skin whitener in many cases for either face or hands. Those who suffer from dry skin may frequently benefit by using fresh milk entirely for washing the face. A half cup of milk or less will be sufficient, when using a good face cloth for the purpose.

Salt.—Salt has a wonderfully stimulating and tonic effect upon the skin. One may put a handful of sea-salt or of ordinary table salt in the bath with advantage. The washing of the face with cold salt water, then

rubbing gently with the bare hands until dry instead of using a towel, will have a very good effect.

Another good plan is to take a little salt in the hands, moisten it only slightly and then rub the face or even the skin of the entire body with it. It can then be rinsed off with cold water. The effect is delightful.

Lemon Juice.—Fresh lemon juice is one of the most valuable of natural beautifiers, especially in the case of oily skin, blackheads, pimples or rough skin. Washing the face with diluted lemon juice will bring surprising benefits. For the neck and shoulders one can apply the lemon juice undiluted.

A good, economical household plan is to save the lemon peelings, after making lemonade or using the juice, and to rub the face, neck and shoulders with the inside of the lemon peeling, thus using up the little remaining juice in this way. Where the hands are badly stained from cutting vegetables or from other causes, lemon juice is the most effective means of cleansing and bleaching them. Where the hands are sore and rough the lemon juice may smart temporarily, but it will leave the hands soft and comfortable. When using lemon juice full strength, it should either be sponged off with milk or rinsed off with water in a few minutes. For a face wash dilute it, using half a lemon to a pint of water.

Strawberry Lotion.—Strawberries were used by the ladies of ancient Rome to whiten the skin. Fresh, ripe strawberries should be mashed to a pulp and the juice strained through a cloth. Dilute with an equal part of water and add a pinch of borax. This tends to whiten the skin and make it clear.

Watermelon Rub.—Rubbing the face, neck and arms with the pulp of a watermelon has an excellent effect in clearing the skin.

Tomato Bleach.—To make a yellow skin more clear, take a slice of a ripe tomato, rub well upon hands, neck or shoulders for five minutes and then rinse off with water mixed with borax, taking a teaspoonful of borax to a quart of water.

Cucumber Lotion.—Good results may sometimes be secured with oily skins by rubbing with sliced cucumbers. The cucumber pulp also may be pounded in a bag, the juice strained through and applied to the skin two or three times a day.

Barley, Honey and Egg.—Where the skin is coarse and the pores enlarged, a satisfactory remedy will be found in a mixture of ground barley, three ounces; honey, one ounce; and the white of an egg, one ounce. This should be spread upon the face at night, using a cheesecloth protector or

mask. It should be washed off in the morning with lukewarm water followed by cold water.

Oatmeal Water.—A little raw oatmeal stirred into cold water for washing the face is excellent for making the skin soft and smooth.

Superfluous Hair.—The electric needle is the only absolutely satisfactory treatment for the removal of superfluous hair. Avoid chemical depilatories; they injure the skin and sometimes cause increased growth of hair. Take no chances. The most satisfactory home treatment is to use small tweezers and pull out the superfluous hairs one by one. They may grow again a few times but with repeated extractions they will become discouraged and you will not be bothered with them further.

Moles and Warts.—Moles and warts may be destroyed by the electric needle, also by the application of a mild solution of nitric acid, one part acid to ten parts water. It is recommended, however, that the nitric acid be used with caution, as this treatment may leave a scar.

Birth-Marks.—It is best not to experiment with birth-marks, inasmuch as nothing can be done for them in most cases.

CARE OF THE HAIR.

Health and Beautiful Hair.—The woman who desires to improve the condition of her hair should learn, first of all, that vigorous health and good blood are more important than local treatment. In poor health, the hair either falls out or becomes dull and dead in appearance. In vigorous health, the hair takes on the appearance of life and health, with a beautiful lustre. Therefore even the hair is a feature of beauty that reflects the general condition of the body.

Care of the Hair.—The most important and most valuable treatment for the hair is plenty of brushing. Most women try to do their hair up as quickly as possible and have it over with. In the time of our grandmothers, women would spend a half hour or more in simply brushing the hair. Thorough treatment of this kind made it healthy and luxurious. Brushing stimulates the roots of the hair and promotes active circulation in the scalp. A woman should spend at least twenty to thirty minutes each day in brushing the hair if she wishes to improve it.

Next to brushing, massage of the scalp is of great value in directly stimulating the circulation in the tissues about the roots of the hair. In many cases the scalp tends to become tightly adhered to the skull, and in order to maintain good circulation the connective tissues should be

loosened. In massaging the scalp, the finger tips should be placed firmly upon it at various successive points, so that they will not slip, and a rotary, or circular movement should be used so as to give the scalp as much elasticity and movement as possible.

Gentle pulling of the hair, supplementing the brushing, is likewise of great value in strengthening the roots of the hair. One should not pull too hard, but just enough to bring about a feeling of life in the roots of the hair. This should be done each night before going to bed and before doing up the hair in the morning.

Washing the Hair.—One great mistake is often made in the use of strong soaps on the hair. In most cases a plain castile soap should be used, lathering and rinsing very thoroughly.

The most satisfactory method of washing the hair in most cases is the use of an egg shampoo. Beat up a fresh egg with a tablespoonful of water and rub it thoroughly into the hair and scalp for five minutes or more with the finger tips. After thoroughly treating in this manner, it may be rinsed off with lukewarm water. It will be best to use several changes of water to accomplish this effectively.

The frequency of washing will depend upon the character of the hair. Where the hair is dull and dry, one should not wash it often and should never use anything but the egg shampoo. Where the hair is very oily or where there is dandruff, frequent washing will be required, perhaps once each week or every ten days.

Dandruff.—Dandruff is the result of excessive activity of the oil glands and should be combated with vigorous treatment in the way of scalp massage, brushing and pulling of the hair in order to improve the local circulation. One suffering from dandruff should never use very hot water on the hair but can advantageously use plenty of cold water. If the case is unusually stubborn, it will be best to use tincture of green soap instead of the castile soap. This should be thoroughly rubbed into the scalp with a soft brush, in order to remove all the dandruff, and the subsequent rinsing of the hair with lukewarm water should be exceedingly thorough. It should be said that a certain amount of fine dandruff is only natural and should not occasion any concern. It is only when dandruff is excessive and the hair unusually oily that one should try to check it.

Falling Hair.—Falling hair is practically always associated with dandruff, although disease of one kind or another may be responsible. Improved general health is nearly always reflected in a lessening of the loss

of hair. The general stimulating treatment of the scalp through brushing and massage is of the greatest value. The hair and scalp should be exposed to the sunshine, if possible, for a certain time each day. Where there is falling of the hair without much dandruff, a good, stimulating treatment would be the alternate use of hot and cold water without soap two or three times each week.

Brittle Hair.—Brittleness and splitting of the hair is simply the result of a dried condition and is due either to the lack of activity of the oil glands or to the use of too much or too strong soap. In such cases a little olive oil may be applied to the scalp with the finger tips. Be sure to apply it on the scalp rather than to rub it on the hair. Singeing is of no value, although it was a supposed remedy of great popularity many years ago.

Cutting the Hair.—The value of cutting the hair as a means of stimulating the growth has been greatly over-estimated. Repeated cutting robs the hair of its vitality. Many authorities now claim that the only reason why men are more subject to baldness than women is because of the hair-cutting habit among them. A woman's hair should never be cut short after the age of puberty or maturity, for in many cases it is impossible ever again to regain the full growth.

Gray Hair.—When the hair turns gray, it does not mean that the health of the hair is in any way impaired, but simply that the tiny color producing glands have gone out of business. Gray hair previous to middle age can often be restored to its natural coloring by improved health and hair culture, and especially when it is the result of nervousness or poor health. In more advanced years, however, there is nothing that can restore color after the hair turns gray or white.

CARE OF THE TEETH.

Diet in Relation to the Teeth.—Good teeth really depend on good health and satisfactory nutrition, although good health in turn depends somewhat on good teeth. Thorough mastication of food is essential to good digestion and good health, and mastication is impossible without sound teeth.

Too much attention cannot be given to cleanliness of the teeth and mouth as a means of avoiding conditions which lead to the decay and loss of the teeth. At the same time, however, there is one factor in maintaining sound and healthy teeth that is commonly overlooked, and that is the character of the food. The preservation of the teeth depends on good

nourishment just as any other part of the body depends upon securing suitable building material from the food consumed. If the diet is lacking in the elements required for building teeth and bone, the decay and loss of the teeth is almost inevitable.

All foods rich in lime and organic mineral salts are of great value. For this reason whole wheat bread is greatly superior to white bread, and in the case of children especially whole wheat or graham bread, shredded wheat and all whole grain products will tend to build strong, healthy teeth. Oatmeal is a food of special value for this purpose. Milk and eggs are both rich in lime and are valuable to supply the material for building teeth and bones. Vegetables, eaten with the water in which they are cooked, are valuable, and fruits are particularly to be recommended. Fruits are not only advantageous from the standpoint of their nourishing elements, but because of their cleansing effect upon the teeth and mouth, especially when eaten without sugar. If one will eat natural foods, calling for exercise of the teeth, and supplying all the elements provided by nature, one will have healthy teeth such as he cannot possibly enjoy by eating white flour, polished rice, white sugar, corn syrup, and other foods which have been refined by manufacturers until they are of very limited value from the nutritive standpoint.

At the same time mouth hygiene and the care of the teeth are none the less important. Every child should be trained in this way and especially women should take care of their teeth because of the special tendency of childbearing to bring about the loss of the teeth where the diet is not entirely satisfactory.

Brushing the Teeth.—The teeth should be brushed at least once each day, but it is better to brush them after each meal. This would be convenient for most women living at home, although it would not be for many women in business. In any case it is a simple matter to brush the teeth on rising and retiring.

The common practice is to brush the teeth with a lateral movement. This, however, is insufficient inasmuch as the brush does not in that way reach the crevices between the teeth. They should be brushed with a short, vertical movement, so that the bristles may reach the spaces between the teeth as perfectly as possible. It is these crevices that really most need the cleansing, for it is in these that the decay commences.

The use of dental floss is a much neglected practice. If anything, dental floss is even more important than the tooth-brush, for it is only by the use of something of this kind that one can completely remove matter

that has lodged directly between the teeth. If you have not a good dental floss, a little piece of white silk thread will answer the purpose very satisfactorily. It is well, first, to use the dental floss thoroughly in all the spaces between the teeth and afterwards to complete the cleansing work by means of thorough brushing.

The standard tooth powders on the market at the present day are for the most part satisfactory. It may be said, however, that ordinary table salt is particularly to be recommended for the purpose. The salt, likewise, has a healthy effect upon the gums, helping to harden and give them tone. In fact, salt water may always be used advantageously as a mouthwash, rinsing with plain water afterwards. There is hardly anything better. It leaves one with a clean, wholesome taste in the mouth.

The stem of the althea blossom is to be recommended for the whitening of the teeth. Take the stem, crush the end of it, and rub the teeth vigorously with the crushed and juicy part, just as you would use a brush.

A good mouthwash is bicarbonate of soda. Dissolve a half teaspoonful in a cup of water. It is a good throat gargle also and is especially recommended for singers.

To remove tartar from the teeth, there is nothing so good as powdered pumice-stone. This can be rubbed upon the teeth with a piece of orange stick, the same as used by manicurists, until they are thoroughly cleaned and then the teeth brushed thoroughly and the pumice-stone rinsed well out of the mouth.

Fruit Juices for Cleansing the Teeth.—Many savage tribes have wonderful teeth in spite of the fact that they never clean them and do not know what a tooth brush is. It is largely due to their plentiful use of fruit, the juices having a valuable cleansing effect. In recent years, some famous dental authorities have advocated cleaning the teeth with fruit juices or food acids, such as dilute cider vinegar, instead with the usual alkaline tooth powders. It is claimed that fruit acids promote the increased flow of saliva and in this way bring about a greater alkaline condition of the mouth within a few minutes, inasmuch as the saliva is naturally alkaline. Furthermore, fruit is somewhat antiseptic and is always healthful.

STRONG BEAUTIFUL EYES.

There is no other feature that plays so prominent a part in making one attractive as the eyes. The eye is the window of the soul. It domi-

nates the face just as the face itself dominates the body. The eye is the most expressive feature just as it is the most important organ of sense, though one should appreciate the fact that the beauty of the eye is, to a large extent, a question of the condition of the tissues and structures surrounding it. In other words, the eye should be appropriately "framed." As a matter of fact, the expression of the eye is determined not by the eye itself, but by the eyelids, eyebrows, and the muscles which control these surrounding parts. When these muscles are weakened or fatigued, there is a drooping and tired aspect. When the muscles of these parts are contracted through pain, the eye wears the expression of agony or distress. When these parts are all well nourished, strong and healthy, the eye looks clear and strong. In other words, the eyes are a good barometer of the general health. They sparkle when one is full of vitality.

However, the eyeball itself has something to do with the appearance of the eye. The so-called "whites" of the eye, when in perfect health, are a light, clear blue in all fair skinned persons. This fact has a great deal to do with the beauty of the eye from the standpoint of color. When the whites of the eyes are muddy, or when they are congested and bloodshot, they naturally lose their attractiveness. In this respect also the eyes reflect the general health.

Much of the eye trouble of civilized races is due entirely to eye strain, and, in large part, to the use of artificial light at night. Those having a tendency to weak eyes should go to bed early and avoid artificial light as much as possible; they should especially avoid sitting in such a way that the light shines into their faces. Sewing should particularly be avoided in the evening, though sewing and reading are not to be encouraged under any conditions by those whose eyes are weak. It may be said, however, that with the building up of the general health and improving the condition of the blood, the eyes always get stronger and partake of the general improvement. A great many people have been able to discard glasses simply through taking up systematized physical culture.

Headaches are very commonly due to eye strain. In all cases of persistent headaches or frequently recurring headaches, the eyes should be investigated. It is well in such cases to consult a competent oculist. In every case where there seems to be the least tendency to eye trouble, nervousness or headache, the eyes should be examined. Even where the sight seems perfect, glasses may be needed to relieve eye strain until the eyes are stronger.

Salt Water Eye Baths.—Are of great value in toning up these organs.



Water as a Cosmetic. 1. Plenty of cold water tones up the skin and gives it that "fresh" appearance. 2. Do not wash the face with hot water, but use cool or luke-warm water, with a little castile soap. Use the washcloth gently. 3. Cold wet compresses, using washcloth or small towel, will help to clear the complexion and improve its color. 4. A small piece of ice rubbed over the face will close the pores, improve the circulation, and give "life" to the face. It is the most stimulating of all means for this purpose. 5. If the face is tender the ice may be wrapped and held in a small cloth when applying it.

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1. Moles may be touched with a weak solution of nitric acid, applied with a matchstick. 2. Removing superfluous hairs with small tweezers, the best home treatment. 3. Using a blackhead remover. Never squeeze them with the fingers. 4. Always apply a good antiseptic to the face after treating blackheads or pimples. 5. Stroking under the eyes, sideways not downwards, for puffiness or sagging under the eyes. 6. In drying the face do not rub roughly, but pat the face with the towel, gently, until dry.



1. The soft flesh brush is the best of all means for making the skin smooth and soft, and for preventing pimples on the shoulders, chest and back. 2. Soft linen cloths, dipped in white of egg, may be applied to remove the lines or wrinkles at the sides of the mouth and upper lip. 3. The growth of the eye-lashes is stimulated by gently pulling them. 4. The flesh brush is of value for giving color to the face, and improving the texture of the skin. 5. Massage is of special value for the body, and may be self-applied with advantage.

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1. Massage for the face should consist largely of gentle pressure, applied with a small circular movement, but no pulling and stretching of the tissues. 2. In smoothing out wrinkles, rub in the same direction, never across them. 3. Massage for a double chin is of great value, stretching the head up when applying it. 4. Massage for the bust is of much value, and should be applied with a circular movement, never with downward strokes.

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1. In brushing the teeth, use a vertical rather than a lateral action, so as to reach the spaces between the teeth. 2. The regular use of dental floss, thus cleaning the spaces between the teeth, is if anything even more important than the use of a toothbrush. 3. A bandage to be worn at night to correct outstanding ears. 4. A device to prevent mouth-breathing during sleep. A bandage applied in this way will hold the mouth shut so that one will breathe through the nose properly.

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Thorough and prolonged brushing of the hair night and morning will insure its luxuriant growth. Before doing up the hair, always give it a gentle pulling, taking only a part of it at a time, and thus stimulating the roots. Once each day, if possible, spend some time massaging the scalp with the finger tips, thus improving the circulation and giving life to the roots of the hair. When convenient, massage of the scalp may be advantageously administered by another, but it is quite as satisfactory when self-applied.

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They will sometimes cure a headache. They are more stimulating when used with cool or moderately cold salt water, but they may be used warm. One can use a small eye cup for this purpose or immerse the face in a basin of salt water, opening the eyes under water and rolling them around so as to give the eye ball a good salt bath. Repeat this several times.

Where there is any inflammation of the eyes, bathing with boric acid solution is even better than salt water. For this purpose an eye cup should be used, using a fresh solution for each eye. If the eyes are strained and sensitive, however, they should be protected from the light, perhaps by a bandage, and in such cases it is always well to consult a specialist. Sometimes complete darkness for a day or two will so rest the eyes as to restore their strength.

Massage and Exercise for the eyes themselves help greatly in strengthening them and giving them the bright, clear appearance that makes for beauty. Exercises for the eyes consists simply in moving and stretching them as far as you can upward and downward several times, far over to each side several times and then around in a circle, reversing the circular movement after a few times. Follow this by squeezing the eyelids tightly shut and then opening them as wide as you can stretch them, shutting again, opening, and continuing this a number of times. This will strengthen the adjacent muscles and increase the circulation in the eye.

Massage of the eyes may be administered with the heel of the hand, pressing gently and using a circular movement. Young children instinctively massage the eyes after crying with the backs of their little hands, but the base of the thumb or heel of the hand will be found more satisfactory as a rule. There is no question of the stimulating effect of such treatment.

Remember, however, that one's entire state of mind and also the condition of health are accurately reflected by the eyes, and all health building measures are of importance in beautifying these remarkable organs.

The eyelashes are important in their influence upon the beauty and appearance of the eye. They may be improved by the practice of gentle pulling, thus stimulating their growth and giving them strength. The same is true of the eye-brows, though rubbing olive oil or vaseline on the latter will also promote their growth.

Care of the Ears.—Not much attention is ordinarily required in the care of the ears apart from the matter of cleanliness. One mistake fre-

quently made, however, is the attempted cleaning of the ears with hair-pins and other hard objects with which to remove supposed accumulations of wax. If the ears are washed thoroughly with an ordinary wash cloth, one need not be concerned about wax. The presence of a certain amount of this is natural and has a protective purpose. The finger nails especially should be kept out of the ears, inasmuch as scratches by the nails may give rise to serious inflammation, with possibly tragic consequences. The only thing that should ever be inserted into the ear is a little twisted wad of clean absorbent cotton, such as mothers commonly use in cleaning a young baby's nose. Nothing harder than this, however, should ever be inserted in the ear except by a physician.

Projecting or outstanding ears cannot in all cases be modified, although something may be done to improve them by wearing a bandage passing from under the chin over the ears and fastened at the top of the head, thus pressing the ears flat against the side of the head. Do not expect results in a week. This bandage must be worn over night for many months to get results, and the treatment will naturally be more effective in children than in the case of adults.

CARE OF THE HANDS.

A great deal may sometimes be learned of one's character through scrutiny of the hands. The hand is a wonderfully perfected mechanism and it is a member of the body well worth taking good care of.

Cleanliness is a matter of first importance in well kept hands. This does not mean, however, that soap should be used excessively, inasmuch as pure lemon juice is not only a more effective means of cleansing the hands, but it is particularly valuable for softening the skin. Furthermore, lemon juice will remove stains from the hands probably better than anything else in the world. At the same time, where the hands are soiled with grease, the use of soap will be necessary, always rinsing well afterwards with cold water.

Chapped Hands.—There is good reason to believe that chapped hands are largely the result of dirt which has worked into the skin and thus produced an irritation. Therefore a thorough cleansing should be the first step in overcoming a chapped condition of the hands. Thorough washing with a mixture of warm water, castile soap and corn meal is very valuable, afterwards rubbing in a little olive oil, vaseline or cocoa butter.

In order to protect the hands when any dirty work is to be performed,

it is a good plan to rub the hands well with olive oil. This will prevent dirt from working its way into the skin. Or one may wear rubber gloves or an old pair of kid gloves.

One of the most effective treatments for chapped hands is a half and half mixture of glycerin and rose water with a benzoin added. This should be rubbed into the hands well after washing with warm water and before going to bed. Where there are deep cracks as the result of chapping, hot melted tallow or shoemaker's wax may be dropped upon the cracks, where it will immediately harden and protect the sensitive tissues until they have had a chance to heal.

Oatmeal Water is splendid for washing the hands. Oatmeal boiled in water may be strained, using the liquid as a wash.

A good preparation for whitening the hands is a mixture of equal parts of cocoa butter, refined wax and oil of sweet almonds, first heating, then stirring until cool and applying to the hands before retiring. Bran mixed with buttermilk to make a thick paste may be rubbed upon the hands at night, after which put on loose gloves and let them remain until morning. Another satisfactory preparation for whitening the hands is a mixture of equal parts of glycerin, rose water and lemon juice. First wash the hands with oatmeal or almond meal water and then apply this mixture,

Red Hands.—Redness of the hands is usually an indication of poor circulation. Tight gloves, tight sleeves or even tight lacing at the waist, by preventing the free circulation of the blood, may be the cause of red hands. The blood does not return freely from the extremities. Holding the hands upward will relieve this condition and also relieve the swollen condition of the veins. For permanent results, exercise, massage and keeping the feet warm will be effective. Washing in cold water is the best temporary remedy.

For perspiring hands, there is nothing better than washing in a little cold water in which a lump of soda is dissolved. Dusting with a little starch will help. Lemon juice will also be valuable in such cases.

Care of the Nails.—If the nails are not abused in any way, they do not need a great deal of attention, aside from proper trimming. For this purpose a file should always be used rather than scissors. Cutting thickens the nails. In filing, the file should always be held between the nail and the flesh rather than at right angles. The deposit of dirt beneath the nails should be removed only with an orange stick. Never use a sharp instrument for this purpose.

The greatest mistake in connection with the nails is the habit of chewing or biting them off. It is largely a nervous habit. The best cure for this is careful manicuring, so that there will be no temptation to bite off jagged ends. Any one who takes pride in her nails and cares for them properly, will find it almost impossible to bite them.

It is advisable that every woman should secure a little manicure outfit and use it regularly. A chamois-skin polisher will be effective even without the polishing powder ordinarily used, though of course this will help.

Brittle nails are the result of defective diet.

Exercise for the Hands.—Exercise for the hands is necessary to keep them in good condition. Hands that are too soft or too much unused are never attractive. If one has no regular employment requiring active use of the hands, piano playing is to be recommended, together with vigorous massage. Shaking hands with yourself and squeezing or massaging the hands and fingers vigorously in this way will promote an active circulation that will not only build up the muscles, but strengthen the bones, tendons, ligaments and other structures in the hands.

Care of the Feet.—The most important factors in the care of the feet are cleanliness and proper footgear. The question of footgear has already been referred to. Corns and bunions are entirely the result of imperfect footgear and can only be permanently corrected by wearing shoes that fit.

Tender feet should be treated with a cold salt water bath each morning. After each washing with warm water and soap they should also be treated with a cold salt water bath, after this massaging and rubbing them vigorously with a little olive oil. This treatment will accomplish wonders.

For perspiring feet, frequent washing is necessary and the salt water suggested will be valuable. The foot may also be dusted with a half and half mixture of starch and salicylic acid.

For flat feet, see "Corrective Exercises" under "Physical Culture and Body Building."

BOOK XVII

Treats of Physical Culture and Body Building.
The book is divided into three parts, describing re-
spectively exercises for men, women and children.

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Book XVII

PHYSICAL CULTURE AND BODY BUILDING

PART I.

EXERCISE NECESSARY TO HEALTH.

Why Exercise is Beneficial.—There is a general impression in man-
ci.cles that exercise or physical culture is merely a means of developing
muscular strength. There is also a general impression that in this age
brain is more important than brawn. Consequently, those who view the
subject of body-building from this narrow viewpoint are not likely to take
physical culture seriously.

The great truth is that physical culture is not simply a means of
building strong muscles, for it is also a means of improving health and
building vitality. Even brain work requires energy. Physical culture
is a means of building not only muscular vigor but functional strength,
organic strength and nerve strength. Muscular power in many cases is
desirable for its own sake, but for the average man and for the average
women exercise is chiefly valuable not for the sake of strength but for the
sake of health. Let this point be made clear, with all possible emphasis.

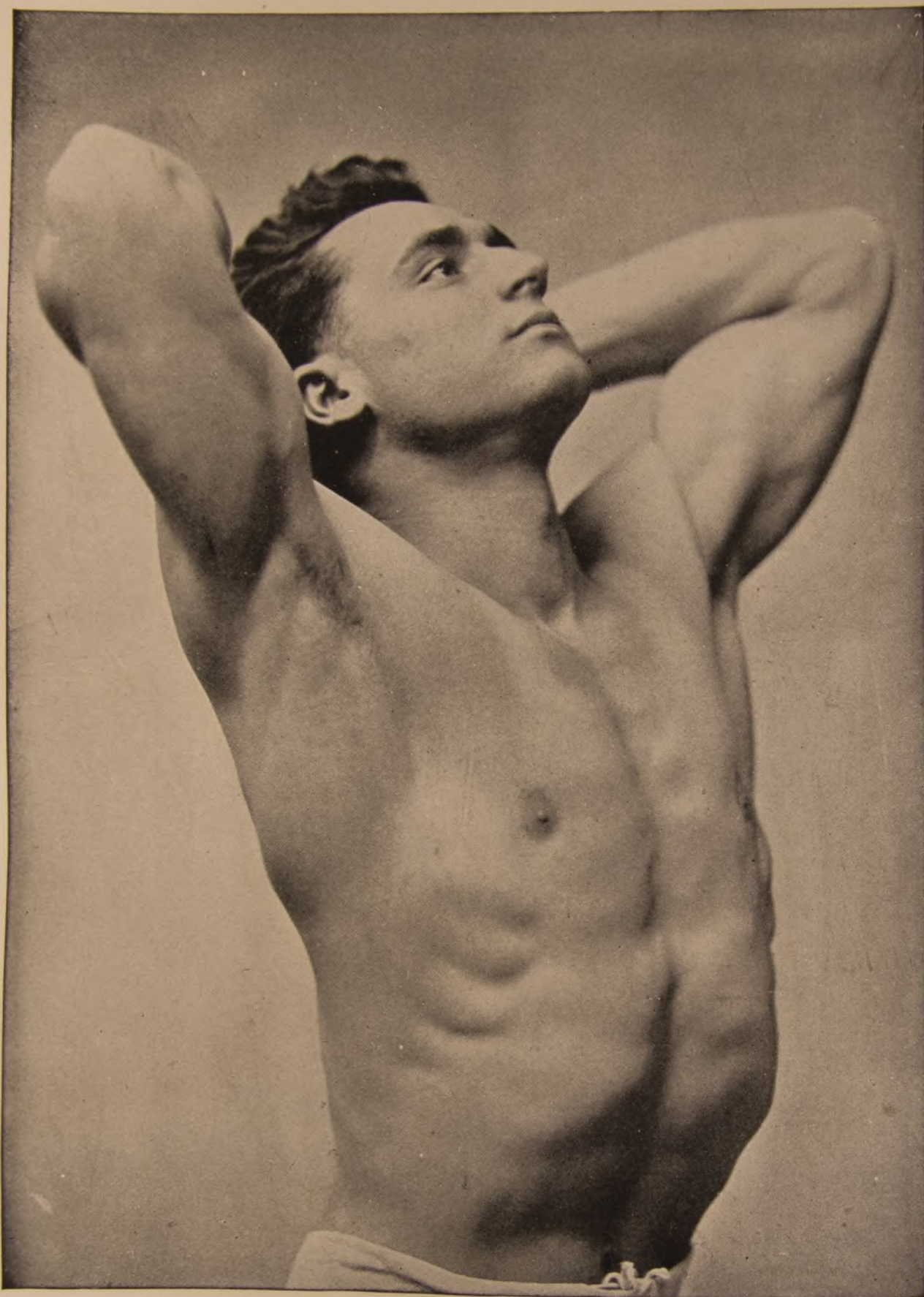
The basis of every healthy life is activity. There can be no such
thing as health without muscular action. Man is fundamentally an ani-
mal. He is much more than this, but this he is first of all, and should be
a perfect representative of animal life. In the days of the cave man
the ordinary requirements of life were such as to keep one physically
active and strong. The preservation of life depended upon strong limbs,
a clear eye, agility and speed of movement, with perfect control of every
muscle of the body. Men in the stone age did not need physical culture.
They lived it all the time. But civilized man, with his sedentary occu-
pations and limited physical activities needs special forms of exercise to
keep him strong and vital.

Brains are indispensable these days, but bodily strength is also necessary to stand the stress and nerve-strain of modern life. The man of to-day should represent a combination of brains and brawn, for never was life so trying as at present. Never was a strong constitution more necessary.

Importance of the Muscular System.—You could not speak, you could not open your eyes, you could not adjust or focus the sight, you could not breathe, your heart could not beat, you could not digest your food, you could not laugh or cry, you could not walk, you could not dress, you could not even crook a finger without muscular action. The muscles should be regarded as organs of the body just the same as any other organ, for they are organs of movement.

Exercise is absolutely essential to health because of the physiological relation of the muscular system to the rest of the body. For over two-fifths of the bulk of a normal body is made up of muscular tissue. The nutrition of such a large part of the body is therefore an important matter. Most of the food we eat is consumed by the muscles, and most of the heat in the body is produced by them. It is apparent that to neglect the muscular system, therefore, means to derange the harmonious balance of all bodily functions. Exercise is beneficial because of its influence upon the appetite through the increased demand for food. It is beneficial because of its influence in promoting a vigorous and active circulation of the blood. It stimulates functional activity in all the internal organs. It causes deep breathing, thereby promoting health of the lungs, increasing the supply of oxygen upon which all life depends, and facilitating the removal of carbonic acid gas. Furthermore, it stimulates the elimination of all wastes and poisons through the kidneys and the pores of the skin. Muscular stagnation means stagnation in all of these functions as well, and under such conditions it is not possible to maintain a high degree of health.

Physiological Effects of Exercise.—Muscular activity brings about increased metabolism or cell-activity. There is a breaking down or wearing out of the cell structures, resulting in the formation of waste products and in the subsequent rebuilding of new cells. Strength may be increased and the muscular structures themselves developed by daily and persistent exercise which involves these changes. The formation of new cells is stimulated by the demand for greater strength in the muscles, and it is because of this fact that body building becomes an easy possibility. In fact, the muscles represent the only tissues in the body which we can in-



A superb example of physical development. This shows a splendid combination exercise for neck and chest. Pull the head back in this manner while resisting the movement with the arms, and repeat until slightly tired. This exercise will insure good chest expansion.

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fluence directly. All other structures must be improved indirectly through the influence of exercise and other measures in the improvement of the blood and the promotion of the general health.

The first and most important effect of exercise is accelerated circulation. The breaking down of the cells brings about a demand for oxygen and new building material, and also the necessity for the removal of the carbonic acid and other waste products formed. Therefore, the heart is compelled to beat more rapidly, pumping the blood through the arteries and finally through the capillaries in such a way that the oxygen is supplied to every minute part and the waste materials are taken up by the blood-stream and carried to the channels of elimination. This means increased breathing, increased action of the kidneys and increased perspiration. Under conditions of physical stagnation the removal of wastes is sluggish and imperfect. The active and vigorous circulation induced by exercise, on the other hand, tends to cleanse all of the bodily structures. A sufficient amount of exercise, therefore, means a condition of internal cleanliness. Exercise for those who are strong enough to take it is the most valuable of all blood purifying measures.

Fatigue.—What we call fatigue is simply the result of an accumulation of the waste products resulting from metabolism. If not removed they will poison the body and make life impossible. When they have accumulated, even to a limited degree, these waste-poisons produce a stiffened and weakened condition of the muscles in which the latter are incapable of normal action. The relief of this condition necessarily involves the removal of these fatigue-poisons. This is ordinarily accomplished during sleep and rest, although it is hastened by massage, hot water bathing and other measures that increase the circulation and hasten elimination.

These fatigue-poisons are produced not only by muscular effort but by brain work or the functioning of any other of the organs of the body. Under conditions of physical inactivity and sluggish functioning these wastes accumulate. Under such circumstances the first effect of exercise, by increasing the circulation, is to remove these poisons and thereby bring about a sense of refreshment. It is in this way that a moderate amount of active exercise is refreshing in its effects. It is possible, however, to carry the exercise to such a point that the muscular work itself involves such increased production of fatigue-poisons that the refreshing effect of the exercise is lost and one feels fatigued. For this reason exercise for constitutional purposes should not be carried too far.

Exercise for the Brain Worker.—It will be seen from what has just been said that mental work is productive of fatigue, or the accumulation of waste-poisons. That is why one feels exhausted at the end of a day of brain work. Exercise in such a case should be taken at five or six o'clock in the afternoon as a means of relief and refreshment. The increased circulation will enable one to sweep these wastes out of his system and to clear his brain. So long as your exercise is enjoyable it is productive of this result, but as soon as it becomes laborious and you lose the sense of pleasure you may understand that it is time to stop.

Classification of Exercise.—While practically all exercises have certain results in common, yet various forms of exercise are especially adapted for definite purposes. Certain types, for instances, are chiefly effective for purposes of *muscular development*. Other forms of exercise will be particularly valuable for *strengthening the internal organs*. We may term these *organic exercises*. *Corrective exercises* form a department of physical culture, the purpose of which is to overcome bodily defects and special weaknesses in various parts of the body. To a large extent it is the corrective influence of many systems of exercise that give them their greatest value. Finally, we may consider what may be termed *constitutional exercise*, the chief purpose of which is not to develop the muscular system, but to build vitality and improve the general health.

ORGANIC EXERCISE.

Strong Muscles or Strong Organs.—We have said that the first purpose of physical culture should be health and vitality rather than mere muscular strength. We need both, but the internal strength is the more important. There was a time when the thought of physical culture was associated chiefly with the biceps, the large, two-headed muscle of the upper arm. The physical training conceptions of that day had to do merely with strong arms and legs, and, to a certain extent, the ability to lift weights. Physical culture was something for the wrestler and boxer. But that day has gone by. Physical culture is now a means of health-building for the professional or business man, or anyone else, and is concerned chiefly with nervous energy and internal strength. The man of to-day wants strong organs most of all. He cares little about his biceps, except as it may be a means of promoting the general circulation and influencing the internal organs.

Strength of Back, Chest and Abdomen.—For the above reasons any

system of physical culture intended for the average man rather than for one specializing in athletics should consist chiefly of exercise for strengthening the trunk of the body and the internal vital organs. The exercises which we are illustrating are practically all of this type. An elaborate system of exercises for the arms and legs is of little value compared to a few simplified movements for strengthening the back, improving the chest and giving one firm abdominal walls. The exercises illustrated have been carefully selected for this purpose. It does not matter so much what exercise one takes so long as it accomplishes results. One may do as many exercises as he pleases, but such movements as have been illustrated are of the very greatest importance.

Exercises that affect the region of the back, sides, chest and stomach have a direct effect upon the internal organs, not only because the increased circulation in these muscles means an increased blood supply to the internal parts adjacent to them, but also because movements of the trunk of the body have the effect of compressing, stretching and otherwise moving the internal parts to a considerable extent, thus promoting functional activity. No one can be absolutely healthy without more or less activity of this kind, whether in the form of work or exercise. Exercises involving the region of the stomach and abdomen are of particular importance for the sake of firm abdominal walls and a general condition of strength and vigor throughout all these parts.

Breathing Exercises.—Voluntary deep breathing is a commendable form of organic exercise that directly affects the lungs and in that way influences the entire body. In civilization, and especially indoors, men and women neglect to breathe deeply. Inactivity and sedentary life are responsible for a degree of shallow breathing that is conducive to pale faces and lack of energy. One cannot live without oxygen and the more oxygen he inhales the better the condition of his blood. Deeper breathing also means the more perfect elimination of carbonic acid gas.

Now, ordinary muscular exercise is at the same time the most perfect form of deep breathing exercise. Under such conditions deep breathing is spontaneous. The lungs automatically adapt themselves to the oxygen requirements of the system. Muscular effort creates a demand for oxygen, or what one may call a condition of oxygen-hunger. Prolonged muscular activity, therefore, insures a perfect lung development. Under such conditions one does not need to think of special deep breathing exercises. Wild animals do not need to be taught deep breathing.

Diaphragmatic Breathing.—One whose occupation keeps him confined

for a large part of the day, however, should practice voluntary deep breathing frequently. This should take the form of diaphragmatic or so-called abdominal breathing. Chest breathing is unnatural except under conditions of extreme muscular exertion, as in running or wrestling. If one requires a tremendous amount of oxygen, chest breathing is instinctively resorted to temporarily to supply the demand. Under ordinary conditions, however, the natural method of breathing involves chiefly the expansion of the body at the waist line and in the region of the abdomen. This is because the diaphragm, during the process of inhaling the breath, presses downward in such a way as to cause the expansion of the body below it. The diaphragm is a large, flat muscular structure which forms a partition between the thoracic cavity and the abdominal cavity. It serves as a floor for the heart and lungs and as a ceiling for the stomach and other functional organs lying underneath. If you take an erect position and inhale a breath, drawing it down to the lower part of the lungs in the proper manner, you will find that the expansion is at and below the waist line, with perhaps a little expansion of the floating ribs. It is remarkable how much air can be inhaled and exhaled without expanding the upper chest. This is a form of deep breathing to be practiced as often as you can think of it. Inhale only through the nose. Exhalation may be either through the nose or mouth, but preferably through the nose.

While it was thought years ago that abdominal breathing was natural for men yet it was assumed somehow that chest breathing was the only natural method for women. The error of this assumption is now well understood. Chest breathing among women is found to be only the artificial result of corset wearing and tight lacing. If there is sufficient freedom at the waist line and below, women naturally breathe in the same manner as men.

The breath is never entirely exhaled. There is always a residue in the lungs and air passages. The fresh air inhaled is therefore only mixed with this residue of "dead air" in the lungs. In order that deep breathing may be as effective as possible, therefore, and the supply of oxygen as great as possible, it is well to exhale as much as one can before inhaling. In this way the new supply in the lungs is more nearly perfect.

Breathing exercises are valuable the first thing in the morning. If one feels "more tired than when he went to bed" it is often because of an accumulation of carbonic acid due to shallow breathing when asleep. Deep breathing exercise will overcome this condition quickly. A little

active exercise and a cold bath, by stimulating respiration, will also quickly bring a sense of refreshment.

CORRECTIVE EXERCISE.

Remedying Bodily Defects.—In two respects systematic exercise has a great advantage over play or athletics as a means of physical development. Active open air pastimes, while always recommended, do not necessarily mean a perfect development of all parts of the body. Exercise, however, properly designed and systematized, will bring about symmetrical development, for each part of the body will be employed in such a way that there are no weak parts. And in the second place, special exercises may be used for corrective purposes where there are bodily defects. Many athletes may be found who are well trained in some specialty, but are nevertheless one-sided in development.

Such conditons as flat chest, drooping or "round" shoulders, spinal curvature, a pouchy abdomen, head hanging or thrust forward, flat foot, "chicken breast," and other similar defects, may be either partially or entirely remedied by appropriate exercise.

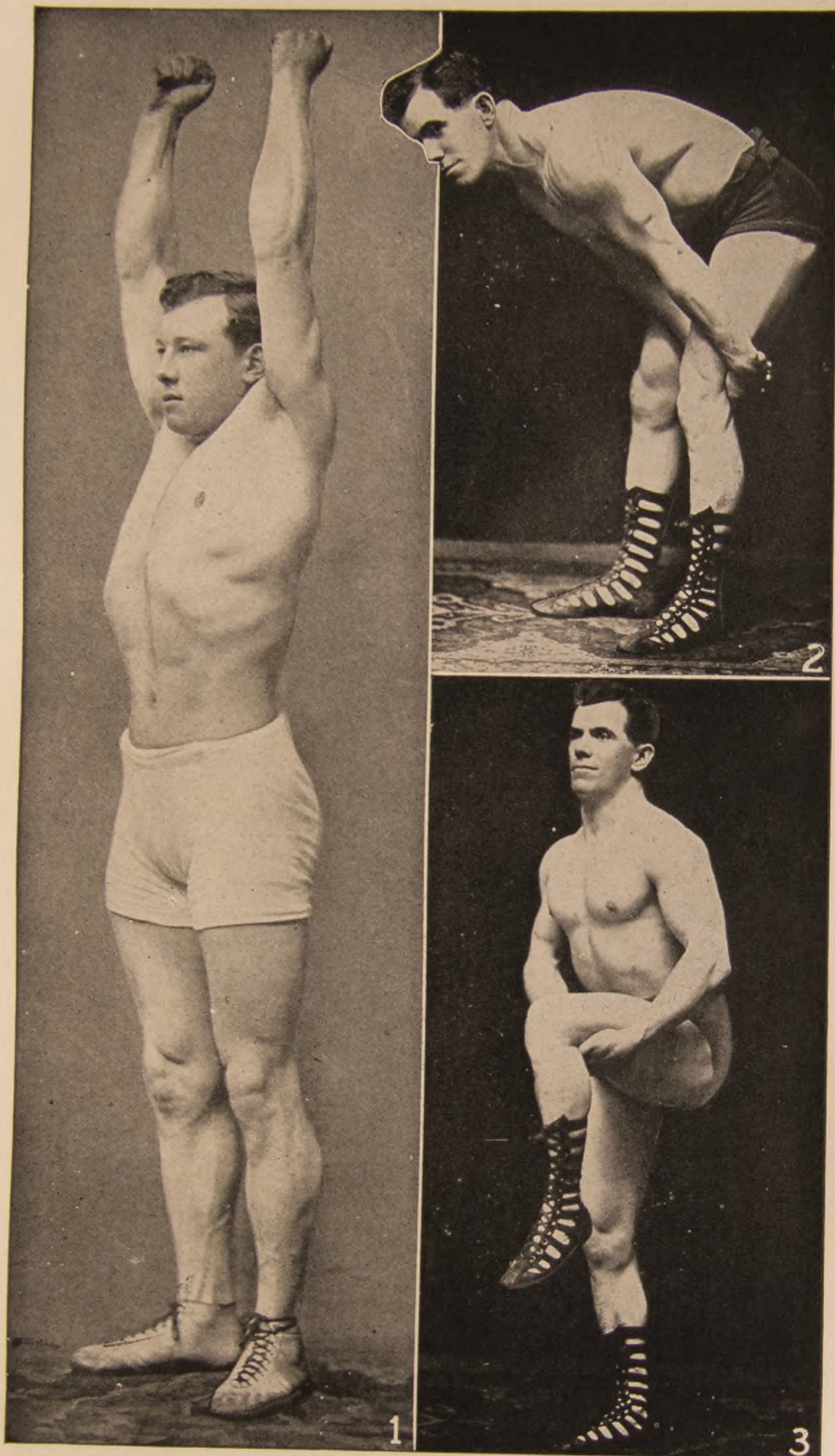
To a large extent, however, ordinary development exercises of the best type are corrective in their influence. In other words, so far as the trunk of the body is concerned corrective and development exercises are to a large extent identical. The subject should be understood, however, so that intelligent selection may be made of those exercises which in each individual case are most suited to one's requirements. All exercises which strengthen the back, and especially stretching and bending movements, are corrective of spinal curvature. All exercises which bring the shoulders back and improve the carriage of the head have a corrective influence upon the chest. In both flat-chest and "chicken breast," chest expansion exercises and chest breathing exercises are advisable, though proper posture in such a case is most important of all. All exercises which tend to strengthen the stomach and abdominal muscles, and particularly those which also promote improved posture, will tend to overcome a pouchy or sagging condition of the abdomen. All neck exercises will strengthen that part and improve the carriage of the head. Flat-foot or weakness of the ankles may be corrected by systematic exercise and especially by the wearing of moccasins or sandals, going barefoot, and the practice of "toeing-in" when walking. Exercises for gripping with the toes, for placing the weight on the outside edge of the foot, for arching the foot and for

deep-knee-bending with the toes slightly turned in will be valuable in flat-foot and other foot troubles. The strengthening of any of these parts will naturally be corrective, but by selection of special exercises suited to each case wonderful results can be secured.

Influence of Correct Posture.—Where there is any occasion for the use of corrective exercise special study should be given to the question of bodily posture. This is always important, even where there is no physical defect or weakness. Correct posture really means a properly balanced and erect condition of the spine. Everything else depends upon this fundamental necessity. An erect spine naturally involves a normal position of the shoulders, chest and abdomen. The chest, under such conditions, is in an active position, well raised and expanded so as to give room for heart and lungs. The shoulders are fairly well back and the abdomen somewhat retracted. The extreme military position, with the abdomen far drawn in and the chest thrown far forward, is neither necessary nor desirable. It is essential, however, that a comfortably erect position be maintained. By holding the head fairly well back this position is easily assumed.

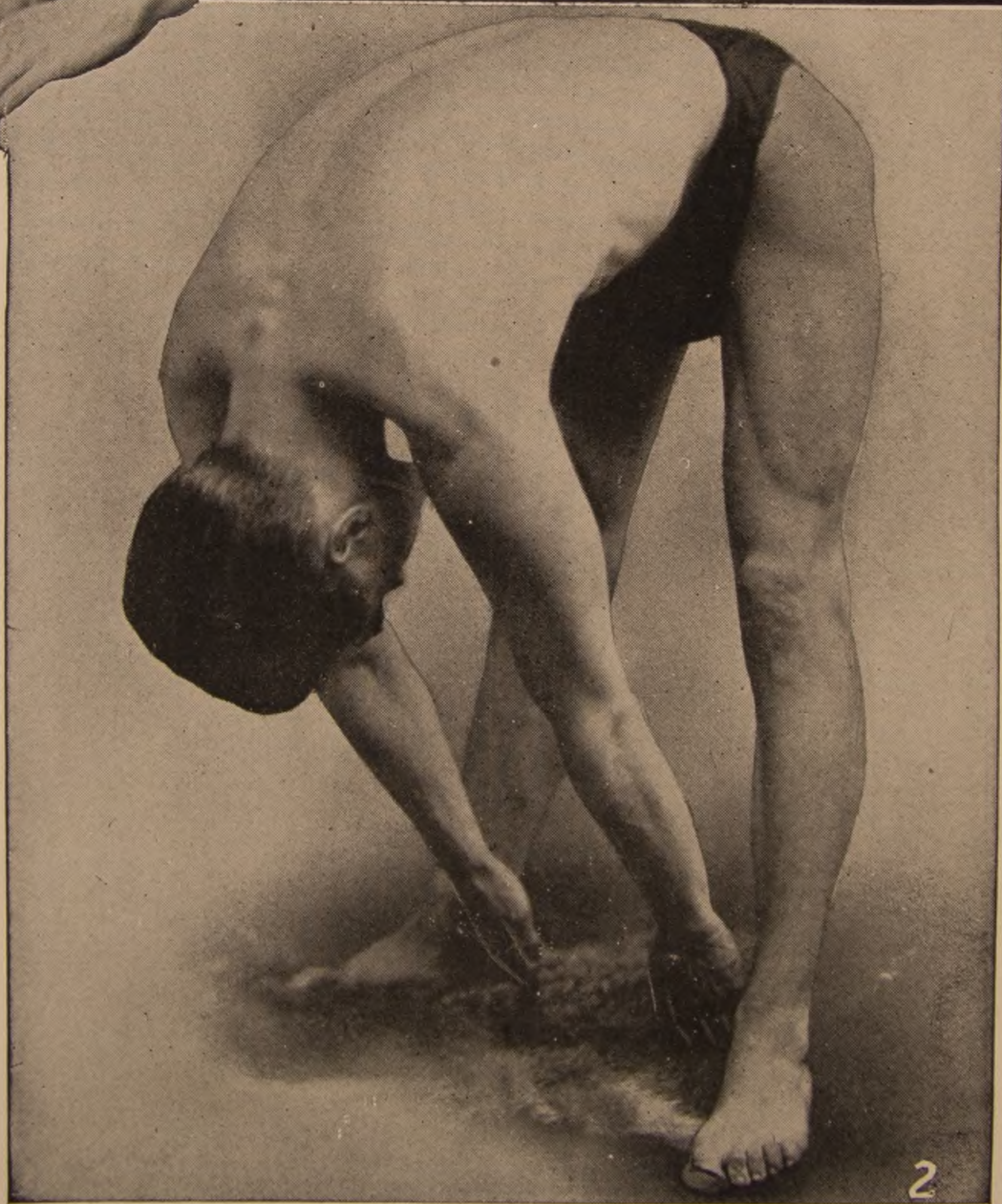
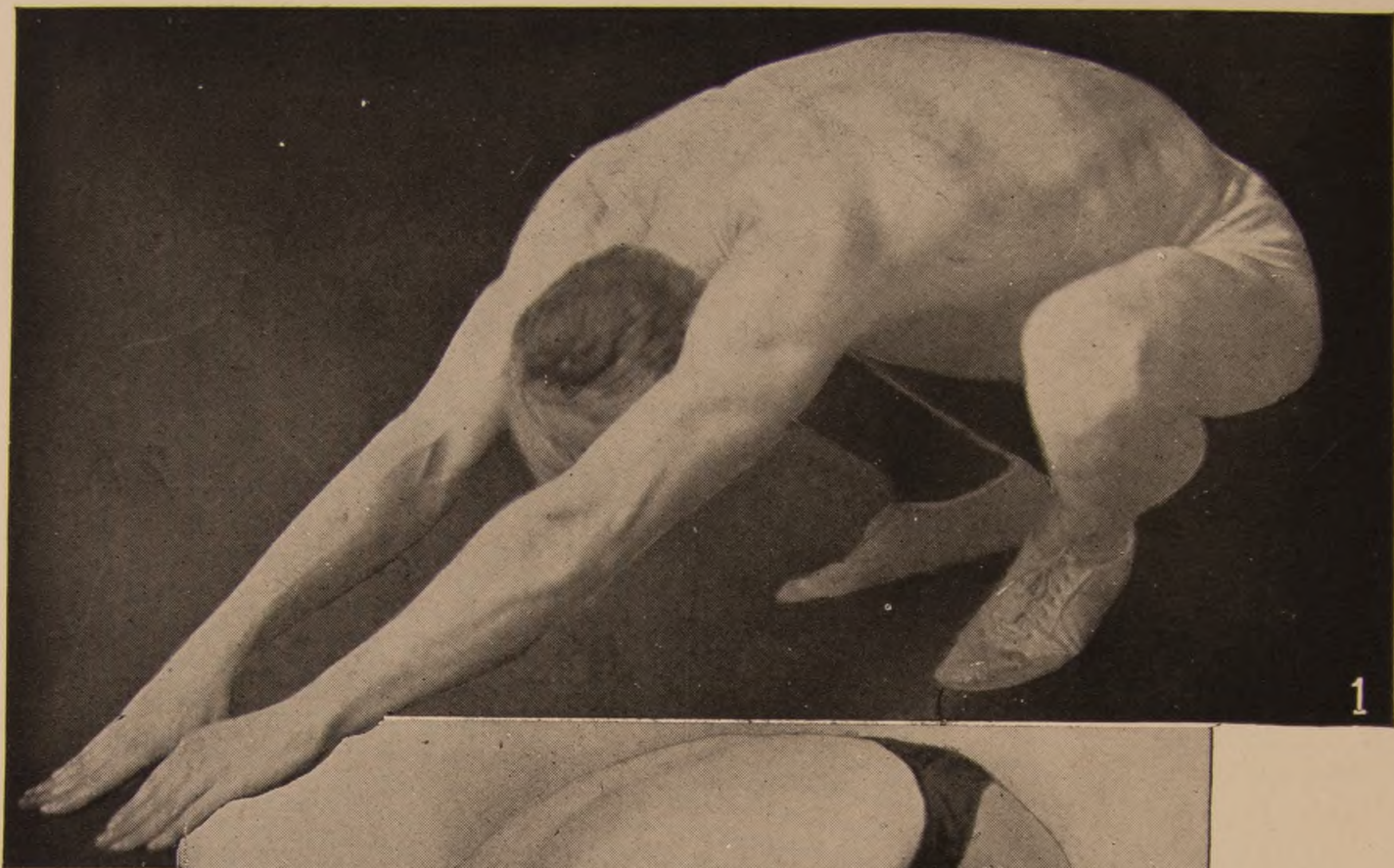
The Spinal Column in Correct Posture.—We have said that good posture is chiefly a question of an erect spine. The human spine is unique in the animal world because man is the only animal who naturally stands erect. This has required a certain variation in the evolution of the spine peculiar to the human race. Particularly this variation involves the natural curves in the spine, of which there are three, the more important for our present consideration being the lumbar curve, which is responsible for the conspicuous arching of the back at the waist line. It is true that these curves help to give resiliency, but fundamentally they are the direct result of our erect posture. This arching of the back, therefore, is an inevitable feature of an erect position. When you slump forward, with shoulders drooping and chest flat, the arch in the back tends to disappear. But when you draw yourself up to your full height, with chest elevated and expanded and head thrown back, the arch in the back becomes pronounced. When you hear reference made to a "straight back," the idea conveyed should be that of square shoulders and erect posture, inasmuch as the spine is never really straight in the strict sense when the body is properly carried.

Exercises for Correct Carriage.—Therefore if you see to it that the back is arched in this way you can depend upon having a correct carriage. As a means of securing this at any time there are three extremely simple



1. Stretching the arms vigorously high above the head, an exercise especially good for the spine. 2. First position in a vigorous exercise for the back. From this position, resisting with the leg, straighten up to the position shown in Figure 3, pulling the leg upward. Repeat several times with each leg.

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Two good back exercises. 1. Squat low down and stretch the arms vigorously far forward, touching the floor at a point as far as you can possibly reach. 2. First standing erect, with arms high above the head, and feet apart, swing down and touch the floor between the feet and at a point as far back as possible.

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exercises. The first of these is merely to stretch the arms high above the head. This will raise the chest, retract the abdomen and bring about a normal arching of the back. Maintain this position of the torso or trunk while bringing the hands down to the sides and you will find yourself standing correctly poised. Do the same thing sitting down. Another simple exercise is the familiar stretching and yawning movement in which the arms are doubled and the elbows brought up to a level of the head and then backward, with the head also drawn back. It elevates the chest and arches the back. Another splendid exercise is to clasp hands behind the back and then pull the shoulders backward and downward. Any one of these three movements may be put into practice a hundred times a day to help you maintain good bodily carriage. The last of the three may be practiced upon the street without attracting notice.

CONSTITUTIONAL EXERCISE.

Exercise for Functional Strength.—The relation of muscular exercise to the internal functions deserves special consideration. It is true that all development exercise is somewhat constitutional in its influence inasmuch as it affects the internal organs to some extent. It is also true that all constitutional exercises, such as walking and hill climbing, are somewhat muscle-building in character. Yet certain forms of exercise are useful chiefly for muscle building, while others are valuable mainly for vitality building. It may be said that any form of exercise which keeps the internal organs vigorously at work for a considerable period of time, even though it may not involve much muscular effort, may be regarded as constitutional in its effect because of having its chief influence upon the heart, lungs, kidneys, liver and internal functions generally.

In other words, exercises which build endurance are constitutional in their effect, as compared with exercises which merely build strength. Great strength in a muscle depends upon its capacity to overcome resistance. This power is developed by daily work in which great resistance is overcome, even though one may make only two or three such efforts each day. One may lift a certain weight only once or twice each day, and by gradually training the muscles to overcome a still greater resistance he will develop the power to lift a heavy weight. In this way the muscles may be enlarged but without involving the same amount of *continued activity* of the heart, lungs and internal organs that would be secured in long distance running or a ten mile walk.

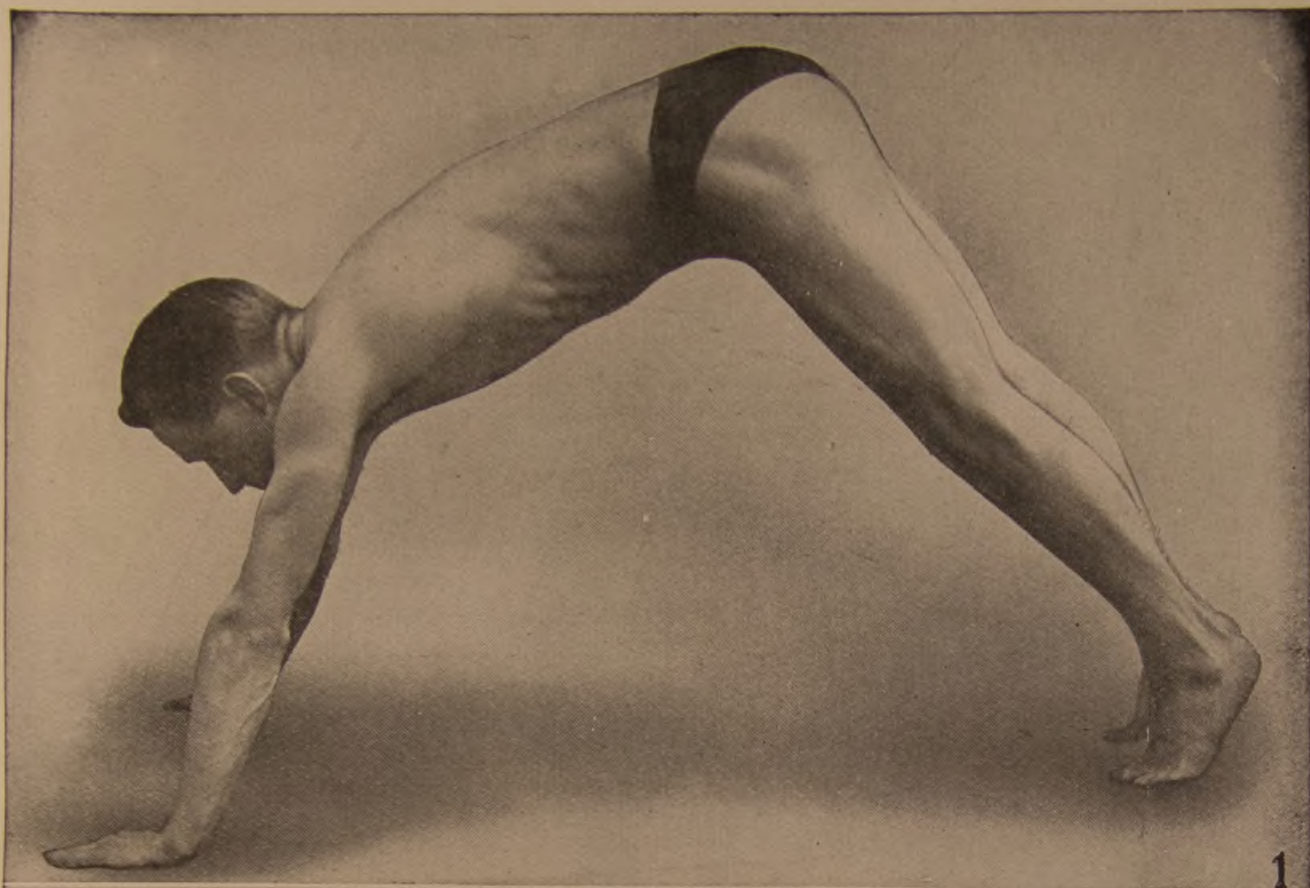
Vitality Building.—Vitality building, therefore, really depends upon a sufficient amount of exercise as measured in time rather than in the severity or intense character of the work. For real constitutional benefit one should each day enjoy some exercise extending over a period of two or three hours at least, even if this consists only in walking. Golf is particularly valuable. Tennis is splendid. Hill climbing is a superb constitutional exercise. It keeps your circulation active and induces both deep breathing and free perspiration, both valuable blood-purifying measures. A system of ten-minute exercise is valuable so far as it goes, and is a thousand times better than no exercise at all; but for real constitutional results one should have some outdoor activity covering a period measured in hours rather than in minutes. One naturally cannot be too strenuous for a period of hours, and therefore walking, golf or some other moderate exercise, long continued, is best for vitality building purposes.

What Endurance Means.—Endurance, as distinguished from strength, means the capacity for continued exertion, or many repetitions of a muscular effort. One may have strength without endurance, but endurance is the more important. Endurance depends upon pure blood and a condition of internal cleanliness as determined by the ability to eliminate fatigue-poisons rapidly. It means functional strength and vitality. In building endurance, therefore, one builds vitality and internal strength. Those who are very strong will find it advantageous to practice cross-country running, wrestling, rowing and other vigorous exercises for the sake of endurance. Naturally, one should avoid over-exertion. To carry these strenuous pastimes too far would mean nervous exhaustion. But generally speaking, endurance means vitality. For those of less physical vigor it is sufficient to play golf, climb hills and take long walks. Horse-back riding, cycling and other pastimes not too strenuous may be suggested for the same purpose.

We have previously referred to organic exercises as involving special movements for the trunk of the body which directly influence the internal organs. These will be decidedly constitutional in their effect, but not to the same extent as those which involve continued functional stimulation, such as will be found in prolonged activity.

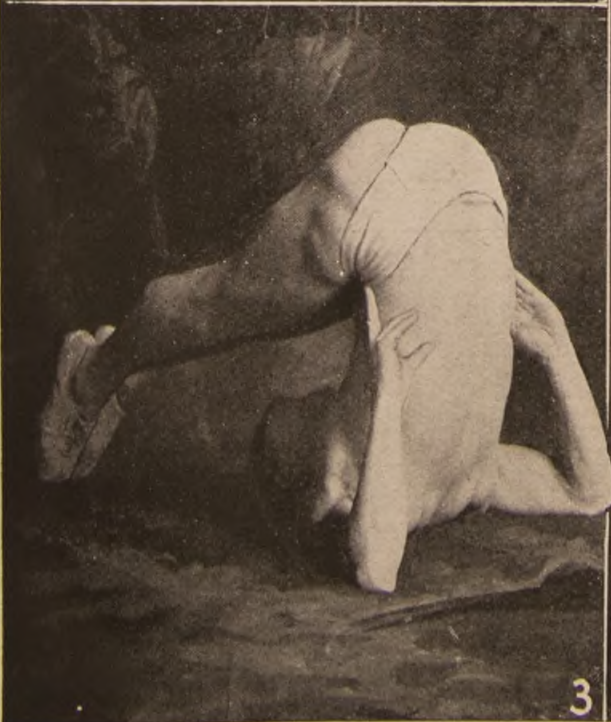
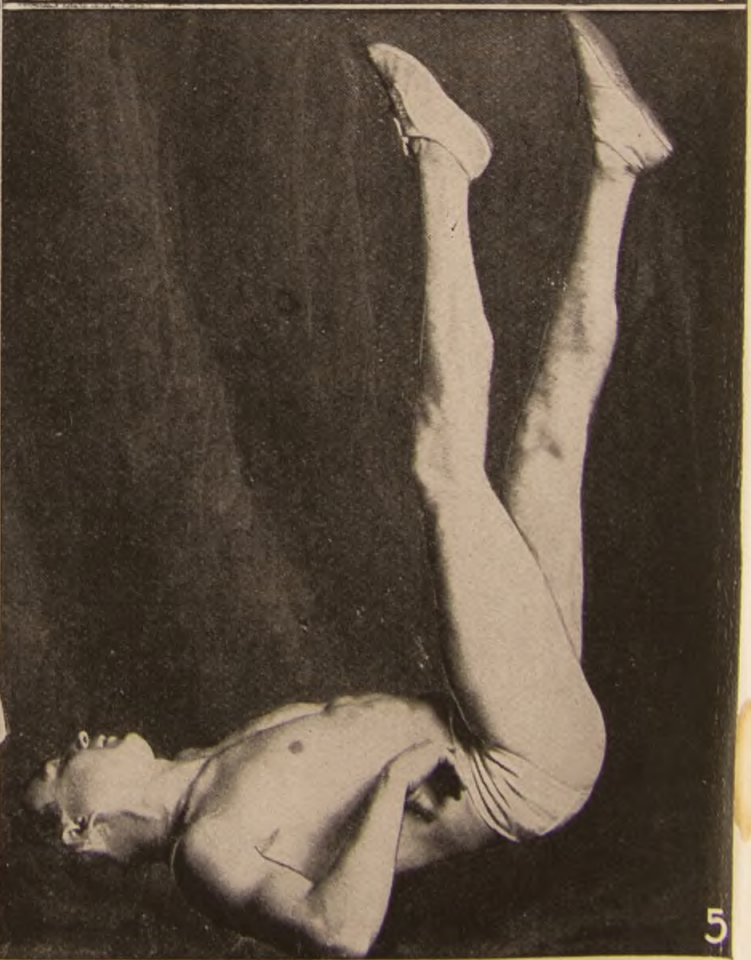
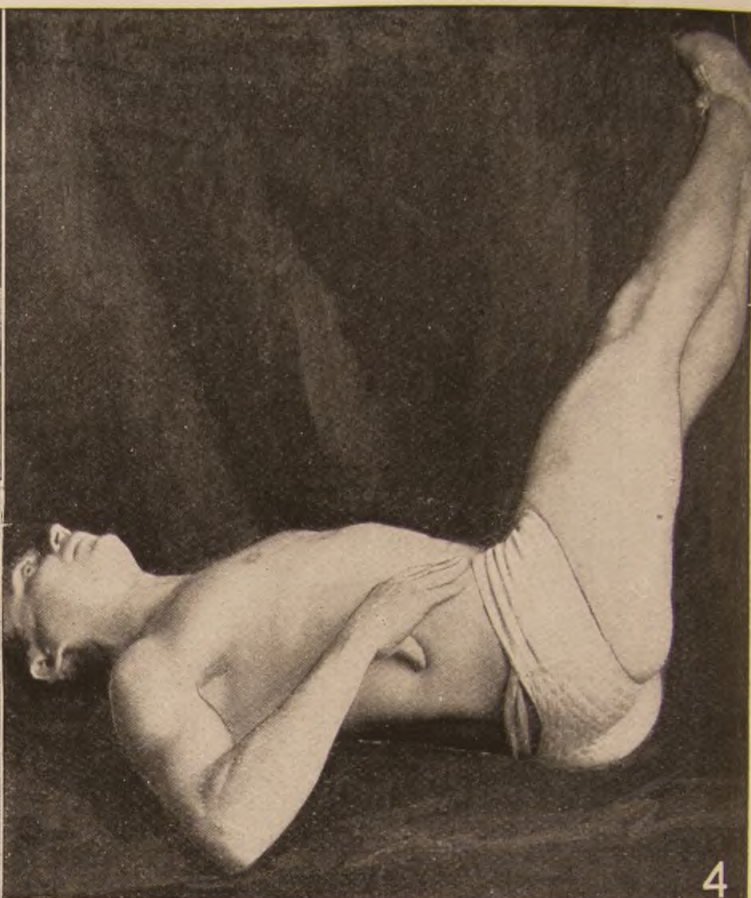
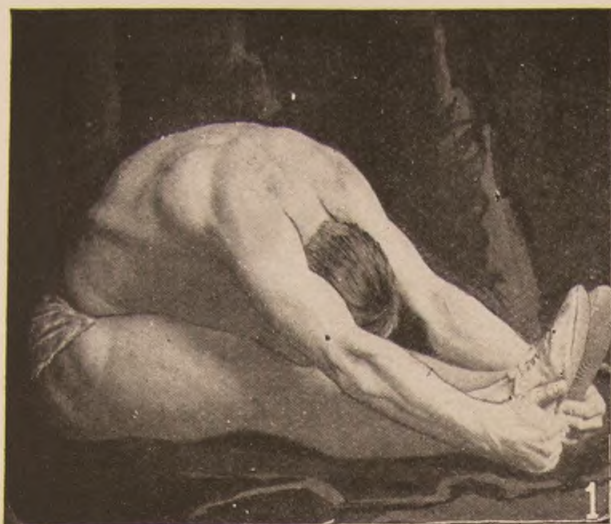
DEVELOPMENT EXERCISES.

A Perfect Body.—While we have emphasized the importance of constitutional and organic exercise, yet a normal development is really neces-

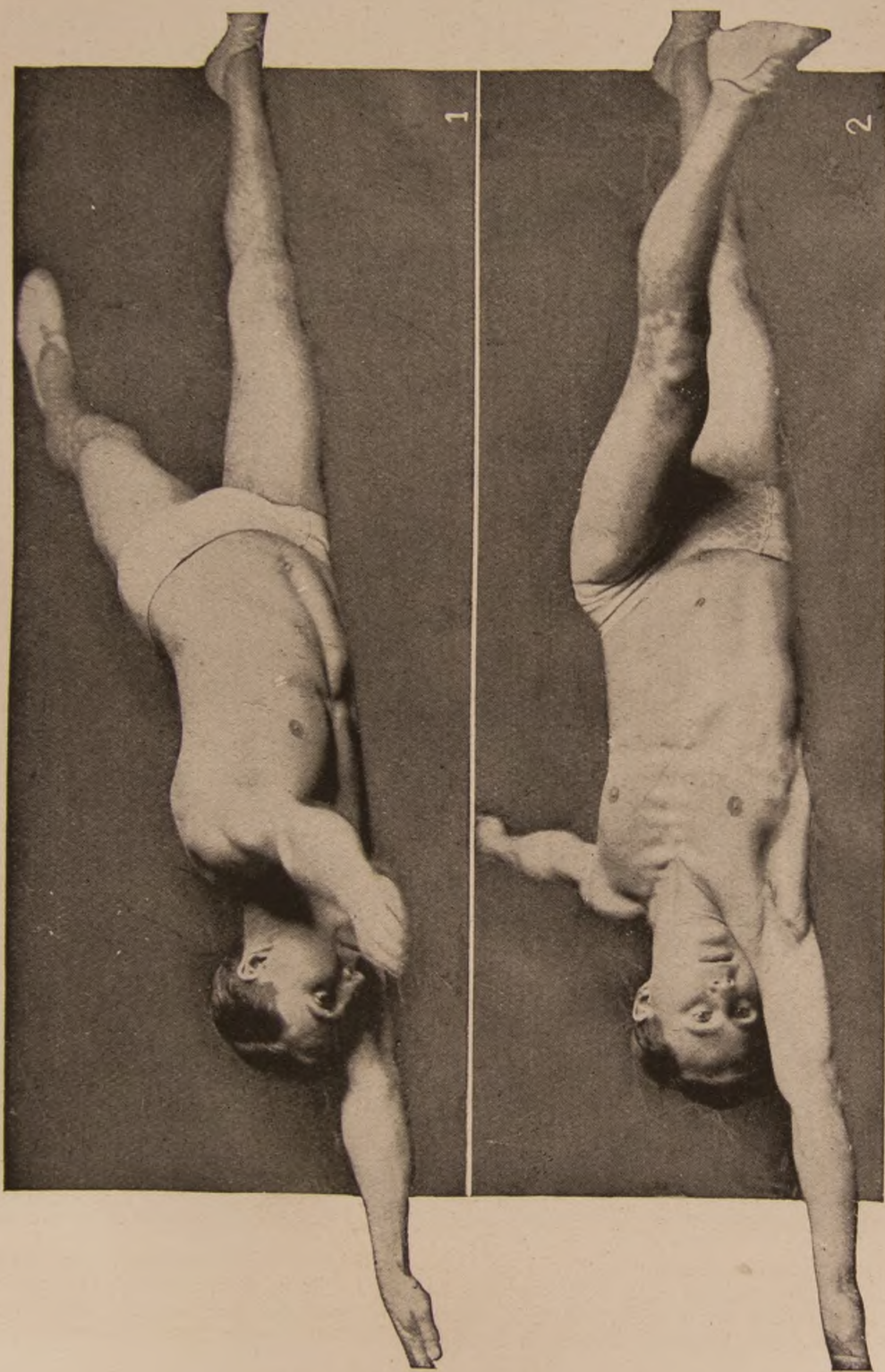


An exercise for the muscles along the front of the body, from the thighs up to the arms. I. First position, with hands and feet on floor, hips held as high as possible. Lower the hips to the position in Figure 2, then rise to the first position, and repeat several times. Very good for the abdominal muscles.

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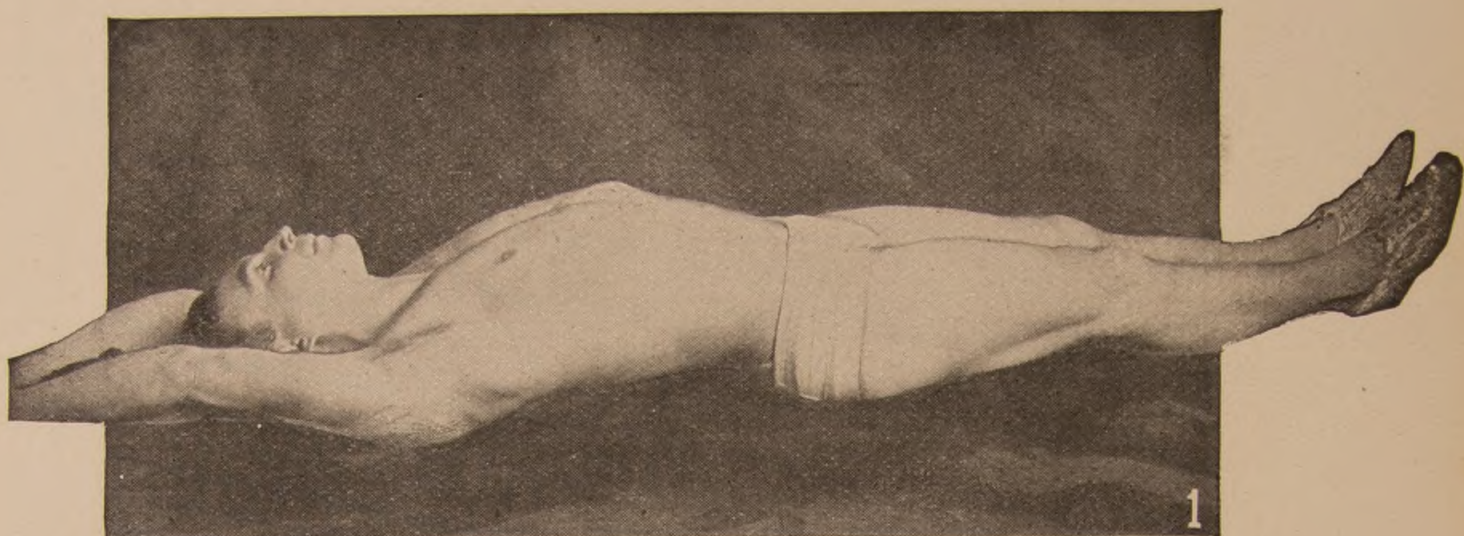


Some exercises for the stomach and abdomen, especially valuable in cases of constipation. 1. Reach far forward until you can take hold of the soles of the feet with the legs straight. Then pull the body still further down and forward. 2. Lying on the back, double the legs back against the abdomen as shown, then stretch them out on the floor. Repeat a number of times. 3. Lying flat on the back, raise the legs and bring them back over the head, touching the floor if possible, as shown. Repeat. 4. Lying on the back, raise the legs to the perpendicular, elbows braced on the floor, then lower the legs alternately to each side, about half way to the floor. 5. With legs held perpendicularly, swing them apart and then bring them together again. Also, in this position, practice a running movement of the legs.



Twisting and stretching exercises for the trunk of the body. Lying on the side, first stretch the upper arm forward and the leg backward, and then stretch the arm backward and the leg forward, as illustrated. Repeat a number of times, and then do the same lying on the other side.

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A strenuous exercise for the Abdominal Muscles. 1. First position, lying flat on the back with arms stretched back of the head. 2. Then, with a quick, energetic action, swing upper body and legs up at the same time until the fingers touch the toes. Repeat several times. You will have to do this with snap in order to accomplish it.

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sary in order properly to enjoy constitutional exercises and to influence the internal organs in the manner suggested. The more perfect the external muscular system, the more satisfactorily can one strengthen the internal organism.

There is no need to strive for Herculean strength, but a natural, normal development is essential. One should have a body of which he need not be ashamed. Symmetrical and harmonious outlines usually mean health as well as muscle. Remember also that any exercise which will strengthen the muscles will at the same time mean stronger bones, stronger ligaments and tendons, more healthy cartilages and a more firm, clean and healthy condition of every structure of the body. In overcoming resistance not only are the muscles strengthened but there is a certain amount of stress and strain on the tendons, the bones, the ligaments and all other parts involved. Even the arteries and veins are affected. The contraction of the muscles means pressure upon the blood vessels, thereby directly affecting the circulation. In the limbs, also, the movements tend to stretch and to shorten the arteries, according to the character of each movement. Accordingly, while advocating organic and constitutional exercise we do not belittle the value of muscular development.

Exercise versus Work.—It is often said that many men and women secure sufficient exercise in the course of their work. This involves a fundamental fallacy inasmuch as certain muscles are overworked, in most instances, while other muscles are unemployed and therefore undeveloped. Work usually means a one-sided development, sometimes with exhaustion of those muscles which are employed. In some cases, as in writers' cramp, telegraphers' cramp and other occupational neuroses, there is exhaustion of the nerve centres. Most "work" is of a character to stiffen and fatigue one, but without building any special degree of strength.

Exercise, therefore, is of just as much value to the manual worker as to anyone else. Some forms of work, such as chopping wood and pitching hay, are splendid exercise. Others, ploughing, for instance, are purely stiffening in their results. After ploughing all day some quick, light exercise will be refreshing and strengthening. One should always exercise those muscles not employed in his work.

Limitations of Athletics.—Athletic games are to be recommended for those physically suited to them. They will not, however, take the place of scientific physical training where one is in need of symmetrical development. Specializing in athletics frequently overworks certain muscles while neglecting others, just as is the case with many forms of work.

All-around athletics should be preferred. In all cases the young man before going into any athletic competition should prepare himself by systematic physical training to build up a normal development and strengthen any weak parts.

Light versus Heavy Exercise.—There is much controversy as to the relative value of light and heavy exercise. Both are valuable for special purposes. For one who is strong very light exercise is practically no exercise at all. He will require some form of exertion which gives resistance to his powerful muscles. Feats of great strength are perfectly natural where one is sufficiently strong so that there is no strain upon the vital organs in performing them. One who is weak and undeveloped, however, cannot attempt heavy exercise and should commence with light movements. As he gains in strength he may use exercises involving more resistance. It requires the expenditure of strength to build strength, and if he hopes to become very strong it will be necessary to use ever-increasing resistance. He should not, however, force himself too much. The theory that one can gain the strength of a Hercules by means of light exercise is without foundation. Pay no attention to the mail-order expert who tells you that you can have “muscles like mine” through five minutes of light calisthenic work, according to “his system.” The facts are that the mail-order expert gained his amazing development from hours of weight lifting each day.

“Calisthenics” are valuable for all-around purposes, and in class work are suited to the needs of the average individual. In advanced physical culture, however, they are no longer sufficiently vigorous. Furthermore, the ordinary calisthenic “drill” contains a number of exercises for arms and legs which are of limited value as compared to such movements of the trunk of the body as are illustrated in this department of this work.

Weight Lifting.—If one wishes to become a professional “strong man” and has exceptional vitality, with a powerful frame to begin with, weight lifting is the one and only means of securing the greatest possible strength. It is not, however, advisable for the average man. There is no real objection to weight lifting for one who is already strong if he does not overdo it. One should be sure that he has a strong heart before using weights. It is possible by practicing speed exercises to maintain some pliability and speed in the muscles while handling weights, but it is nevertheless true that weight lifting has a tendency to promote stiffness of the muscles and a more or less muscle-bound condition.

Dumb-bells.—Dumb-bells of light weight were popular one or two



generations ago, but are not now much used. A dumb-bell drill is really a calisthenic drill in which these light weights are held in the hands for the purpose of giving some resistance and to make the movements more effective. If you practice calisthenics, dumb-bells are as useful for this purpose as ever, but they are inclined to make one slow even though they help to build strength. One can use a pair of flat-irons for the same purpose.

Tensing Exercise.—This is a form of exercise, much advocated and taught by mail-order experts, which consists simply of a method of hardening or “tensing” the muscles. One muscle or set of muscles is used to resist the contraction of the opposing muscle or set of muscles. For the arm, for instance, the flexor or biceps is used to resist the extensor or triceps muscles. High-sounding, meaningless terms, such as “physiological exercise” or “concentration exercise” are applied to this form of exercise by mail-order instructors. Tensing exercises, however, while somewhat effective, are not to be recommended because of their muscle-binding and stiffening tendencies. They call for an unnatural use of the muscles. The muscles were intended for purposes of movement and not to resist each other. Exercises involving bodily movement, or exercises against external resistance are infinitely superior to any of these freak “systems.”

Stretching Exercise.—Stretching is a natural and spontaneous form of muscular action. When systematized stretching gives a fairly satisfactory method of exercise. It can never, however, take the place of active movement exercises. It cannot influence the heart or functional system to the same extent as active games and real muscular exertion. One may advantageously practice a few minutes of stretching for all parts of the body the first thing in the morning, but should not depend upon this limited form of exercise for all of his physical requirements.

Complete and Incomplete Movements.—It should be said, however, that a certain amount of stretching should form a part of all systematic exercise. All exercise movements should be as “complete” as possible, in order to stretch the muscles and other tissues. In our ordinary, everyday work our movements are usually limited in scope. We do not extend the arm fully or flex it fully. We do not bend as far to either side as we can nor stretch the arms as high above the head as we can. Special exercises, therefore, should extend the scope of our movements to their natural limit. In extending the arm in exercise it should be straightened absolutely. In bending at the elbow it should be flexed as far as it will go.

In bending the body we should bend as far as we can in each direction, and in raising the arms above the head we should raise them as high as we can stretch. This principle should be earnestly kept in mind, in order to keep the muscles supple and elastic, and in order to promote the circulation in the tendons, joints, ligaments and other structures apart from the muscles. The back, for instance, should be vigorously stretched in all bending exercises so as to influence the cartilages of the spine, thus keeping them elastic and healthy. It is, in part, the stretching of all sections of the body in systematized exercise that gives it its unusual value, and to neglect this feature is to fail to get the best results.

Gymnasium and Apparatus Work.—Practically all apparatus work in the gymnasium can be recommended as an effective form of exercise. Too much emphasis need not be placed upon apparatus work because thousands of people do not have the opportunity of visiting a gymnasium regularly, and therefore should depend upon such exercises in the home as we have illustrated. But if a gymnasium is convenient the various forms of apparatus can be recommended not only for strengthening the body, and especially the arms, but because such apparatus helps to lend interest to the work of physical training. It is an excellent plan, especially where there is a family of children and a convenient yard for the purpose, to instal a little home-made apparatus. A horizontal bar, parallel bars, a vaulting horse and a trapeze or flying rings will all be useful in this way.

Owing to the elevated character of most forms of apparatus, such as the horizontal bar, parallel bars and rings, it may be said that exercise of this kind bears a certain relation to the natural life and activities of prehistoric man, and especially to those of our alleged ape-like ancestors, who lived in the trees. In other words, exercise of this type is strictly natural. Apparatus work is usually most effective for improving the shoulders, chest and arms, although to a certain extent valuable for the other parts of the body as well.

Rapidity of Exercise.—The question of the speed at which exercise should be carried on is frequently brought up. Should certain movements be performed rapidly or slowly? This depends upon the character of the exercise and upon the individual. As a general thing, movements should be fairly active in character and of a speed which one can best enjoy. Very great speed calls for more energy. Very slow movements are stiffening in their results, also fatiguing. As a general thing, exercises performed with a "swing" and a fair degree of speed are suggested. The quality of rhythm is also helpful.

Stimulating Exercise.—Fast movements have a stimulating effect upon the nervous system. They wake one up. They call for more energy than slow movements and they arouse the energies of the body more thoroughly. They are even mentally stimulating if not carried to the point of too much fatigue. Also they are refreshing. Slow movements are sedative in character. If one wishes to sleep soundly a few very slow movements, or walking very slowly, would make him feel tired and in a condition to sleep. A brisk walk, however, is mentally stimulating and all fast exercises are energizing. If engaged in any work of a monotonous, slow and stiffening character, then a couple of minutes of very fast exercise will be found refreshing. If stiffened from a slow walk of ten miles, a quick run will arouse an active circulation and make one feel fresh and energetic.

Relaxation and Contraction.—The best results in exercise of any kind will be secured from a policy of alternate contraction and relaxation of the muscles. In other words, the state of tension or contraction should not be prolonged, but momentary in character. There should be a moment of contraction and then a brief interval of relaxation, and then another moment of contraction. During the brief interval of relaxation a renewed blood supply is allowed to flow into the capillaries in the muscles, and in that way the exercise can be continued without discomfort and with the very best results. Prolonged stress or tension of the muscles interferes with the circulation by reason of the continued pressure on the blood vessels, and may result in a stiffened or cramped condition.

Occupational Exercise.—The character of the exercise best suited to various men and women will depend largely upon the nature of their occupation. One who does hard physical work will not need strenuous exercise but rather activity of a quick, light character. One whose occupation involves sitting down all day will naturally require some vigorous exertion. He needs real exercise, and if possessing much vitality and a strong frame he may benefit most by exercise of a decidedly strength-building character.

Exercise in Relation to Bodily Weight.—Undoubtedly those who are thin will require different methods of training from those who carry an excess of flesh. The thin man usually needs to conserve his vitality and must carefully avoid over-exertion. This is especially true if he is of a nervous temperament. What he needs is a small amount of exercise, but of a muscle-building character. Men are thin not simply through lack of fat but through lack of muscle. They need strength-building exercise

for enlarging the muscles, but only a small amount of it because they cannot spare too much energy. They should not, however, strain themselves. Also they need a certain amount of walking for constitutional purposes, but should not do any running.

On the other hand, the man who is over-weight usually has sufficiently large muscles already, in combination with his fat. Reference is made to the ordinary case of superfluous flesh, not those cases in which fat is a disease, for such cases need a doctor. Many stout men are powerful—that is to say, “awfully strong for a minute.” They do not need strength-building exercise. What they need is fast, active exercise such as will build endurance. Their activity should be light, but continuous enough to burn up the fatty tissue. There should be no strain, but the exercise should be a matter of hours.

At the same time those who are over-weight must depend largely upon diet to secure a satisfactory reduction, especially eliminating the fat-forming foods, or in other words, the carbohydrates and fats. If they will eliminate bread from the diet together with cereals, rice, potatoes and other starchy food, and also sugar and other sweets, it is usually a simple matter to reduce weight.

Age and Exercise.—Age is usually the period of decreasing activity, but to a certain extent it is due to decreased activity. Age is not merely a matter of years; it is a bodily condition. Some men are old at thirty, others are still young in body and mind at seventy. To maintain youth is largely a matter of keeping physically active as well as observing other rules of health. Exercise is, therefore, just as important in advancing years as in youth.

Exercise for men above sixty years need not be so active or strenuous as that for young men, but it should be of a character to maintain suppleness, and especially it should be conducive to an erect bearing. What we have said about the importance of bodily posture applies especially in advancing years. It is found that healthy men in old age often possess remarkable endurance. Many records for long distance walking have been made by men between sixty-five and seventy-five years of age. Walking, golf, hill climbing and activities of a similar character are very highly to be commended. Appropriate exercise is one of the most effective means of avoiding the hardening of the arteries which is commonly associated with the declining years of life.

Exercise and the Bath.—A cold bath may be used in the morning as a tonic and as a means of improved circulation, but it should follow the

morning exercise. A cold bath is only valuable when one can enjoy it and recuperate promptly with warmth. If one feels chilly or nervous, or finds himself trembling afterwards it is weakening and harmful.

Success with cold bathing and the ability to recuperate depend largely upon being thoroughly warm before taking the bath. For this reason also it is better to take the bath in a warm room. One recuperates more readily. Exercise preceding the bath has the effect of thoroughly warming the body so that one may enjoy it and benefit from it. Never attempt a cold bath when already chilled, when the hands and feet are cold or when the skin takes the form of "goose flesh."

The shorter the bath the better. Simply stay in the cold water for a moment, whether a plunge or shower is used. If perspiring freely from exercise this is especially important. After the bath one should, in such case, use a warm sweater or bath-robe so that he may continue to perspire somewhat and cool off only gradually. One should not cool off too quickly or stay in a cold bath too long when perspiring. Under such conditions also it is a good plan to use a warm shower first and to wind up with a momentary cold shower. if all shower bath conveniences are available. Only one or two hot baths with soap a week are required for purposes of cleanliness, and such hot baths should always be followed with a cold shower or cold sponge.

Cold baths have a pronounced effect upon the circulation and are a tonic of great value for those with whom they agree. One of limited vitality, however, should be careful.

Air Baths and Sun Baths.—Air baths are of distinct value for their tonic effect on the nerves and for promoting the functions of the skin in general. Clothing is an artificial form of protection, tending to smother the skin and interfere with the elimination of waste matter through the pores. To take an air bath, simply remove the clothing in a comfortably warm room and allow the air to come in contact with the surface of the body. Air baths are conducive to good health and circulation, but it is always important that the hands and feet should be kept warm through good circulation.

Sun baths are stimulating and energizing, if properly taken. The sun is the source of all life and energy upon the earth, and the sun's rays directly stimulate the bodily metabolism. A sun bath and air bath may be combined, if convenient. Care should be taken by those of fair, light skins not to carry them too far, and especially in midsummer in the middle of the day. The vertical or nearly vertical rays of the sun have

a chemical effect which, although stimulating for a short time, become destructive to the nerve-protoplasm if continued too long in the case of those of blonde or unpigmented skins. Those of dark complexions can endure much more sunshine. The best time for a sun bath in summer is early or late in the day, though in winter one may take a sun bath at noon. There is no doubt that everyone requires a certain amount of sunshine the year around as a means of stimulating the formation of red blood cells and energizing the system generally. If care is taken to avoid the chemical action of the vertical rays, sun baths will be of great value in building vitality and strength.

Clothing and Sunshine.—Light colored clothing may generally be recommended as a means of permitting light to reach the skin. Gray and tan are excellent and serviceable colors for this reason. If engaged in farm work or otherwise too much exposed to the direct rays of the sun in the summer, some protection from the light may be desirable. Light colored fabrics are cool, but admit the light. Black or dark colored fabrics absorb the heat, but shut out the light. In a tropical climate or under the vertical rays of the sun, where protection from both light and heat are desired, one should wear black or dark underclothing to shut out the light, and white or light colored outside clothing to reflect the heat and keep cool. Hats should be white or light colored on top, with a dark lining. Arabs and others exposed to much sunshine wear white turbans and light colored clothing to keep cool.

Friction Rubs.—Supplementing air baths and sun baths, friction of the skin is of great value in promoting its functional activity. A coarse Turkish towel is excellent for this purpose, although soft brushes may be used. If the skin is tender and sensitive one may even use the palms of the hands. Five or ten minutes of this friction of the skin, briskly rubbing every part of the body, will more than repay one through the improved texture of the skin itself and the healthful influence of this treatment upon the body in general.

PHYSICAL CULTURE

PART II.

PHYSICAL DEVELOPMENT FOR WOMEN.

Strength and Womanhood.—It is a mistake to suppose that bodily strength is a possession to be cultivated exclusively by the male sex. The burdens naturally placed upon womanhood are such that strength and vitality are, if anything, even more desirable for women than for men.

Great muscular strength is not desired. But a certain degree of strength, concomitant with a natural and normal bodily development, is absolutely essential. The biological peculiarities of each sex are to be considered. Anthropological studies have shown that men are naturally better suited for exertions of a violent and strenuous character, but that in work or any form of activity requiring moderate exertion only, women on the average have better powers of endurance. It need not be said that women have more vitality, though there may be reason for thinking so, but it is undoubtedly true that they naturally have remarkable powers of endurance when at their best. They are not fitted muscularly for extremes of heavy lifting, nor for hunting and war, and so it is only natural that exercise of that character and games which simulate these activities should be limited to men. But within the natural limits of a woman's strength exercise and development are fully as important as in the case of men, and activities that promote grace and elasticity rather than strength are particularly commended.

Bodily Development.—Every woman desires a good carriage. Every woman desires a good figure. A normal bodily development, with its lines of strength and grace, indicates vitality and a condition of physical wholesomeness. It is impossible to carry the body properly or to enjoy the possession of a good figure without a satisfactory muscular development. It is quite true that women naturally are supplied with slightly

more fatty tissue than men, but the real outlines of the body, nevertheless, are determined by the fundamental muscular structure. Without it, the whole body lacks character. Fat, without an underlying muscular formation, means shapelessness. The beauty, contour and shapely lines of healthy womanhood are determined almost entirely by the muscular development. The external layer of fat simply serves to fill in and make smooth the various parts.

Masculine or Feminine Outlines.—It has sometimes been suggested by uninformed and prejudiced writers that physical exercise tends to give a woman masculine outlines. This contention, however, is not borne out by the facts, inasmuch as the structure of a woman's body differs fundamentally from that of a man. No amount of exercise, no matter how far she may carry her physical training, can possibly give a woman the angular, lumpy and conspicuous muscular outlines of the over-trained male athlete. Humorous writers have sometimes referred to professional "strong men" as giving the appearance of having a large number of tennis balls concealed under the skin. This type of physical development, however, cannot possibly be secured by women, inasmuch as their muscles partake of a long, smooth character, productive of softer outlines.

Exercise for women, instead of making them masculine in appearance, only serves to accentuate their feminine qualities by reason of promoting better health. Their feminine attributes are more distinctly emphasized. The greater the degree of physical development in each sex the more perfectly will the secondary sex characteristics of each be made manifest. The more vitality that each possesses the more perfectly will they be differentiated in these respects.

The Right Kind of Exercise.—To a large extent all considerations applying to exercise in general, and especially to exercise for corrective purposes, will apply very forcibly in the case of women. It is not strong arms and legs that are most desired. On the contrary, physical training for women should be chiefly directed to building up strength of the trunk of the body. Even more than men women need strong backs, good chests and particularly a strong and firm condition of the abdominal region. To a large extent, therefore, the exercises we are illustrating are of a type to bring about increased strength in the trunk of the body. Aside from these special exercises all activities that involve grace and suppleness are particularly commendable.

Housework as a Form of Exercise.—Thousands of women are under the impression that they get plenty of exercise in the form of housework.

Unfortunately, they are mistaken. Housework is not exercise. If it were, nearly all women would be models of physical perfection. Housework requires a certain amount of activity and by special study certain forms of housework can be employed as exercise by doing it energetically and by modifying ordinary movements in such a way as to stretch the body and improve the posture. As usually performed, however, housework involves the use of only a limited number of muscles. Most of the activities in the home are of a nature to bend the back, cramp the chest, pull the shoulders forward and in other ways to operate against proper poise and the active use of the entire muscular system.

The houseworker probably needs exercise of the right kind even more than any one else. Housework has a fatiguing effect upon the body but does not refresh and strengthen like exercise. Houseworkers need special movements for raising and expanding the chest, pulling the shoulders back, straightening the back, bringing the head back and up, and in other ways for strengthening and improving the trunk of the body as a whole.

Poise and Carriage.—All that we have said in the section on “Physical Culture and Body Building” and about the importance of correct posture applies with special emphasis in the case of women, not only for the sake of health but for the sake of personal attractiveness and good appearance. The elusive quality which we often term “style” is not a question of clothing but a question of bearing. It is entirely a question of proper carriage. A woman may be gowned in the most expensive fabrics, but if she does not carry herself like a queen she has no “style.” On the other hand, a woman with a well developed body, full of vitality and energy, may wear the most economical and simple kind of a dress, and yet by her grace of carriage and physical poise will give the suggestion of “style.”

It is this quality that physical culture, and physical culture only, can develop in women. This quality may be the possession of every woman who will make the effort to perfect herself physically and to secure an upright carriage of the body. Posture alone may be insufficient, inasmuch as one might stand erect, but stiffly. Style and good carriage involve not only an erect position, but a certain freedom and grace of movement that can only be secured by proper muscular co-ordination, as developed through exercise. One must have control of her physical organism in such a way that every movement is free and easy. Active play during girlhood tends to give one this grace and muscular

control. Dancing helps to develop it, but physical culture is the most valuable of all measures for improving one in this particular respect.

Why Women Wear Corsets.—There is no question that the primary purpose of the corset was to supply in an artificial way the erect bearing which would naturally be the expression of vitality and a normal, vigorous bodily development. It may appear that many women at the present day wear the corset as a means of bodily support, and come to depend upon it for such support, but the corset when it was first worn was designed to make the figure more attractive. Even to-day many women continue to wear corsets because of the feeling that they would “look like a fright” without them. Considering their undeveloped physical condition it is quite true that they would be unattractive in their natural state. The corset tends to hold one erect, and the persistence with which corset wearing has been practiced throughout many centuries is largely the manifestation of the normal instinct of women to make themselves attractive and presentable. It is an attempt to supply by artificial means what should be supplied as a result of health and vigor. A prominent and protruding abdomen, largely as a result of improper carriage, and associated with drooping shoulders and a flat-chested condition, is an intolerable outrage to the æsthetic sense of every healthy woman. The corset affords a way out of the difficulty.

Are Corsets Unnecessary.—Books and articles without end have been written in denunciation of the corset. There is no question of the harm done in many cases through tight lacing and the wearing of improper corsets. It need not be said, however, that corsets are in all cases injurious if they are well designed and properly fitted. The great difficulty, however, is that women depend upon the corset for their “shape.” Many of them feel that they have no shape at all without this contrivance. Instead of being fitted to the corset, however, as is the case in most instances, the corset should be selected to fit the figure, and first of all every woman should have a figure of her own to which the corset should conform. Instead of being shapeless without her corset she should be shapely, and this is entirely a matter of physical development.

The torso of a woman, like that of a man, is normally supplied with a muscular structure which, when properly developed, really provides a natural corset for her. It is a corset of vigorous muscles which will keep her body firm and strong and beautiful. If these muscles are properly developed she will need no corset in order to give her shape. In present fashions in dress, and particularly in the wearing of separate

waists and skirts, involving tight waist bands, something in the nature of a girdle or corset may be required for comfort and for proper adjustment of the clothing, but no one should be compelled to wear a corset just to "give her a figure." She should depend upon the natural corset of the muscles of her waist line and abdomen. If these muscles are weakened and allowed to degenerate with an accumulation of fatty tissue, and particularly if the carriage of the body is faulty, then she will be truly shapeless and unpresentable without artificial support.

A strong back and an erect posture, however, should by all means be cultivated by women. Erect posture will mean a full and well-rounded chest and a retracted abdomen. Furthermore, some of the exercises illustrated in this section will be of special value for strengthening the muscles in the region of the abdomen and waist line in the manner desired.

Weaknesses of Women.—There is no question that the weak point in the case of many women is the pelvic region. The displacements of the female organs are the cause of great suffering and contribute to various nervous disturbances. A prolapsed or otherwise displaced condition of these organs is usually the result of a weakened condition of the ligaments involved and also of the adjacent muscles, organs and structures generally. By toning up and building strength in all these parts it is frequently a very simple matter to overcome difficulties of this type. Faulty carriage also has a great deal to do with weaknesses of this kind and should require special attention. All exercises, however, which tend to build strength of the external abdominal muscles will likewise favorably affect the pelvic organs, together with the digestive and other functional organs. Particularly commendable are those movements for strengthening the abdomen which may be practiced while lying down. In the case of prolapsed organs excessive exertion or muscular strain while standing may in some cases aggravate the trouble.

As a special means of relief in the case of prolapsus of the female organs and also as a means of building strength, reclining exercises performed on an inclined plane with the hips and feet higher than the level of the head, will be advantageous. In this case the force of gravitation tends to restore these organs to their normal position. One may take a large ironing board, placing one end of it upon the side of the bed, the lower end on the floor, and while lying with the feet elevated upon this board she may execute simple exercises for the legs, raising them to

be perpendicular, flexing the knees against the chest and devising other movements that will bring into play the abdominal muscles.

A still more effective type of exercise as a means of relief in such conditions is one which we have illustrated, in which the body is raised to a practically upside down position. This can be executed while lying in bed. If you have a brass or iron bedstead, take hold of the rods at the head of the bed with your hands, raise the legs first to a perpendicular position, and then stretching them still further upward, raise the hips and back until the weight of the body is practically supported by the shoulders, and the torso as well as the legs are held for a few moments in an upside down position. Study the illustrations carefully.

Apart from special exercises of this type the all-around building of strength and an improvement in the circulation, together with good posture and freedom from the constriction of corsets or skirt-bands which compress the lower part of the body, will be very effective by way of avoiding and also remedying many of the tormenting weaknesses of women.

Exercise for Constipation.—In connection with weaknesses of women the necessity for overcoming any tendencies toward constipation assumes special importance. All exercises that tend to strengthen the abdomen will be very effective in this direction, while brisk walking, rope skipping, dancing, tennis and active exercise generally, if one is strong enough, will be helpful. Deep abdominal massage, using a circular movement in the direction of the hands of a clock, will be valuable. In connection with such exercise and massage, dietetic measures will be necessary. One should drink freely of water and use plenty of fruit and green vegetables. White bread is the most common cause of constipation and should be avoided, together with cakes, cookies, crackers, crullers and white flour products generally. Instead, whole wheat bread or graham bread should be used. Bran is especially good, either used in muffins or mixed with one's cereal. All whole wheat or whole grain breakfast foods are satisfactory. Cheese, rice, tapioca, spaghetti and other starchy foods are likewise constipating and should be avoided. Fresh milk is sometimes conducive to constipation, and in a serious case it would be better to use buttermilk or fermented milk instead.

By following these suggestions on diet strictly, together with sufficient exercise and water drinking, stubborn cases of constipation may usually be overcome without the help of cathartic treatment. In a

serious case an enema will usually be found more satisfactory than a cathartic.

Exercise During Pregnancy.—If ever strength and health are desirable in the case of a woman, it is in connection with the trials of maternity. Physical weakness, under such circumstances, is responsible for much suffering and difficulty of recuperation. It is a well-known fact that the women of savage races experience very little of the weakness and difficulty in recuperating from childbirth that is prevalent in civilized communities. There is also some evidence that, to a certain extent, painlessness in childbirth may be enjoyed as a result of a normal, vigorous and healthy physical condition. If pain cannot be entirely avoided, at least in many cases it may be greatly lessened by proper physical preparation for maternity, in which the building of strength is an important factor. And in all cases exercise enables one to recuperate much more quickly and to avoid permanent weakening results.

The prospective mother should, above all things, get plenty of sleep and outdoor air. The inclination to remain indoors during this period "for fear of being seen" is little short of criminal in its results, inasmuch as it bears upon the health and vitality of the unborn child, as well as impairing the health of the mother. Nutrition is a most important matter at this time, and the lack of fresh air, by interfering with the appetite, is also indirectly detrimental in this way.

Walking is one of the most valuable of all forms of exercise during this period because of its vitality building influence. It should be made the special duty of every prospective mother to take a long walk some time each day.

Special exercises, however, are important for strengthening the abdominal walls and for promoting the health and vigor of all the bodily structure concerned. In these exercises the aim should be elasticity and suppleness rather than excessive strength. In other words, these exercises should not be carried so far as to produce an abnormal muscular development or a condition of muscular rigidity. It is best, accordingly, to employ active exercise of this type during the first three or four months of pregnancy, and thereafter to use less vigorous movements involving this part of the body, but particularly to depend upon daily long walks. Motoring and other pastimes which take one out of doors are particularly suggested. In the latter months of pregnancy special care should be taken to avoid any strain. Stretching or bending exercises

should then be taken with caution, and only to the point at which they are easy and comfortable to execute.

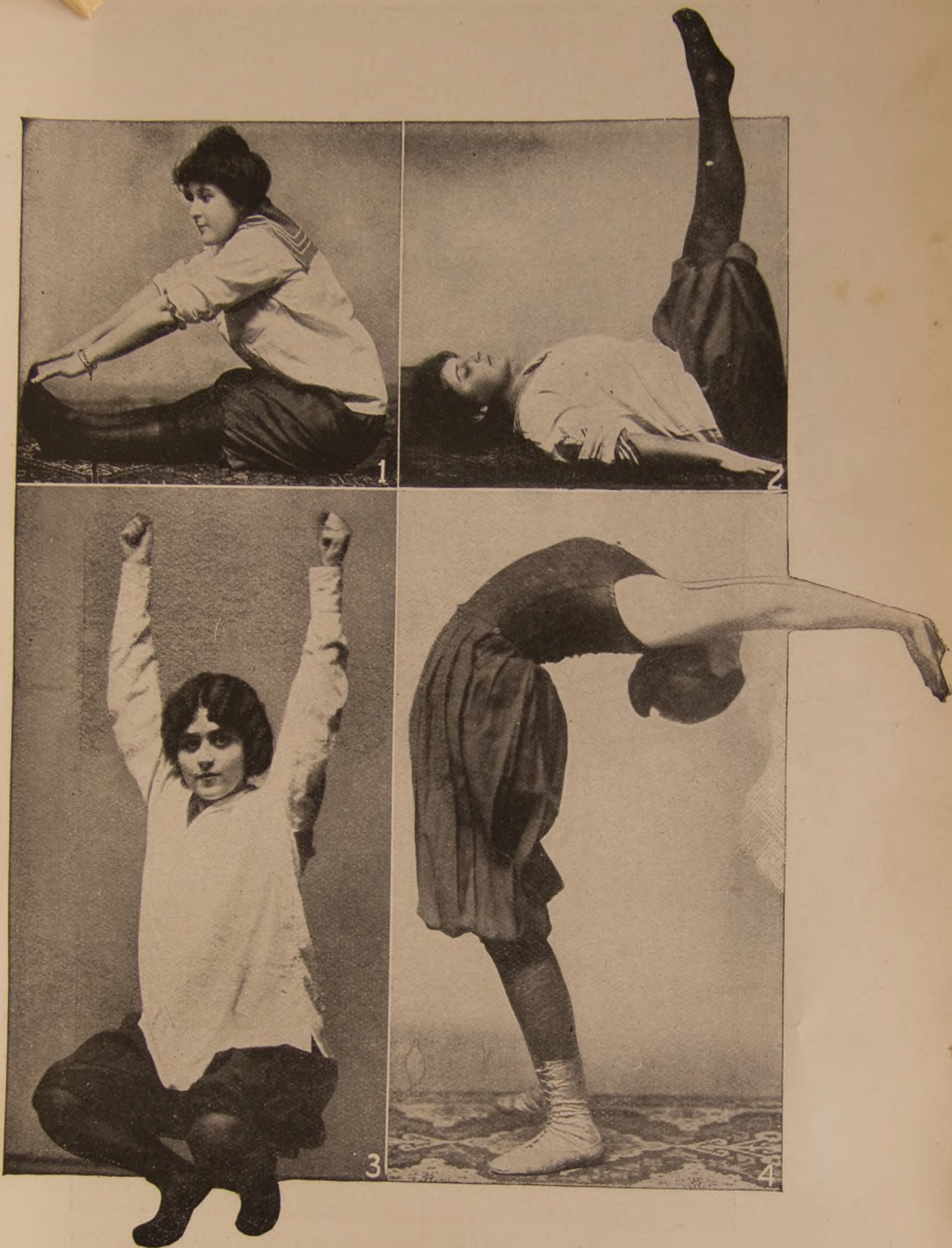
Bust Development.—The question of improving the bust is one of special interest in the case of large numbers of women. A normal bust development is invariably associated with a condition of vitality and perfect womanhood. In many cases a source of complaint is found in a lack of development and in other cases in excessive development, with the desire to reduce the bust. In either case, good results can usually be secured by physical culture methods.

Exercises which involve the muscles of the upper chest have a decided effect in improving the firmness and contour of the breasts. It cannot be said that in all cases exercise will increase the size of the bust, but in all cases it will increase their firmness and beauty. Where there is a tendency to droop this firmness has everything to do with their character and contour.

The increased size of the bust, where it is lacking or defective, must first of all depend upon improved nutrition and the development of vitality. The glandular structure depends upon the general health and active circulation, and to bring about an improvement in this respect all possible measures that affect the general health must be considered. In many cases a general gain in health is necessary, requiring more sleep, better nutrition through appropriate foods, freedom from mental strain or worry, freedom from overwork and particularly as much outdoor life as possible.

The bathing of the breast with cold water may be particularly suggested. Massage, under such conditions, is likewise valuable, but it should never take the form of pulling or stroking downward because this will tend to increase still further any sagging or drooping of the parts. Massage strokes should take an upward direction.

It should be said that there is a widespread, popular misconception as to what should be the normal size of the bust. Under natural conditions and the most perfect health the bust should not be too large. It is only under conditions of maternity and approaching maternity that these glands are particularly enlarged. At other times they should be of only moderate size, and it is only under such conditions that the most perfect contour can be maintained. When the breasts are too large it is almost impossible to prevent their drooping or hanging. A study of works of art, both antique and modern will show one very quickly that the perfect bust is not excessive in size.



General Exercises for Women. 1. Sitting on the floor, stretch the fingers forward to the toes, or farther, if possible, repeating several times. 2. Lying on the back, bring the legs to the perpendicular position shown, then down to the floor, and repeat until slightly tired. 3. First standing erect with arms at sides, bend the knees and lower the body to the squatting position shown, at the same time swinging the arms high above the head. Lower the arms when rising. 4. Bend and stretch backward as well as you can for a moment, rest and then repeat. This is a superb exercise for back, chest, stomach and abdomen.

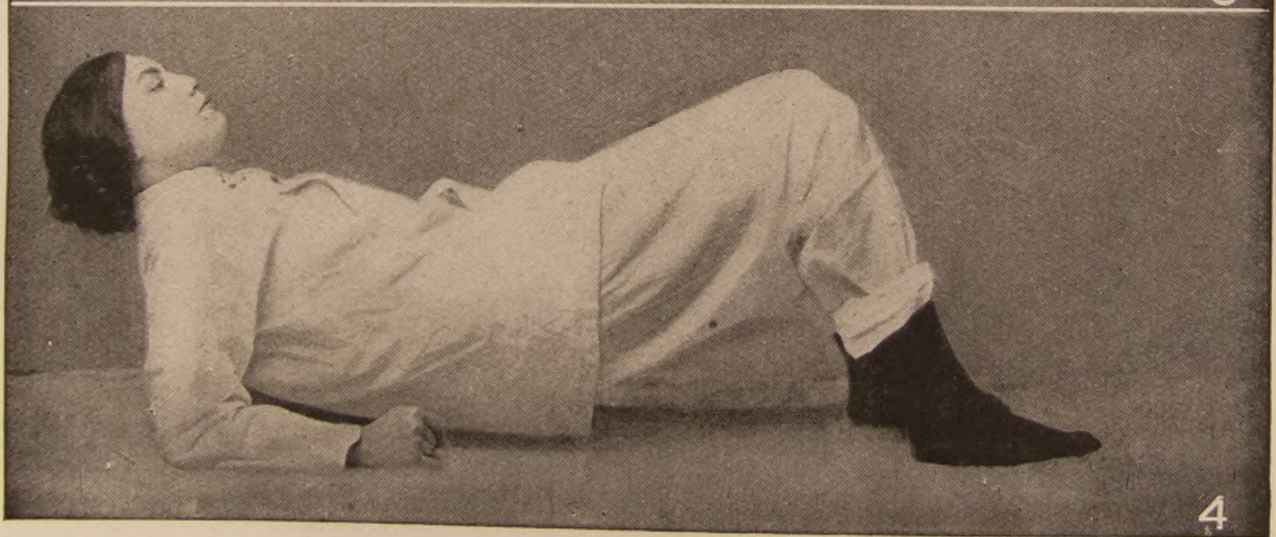
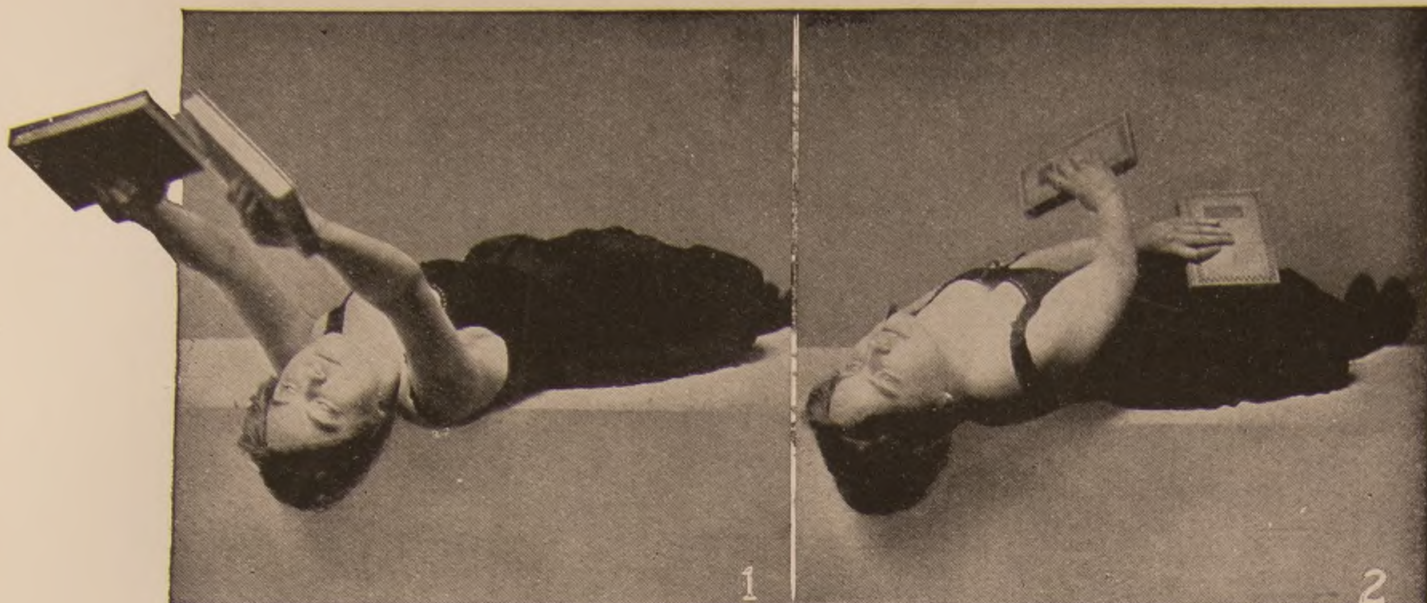
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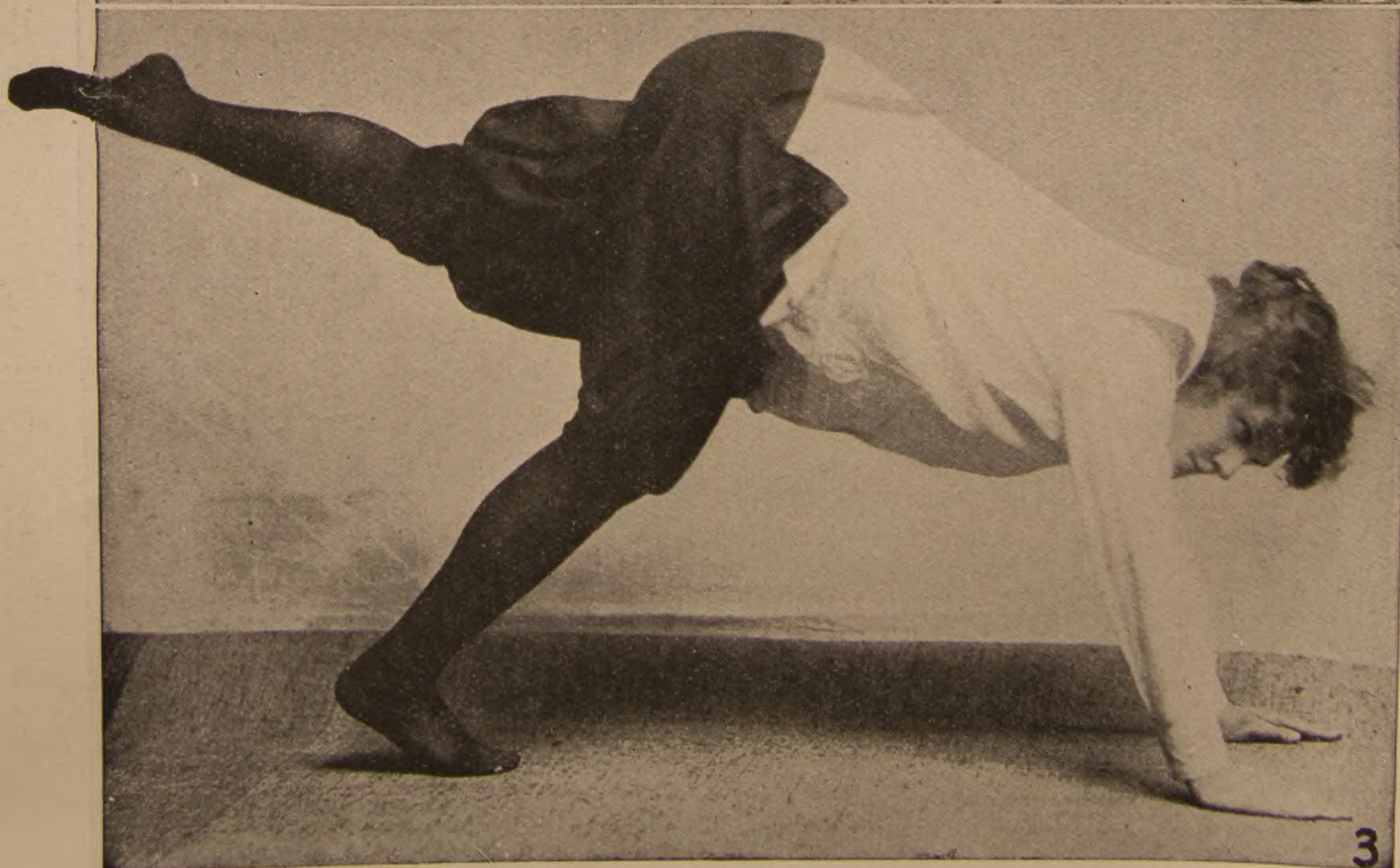
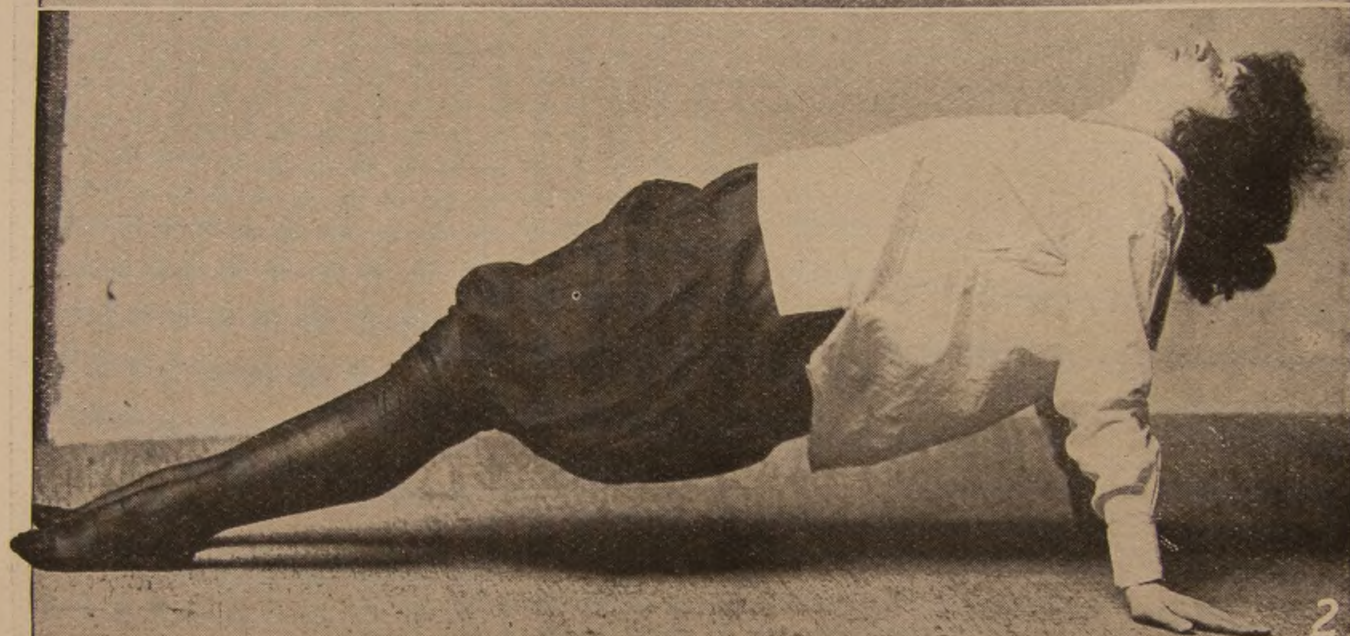


Exercises for Grace and Agility. 1. With hands on hips, jump to the position shown, with feet wide apart. Next, change positions of the feet with a little jump, bringing the left foot forward. Also, in this position, twist or turn the body first to one side then to the other. 2. Standing first with feet together, jump to the charging position, with arms outstretched. Return and charge in the same way with the other foot forward. These exercises should be executed on the toes. An exercise for chest and bust is shown in 3 and 4. With the arms outstretched at sides, and well back, bring them forward and cross in front of the chest as far as possible. Swing back and repeat.

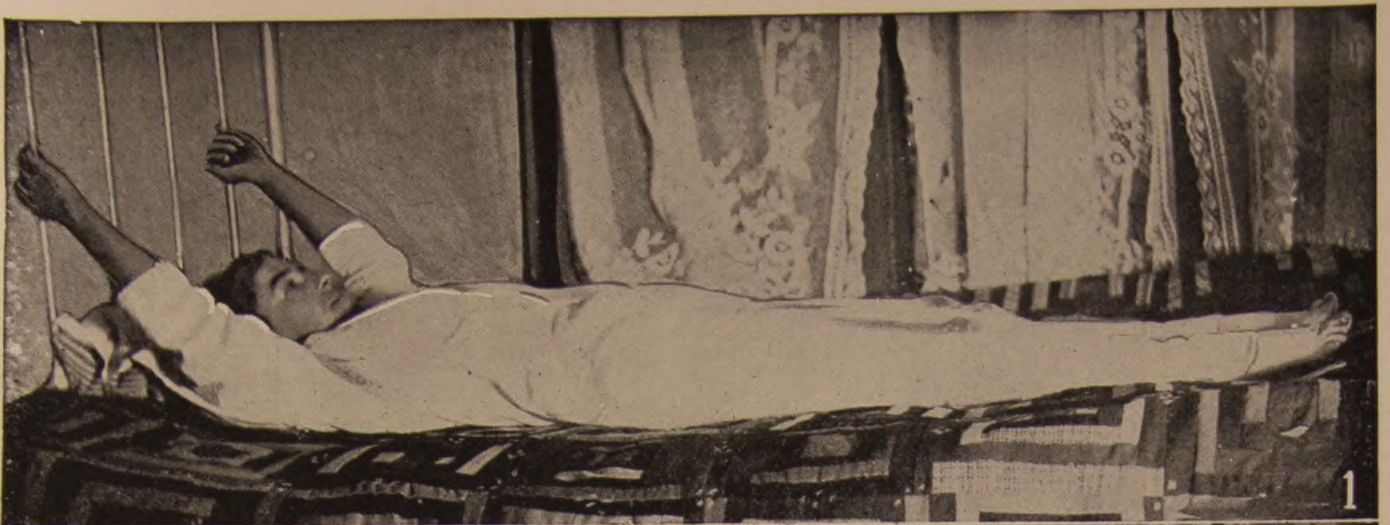
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An exercise for the bust shown in 1 and 2. Reclining, and with some small weights in the hands, stretch the arms up and back. Then bring them downward and cross them over position. This will be easier if arms are folded in front. 3. An exercise for the abdomen. Lying on back, rise to sitting position. This will be easier if arms are folded in front. If necessary use a weight to hold the feet down, or thrust them under some piece of furniture. 4. An exercise for the back, value to female weaknesses, is to raise the hips high with the weight on the shoulders instead of on the elbows.

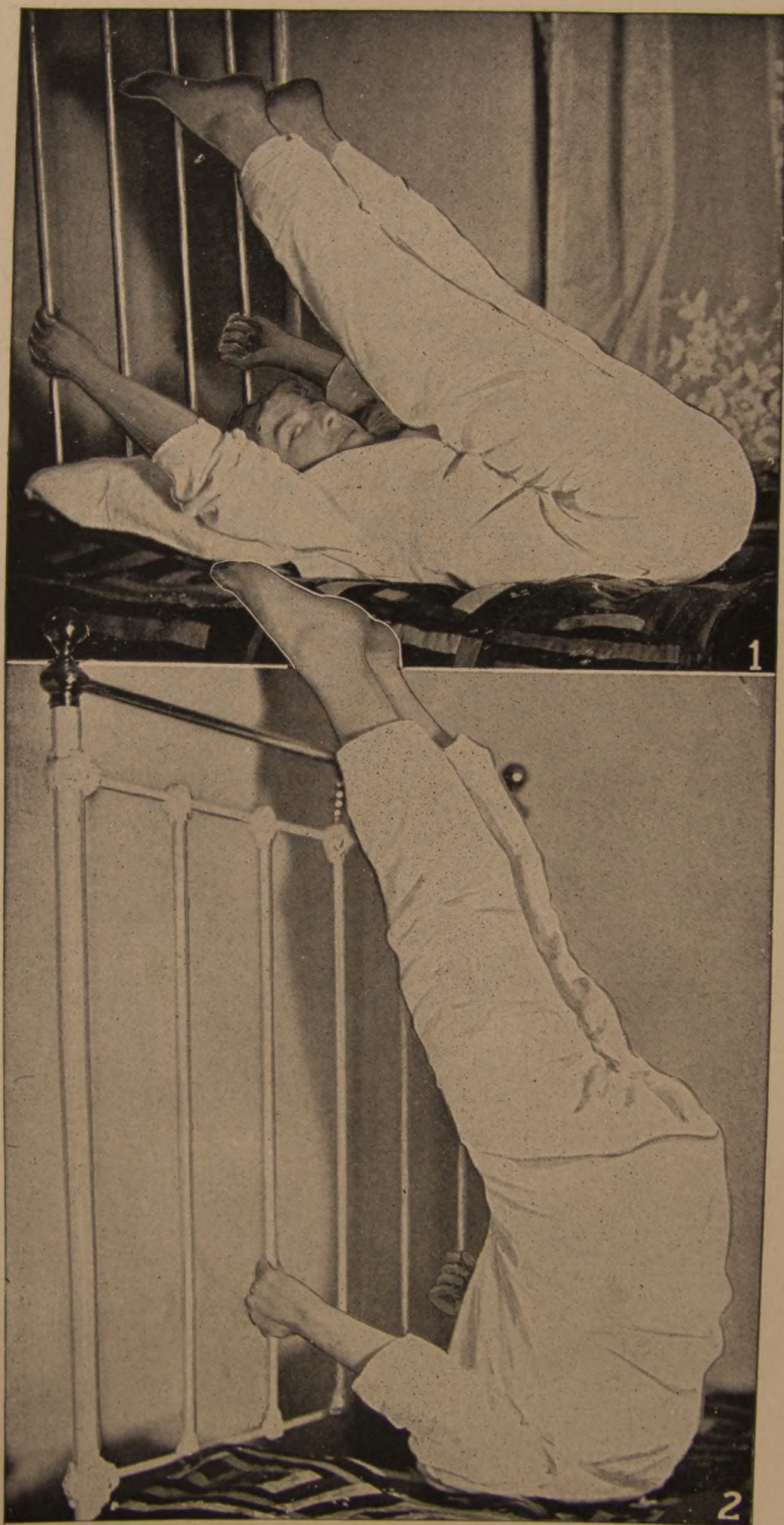


1. Doubling one knee hard against the body, alternating with each leg. An excellent exercise for remedying constipation. 2. An exercise for the back. Sit on the floor, place hands on the floor a little ways back, and then raise the hips, as illustrated, until the body occupies a straight line. 3. An exercise for developing and improving the hips. Assume a position on hands and feet, then raise one leg at a time as high as possible. Try to raise the leg a little higher each time, and repeat a number of times with each leg.



Some bed exercises especially suited to women, and helpful in weaknesses of women. 1. By taking hold of the bedposts in this way all leg movements can be more perfectly executed. A good preliminary position. Resting with the foot of the bed or couch raised will give relief for prolapsed organs. 2. Raise the head and shoulders by claspings the knee with both hands, and pull yourself up to a sitting position. In this way there is less strain upon the abdominal muscles than when rising to a sitting position with such help from arms and legs. Alternate legs. 3. A twisting exercise for the abdomen and trunk. Lying on the back, swing the left leg far over to the right side, stretching as shown. Same with the other leg.

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An effective exercise for relief in falling of the womb or other female weakness. **1.** First lying on the back, raise the legs to the position shown. Then, pushing upward, raise the hips and finally the back, finally stretching upward to the position shown in **Figure 2**, with the weight on the shoulders. Hold this for a few moments, return, and repeat two or three times. In the case of fallen organs, this exercise causes them to return to their normal position through the simple force of gravitation.

Apart from exercises for the muscles of the chest, the appearance of the bust depends very large upon proper carriage and the development of the chest. A good bust is impossible in connection with a flat-chested condition. If the chest is round, full and well developed, and the carriage erect in such a way that the chest is properly raised, a bust of moderate size will assume its true proportions of harmonious outline and symmetry. One cannot, therefore, pay too much attention to improving the condition of the chest as a whole.

The reduction of the bust when too large is a much more difficult matter in many cases, and if one is over-weight it will be necessary to employ special reducing methods for the entire body. Massage is especially advantageous for bust reduction, and kneading with a circular movement is to be suggested. The exercises already mentioned for bringing into play the muscles of the upper chest are of even more importance, if anything, as a means of removing the superfluous fat. These should be practiced at least two or three times each day. The bathing of the parts with cold water is likewise especially valuable for improving the circulation, oxidizing the adipose tissue and for improving their firmness.

The Thin Woman.—It is not generally recognized that a lack of flesh upon the part of women is to a large extent the result of a lack of physical development. It is quite true that it frequently means poor nutrition and a lack of vitality, but nutrition is improved in part by exercise and the better appetite that comes with exercise and open-air life.

At the same time, a thin arm means an undeveloped arm. A body not properly filled out means one lacking in general muscular development. A thin woman, often of a nervous temperament, cannot afford to waste her energy in an excess of exercise, but she should persistently and systematically exercise every part of the body by a little really energetic exercise each day. By using each and every muscle only a little bit, but with sufficient effort to prove to Nature the need of greater strength, Nature will respond by building strength and developing the muscles. As a woman builds up her muscular structures she will enjoy improved functional tone and her flesh will be rounded out in the manner that is natural to her when in good health. Physical stagnation is just as detrimental to a woman as to a man.

Recreational Exercises.—It is true that outdoor recreations cannot take the place of systematic movements in improving the body, but they

have a marked constitutional effect and are also helpful in the case of women for developing grace, agility and muscular control.

Dancing is a form of activity particularly well suited to the physical requirements of women. Although not necessarily an outdoor exercise, it is best practiced in an open-air pavilion. The ordinary social dances are valuable, though to a less extent than folk-dances and fancy dances of various kinds. Toe dancing alone is somewhat artificial and unnatural, although even that is not really harmful in any way, and would be helpful.

Tennis is well suited to women and many of them become fully as expert as the best male players. It is an active game, but without any special strain for those in condition to play it. Rope-skipping may be made very interesting with a study of fancy steps, and is valuable for women, although where there is prolapsus of the pelvic organs one should strengthen these parts before attempting rope-skipping.

Swimming is an ideal exercise for women inasmuch as it is particularly well suited to their bodily structure. Fencing is another active and enjoyable competitive exercise, conducive to grace and muscular control. Other games and sports may be recommended for those to whom they naturally appeal.

For Women Who Worry.—Worry may often be overcome by relaxation exercises or some active and stimulating form of exercise, such as tennis, rope-skipping, running or dancing. Such activity will take one out of the mental rut of her worry. By overcoming physical depression one also overcomes the mental depression associated with it. By arousing an active circulation and stimulating all the bodily forces, one takes an entirely different view of things. By promoting deep breathing and by thus changing the blue blood into red blood the "blues" will naturally fade away. There is no other possible means of overcoming worry that is so effective as stimulating exercise, although where there is any liver trouble, dyspepsia or constipation as a fundamental cause of this mental condition, proper attention should be given to these disorders.

Relaxation Exercises.—For nervous persons generally and especially for women of nervous temperament, relaxation exercises are of great value. They enable one to overcome that condition of nervous tension which is, in many cases, such a waste of vitality. Learn to relax. One may train herself to "let go" of the tense muscles, and in that way relax the nerves. We have voluntary control of our muscles and through their use we may, to a large extent, control our nerves and mental states.

The most convenient relaxing exercises are those performed lying on a soft bed, with a good spring. Raise one foot at a time ten or twelve inches, hold it for a moment and then relax, letting it drop absolutely limp upon the bed. Repeat several times. Then try it with both legs together. With the arms at the sides raise them a few inches and let them drop seemingly lifeless. Raise the head and shoulders two or three inches and then let them drop back relaxed. Next with the weight on the shoulders and feet raise the hips and back three or four inches from the bed, hold the position for a moment and then let the body drop limp upon the bed. It may bounce if properly relaxed. By frequent repetitions you will readily learn to relax the muscles voluntarily, and by overcoming the tightness or muscular tension you will at the same time relax the nerves. Those who have difficulty in going to sleep should practice these relaxing exercises on going to bed each night.

Similar relaxation movements can be performed while standing by raising one arm or one leg at a time and then letting it drop limp, swinging loosely at the side. Another excellent movement is to let the head suddenly drop limp upon the chest, with arms swinging loosely. For another, hold the arms extended in front, hands hanging limp from the wrists, and then shake the hands loosely.

Cold Baths for Women.—The effect of cold bathing in the case of women is exactly the same as in the case of men, and what we have said in the section on physical culture in regard to bathing, air baths, sun baths and friction rubbing will likewise apply to women, although in the matter of cold bathing women of limited strength should be especially careful. It is, of course, advisable to avoid cold bathing during the monthly periods, and to be careful about exercise at such times unless very strong.

Clothing.—The dress of women has such an important influence upon physical activity and health that a word on the subject is necessary. We have already referred to the influence of the corset, though it should be said that when avoiding a corset the wearing of tight skirt-bands and the weight of heavy skirts may be even more serious. Any form of clothing which permits free bodily movement may be suggested, and princess gowns, house dresses and other forms of apparel which are supported from the shoulders should be much used on general principles. Hose supporters, if possible, should be suspended from the shoulders rather than from the waist. Skirts should be as light as possible, fairly full and fairly short so as to give the greatest freedom in walking.

A gymnasium suit, being naturally intended to provide for the greatest freedom of movement, would likewise be especially valuable for purposes of housework in the privacy of the home. Such a plan is to be highly recommended and would undoubtedly mean improved health and a more perfect bodily development.

Probably the greatest offense against the body in modern clothing is found in our conventional foot-gear, especially that of women. The only perfect foot covering would be a moccasin or sandal, that gives the muscles of the human foot the same freedom that it enjoys when bare. Going barefooted will cure most foot troubles. Sandals are also suggested for this purpose. Shoes, as nearly as possible, should approach the outlines of the human foot. There should be plenty of room for the toes, and the big toe should occupy a position following the straight inside line of the foot. Shoes should fit snug around the instep or shank, but with room to double the toes inside of the shoe. Square-toed shoes are not necessary if the straight inside line is followed and there is plenty of room for the toes. The ordinary pointed shoe, however, is built on very bad lines.

The addition of an artificial heel to the shoe is undoubtedly one of the greatest crimes of the shoemaker. Nature would have supplied us with a natural high heel if it were desirable. The high heel places a strain upon the entire foot, and by throwing the body out of balance it places a strain upon the spine, and to some extent upon the pelvic organs. High heels are a common source of nervous disturbance. The flat heels found in tennis shoes and in the so-called "spring-heeled" shoes of school children are to be recommended.

Extremes of Dress Reform.—For sensible attire extremes in dress reform are not necessary if only the comfort and freedom of the body are permitted in the clothing worn. It is not desirable for women to adopt the dress of men. It is perfectly natural that the clothing of the two sexes should be absolutely distinctive. Soft, clinging fabrics are especially suited to the feminine nature and bodily requirements, while strong, firm fabrics and more severe or formal outlines are suited to the masculine nature and bodily conformation. The secondary sex characteristics of men and women are so distinctive that it is only natural that the clothing of the two sexes should harmonize with these differences. Masculine attire for women, therefore, has no sound basis, but sensible and comfortable dress is a matter that directly affects the health of everyone.

PHYSICAL CULTURE

PART III.

PHYSICAL TRAINING FOR CHILDREN.

Strength in Childhood.—All mothers and fathers wish their children to be strong and healthy. Many youngsters are naturally so. It is partly a question of being born with a vigorous constitution, and this depends largely upon the health and vitality of the parents.

But only taking into consideration the children after they are here, and especially those who are born not exceptionally rugged, is it possible to improve their physical make-up? Can vital resistance, red-blooded health and all-around strength be cultivated in the infant and the child? Assuredly. The child with a naturally strong constitution undoubtedly has an advantage over those less favored by nature, but by proper methods the latter may also attain a satisfactory degree of strength and health.

To a large extent the physical improvement of children is a matter of proper food, fresh air, sufficient sleep, appropriate clothing and other factors tending to build vitality and promote health. Not one of these can be ignored. Probably the first in importance is the question of nutrition, and without doubt the greatest of all mistakes are to be noted in this quarter. But there are also mistakes enough in connection with these other requirements to prevent the satisfactory growth and development of many children.

Children need all the sleep they can get. Up to five years of age, if possible, they should sleep two or three hours each afternoon. They need almost continuous fresh air. They should practically live out of doors the year round. Their diet should be plain, wholesome and nourishing, with an abundance of milk, with no food allowed between meals to spoil the appetite, and especially with no cheap candy to overtax the

liver, spoil the teeth and interfere generally with good nutrition. All these influences are of the greatest importance, but in this particular place we are concerned chiefly with the strengthening of the children through play and exercise.

Play Versus Exercise.—Most children, if unhampered by the artificial restrictions of civilized life, would secure sufficient exercise from the spontaneous activity of play. Play is the one great and universal means of strength building and education. Young animals educate themselves through play. In the human race play serves as a means of both physical and mental education. The child first develops its mind through the use of its muscles. Continuous activity is the one invariable characteristic of all healthy children, and it may also be said that under many conditions play is the very best form of physical training. At least this is true of those children who are naturally strong and energetic.

But play has certain limitations where bodily defects of any kind are concerned and where the children are inclined to be frail. Under such conditions, special attention will be required. Systematic and persistent exercises directly affecting the weakened parts will bring about a condition of symmetry and harmonious strength, and this result can be gained in no other way.

Outdoor Play.—We may say that those children who are so full of energy that they are constantly on the move and simply cannot keep still, will usually need no special attention in the way of physical culture. You cannot do better than to turn them outdoors into a nice, grassy yard, where they will have full freedom to wrestle and run, to push and pull, to roll and romp and play all kinds of games that may appeal to them. Depend upon it, such children will take care of themselves in the matter of strength and healthy growth. All they need is good food, plenty of sleep, outdoor play-space and such clothing as will not interfere with their bodily activities in any way.

It is important that girls should be sensibly dressed so that they can play absolutely the same type of games as the boys. Dainty and pretty clothing will do very well for Sunday, but for the play hours the clothing of girls as well as of boys should be serviceable in color, texture and construction. Little girls, by way of underclothing, should wear bloomers which will give them full freedom to climb trees, if desired, or to run, wrestle and romp as much as they choose.

The confinement of city life is almost a crime against childhood. If possible, children should be raised in the country. Even the best ven-

tilation cannot make indoor rooms as satisfactory as the open air. The outdoor world and the sunshine are absolutely essential. A nursery or play-room in the house may be advantageous in extraordinarily stormy weather, but in the case of ordinary snow and rain the children should be provided with suitable clothing and be allowed to stay out of doors. When raining they may wear appropriate rubber coats, rubber boots and helmets such as will permit them to run around out in the open just the same as in clear weather. They may enjoy it even more.

If the little folks must play indoors in the winter-time, then give them a room well provided with windows, open the windows wide and let them put on their sweaters, overcoats, gaiters, mittens and caps so that they will be provided for the cold air just about the same as if out of doors. Every nursery and playroom should be as nearly as possible an outdoor playroom, so that the children will have good health, good appetites and beautiful rosy cheeks. Much emphasis is here placed on this particular question of fresh air because it is, if anything, even more important than any method of exercise. Furthermore, fresh air is so conducive to energy that the children will naturally turn to active play. And the more noise they make, the better. It indicates a healthy, normal childhood.

But if open air life is of such value in the case of rugged and vigorous children, it is even more important where delicate children are concerned. The latter should not be sent to school too early but should be kept out of doors and, if possible, arrangements should be made on any convenient porch, balcony or roof, or possibly in a tent, for outdoor sleeping.

What Children Need Exercise?—The children who particularly require physical training are those who are thin, pale and generally delicate. The child who plays only with blocks and picture cards, who prefers to sit on a rug rather than to run about, who never makes any noise and whom his parents regard as a very, very “good” little boy, will need special attention. Those who are always running, wrestling and fighting will get along well enough, but the quiet child and especially the nervous child should be encouraged in the direction of active play and in all forms of outdoor life. He should not be exhausted by a too strenuous program, but he should be given enough exercise to make him muscularly tired, to make him sleep better, to improve his appetite and in that way to bring about a revolutionary change for the better in his entire physical make-up.

Children who are of an excitable nature or who suffer from hysterical tendencies should be discouraged in mental pastimes and kept out of doors. Having a mental temperament, these children usually learn very quickly at school and one can afford to let them start their school life later than the average child. Give them a chance to build up a vigorous physique.

Those having weak eyes or eye defects should be discouraged in pastimes involving eye strain, such as playing with pictures and books. The eyes of young children are really suited to fairly large objects at a little distance. They should have large balls to play with, shovels, digging implements and other things that do not call for close concentration of sight. In fact, this is true of all children. Kindergarten work, because frequently trying on the eyes, is of doubtful value. All such children should have their eyes thoroughly and carefully examined, and when necessary glasses should be used to remove any eye strain until the eyes become stronger. The eyes invariably improve with better general health.

Adenoids are usually developed from a lack of outdoor air and active play. When once established they should be removed as soon as discovered, but they may be prevented just as swollen tonsils may frequently be prevented by open air activity. Mouth breathing should be avoided. Defective hearing is often catarrhal in origin, and the building up of the general health will usually mean an improvement in the hearing.

Corrective Exercise.—Bodily defects can usually be remedied far more successfully in childhood than in later life by special and systematic exercise. All gymnastic work is somewhat corrective in character, though to get the best results this work should be individualized, depending upon the personal requirements of each child. For round shoulders, spinal curvature and conditions in which one shoulder is lower than the other, stretching and body bending exercises are effective. Stretching the arms high above the head, swinging by the hands from a horizontal bar and twisting the body at the waist should be diligently practiced. If one shoulder is lower than the other, that shoulder should be stretched upward repeatedly. Let the child place a pencil mark on the wall as high as he can reach. Let him each day strive to stretch still higher to beat his previous mark. Wrestling and all physical exercises for the back will likewise tend to improve this condition. Bodily posture, both standing and sitting, is most important. The erect position can best be secured

By stretching the arms high, also by bringing the arms back, thus pulling the shoulders backward. This exercise will likewise raise and expand the chest, overcoming any flat-chested tendency.

Where the abdominal muscles are weak, and especially where there is constipation and digestive weakness, bending exercises and those which double the legs against the body will be useful. Let the child lie on his back, hold his feet steady, and then let him raise himself to a sitting position without the use of his hands. Also, while hanging by the hands, let him raise the legs to a horizontal position.

In any tendency to bow-legs or knock-knees all strengthening exercises for the legs will be useful, particularly deep-knee-bending, or squatting and rising. Mechanical pressure or rubbing, either outside or inside the knee, as required, may have some effect in childhood, although these defects cannot be altered at or after maturity. Good food has much to do with it, and milk should be used freely.

For weak ankles or flat-foot there is nothing like going barefoot. If a child seems to favor one leg—that is, stand mostly on the other foot—he may have some weakness in this direction. Sandals and moccasins are just about as good as going barefoot, but all possible exercise for the legs and feet should be encouraged to strengthen the weakened parts. Skating, dancing, rope-skipping and running are very effective if one can practice them. Foot exercises, such as rising high on the toes and on the heels, bending the feet inwards and outwards and also circular movements of the feet are remediable in such cases.

In the same way weak hands and wrists may be strengthened by exercises with a broomstick, using especially a competitive game in which two children try to pull or twist the stick away from each other.

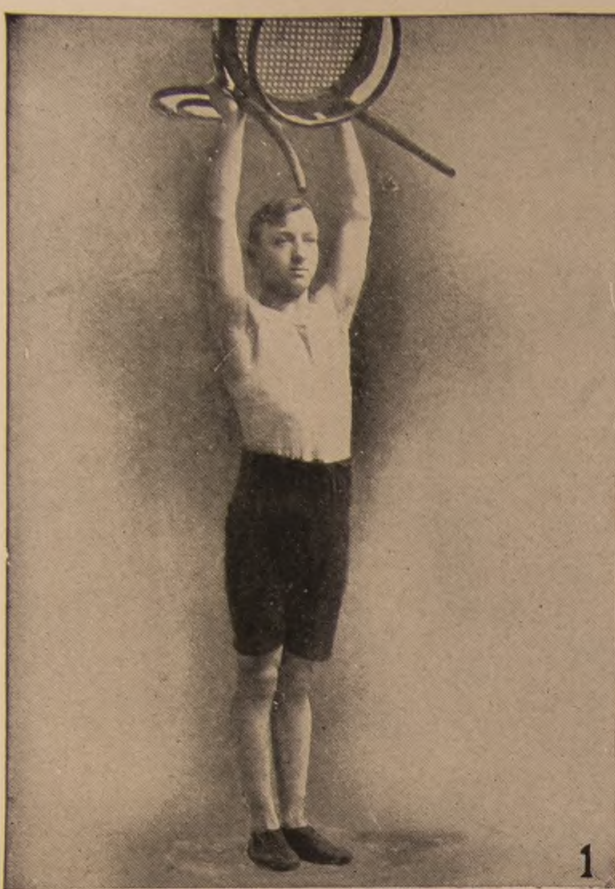
A thin neck usually goes with an undeveloped and delicate condition of body generally, and all kinds of development exercises are necessary together with special movements for the neck itself. The latter should consist of bending the head far backward and forward and far to each side, as well as twisting or turning the head. By way of advanced exercises, after some strength is developed, the weight of the body should be partly supported by the head while lying on the back and also in a position face downward. In the latter exercise first get down on hands and knees, place the head on the floor, then lift the hands and if possible the knees. A good strong neck is always associated with a condition of vitality.

How Much Exercise.—There should be no forcing of the child's

growth and no excess in exercise. Do not strive for feats of strength or to make a circus performer of the youngster. Such "stunts" as throwing the child high in the air, tossing him up for somersaults and dangerous feats of any kind should be avoided. Exercise should be intended merely for a normal development and healthy growth. Beyond this, training is not advisable. When the child shows the least lack of pleasure in the exercise it is probably time to quit.

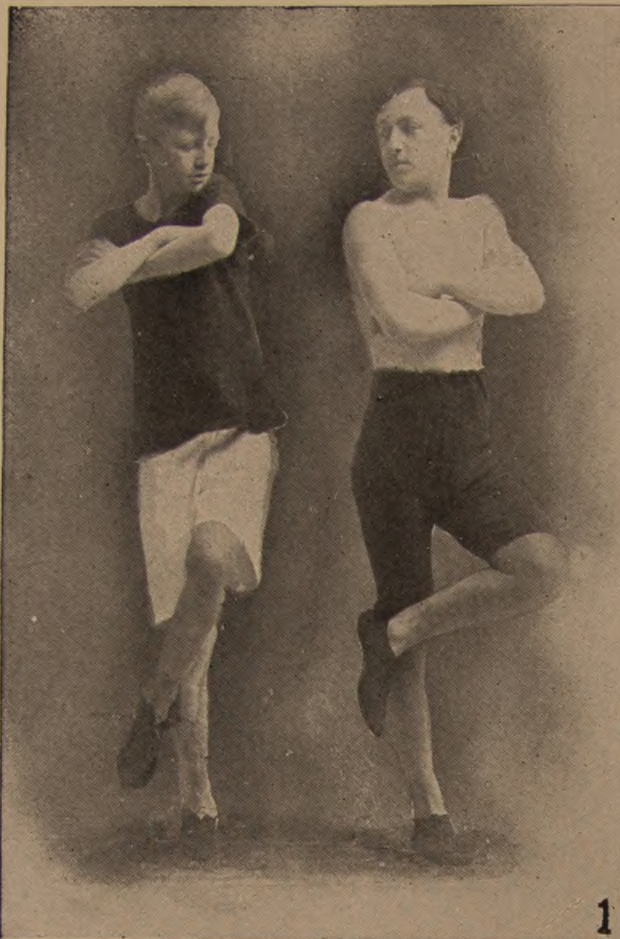
How Children Should Exercise.—So far as possible, even systematic or special training should take the form of play. It should be made pleasurable, and if the parent will take an interest so as to make it as much "fun" as possible there will be no difficulty in keeping the child's interest. A great many exercises can be employed in the form of stunts or tricks, and where there are several children they can compete with each other in doing them. Who can stretch the higher? Who can make a better backward bend? Who can balance longest on one foot in certain stretching feats? Who can expand his chest the most? Who can raise his back the highest when lying on his back with the weight of the body on the feet and head? The competitive or play spirit in all such exercises will help greatly.

Competitive Games.—There is a great variety of competitive games and exercises that may be especially suggested for all-around development. Hand wrestling is ideal for children. Taking a firm position, with feet well apart, let them "shake hands" with the right hand and then see who can pull, push or jerk the other out of balance so as to make him move his feet or touch the floor with his other hand or any part of the body. This is splendid exercise. After five "falls" change off to the left hand. Ordinary wrestling is a superb exercise for boys if practiced on the grass. It will be advantageous, however, to study wrestling holds. There is a simple "tug-of-war," in which two children, taking hold of the same broomstick and sitting down with the feet braced against each other, try to pull each other over. Let the two take hold of a broomstick high above the head and bring it downward between them, each one trying to twist the stick in the hands of the other. This requires and develops a tight grip. There is a great variety of exercises of this type, all appealing to the mind of a child and all valuable. If gymnastic apparatus is available it will be a great help, but it should not be taken seriously. The children should not strive to make records or to do difficult feats. They should simply "play" on the apparatus so



Children will find an ordinary chair a satisfactory piece of exercise apparatus. 1. Using a chair for a regular exercise drill. 2. A good "stunt" for boys, performed on the backs of two chairs. 3. Combination balancing and stretching exercises are splendid for girls, developing grace and muscular control. This is a good example. 4. Another balancing exercise of great value, to be performed on each foot alternately.

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Competitive games and exercises particularly appeal to children, and should be encouraged. 1. "Rooster fight." With arms folded, and hopping on one foot, each tries to "bump" the other over, or make him put down the other foot. 2. A typical wrestling hold. Wrestling is an ideal exercise for naturally rugged children. 3. Testing the grip. Let each grip the broomstick tightly, and then try to make it turn in the other's hands as it is brought down between them. 4. Hand wrestling is a clean and delightful sport. Taking this position, each boy tries to pull, push or jerk the other off his balance. To move either foot or touch the floor means a fall.

as to get the most fun. For girls, folk-dancing is especially suited. Simple balancing exercises will give grace, poise and bodily control.

Children are not suited to endurance work. Their exercise should be active in character, but not long continued. There should be a variety in their exercise. This is one reason why baseball is a splendid game for boys old enough to play it.

The Slender Child.—Slenderness in itself does not indicate a lack of vigor. Children, like adults, are of various types. Some are naturally more short and stocky, while others are taller with light bones. The frail child is thin from lack of development, but the naturally slender child may be only light-boned, and may really be in perfect health, with good color and remarkable strength and vitality for his weight. Such a child is usually a good runner and very active. but when the slender child is pale and inactive, with a thin neck, drooping head, round shoulders, a flat chest and pouchy abdomen, he needs a rigid course of physical training

From the age of twelve to sixteen or seventeen some children are slender because of growing tall very fast. Their vitality is often expended in this rapid growth and they may not have the stamina of boys and girls who have grown more slowly and who have filled out more during the process. These apparently "over-grown" young people will fill out later if in good health, but they should not attempt to compete in athletic games with others of their height simply because they are tall. They cannot be expected to have the same endurance. Athletic work for all young people during the period from boyhood or girlhood to manhood and womanhood should be carefully supervised. Athletics are undoubtedly of great value, but in occasional instances may be carried too far if not closely looked after. Athletic directors are supposed to look after this, but it should be the duty of every parent to take a personal interest in the matter.

Exercise for Babies.—A healthy baby, as a rule, requires no special exercise. What he needs most of all is sufficient freedom in his clothing to allow him to kick and use his arms. Babies should not be bundled too much. An air bath once each day in a warm room will be of great value. This may precede the daily bath. Place the baby on a heavy quilt on the floor and let him kick, roll and wiggle. In this way he will gain the strength that will enable him to creep when he gets ready for it.

Passive exercises may be given the baby by moving his arms and legs in a manner suggested by ordinary calisthenic work. Such movements will stretch his little body, expand his chest and improve his

circulation. Take the little arms, raise them above the head, then down, draw them out to the side and then back. Double the knees up against the chest, then straighten them. Put the child through a variety of other movements. Let him take hold of your fingers and then partially lift him. You will soon find that he can sustain his entire weight by his grip. Massage will be especially valuable, kneading the arms and legs lightly but thoroughly, and especially massaging or rubbing the back, chest and abdomen. A quick, circling movement is especially suggested for massage of the back, chest and stomach. This massage, if used, may follow any exercise given and precede the bath. When the baby learns to creep or hitch this will mean a great deal of exercise. He should not be forced or urged to walk until he does it of his own accord.

BOOK XVIII

Is a treatise on Full or Complete Breathing as practiced by the Hindu Yogis, together with a series of Remedial Exercises designed to correct bodily infirmities.

<p>Breath, Cleansing1696 Nerve Vitalizing1696 Retained1697 Science of1689 Vocal1697 Breathing, Full or Complete1693 High1692 Low1693 Mid1693 Mouth1691 Nose1691 Rhythmic.....1699 Chest Expansion.....1698 Circulation, Stimulation of1699 Cleansing Breath1696 Complete Breathing1693 Exercises in1701 and Weak Lungs1702 Douche, Nasal1692 Exercises in Complete Breathing....1701 Morning1699 Walking1698 Full Breathing1693 High Breathing1692 Low Breathing1693 Lung Cell Stimulation1697 Mid Breathing1693 Morning Breathing Exercise.....1699 Mouth-breathing1691 Nasal Douche1692 Nerve Vitalizing Breath1696 Nose-breathing.....1691 Respiratory System1689</p>	<p>Retained Breath1697 Rhythmic Breathing1699 Rib Stretching1698 Science of Breath1689 Stimulation of Circulation1699 of Lung Cells1697 Vocal Breath1697 Walking Exercise1698 Weak Lungs and Complete Breathing1702</p> <p style="text-align: center;">ILLUSTRATIONS</p> <p>Cleansing Breath.....1696 Correct Position for Complete Breathing1696 Filling Upper Lobe of Right Lung...1696 Nerve Vitalizing Breath1696</p> <p style="text-align: center;">REMEDIAL EXERCISES</p> <p>Abdominal Organs, Exercise for.....1704 Asthma, Exercise for1705 Bronchitis, Exercise for1705 Catarrhal Conditions, Exercise for..1705 Exercise for Abdominal Organs1704 Asthma1705 Bronchitis1705 Catarrhal Conditions.....1705 Hay Fever1705 Ovaries1704 Prolapsed Organs1705 Hay Fever, Exercise for1705 Ovaries, Exercise for1704 Prolapsed Organs, Exercise for.....1705</p>
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Book XVIII

THE SCIENCE OF BREATH

THE RESPIRATORY SYSTEM.

It is an axiom that "breath is life." It may likewise be said that the manner of breathing vitally affects the length of life, yet few people appreciate the significance of this fact.

Breathing is dependent upon the organs of respiration—that is to say, upon the lungs and the air passages leading to them. There are two lungs, separated from each other by the heart, the large blood-vessels and the large air tubes, each being connected with the heart by arteries and veins. The lungs themselves are porous and spongy, their tissues having great elasticity. They are covered by a sac or thin double wall, known as the pleura, one side of which is attached to the lungs and the other to the inner walls of the chest. The pleura secretes a fluid which acts as a lubricant to the inner surfaces involved, and enables them to glide upon each other without friction in their respective movements in breathing. The pharynx, larynx and the windpipe or trachea, together with the bronchial tubes, form the air passages to the lungs. Nature intends that we should draw air into and expel it from the lungs through these passages and has provided the nose as the medium of passage. These are provisions of nature, yet a considerable percentage of humanity breathes chiefly through the mouth. In breathing air through the nose the temperature is properly regulated by mucous membranes especially adapted to the purpose. In breathing through the mouth this design of nature is frustrated. In breathing through the nose not only is the air modulated to the temperature which the lungs require, but it is freed of germs detrimental to the lungs. In breathing through the mouth a false medium is employed and the air passes into the lungs without divestment of germs which the nose channel would have thrown off.

Air is drawn into and expelled from the lungs by action of the diaphragm, a strong, flat, sheet-like muscle lying across the chest and separating the chest-box from the abdomen. When the diaphragm expands the elastic lung tissues are correspondingly stretched and the lung cavities thereby enlarged, creating a vacuum, into which air from without is drawn; when the diaphragm relaxes the air is expelled. This action of the diaphragm is almost as automatic as that of the heart, but unlike heart-action it may to a very considerable extent be controlled by will-power.

In a consideration of breathing it is necessary to have in mind the manner of the circulation of the blood. By the heart's action the blood is forced through the arteries and capillaries to all parts of the body and then returns to the heart through the veins, which are reached by capillaries throughout the body. After regeneration by medium of the capillaries of the lungs, the blood, in a red, rich condition having life-giving properties, passes through the left auricle into the left ventricle, and thence through the arteries and capillaries, distributing its life-giving properties to the body as it goes, but as it returns through the veins it picks up the waste materials of the system and reaches the right auricle of the heart, blue in color and robbed of its life. As this auricle becomes filled it contracts and drives the blood through an opening into the right ventricle of the heart, from whence it is forced into the lungs and distributed by millions of hair-like blood-vessels to the air cells of the lungs. The texture of these blood-vessels of the lungs is sufficiently dense to prevent any outlet of blood, yet porous enough to permit the passage of oxygen which has reached the lungs in breathing, and this oxygen if received in sufficient quantity drives out the impurities, and the re-oxygenized blood passes from the blood-vessels of the lungs through the left auricle of the heart to the heart's left ventricle, from whence it is again forced through the arteries. When it is remembered that in the ordinary man approximately 35,000 pints of blood pass through the capillaries of the lungs each twenty-four hours, it will be evident that unless fresh air reaches the lungs in sufficient quantity the poisoned blood cannot be fully purified and waste products which should have been eliminated must return to and poison the system. When properly oxygenized by fresh air not only is the poison in the blood eliminated, but the newly-charged blood carries some twenty-five per cent. of free oxygen which in its arterial course it distributes to all the cells, tissues, muscles and organs of the body, even the lungs themselves. Insufficient oxygen means imperfect elimination of poisonous matter and consequently poor nutrition and ill health.

For proper re-oxygenation of the blood as it passes through the blood-vessels of the lungs it is not sufficient for the air to merely reach certain of the air-tubes of the lungs, but that it should reach every part of all the air cells, and this cannot be accomplished unless the manner of breathing through the nose and so regulating the action of the diaphragm that it will produce the requisite inhalations and exhalation of the lungs, and this action of the diaphragm can be regulated by the will in the same manner that an arm may be raised or a foot extended. This means full or complete breathing and implies more than is commonly meant by deep breathing. In shallow breathing only a portion of the lung cells are reached, the blood is correspondingly imperfectly oxygenized and the whole system suffers in proportion to the under-oxygenation.

Reverting to the nose and mouth as mediums of breathing, man's mechanism is so constructed that he may breathe through either, but nose-breathing properly exercised brings health and strength, while mouth-breathing cannot but result in weakness and disease. Many diseases to which man is subject can undoubtedly be attributed to the ill, but common habit of mouth-breathing. Every mother should carefully watch her infant, close its lips and bring about the habit of proper breathing. When the child seems inclined to breathe through the mouth, the error may usually be corrected by tipping the head slightly forward when asleep. This causes the mouth to close and forces the nose to perform its functions. Contagious diseases are much more easily contracted by mouth-breathers than by nose-breathers. The nostrils have natural protective apparatus which filter all air as it passes through and do not permit obnoxious ingredients to pass to the lungs. Mouth-breathing, on the other hand, permits the passage to the lungs of germ-laden dust and other deleterious things and not only so, but permits air to pass which is not adapted to the sensitive requirements of the lungs in the matter of temperature and therefore causing inflammation of the respiratory organs. In nose-breathing the impurities which are stopped by the mucous membranes of the nostrils are duly thrown off by exhalation and should they by any means have penetrated beyond these membranes, they are usually still thrown off because of an irritation in the nostrils resulting in a sneeze, which ejects them. This does not happen in mouth-breathing. Those who have been habitual breathers through the nose are seldom troubled with clogged or stuffy nostrils, but those who have been addicted to mouth-breathing may find that the nose to a certain extent has lost its facilities and may be subject to clogging. In such cases the nose should be thor-

oroughly cleansed each day with tepid water, which may be administered through a small glass nasal douche, purchasable from any druggist, or in lack of such by snuffing the water up the nostrils, permitting it to run down the nasal passages to the throat and then ejecting it through the mouth. Each morning it will be found well to stand in front of an open window, close one nostril with the finger and breathe the air through the open nostril, repeating this several times, changing from one nostril to the other. A little vaseline or camphorated ice rubbed in the nostrils at time of retiring and placed as far up as the little finger will reach will be found very beneficial in such cases.

The mechanical arrangements of respiration manifest themselves through: (1) elasticity of the lungs, and (2) the activity of the thoracic cavity (commonly referred to as the chest), in which the heart and lungs are contained, and which is bounded by the spinal column, the ribs with their cartilages, the breast bone and the diaphragm. There are twenty-four ribs, twelve on each side, emerging from the spinal column. The upper seven pairs which are fastened directly to the breast bone are called true ribs, while the lower five pairs which are not fastened to the breast bone are known as false or floating ribs, the upper three being fastened by cartilage to the other ribs, the remaining two pairs having no cartilages and being free at their forward ends. The ribs move in respiration by means of two muscular layers called the intercostal muscles, being affected by the action of the diaphragm, which separates the thoracic cavity from the abdominal cavity. Without action of the diaphragm and its dependent intercostal muscles the lungs cannot expand, and upon the extent of the action of the diaphragm the sufficiency or insufficiency of the air taken into the lungs depends. A proper control of the action of the diaphragm is therefore necessary in order to secure proper lung expansion and send properly oxygenized air through the arteries to the cells and tissues of the body.

Respiration may be divided into four classes, namely: high breathing, mid breathing, low breathing and full or complete breathing.

In high breathing the ribs are elevated and the collar-bone and shoulder raised, the abdomen being drawn in so as to push against the diaphragm, which is also raised. This action simply calls into requisition the upper or smallest portion of the lungs and consequently permits but a minimum amount of air to enter the lungs. Notwithstanding that this form of breathing requires the greatest expenditure of energy, it is com-

monly the only way of breathing with many people, especially among women.

Mid breathing, known as rib breathing and intercostal breathing, although superior to high breathing, is nevertheless inadequate. The abdomen is drawn in and the diaphragm pushed upward; the ribs are somewhat raised and there is a partial expansion of the chest. It is perhaps the most common form of breathing.

Low breathing is known under many different names, such as deep breathing, diaphragmatic breathing, etc., and has much to be said in its favor. It is in every sense superior to high breathing and mid breathing, yet cannot be termed as full or complete respiration. It fills the lower part of the lungs and a considerable portion of the middle part, but it does not fill the entire lung space.

Full or complete breathing embraces all the advantageous points of high, mid and low breathing without any of their objectionable features. The entire respiratory apparatus is brought into play and every air cell is reached. The complete respiratory system responds to this breathing, producing the maximum amount of benefit with a minimum expenditure of energy. The thoracic cavity is increased to its full limit in every direction, each part performing its natural function in a natural way. In no other form of breathing are all the respiratory muscles brought into play, but in complete breathing every respiratory muscle is used, the ribs are forced into useful activity and not only increase the space in which the lungs may be expanded, but give proper support at needed points. The diaphragm draws the ribs slightly downward, while other muscles hold them in place, and they are forced outward by the intercostal muscles. This increases the mid-chest cavity to its full natural capacity. The intercostal muscles also lift the upper ribs and force them outward, thereby increasing the upper chest capacity to its maximum.

It requires study and practice to acquire such mastery of complete breathing as will enable one to carry on the process as the natural method of breathing, but the results obtainable are so great and so beneficial that no one, once having become master of the art, will go back to the old method of breathing. The complete breath is not abnormal, but on the contrary the only natural way of breathing, and the healthy infant, even in civilization will usually be found to breathe in this way, but neglect in the care of children and unnatural methods of living, clothing, etc., result in unnatural forms of breathing. While the form of complete breathing

should be followed at all times it is not essential that the lungs should be completely filled at each inhalation.

Ordinarily the average amount of air taken in breathing is adequate, provided the complete form be followed, for in complete breathing, be the quantity inhaled large or small, it is evenly distributed to all parts of the lungs. But at least several times a day, and the more frequently the better, a series of complete breaths should be taken in such manner as to completely fill all parts of the lungs with fresh oxygen.

In a later part of this chapter will be found a complete series of exercises to be used in the development of different parts of the body, but the following exercise will give a clear idea of the manner of complete breathing:

Sit or stand erect. Breathe steadily through the nose in such manner as to fill the lower part of the lungs, to accomplish which the air must press upon the diaphragm so as to cause it to descend with gentle pressure upon the abdominal organs, forcing the front walls of the abdomen forward. Now fill the middle part of the lungs. This will push out the lower ribs, breast bone and chest. Now fill the higher portion of the lungs, forcing the upper chest outward and lifting the whole chest, including the upper pairs of ribs. In this last mentioned movement there will be a slight drawing in of the lower part of the abdomen, giving the lungs support and also aiding in the filling of the highest part of the lungs. Although these are described as if they were three separate movements, the whole operation is one continuous action, commencing at the lower diaphragm and gradually, but continuously, coming upward until the highest points of the lungs have been reached. Jerky inhalation should be avoided and a steady, continuous action strived for. At first there will be a tendency to divide the inhalation into three movements, but comparatively little practice will overcome this. Retain the breath a few seconds, then slowly exhale, the chest being held in a firm position, the abdomen being drawn slightly inward and slowly upward as the air leaves the lungs. Upon complete exhalation relax the chest and abdomen. It will require some practice to perform this exercise easily, but once mastered, the movement will be performed almost automatically.

This method of breathing brings into play all parts of the respiratory system, the most remote air cells being exercised and the chest cavity expanded in every direction. It will be found advantageous in beginning to practice this breath before a large mirror. Lightly place the hands upon the abdomen so that the movement may be felt. Watch the whole

chest movement in the mirror and endeavor to make the inhalation reach the different parts of the lungs in continuous, not spasmodic succession. While there should not be straining in taking the complete breath, it will be found well occasionally, at the end of an inhalation to slightly elevate the shoulders, which will raise the collar-bone and permit air to pass freely into the small upper lobe of the right lung, which is frequently a breeding place of tuberculosis.

It is believed that those who habitually utilize the form of complete breathing in their respirations will be immune to consumption and other pulmonary troubles, and that with those who have already contracted this wasting disease, it will do much in amelioration if it does not positively cure. Low vitality is a principal cause in consumption, and low vitality is largely attributable to an insufficient amount of air being inhaled, causing a considerable portion of the lungs to remain inactive, and these inactive parts become inviting fields for germs. If the lungs be in healthy condition they will resist germs and habitual complete breathing of pure air will keep the lungs in healthy condition. Consumptives are almost invariably narrow chested, which simply means that they have been addicted to improper methods of breathing, for those who have been accustomed to complete breathing will always be found with full, healthy chests. Those who are narrow chested may develop normal proportions by adopting the mode of breathing here prescribed.

Colds may frequently be prevented by a little vigorous breathing when it is felt that one is unduly exposed. If chilled, utilize the complete breath vigorously for a few minutes, when a glow will be felt over the whole body. It is claimed by some people that most colds may be quickly cured by complete breathing and partial fasting.

It has been shown how under-oxygenated blood (caused by improper breathing) becomes poor in quality, is laden with many impurities and carries disease instead of nourishment throughout the system. Every organ is dependent for nourishment upon the blood, and impure blood must have a detrimental effect upon the entire system. The stomach and other organs of nutrition cannot be properly nourished when there is improper breathing. Not only are these organs themselves ill-nourished, and therefore unable to properly perform their functions, but the food itself must absorb oxygen from the blood and thus itself be oxygenated before it can be digested and assimilated.

The nervous system also suffers from improper breathing because the brain, the spinal cord, the nerve centers and the nerves themselves depend

upon the blood for their nourishment, and when the blood is impure they become inefficient mediums for generating, storing and transmitting nerve currents.

EXERCISES IN FULL OR COMPLETE BREATHING.

Whatever may be considered of them otherwise, it is a recognized fact that the Yogis of Hindustan are practically without exception superbly physically developed. Their claim is that this physical development is due to complete breathing, which has been practiced by them and their forebears for many centuries. They have many exercises, some of which they claim produce mental and psychic conditions, but the following exercises are those most generally used by them for physical development:

Cleansing Breath.—This has for its object the ventilation and cleansing of the lungs. It is a common practice to conclude breathing exercises with this cleansing breath, the claim being that it cleanses and ventilates the lungs and generally refreshes the entire system, and that it is especially restful to speakers and singers who are tired from excessive use of the respiratory organs. (1) Inhale a full or complete breath and retain this for a few seconds. (2) Without swelling out the cheeks pucker up the lips as if about to whistle and then with considerable force exhale a small quantity of air through the opening. Now stop for a moment and then exhale a little more and again stop, and continue in this manner until the air is completely exhaled. Do not forget that each time the air must be forced from the mouth with considerable vigor. This cleansing breath will be found very refreshing when one is tired or exhausted. It should be practiced until its performance becomes natural and easy.

Nerve Vitalizing Breath.—The claim for this breath is that it is one of the strongest nerve stimulants possible to be used, developing nerve force, energy and vitality, and by working on important nerve centers stimulates and energizes the entire nervous system, sending increased nerve force to every part of the body. (1) Stand erect and inhale a complete breath and while retaining it extend the arms limply straight in front, using only sufficient nerve force to keep them in that position. (2) Draw the hands slowly back toward the shoulders, gradually putting nerve force into the muscles in such manner that when the fists reach the shoulders they will be so tightly clenched as to give the feeling of tremulous motion. (3) Keep the fists closed and the muscles tense and push the arms slowly outward to their full extent and then, still keeping them tense



Correct Position for Complete Breathing.



Filling the Upper Lobe of the Right Lung.



Nerve Vitalizing Breath.



Cleansing Breath.

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draw the fists quickly back to the shoulders. Repeat this several times. (4) Exhale vigorously through the mouth and then practice the cleansing breath. To secure full effect not only must the lungs be thoroughly filled, but special attention given to drawing back the arms with speed and in keeping the muscles in a highly tense state.

Vocal Breath.—The object of this breath is to develop the voice. It is claimed for it that it makes the voice soft and flexible, yet thoroughly resonant. (1) Take complete breath very slowly, but steadily, using utmost possible time in the inhalation. (2) Retain the air in the lungs for a few seconds and then vigorously expel it through the mouth with one strong, forceful breath. (3) Follow with a cleansing breath which will rest the lungs.

Retained Breath.—The object of this breath is to strengthen and develop the respiratory muscles and the lungs. It also has a tendency to expand the chest. It is claimed for it also that it is very beneficial to the organs of nutrition, the nervous system and the blood. The retention of the full breath has a purifying effect upon the air remaining in the lungs from former inhalations and not only so, but during its retention it gathers up all waste matter in the lungs and carries it out of the system when the breath is expelled, cleansing the lungs as thoroughly as a purgative does the bowels. It is recommended for various disorders of the stomach, liver and blood and is helpful in relieving bad breath when this is attributable to poorly ventilated lungs. (1) Stand erect and inhale a complete breath and retain it as long as it can comfortably be held. (2) Vigorously exhale the air through the open mouth and then practice the cleansing breath. In early efforts it will be found difficult to retain the breath for more than a very short time, but with constant practice this difficulty will be overcome. By timing yourself with your watch you will be able to note steady progress.

Lung Cell Stimulation.—This breath is intended to stimulate the air cells of the lungs. Beginners must be very careful not to overdo it, and under no circumstances should it be practiced vigorously. It sometimes causes slight dizziness with beginners. In such cases the exercise should be discontinued for some time. To relieve the dizziness take a short walk. (1) Standing erect with hands at sides slowly and gradually take a complete breath and while inhaling raise the arms and with the finger-tips gently tap the chest at different points. (2) The lungs being filled, retain the breath, at the same time patting the chest with the palms of the hands. Then practice the cleansing breath. With those who have been

accustomed to imperfect breathing for years, many air cells will be found inactive, sometimes almost atrophied, and it will take considerable time and careful practice to revive them to activity, but regular and continued practice of deep breathing and the careful daily use of this exercise will have most beneficial effect.

Rib Stretching.—Owing to the cartilages with which they are fastened the ribs are subject to considerable expansion, and in proper breathing play an important part in respiration. It is therefore well to give them special exercise in order that their elasticity may be preserved. With people of sedentary habits the ribs are likely to become more or less stiff and inelastic, and in order to enjoy the full benefits of complete breathing this unnatural condition should be overcome. (1) Standing erect, place the thumbs close under the armpits with the palms on the side of the chest and the fingers over the breast. (2) Inhale a complete breath and retain it for a short time. Then slowly exhale, gently squeezing the sides with the hands while doing so. Follow with the cleansing breath. This exercise should be used with moderation.

Chest Expansion.—The object of this exercise is to restore natural chest expansion when the chest has become contracted from bending over work or other cause. (1) Stand erect and inhale a complete breath. Retain the air and while doing so extend both arms forward, bringing the two clenched fists together on a level with the shoulders. (2) Swing the fists vigorously until the arms are sideways in line with the shoulders. Then bring the arms back to their position in front of the body and repeat this movement several times. (3) Vigorously exhale through the open mouth and practice the cleansing breath. This exercise must be used with moderation and with caution.

Walking Exercise.—This exercise will not only be found generally helpful, but it is an excellent method of practicing the complete breath. One should walk in military style—that is, with head erect, chin drawn slightly in and shoulders back, the pace being measured. (1) While walking, inhale a complete breath, mentally counting each step and making the inhalation extend over eight counts. (2) Still counting the steps, slowly exhale through the nostrils through the counting of eight more steps. (3) Continue walking and counting, but do not breathe until another eight steps have been taken, then repeat the inhalation and exhalation in the same manner and with the same counting. This may be kept up until there is a feeling of being tired, when it should be discontinued and resumed at pleasure. This exercise should be practiced

several times every day. Some people find it advantageous to retain the breath during a count of four steps, then exhaling in an eight step count as described.

Morning Exercise.—Standing erect with head up, chin in, shoulders back, eyes front, hands at sides and knees stiff, raise the body slowly on the toes and while doing so steadily and slowly inhale a complete breath. Retain both breath and position for a few seconds and then slowly sink back to the first position, slowly exhaling through the nostrils while doing so. Repeat the exercise several times, varying it by standing on right leg alone and then on left leg alone. Follow with the cleansing breath.

Stimulating Circulation.—The object of this exercise is to stimulate the circulation by driving blood to the extremities through the arteries and drawing it back to the heart and lungs through the veins in order that the blood may receive an extra charge of oxygen through the quickened circulation. In cases of anæmia and poor circulation there may not be enough blood in the lungs to absorb the increased amount of oxygen inhaled in complete breathing, and such persons therefore do not enjoy the full benefits of complete breathing. The occasional practicing of this exercise with the regular complete breathing will aid in bringing about an absorption and assimilation of the increased oxygen. (1) Place a cane or stick on a low table, and standing erect in front of it, inhale and retain a complete breath, and while retaining bend slightly forward and firmly grasp the stick and gradually exert your full strength upon the grasp. Then relax the grasp and return to the first position, when slowly exhale. Repeat several times and follow with the cleansing breath.

Rhythmic Breathing.—It is well known that there is great power in rhythm. A note on a violin sounded repeatedly and in rhythm will start vibrations which, if properly directed, would move ponderous bodies. When moving in body soldiers are supposed to keep step, but when crossing a bridge they invariably break the general body step, each soldier walking without regard to the stepping of the man around him, and the whole body thus marching without uniformity or rhythm. If this were not done the steady, rhythmic tramp of thousands of soldiers would set up such vibration that the bridge would collapse. Rhythmic breathing acts in this same way upon the human body and if it be brought into full rhythmic harmony with the will it can be directed to increase nerve currents to different parts of the body by the will. It is first necessary to be thoroughly and practically familiar with and habitually accustomed to complete breathing, after which the full mental idea of rhythm must be

acquired. The measured counting in music: one, two, three, four; one, two, three, four, or the rhythmic step of the soldier: left, right; left, right, are symbolical of the idea. In breathing the rhythm must be with the heart-beat and as the heart-beat varies in different persons, the heart-beat unit of each individual must be his or her rhythmic standard. The heart-beat may be ascertained by placing a finger over the pulse on the wrist and counting: one, two, three, four, five, six; one, two, three, four, five, six, and continuing this until the measure or rhythm of the beats becomes thoroughly fixed in the mind. Very little practice will so positively fix this rhythm in the mind that there need be no actual counting in making the breathing correspond to the heart-beat. The average beginner inhales in about six pulse units, but in some cases it may run to seven or eight, and these numbers with practice will gradually increase. The exact counting to a measure must depend upon the individual and must be decided by himself, but the idea is the same whether the measure or rhythm be covered by four or eight pulse units. The rhythmic units of inhalation and exhalation are the same, but the units for retention and the units between breaths should be one-half those of inhalation and exhalation—that is to say, if the rhythmic inhalation be eight pulse beats, the rhythmic retention will be four beats, the rhythmic exhalation eight beats, and the rest until the next inhalation four beats.

The Hindu Yogis claim wonderful psychic effects as possible with a full knowledge of rhythmic breathing, but without taking up this phase of the matter, which is foreign to our present discussion, and considering rhythmic breathing simply as respects its relation to the physical effects of complete breathing, the following exercise will be demonstrative of rhythmic effect: (1) Sitting erect, but in an easy position, yet with the chest, neck and head as nearly as possible in line, shoulders slightly thrown back and hands quietly reposing on the lap, slowly inhale a complete breath, counting six pulse units. (2) Retain this breath while counting three pulse units. (3) Exhale slowly through the nostrils during the time of six pulse units. (4) Count three pulse units and then again inhale. Repeat this a number of times, but be careful not to do so to a point of fatigue. When you feel that the exercise has been sufficiently prolonged follow with the cleansing breath, which will not only rest you, but cleanse the lungs. Gradually with practice, the duration of the inhalations and exhalations will increase until perhaps fifteen pulse units indicate a measure or rhythm and it is to be remembered that the units for retention and between the breaths increase in like proportion—that is, they

continue to be one-half of the units of inhalation and exhalation. Always avoid becoming tired in this exercise. Practice it frequently, but in no instance excessively continue any one exercise, but on each occasion pay all possible attention to acquiring the "rhythm," until the measured swing of the rhythm may be felt as a vibratory motion throughout the whole body. It will require time and much perseverance to accomplish this, but the gratification that will come as improvement is observed will make the task a pleasing one.

SEVEN SIMPLE EXERCISES IN COMPLETE BREATHING.

Being a Condensed Course in Physical Culture and Lung Development.

1. Standing erect, with hands at sides, inhale a complete breath and retain it, raising the arms rigidly until they meet above the head; hold them there a moment and then lower the hands slowly to the sides, exhaling slowly at the same time. Follow with the cleansing breath.

2. Standing erect with arms straight in front, inhale and retain a complete breath. Then swing the arms back as far as they will go, and still retaining the breath, bring them forward to the first position and repeat the whole movement several times without any exhalation. Then exhale vigorously through the mouth and follow with the cleansing breath.

3. Standing erect with arms straight in front of you, inhale complete breath; swing the arms around a few times in a backward circle, then reverse the motion. The breath must be retained throughout all the motions. Then exhale vigorously through the mouth and follow with the cleansing breath.

4. Lying face downward on the floor with palms of hands flat upon the floor at the sides, inhale and retain complete breath. Then stiffen the body and raise it by the strength of the arms until the whole weight is upon the hands and toes. Then lower the body to its original position and exhale vigorously through the mouth. Follow with the cleansing breath.

5. Standing erect with your palms against the wall, inhale and retain a complete breath, then with the weight of the body on the hands push the chest forward against the wall; then, keeping the body still and using only the arm muscles push the body back to the original position; then exhale vigorously through the mouth and follow with the cleansing breath.

6. Standing erect with the hands resting on the waist and the arms akimbo, inhale and retain a complete breath; then keeping the hips and legs stiff, bend well forward, slowly exhaling as the forward movement is

made. Returning to the first position inhale again and then bend backward, slowing exhaling; resuming the first position and inhaling, bend to one side, exhaling, and then repeat by bending to the other side. Follow with the cleansing breath.

7. Standing or sitting erect with straight back, inhale a complete breath, not in the usual continuous manner, but instead in a series of short quick breaths, adding one breath to the other without exhaling until the lung space is completely filled. After retaining this series of breaths for a few seconds, exhale through the nostrils in one long restful exhalation. Follow with the cleansing breath.

The exercises which have been given are useful to all people of whichever sex. They may be brought into utilization in youth or old age, but they should be put into effect from early infancy. The mother should carefully guard all points of breathing. She should see that the child from its earliest days does not breathe through the mouth, she should take every precaution and use every endeavor to bring about breathing through the nostrils. As the child grows older and commences its infantile frolics this point still should be guarded and at a very early age instructions should be commenced as to the proper form of breathing. Very simple demonstrations will appeal to the little child in a way that will bring effects that could not be accomplished in later years. The great point is to make it become natural with the child from its earliest beginnings to breathe in the right way, so that it will not need to be a lesson to be learned, but something that is naturally done. It is not advocated that the whole series of breathing exercises set forth in this chapter should be taught, but that the natural art or system of nature as it exists and is demonstrated by complete breathing should be instilled into the child in its early, plastic age, so that there may be no thought nor effort in later years as to how or why this particular form of breathing should be performed, but that it comes as a natural part of existence.

There is one point in connection with complete breathing which must not be lost sight of, and it is this—there should be no straining of the lungs nor muscles in endeavors to carry out the exercises which have been outlined. This is to be especially noted in respect of those whose lungs are weak and still more especially when there has been indication of hemorrhage. Where tendency to hemorrhage exists it is evident that the minute blood-vessels of the lungs have become deteriorated and are susceptible to strain of any kind and should complete breathing be exercised with straining effort it follows that there must be danger of rupture of

the vesicles and hemorrhage may ensue. This does not mean to say that complete breathing should not be adopted by people with weak lungs, but simply that there should be no undue straining. With one whose lungs are strong and in healthy condition, vigorous and even strained effort may be employed, but with those whose lungs are weak it must be matter of quietly endeavoring to reach the extremities of the lungs to an extent that never before has been reached, yet without strain. In other words, do not attempt to completely fill each and every cell of the lungs by strenuous effort, but quietly reach the entrance to all the cells by the complete breath inhaled and exhaled without undue effort, and gradually these entrance cells will open the way to the deeper parts and permit the entry of oxygen or life-giving source to cells which have become dormant.

REMEDIAL EXERCISES

By Remedial Exercises, we mean particularly a scientific series of movements bringing into play and developing those muscles that hold, encase or control, the great vital organs: the heart, lungs, kidneys, liver, intestines and female organs of generation.

These exercises have proven beneficial to an extraordinary degree, as they increase bodily vigor, and help all organs to perform their functions properly. They are suggested as a *natural method* of treatment in certain common disorders.

We hold that prevention as a successful factor in the attainment of health is not possible under certain conditions. The arm with weakened muscles could not prevent or ward off a blow. That entire organ that has dropped out of normal place, because the supporting muscles are not strong enough to hold it properly, cannot perform its functions and prevent or ward off disease.

While the exponent of the *natural method* seeks no quarrel with the drug practitioner, yet he believes that there are many cases where the use of drugs cannot possibly benefit, and is more than likely to prove very harmful.

The muscles of the weakened arm need to be exercised properly—

soon the blood courses through each artery and vein, waste and diseased tissue is carried away, while the nascent oxygen and blood corpuscles repair everything that need attention.

In like manner, the muscles and supporting tissue surrounding the internal organs can be strengthened, and the organs brought to a normal condition. Now, their corrected action quickly brings about perfect health. While the masseur, chiropractic and the osteopath obtain some excellent results along these lines by purely mechanical methods, the results are more beneficial and permanent when the muscles are worked naturally instead of artificially.

The following are selected as a thorough series of Remedial Exercises; any one of which, if persisted in regularly over a reasonable period of time, will bring results.

Care should be taken at the start not to exercise too hard. For the first few days merely go through the motions and become accustomed to what you are doing, and why. Put your mind thoroughly on each movement, as exercise of a certain amount of your will power is helpful in any method of treatment, but particularly so in this method, where the object is to build up and strengthen all important organs naturally from within. Centering the mind on the organ to be benefited directs the blood to that place.

FIRST EXERCISE (For Men and Women).

OBJECT.—To tone up and strengthen heart, lungs, stomach, spleen, liver and intestines.

Place the hands, closed, on chest with knuckles touching the elbows raised until forearms are horizontal. Completely fill the lungs, then close throat as if swallowing; holding the throat closed, lower chest and force air fully into the lower lungs by distending the abdomen. Still holding throat closed, contract abdomen and inhale in upper lungs, spreading chest as fully as possible. Be careful to hold the throat closed, not allowing air to escape while distending abdomen and chest. Repeat five to ten times. Relax chest and exhale slowly.

SECOND EXERCISE (For Women).

OBJECT.—To strengthen kidneys and ovaries.

Lie on floor or bed; clasp hands over head. Stretch downward with

right leg, reaching far as possible with the leg, until the right hip is drawn so that a line from the armpit to the hip is straight. Center your thought on the muscles of the hips and buttocks. While holding right hip and leg tense, reach up with the left hip, drawing same as high as possible. The left hip bone in this exercise may be brought as much as four inches higher than the right. Change, stretching left and raising right hip. Repeat twenty times, alternating ten times with each hip.

THIRD EXERCISE (For Women).

OBJECT.—To bring weakened organs back to normal strength and proper position in the body. Beneficial in kidney trouble, ovarian disorders and prolapsus of the uterus.

Lie on the back with hands folded under the head. Bend knees, bringing feet close to body. Raise heels, supporting body on head and shoulders, and raise thighs slowly until body curves upward from knees to neck. Now draw feet still closer and contract muscles of abdomen, hips and back, making them rigid. Lower body nearly to floor and raise again while keeping abdominal muscles tense. Raise and lower five times; rest; repeat five times.

FOURTH EXERCISE (For Men and Women).

OBJECT.—To check and prevent cold, catarrh, hay fever, asthma, bronchitis and similar ailments.

Lie on back with arms and legs relaxed. (1) Distend muscles of the abdomen; relax. Repeat five times. (2) Distend muscles over stomach; relax. Repeat five times. (3) Lift chest upward, trying to make it touch chin, but do not raise small of back too far from floor. The abdomen in this movement draws in tensely. Now relax chest. Repeat five times. Distend and relax as in (1); follow directly with (2). Continue this movement to (3), abdomen tense. This creates a surging movement affecting many important muscles. Repeat the movement five times. Take every night on retiring; follow by ten deep full strong breaths.

FIFTH EXERCISE (For Men and Women).

OBJECT.—To correct catarrhal condition of the nose and throat. Distend muscles over diaphragm with strong, quick movement. This

is done by keeping mouth closed, inhaling quickly through the nostrils, which will close quickly as the muscles contract. This exercise should be done vigorously, and will cause a loud sniffing sound, both in inhaling and exhaling. Distend muscles to the fullest extent, contracting quickly and repeating in rapid succession ten times.



"TELL THEM THE BEAUTIFUL TRUTHS OF NATURE"



Book XIX

SEX HYGIENE

HOW THE PARENT SHOULD INSTRUCT THE YOUNG BOY AND GIRL

Sex Knowledge.—It is not for parents to choose whether or not their children shall learn about sex. There comes a time when new emotions stir within them—emotions that at first are indistinct, and differing from any they have ever experienced before; it is the call of sex; it is nature asserting itself; and nature will not be turned aside or made to suspend her laws by any decree of Man. Right here, then, is the danger point. It is the time when the child must learn, and the responsibility rests upon the parents as to whether they shall learn, wrongly, in the streets, or rightly, from their natural protectors, those who gave them being. It is the time if ever that the truth must be told, and its telling in the proper way may save a loved child from a life of suffering and unhappiness.

Duty of the Parent.—Do not blame the child if to satisfy a curiosity inspired by the Great Creator of the Universe, and you refuse to give the information it seeks and must have, it turns to vicious sources for it and is led astray. It is the sacred duty of the mother to guide her daughter; and the father to reveal the truth to his son. God made Man and He made Woman and bade them increase and multiply; and to make sure that His will be obeyed He implanted in all living things an impelling sex desire. Its possession indicates vitality and splendid health. The old-fashioned idea that sex subjects should not be mentioned in the presence of children; that they should be brought up in presumed ignorance of the sacred mysteries of creating life, of reproducing their kind, has been the cause of untold misery, tens of thousands of wrecked lives, horrid diseases akin to leprosy, the loss of reproductive faculties in early youth, and the birth of great numbers of idiots, or the sending forth into the world of thousands to face life handicapped by the bend sinister of illegitimacy. And all
(1707)

could have been avoided by a word spoken in time by parents who failed to do their duty.

Ignorance Breeds Crime.—Ignorance of facts; the blundering, unthinking gratification of sex desire was revealed to such a startling extent by the United States Army Medical Corps in the early days of the war, that stringent quarantines were established about every camp and cantonment and military or Naval post to protect our soldier boys from the contamination of diseased prostitutes. For the first time in war a physical examination was made of every recruit, and the prevalence of venereal diseases was appalling. Even dread syphilis had its victims by the thousands. The Government found it to be one of its most important functions to give its soldiers that thorough instruction in sex matters that should have been impressed upon their young minds years before by their parents, and thanks to the system of sex education that it established and the protection thrown about them great numbers of these fine American lads were cured or kept from error. It was made one of the duties of the Soldier to keep his passions in leash and to realize in full the danger of giving way to them.

In the last few years Physicians, Educators and Publicists have joined hands in a campaign of education in the interests of the health, happiness and future welfare of the race; and in these pages it is our aim to assist in this great work by instructing parents how they shall instruct their children.

False Ideas.—Let the mere rumor reach you that there is Scarlet Fever, or Small-pox, or any other contagious disease in your neighborhood, and you will at once call your children home and surround them with every safeguard. You will tell them frankly of their danger and how to avoid it. Is it not, therefore, much more your duty to instruct them and warn them of that epidemic that is always prevalent and which claims more victims than all other diseases combined? Is not the danger more real because it is insidious, attractive and secret? Is it a time for false ideas of modesty? And if you are solicitous for the health and welfare of your children, is it not equally your duty to safeguard your future grand-children through them?

Proper Instructions.—There is nothing immoral about the creative instinct or its proper consummation. True marriage is the attainment of sex desire sanctified by a love that is not lessened, but grows with gratification. There is nothing finer in this life than the union of a healthy, clean, virile young man to a healthy, clean, virtuous young woman. If they have been properly instructed, and thereby protected from the evils

that surround them through youth, they will approach parenthood with all the joy and pride that comes from the propagation of their kind; the man in the thought this child of his will have a mother as sweet and pure as ever Heaven ordained, the woman profoundly happy in the thought of having a baby of her own to fondle and caress, and that it will come without taint, because its father is one of unimpaired and vigorous manhood.

Nothing stands in the way of a physically perfect race but Prejudice. Let us, therefore, sweep prejudice aside for the good of our children and our children's children and generations to come.

A Shield From Danger.—Sex education includes the study of reproduction and its process; the meaning of marriage; of legitimacy and illegitimacy; the evils of prostitution; the dangers of venereal disease; the hygiene of the body. The Home is the only proper place in which to direct the adolescent mind. It is a subject that neither school nor church dare touch. It is taught only in its viciousness and vulgarity on the streets, where its virtues and its sacredness are ignored. Your child will "hear things" out of doors under any circumstances, but if properly informed and instructed by you it will bear a protecting armor of knowledge which will shield it from danger. In ninety-nine out of every hundred cases the child's first sexual sin is due to ignorance, and that first sin may mean a ruined life. Nature makes inexorable laws; she provides appalling punishment for their violation and showers rich blessings with a lavish hand upon those who respect them.

Your Responsibility.—So much for your responsibility. And it is a responsibility that cannot be shunned without great risk to that child who is your dearest possession. But you must prepare for it. The time will come when the arrival of babies in your own or some other home will start the little brain to thinking. The child notes the commotion and sees the doctor hurrying into a room the door of which is promptly closed. It wonders why. Soon afterward the wail of a new-born infant is heard and the little one is taken in to see the new brother or sister. And some day comes the inevitable question: "Where do babies come from?"

The old way was to reply, "The Doctor brought it," or "the stork flew in through the window with it," or "papa bought it," or give some similar answer, and the parents congratulated themselves that the explanation was satisfactory. Never again would that question be asked of them. The child's faith in its parents tells it that the answer is true. And left alone in this ignorance in time it goes out into the streets and learns—what? The truth as something subject only to coarse jest; the basis of vulgar anecdote. It hears of the exhilaration of the

sexual relation and masturbation is taught it as a substitute in the absence of opportunities for normal indulgence. At first these revelations are puzzling to the little one. Any other subject of doubt would be at once broached to its parents; but they have closed the door to this one by the remembered lies and the fact that the instructors of the street have impressed upon it that the knowledge is of such a nature that parents must not be consulted, but on the contrary kept ignorant of the fact that the child has learned.

The Safe Way.—The only safe thing to do when the great question comes is to tell the Truth. Not all of it, perhaps, but enough for the time being. Much depends upon the age of the little interrogator. Suppose it is a boy of three years who puts the question to his father.; Take him upon your knee and talk to him somewhat like this:

“Sonny, you did right to come to Papa and ask him about this. Don’t ever go to anybody else when you want to know about things, and don’t talk about this to other children. Did you notice that every baby has a mamma and a papa? So do the kittens and the puppies, the little birds and the fishes and even the flowers. Everything has to have a mamma and a papa. When God created the living things of the world He made a pair of each kind, one of which he called the male, the other the female, and among people, as we are, the papas are male and the mammas female. When the male and the female marry each other and live together little babies come and I’ll tell you why.

Lesson From the Garden.—“Do you remember the pretty flowers we saw in the garden? Well, there are male flowers and female flowers. In the female flowers tiny seeds grow, and in the male flowers a dust called pollen. The bees and other insects that fly carry the pollen of the male flower to the seed of the female flower and put the two together. That is what we call fertilizing it. As soon as the seed is fertile it is ready to be planted, and it will then grow into a new and beautiful plant and produce more seeds, so that we will always have the pretty flowers even if the old ones wither up and die. The first chance we have we will go out to a garden and see the pretty flowers and watch the bees carrying the pollen that makes the little seed babies. Now run away and play and we will talk about it again some other time. Don’t forget, sonny, to come to Papa when you want to know.”

The thought of the seed babies will interest him for a while, but the outstanding fact in his young mind will be that Papa will tell him what he wants to know. You might appeal further to his childish love of mystery by making a wonderful secret of it that only you and he may

share—something to be treasured as proof of your comradeship. Every child loves a mystery and a secret.

A visit to the gardens—don't ever break a promise—and an elaboration of the talk about flowers and seed babies will give the little one a new interest in plant life. It may ask "do the bees carry pollen from papas to mammas like mine?"

"Oh, no, there are various ways of doing this. That is the way the plants do it. But the birds have another way, and the fish another and human beings still another. You will learn all about it in time, but I want you to learn so that you will fully understand what a wonderful thing it is."

When the next lesson is given should depend upon circumstances. Perhaps it is in the shad season. If not, or the child is unfamiliar with this succulent fish, it can easily be explained, with variations upon this thought.

Lesson From the Sea.—"Do you remember the shad roe you liked so much? Now I am going to surprise you. Shad roe is just a vast lot of little eggs; millions upon millions of them, and they grow in the mamma shad. The papa shad has instead of the eggs a secretion. The mamma shad and the papa shad swim far up the rivers from the sea, and when the mamma shad casts the roe from her body the papa shad just showers the secretion over them. That secretion is like the pollen of the flower, and the tiny eggs like the seeds. So they are fertilized, and after a while they hatch out little baby shad. Nature is very wonderful; it gives the mamma shad so many billions of little eggs because we eat so many of them, and others are eaten by big fish; but there are so many of them that vast numbers escape all dangers and grow up to be big shad themselves and to have other millions of shad babies. Some fish do not have so many eggs because people do not eat them, and they have not so many enemies in the streams and rivers."

Lesson From the Air.—Let your next lesson be about birds.

"There is a time in the year when the little male bird hunts for a mate. It wants a female bird to be its wife so that they can live together and have little baby birds. So when he finds his mate they go to work to build a nest which is to be their home, just as your papa and mamma selected our house to be our home, and where you and little brother (or sister) could come to make us happy. The little mamma bird grows an egg in her body, and the little papa bird sends a little germ into it that makes it fertile. Then a shell grows around the egg and the mamma bird lets it fall from her body into the nest. When she has two or three

eggs in the nest she sits on them to warm them with her body, while papa bird flies away to get food for her. The heat of her body makes the bird baby grow in the shell until it is time for it to come out, when it breaks its shell, and then papa and mamma birds are very happy and work very hard to feed and care for the baby birds while they grow and the feathers come. Then after a while the little baby birds are taught to fly and soon they become big birds and want mates for themselves.

“Sometimes the eggs of birds are intended for people to eat, too. That’s why we use hen’s eggs. Out on the farms each hen will lay one egg every day for a while. The rooster is the papa chicken and the hen the mamma chicken. The rooster fertilizes the eggs just as the little bird papa does, but the hen does not always want to be a mamma. After a while she does, and then she is put on a nest of eggs that the rooster has fertilized, and she sits on them until they hatch a lot of fluffy little chicken babies. The hens lay a great many more eggs than are needed to become chickens, and that is why we use them for food.”

Some day the boy will notice the swelling body of a cat, or a dog, or perhaps a woman, and his curiosity will be aroused. What more natural, having been frankly told so much, that he goes with confidence to his father with the inevitable question.

Plant Life.—“I have told you, son,” you may reply in substance, “how the female plants have seeds and the male plants the pollen; and how the female fishes and birds have eggs and the males the fertilizing fluid in which there is the tiny germ of life, too small to see except with the most powerful microscope, and how this germ unites with the seed or the eggs to create new life; to bring new babies. Now human beings and all the four-footed animals running about are called mammals. Mammals have different ways of producing babies and feeding them. It is the word that mamma comes from. Now the female cat and the female dog and a woman, as we call the female human being, also produce eggs, but they are kept within her body. The male produces a fluid known as semen, in which there are creative germs. He injects this semen into the female body and it reaches the egg. Immediately a change takes place. The egg is surrounded by a sort of wall which takes the place of the shell of a bird’s egg, and protects it while it grows and takes form. We will just talk of human beings now, of mammas and papas like yours. The mamma lets the egg develop in her body and it grows and takes form and in time it becomes a real baby. Then it breaks through the wall, or shell, and comes from the mamma’s body. And while it is growing and getting ready to appear (we call it being born), nature provides milk in the

mother's breast so that when the baby is born it is too little and its stomach is too delicate to eat meat and vegetables and lives and thrives on the milk it sucks from its mamma's breast. Isn't it wonderful?"

Father's Talk to Son.—Then let the father explain the organs of reproduction of the lad. Some time later, perhaps, he might describe the female organs. As said before, much depends on the age of the child and whether or not it has mingled with other children on the streets. But the need of absolute cleanliness should be impressed upon him. As he reaches the period bordering on puberty and the sex instinct begins to assert itself, describe the whole process of reproduction to him, delicately, but understandingly. Impress upon him the dangers of masturbation; tell him that it may so weaken him that he will become impotent and be forever denied the joy of having children of his own. Impress upon him, too, the dangers of indulgence. Teach him that a woman's virtue is the most sacred thing in life, and that to wrest it from a girl is to take from her a glory that can never be replaced and to commit an act that can never be atoned for; and if a child should result either it would go through life branded with illegitimacy, and the mother be forever disgraced, or if the boy atoned as far as possible for the fault by marrying her, it might be a loveless match with all the misery that results from such unions.

The alternative of gratification with a prostitute, let him understand, might lead to infection with venereal disease, some forms of which mean the actual rotting away of the body, physical agony, the humiliation of being denied fellowship of other men and eventual disgraceful and awful death; and even in its milder forms its evils may be imposed upon his children at the moment of conception.

Teach the boy that the union of man and woman in holy wedlock is a sacred thing; that in wedlock coitus is desirable and ordained by God; that the girl who yields her body to her husband does not lose her virtue thereby, but accentuates it; and that the boy in consummating the marriage may do so with a clear conscience, and that it should increase his reverence and love for the girl who has surrendered her all to him.

Mother's Talk to Daughter.—Instruction of the girl may best be left to the mother, and she should never shun her duty. The same formula the father adapts toward the boy may be used in her case, with the addition that the mother must explain menstruation to her. The presence of the hymen, the evidence of her virginity; and the reason for the swelling of her breasts, which is one way in which she differs from her brother must be told. Let the mother explain the sanctity of marriage, and that her virtue is something that is to be cherished and guarded above all things.

She should be told that the slightest suggestion of immorality from a man or boy must be responded to by his instant dismissal and a severance of their acquaintance. The girl should be enlightened upon the evils that follow indulgence, such as disease, disgrace, perhaps parenthood without the sanctification of the wedding ceremony, the drifting into a life of prostitution and the steady descent to the gutter.

Let it be impressed upon the boy that Man is the natural protector of Woman; arouse all the chivalry in his nature; lead him to look upon all women as he looks upon his mother or his sister and to stand their champion. But to do this he must know why.

Both boy and girl should be encouraged in their outdoor sports. Clean, healthful exercise not only aids in the development of their bodies but helps to keep their thoughts from wandering to forbidden subjects. Let both understand that childhood and youth are the periods when they are developing for the Great Purpose—physical and spiritual union and the perpetuation of the race. Continence until then means the bringing together of two unsullied bodies, unimpaired sexual powers, clear consciences, first experience with the creative act intensified in its pleasure by perfect love and unshaken virtue, and the right to look forward to many years of sweetest companionship and the bringing forth and care of children of their own. The perfect home is the strength of the Nation.

Book XX

DICTIONARY OF DRUGS

LATIN	ENGLISH	LATIN	ENGLISH
<i>Absinthium</i>	Absinthium	<i>Althæa</i>	Althæa, marshmallow
<i>Acacia</i>	Acacia (Gum-arabic)	<i>Alumen</i>	Alum
<i>Aceta</i>	Vinegars	<i>Aluminii sulphas</i>	Sulphate of alu- minum
<i>Acetanilidum</i>	Acetanilide	<i>Ammoniacum</i>	Ammoniac
<i>Acetum</i>	Br. Vinegar	<i>Ammonii benzoas</i>	Benzoate of ammon- ium
<i>Acetum opii</i>	Vinegar of opium	<i>Ammonii bromidum</i>	Bromide of ammon- ium
<i>Acetum scillæ</i>	Vinegar of squill	<i>Ammonii carbonas</i>	Carbonate of ammon- ium
<i>Acidum aceticum</i>	Acetic acid	<i>Ammonii chloridum</i>	Chloride of ammon- ium
<i>Acidum arseniosum</i>	Arsenious acid	<i>Ammonii iodidum</i>	Iodide of ammonium
<i>Acidum benzoicum</i>	Benzoic acid	<i>Ammonii nitras</i>	Nitrate of ammonium
<i>Acidum boricum</i>	Boric acid	<i>Ammonii phosphas</i>	Phosphate of ammon- ium
<i>Acidum carbolicum</i>	Carbolic acid	<i>Ammonii sulphas</i>	Sulphate of ammon- ium
<i>Acidum chromicum</i>	Chromic acid	<i>Ammonii valerianas</i>	Valerianate of am- monium
<i>Acidum citricum</i>	Citric acid	<i>Amygdala amara</i>	Bitter almond
<i>Acidum gallicum</i>	Gallic acid	<i>Amygdala dulcis</i>	Sweet almond
<i>Acidum hydrobromicum</i> <i>dilutum</i>	Diluted hydrobromic acid	<i>Amyl nitris</i>	Nitrite of amyl
<i>Acidum hydrochloricum</i>	Hydrochloric acid	<i>Amylum</i>	Starch
<i>Acidum hydrocyanicum</i> <i>dilutum</i>	Diluted hydrocyanic acid. Prussic acid	<i>Amylum iodatum</i>	Iodized starch
<i>Acidum lacticum</i>	Lactic acid	<i>Anisum</i>	Anise
<i>Acidum nitricum</i>	Nitric Acid	<i>Anthemis</i>	Anthemis chamomile
<i>Acidum nitro-hydro-</i> <i>chloricum</i>	Nitro-hydrochloric acid	<i>Antimonium</i>	Antimony
<i>Acidum oleicum</i>	Oleic acid	<i>Antimonii et potassii tar-</i> <i>tras</i>	Tartar emetic. Tar- trate of antimony and potassium
<i>Acidum oxalicum</i>	Oxalic acid	<i>Apocynum</i>	Apocynum. Cana- dian Hemp
<i>Acidum phosphoricum</i>	Phosphoric acid	<i>Apomorphinæ hydro-</i> <i>chloras</i>	Hydrochlorate of apomorphine
<i>Acidum salicylicum</i>	Salicylic acid	<i>Aqua</i>	Water
<i>Acidum sulphuricum</i>	Sulphuric acid	<i>Aqua chlori</i>	Chlorine water
<i>Acidum sulphurosum</i>	Sulphurous acid	<i>Aqua auranti flor.</i>	Orange flower water
<i>Acidum tannicum</i>	Tannic acid	<i>Aqua ammoniæ</i>	Hartshorn
<i>Acidum tartaricum</i>	Tartaric acid	<i>Aqua calcis</i>	Lime water
<i>Aconitina</i>	Aconitine	<i>Argentum</i>	Silver
<i>Aconiti folia</i>	Aconite leaves	<i>Argenti nitras</i>	Nitrate of silver
<i>Aconitum</i>	Aconite		
<i>Adeps</i>	Lard		
<i>Adeps lana hydrosus</i>	Lanoline		
<i>Aether</i>	Ether		
<i>Alcohol</i>	Alcohol		
<i>Allium</i>	Garlic		
<i>Aloe</i>	Aloes		
<i>Aloe barbadensis</i>	Barbadoes aloes		
<i>Aloin</i>	Aloin		

LATIN	ENGLISH	LATIN	ENGLISH
<i>Aristolochia serpentaria</i>	Snakeroot	<i>Caulophyllum</i>	Blue cohosh
<i>Armoracæ radix</i>	Horse-radish root	<i>Cephalis ipecacuanha</i>	Ipecac
<i>Arnica flores</i>	Arnica flowers	<i>Cera alba</i>	White wax
<i>Arnica radix</i>	Arnica root	<i>Cera flava</i>	Yellow wax
<i>Arsenium</i>	Arsenic	<i>Cerata</i>	Cerates
<i>Asafætida</i>	Asafetida	<i>Cerevisiæ fermentum</i>	Bur yeast
<i>Asclepias</i>	Asclepias (Pleurisy Root)	<i>Cerii oxalas</i>	Oxalate of Cerium
<i>Aspidium</i>	Aspidium (Male fern)	<i>Cetaceum</i>	Spermaceti
<i>Aspidosperma</i>	Quebracho	<i>Cetraria</i>	Iceland moss
<i>Atropa belladonna</i>	Deadly nightshade	<i>Chelidonium</i>	Celandine
<i>Aurantii amara</i>	Bitter orange	<i>Chenopodium</i>	American wormseed
<i>Auranti cortex</i>	Orange peel	<i>Chimaphila</i>	Pipsissewa
<i>Auranti dulcis</i>	Sweet orange	<i>Chinoidinum</i>	Chinoidin (Quinoidin)
<i>Auri et sodii chloridum</i>	Chloride of gold and sodium	<i>Chloral</i>	Chloral (Hydrate of chloral)
<i>Avenæ farina</i>	Oatmeal	<i>Chloroformi</i>	Chloroform
<i>Avena sativa</i>	Oats	<i>Chondrus</i>	Irish moss
<i>Balsamum peruvianum</i>	Balsam Peru	<i>Chrysarobinum</i>	Chrysarobin
<i>Balsamum toluatanum</i>	Balsam Tolu	<i>Cimicifuga</i>	Black snakeroot
<i>Barium</i>	Barium	<i>Cinchona</i>	Peruvian bark
<i>Berbinæ sulphas</i>	Sulphate of berbine	<i>Cinchonina</i>	Cinchonine (Cinchonia)
<i>Belladonnæ folia</i>	Belladonna leaves	<i>Cinnamomum</i>	Cinnamon
<i>Belladonnæ radix</i>	Belladonna root	<i>Cocainæ hydrochloras</i>	Hydrochlorate of cocaine
<i>Benzinum</i>	Benzine	<i>Coccus</i>	Cochineal
<i>Benzoinum</i>	Benzoin	<i>Codeina</i>	Codeine (Codeia)
<i>Bismuthi citras</i>	Citrate of bismuth	<i>Colchisi radix</i>	Colchicum root
<i>Bismuthi et ammonii citras</i>	Citrate of bismuth and ammonium	<i>Colchisi semen</i>	Colchicum seed
<i>Bismuthum</i>	Bismuth	<i>Collodium</i>	Collodion
<i>Bromum</i>	Bromine	<i>Colocynthis</i>	Colocynth
<i>Bryonia</i>	Bryonia (Bryony)	<i>Conium</i>	Hemlock
<i>Buchu</i>	Buchu	<i>Convolvulus jalapa</i>	Jalap
<i>Butyrum</i>	Butter	<i>Copaiba</i>	Copaiba (Balsam of Copaiba)
<i>Caffea</i>	Coffee	<i>Coriandrum</i>	Coriander
<i>Caffeina</i>	Caffeine	<i>Cornus</i>	Dogwood
<i>Calamina præparata</i>	Prepared calamine	<i>Creosotum</i>	Creosote
<i>Calamus</i>	Calamus (sweet flag)	<i>Creta</i>	Chalk
<i>Calcis chloridum</i>	Chloride of lime	<i>Crocus</i>	Saffron
<i>Calcium carbonas precip.</i>	Precipitate of chalk	<i>Cubeba</i>	Cubebs
<i>Calendula</i>	Calendula (Marigold)	<i>Cuprum</i>	Copper
<i>Calumba</i>	Calumba (Columbo)	<i>Cupri sulphas</i>	Bluestone
<i>Calx</i>	Lime	<i>Cydonium</i>	Quince seed
<i>Cambogia</i>	Gamboge	<i>Cypripedium</i>	Ladies' slipper
<i>Camphora</i>	Camphor	<i>Datura stramonium</i>	Thorn apple
<i>Cannabis</i>	Hemp	<i>Digitalis</i>	Foxglove
<i>Cantharis</i>	Cantharides (Spanish flies)	<i>Dulcamara</i>	Bitter sweet
<i>Capsicum</i>	Capsicum	<i>Elaterinum</i>	Elaterin
<i>Carbo</i>	Carbon	<i>Elaterium</i>	Elaterium
<i>Carbo animalis</i>	Animal charcoal	<i>Ergota</i>	Ergot (Ergot of rye)
<i>Carbo ligni</i>	Charcoal	<i>Erythroxyton</i>	Coca
<i>Cardamomum</i>	Cardamomum	<i>Eucalyptus</i>	Eucalyptus
<i>Carum</i>	Caraway	<i>Euonymus</i>	Wahoo
<i>Caryophyllus</i>	Cloves	<i>Eupatorium</i>	Thoroughwort (Boneset)
<i>Cascarilla</i>	Cascarilla	<i>Farina tritici</i>	Wheaten flour
<i>Cassia fistula</i>	Cassia (Senna)	<i>Fel bovis</i>	Ox gall
<i>Castanea</i>	Chestnut	<i>Ferri citras</i>	Citrate of iron
<i>Cataplasmata</i>	Cataplasms	<i>Ferri et quinia citras</i>	Citrate of iron and quinine
<i>Catechu</i>	Catechu		

LATIN	ENGLISH	LATIN	ENGLISH
<i>Ferri ferrocyanuretum</i>	Prussian blue	<i>Ichthyocolla</i>	Isinglass
<i>Ferri sulphas</i>	Green vitriol	<i>Ignatia</i>	Bean of St. Ignatius
<i>Ferrum</i>	Iron	<i>Illicium</i>	Star anise
<i>Ficus</i>	Fig	<i>Inula</i>	Elicampane
<i>Foeniculum</i>	Fennel	<i>Iodoformum</i>	Iodoform
<i>Frangula</i>	Buckthorn	<i>Iodum</i>	Iodine
<i>Galbanum</i>	Galbanum	<i>Ipicacuanha</i>	Ipecac
<i>Galla</i>	Nutgall (Galls)	<i>Iris</i>	Blue flag
<i>Gaultheria</i>	Wintergreen	<i>Jalapa</i>	Jalap
<i>Gelsemium</i>	Yellow jasmine	<i>Juglaus</i>	Butternut
<i>Gentiana</i>	Gentian	<i>Juniperus</i>	Juniper
<i>Geranium</i>	Cranesbill	<i>Kamala</i>	Kamala
<i>Glycerinum</i>	Glycerin	<i>Kino</i>	Kino
<i>Glycyrrhiza</i>	Liquorice root	<i>Krameria</i>	Rhatany
<i>Gossypii radice cortex</i>	Cotton root bark	<i>Lac</i>	Milk
<i>Gossypium</i>	Cotton (Purified cotton, Absorbent cotton)	<i>Lactuca</i>	Lettuce
		<i>Lactucarium</i>	Lactucarium
<i>Granatum</i>	Pomegranate	<i>Lappa</i>	Burdock
<i>Grindelia robusta</i>	Grindelia	<i>Laricis cortex</i>	Larch bark
<i>Guaiaci lignum</i>	Guaiacum wood	<i>Lauro-cerasi folia</i>	Cherry laurel leaves
<i>Guaiaci resina</i>	Guaiac	<i>Laurus camphora</i>	Camphor
<i>Guarana</i>	Guarana	<i>Lavandula</i>	Lavender
<i>Gutta-percha</i>	Gutta percha	<i>Leptandra</i>	Culver's root
<i>Hæmatoxylon</i>	Logwood	<i>Limonis</i>	Lemons
<i>Hamamelis</i>	Witchhazel	<i>Limonis cortex</i>	Lemon peel
<i>Hedeoma</i>	Pennyroyal	<i>Limonis succus</i>	Lemon juice
<i>Hordium decorticatum</i>	Pearl barley	<i>Linum</i>	Flaxseed
<i>Humulus</i>	Hops	<i>Lini farina</i>	Flaxseed meal
<i>Hydrargyri chloridum corrosivum</i>	Corrosive chloride of mercury (Corrosive sublimate, Mercuric chloride)	<i>Linium Usitatissimum</i>	Flaxseed
<i>Hydrargyri chloridum mite</i>	Mild chloride of mercury (Calomel, Mercurous chloride)	<i>Liquor calcis</i>	Lime water
<i>Hydrargyri cyanidum</i>	Cyanide of mercury	<i>Liquor plumbi subacetate</i>	Lead water
<i>Hydrargyri iodidum rubrum</i>	Red iodide of mercury	<i>Lithii benzoas</i>	Benzoate of lithium
<i>Hydrargyri iodidum viride</i>	Green iodide of mercury	<i>Lithii bromidum</i>	Bromide of lithium
<i>Hydrargyri oxidum flavum</i>	Yellow oxide of mercury	<i>Lithii carbonas</i>	Carbonate of lithium
<i>Hydrargyri oxidum rubrum</i>	Red oxide of mercury	<i>Lithii citras</i>	Citrate of lithium
<i>Hydrargyri persulphas</i>	Persulphate of mercury	<i>Lithii salicylas</i>	Salicylate of lithium
<i>Hydrargyri subsulphas flavus</i>	Yellow subsulphate of mercury	<i>Lobelia</i>	Lobelia
<i>Hydrargyri sulphidum rubrum</i>	Red sulphide of mercury	<i>Lotio hydrargyri nigra</i>	Black wash
<i>Hydrargyrum</i>	Mercury (quick-silver)	<i>Lupulinum</i>	Lupulin (Lupulin glands)
<i>Hydrargyrum ammoniatum</i>	Ammoniated mercury	<i>Lycopodium</i>	Lycopodium
	White precipitate	<i>Macis</i>	Mace
<i>Hydrargyrum cum crêta</i>	Mercury with chalk	<i>Magnesia</i>	Magnesia (light magnesia)
<i>Hydrastis</i>	Golden seal	<i>Magnesia sulphas</i>	Epsom salts
<i>Hyoscyamus</i>	Henbane	<i>Magnolia</i>	Magnolia
		<i>Maltum</i>	Malt
		<i>Mangani oxidum nigrum</i>	Black oxide of manganese
		<i>Mangani sulphas</i>	Sulphate of manganese
		<i>Manna</i>	Manna
		<i>Maranta arundinacea</i>	Arrow root
		<i>Marrubium</i>	Horehound
		<i>Massa hydrargyri</i>	Blue mass pill
		<i>Mastiche</i>	Mastic
		<i>Matico</i>	Matico
		<i>Matricaria</i>	German chamomile
		<i>Mel</i>	Honey
		<i>Melissa</i>	Balm
		<i>Menispermum</i>	Canadian moonseed
		<i>Mentha piperita</i>	Peppermint

LATIN	ENGLISH	LATIN	ENGLISH
<i>Mentha pulgium.</i>	Pennyroyal	<i>Prunus virginiana</i>	Wild-cherry
<i>Mentha viridis</i>	Spearmint	<i>Pulsatilla</i>	Pulsatilla
<i>Menthol</i>	Menthol	<i>Pulv. Ipecac et opii</i>	Dover's powders
<i>Menthol salicylis</i>	Menthol Salicylate	<i>Pyrethrum</i>	Pellitory
<i>Mezereum</i>	Mezereum	<i>Pyroxylinum</i>	Soluble gun cotton
<i>Mica panis</i>	Crumb of bread	<i>Quassia</i>	Quassia
<i>Mistura creta</i>	Chalk mixture	<i>Quercus alba</i>	White oak
<i>Mori succus</i>	Mulberry juice	<i>Quercus cortex</i>	Oak bark
<i>Morphina</i>	Morphine	<i>Quercus infectoria</i>	Nutgalls
<i>Moschus</i>	Musk	<i>Quillaia</i>	Soap bark
<i>Myristica</i>	Nutmeg	<i>Quinidinae sulphas</i>	Sulphate of quinidine
<i>Myrrha</i>	Myrrh	<i>Quinina</i>	Quinine
<i>Narthex asafoetida</i>	Asafetida	<i>Resina</i>	Resin
<i>Nectandrae cortex</i>	Nectandra, b e e b eru bark	<i>Rhamni purshiani</i> <i>cortex</i>	Sacred bark Chittim bark Cascara sagrada
<i>Nux vomica</i>	Nux vomica	<i>Rhus</i>	Rhubarb
<i>Oleum adipis</i>	Lard oil	<i>Rhus glabra</i>	Rhus glabra; oak
<i>Oleum amygdalae</i>	Oil of almonds	<i>Rhus toxicodendron</i>	Rhus toxicodendron
<i>Oleum caryophylli</i>	Oil of cloves	<i>Rosa centifolia</i>	Pale rose
<i>Oleum cubebae</i>	Oil of cubebes	<i>Rosa gallica</i>	Red rose
<i>Oleum gaultheria</i>	Oil of wintergreen	<i>Rosmarinus</i>	Rosemary
<i>Oleum morrhuae</i>	Cod-liver oil	<i>Rubus</i>	Blackberry
<i>Oleum olivae</i>	Sweet oil	<i>Rubus Idams</i>	Raspberry
<i>Oleum ricini</i>	Castor oil	<i>Rumex</i>	Rumex
<i>Oleum terebinthinae</i>	Turpentine	<i>Sabadilla</i>	Cevadilla
<i>Oleum tiglium</i>	Croton oil	<i>Sabina</i>	Savine
<i>Opium</i>	Opium	<i>Saccharum</i>	Sugar
<i>Origanum</i>	Wild marjoram	<i>Saccharum albe</i>	White sugar
<i>Os ustrum</i>	Bone ash	<i>Saccharum lactis</i>	Sugar of milk
<i>Ovi albumina</i>	Egg albumin	<i>Sagus rumphii</i>	Saco
<i>Ovi vitellus</i>	Yolk of eggs	<i>Salicinum</i>	Salicin
<i>Papaveris capsula</i>	Poppy capsules	<i>Salix</i>	Salix
<i>Papaveris somniferum</i>	Poppy-heads	<i>Salvia</i>	Salvia
<i>Paraffinum durum</i>	Hard paraffin	<i>Sambucus</i>	Elder
<i>Pareira</i>	Pareira brava	<i>Sanguinaria</i>	Bloodroot
<i>Pepo</i>	Pumpkin seed	<i>Santalum rubrum</i>	Red saunders
<i>Pepsinum saccharatum</i>	Saccharated pepsin	<i>Santonica</i>	Levant wormseed
<i>Petrolatum</i>	Petroleum ointment	<i>Santoninum</i>	Santonin
<i>Phosphorus</i>	Phosphorus	<i>Soap</i>	Soap
<i>Physostigma</i>	Calabar bean	<i>Sarsaparilla</i>	Sarsaparilla
<i>Physostigmina</i>	Physostigmine	<i>Sassafras</i>	Sassafrass
<i>Phytolaccae</i>	Poke berry	<i>Sassafras medulla</i>	Sassafrass pith
<i>Phytolaccae radix</i>	Poke root	<i>Scammonium</i>	Scammony
<i>Picrotoxinum</i>	Picrotoxin	<i>Scilla</i>	Squill
<i>Pigmentum indicum</i>	Indigo	<i>Scoparius</i>	Broom
<i>Pilocarpus</i>	Jaborandi	<i>Scutellaria</i>	Scullcap
<i>Pilulae masse hydrargyri</i>	Blue-mass pill	<i>Senega</i>	Senega
<i>Pimenta</i>	Allspice	<i>Senna</i>	Senna
<i>Piper</i>	Pepper (black pepper)	<i>Serpentaria</i>	Virginia snakeroot
<i>Piperina</i>	Piperine	<i>Sevum</i>	Suet
<i>Pix</i>	Pitch	<i>Sinapis</i>	Mustard
<i>Pix liquida</i>	Tar	<i>Sinapis alba</i>	White mustard
<i>Plumbi acetas</i>	Sugar of Lead	<i>Sinapis nigra</i>	Black mustard
<i>Plumbum</i>	Lead	<i>Smilax Officinale</i>	Sarsaparilla
<i>Podophyllum</i>	May-apple	<i>Sodii biboras</i>	Borax
<i>Potassii bitartras</i>	Cream of tartar	<i>Sodii bicarbonas</i>	Baking soda
<i>Potassii nitras</i>	Saltpetre	<i>Soda</i>	Soda
<i>Potassium</i>	Potassium	<i>Solanium dulcamara</i>	Bitter sweet
<i>Potassa</i>	Potassa	<i>Spigelia</i>	Pinkroot
<i>Prinos</i>	Black alder	<i>Spiritus frumenti</i>	Whiskey
<i>Prunum</i>	Prune	<i>Spiritus vini gallici</i>	Brandy

LATIN	ENGLISH	LATIN	ENGLISH
<i>Staphisagria</i>	Stavesacre	<i>Syrupus pruni</i>	Syrup of wild-cherry
<i>Stillingia</i>	Queen's root	<i>Virginianae</i>	
<i>Stramonii folia</i>	Stramonium leaves	<i>Syrupus rhus</i>	Syrup of rhubarb
<i>Sodii chloridum</i>	Salts	<i>Syrupus rhus aromaticus</i>	Aromatic Syrup of rhubarb
<i>Sodii et Potassi tartras</i>	Rochelle salts	<i>Syrupus rosae</i>	Syrup of rose
<i>Sodii phosphas</i>	Phosphate of soda	<i>Syrupus rubi</i>	Syrup of blackberry
<i>Sodii sulphas</i>	Glauber salts	<i>Syrupus rubi idaei</i>	Syrup of raspberry
<i>Stramonii semen</i>	Stramonium seed	<i>Syrupus sarsaparilla compositus</i>	Compound syrup of sarsaparilla
<i>Strychnina</i>	Strychnine	<i>Syrupus scillae</i>	Syrup of squill
<i>Styrax</i>	Styrax	<i>Syrup scillae compositus</i>	Compound syrup of squill
<i>Sulphuris iodidum</i>	Iodide of sulphur	<i>Syrupus senegae</i>	Syrup of senega
<i>Sulphur lotum</i>	Washed sulphur	<i>Syrupus sennae</i>	Syrup of senna
<i>Sulphur praecipitatum</i>	Precipitated sulphur	<i>Syrupus toluatanus</i>	Syrup of tolu
<i>Sulphur rotundum</i>	Brimstone	<i>Syrupus zingiberis</i>	Syrup of ginger
<i>Sulphur sublimatum</i>	Sublimed sulphur	<i>Tabacum</i>	Tobacco
<i>Sumbul</i>	Sumbul	<i>Tamarindus</i>	Tamarind
<i>Syrupus acaciae</i>	Syrup of gum arabie	<i>Tanacetum</i>	Tansy
<i>Syrupus acidi citrici</i>	Syrup of citric acid	<i>Taraxacum</i>	Dandelion
<i>Syrupus acidi hydriodici</i>	Syrup of hydriodic acid	<i>Terebinthina</i>	Turpentine
<i>Syrupus allii</i>	Syrup of garlic	<i>Theobroma cacao</i>	Chocolate
<i>Syrupus althæae</i>	Syrup of althæa	<i>Theriaca</i>	Treacle (molasses)
<i>Syrupus amygdala</i>	Syrup of almond	<i>Thuja</i>	Arbor vitae
<i>Syrupus aurantii</i>	Syrup of orange	<i>Thymol</i>	Thymol
<i>Syrupus aurantii florum</i>	Syrup of orange flowers	<i>Tinctura opii</i>	Laudanum
<i>Syrupus calcii lacto-phosphatis</i>	Syrup of Lactophosphate of calcium	<i>Tinctura opii camphorata</i>	Paregoric
<i>Syrupus ferri bromidi</i>	Syrup of bromide of iron	<i>Tragacantha</i>	Tragacanth
<i>Syrupus ferri iodidi</i>	Syrup of iodide of iron	<i>Triticum</i>	Couch-grass
<i>Syrupus ferri phosphatis</i>	Syrup of phosphate of iron	<i>Ulmus</i>	Elm (slippery elm)
<i>Syrupus ferri quininae</i>	Syrup of the phosphates of iron	<i>Ustilago</i>	Corn smut
<i>Quinina et strychninae phosphatum</i>	Quinine and strychnine	<i>Uvae</i>	Raisins
<i>Syrupus hypophosphitum</i>	Syrup of hypophosphites	<i>Uva ursi</i>	Bearberry
<i>Syrupus hypophosphitum cum ferro</i>	Syrup of hypophosphites with iron	<i>Valeriana</i>	Valerian
<i>Syrupus ferri quininae et strychninae phosphatum</i>	Syrup of the phosphates of iron, quinine and strychnine	<i>Vanilla</i>	Vanilla
<i>Syrupus ipecacuanhae</i>	Syrup of ipecac	<i>Veratrina</i>	Veratrine
<i>Syrupus krameriae</i>	Syrup of krameria	<i>Veratrum viride</i>	American hellebore
<i>Syrupus lactucarii</i>	Syrup of lactucarium	<i>Viburnum</i>	Black haw
<i>Syrupus limonis</i>	Syrup of lemons	<i>Viburnum opulus</i>	Cramp bark
<i>Syrupus mori</i>	Syrup of mulberries	<i>Vinum album</i>	White wine
<i>Syrupus papaveris</i>	Syrup of poppies	<i>Vinum rubrum</i>	Red wine
<i>Syrupus picis liquidae</i>	Syrup of tar	<i>Vina medicata</i>	Medicated wines
		<i>Viola tricolor</i>	Pansy
		<i>Vitellus</i>	Yolk of egg
		<i>Xanthoxylum</i>	Prickly ash
		<i>Zincum</i>	Zinc
		<i>Zinci acetas</i>	Acetate of zinc
		<i>Zinci Chloridum</i>	Chloride of zinc
		<i>Zinci iodidum</i>	Iodide of zinc
		<i>Zinci oxidum</i>	Oxide of zinc
		<i>Zinci sulphas</i>	Sulphate of zinc
		<i>Zingiber</i>	Ginger

TABLE OF MEDICINES AND DOSES

No fixed rule can be applied to dosage for various reasons. Primarily because one individual may be more readily affected by drugs than another, or the drugs may be so antagonized by the disease process as to render very large doses necessary. Therefore, dosage must be varied to suit the case, and taking into consideration age and sex.

The following table gives a full list of medicines ordinarily used, with their properties and the doses suitable for adults. The dose for a child may be determined, excepting in a few dangerous medicines, by this rule: *Add twelve to the child's age in years and divide the sum by the child's age. The quotient shows what proportion of the dose for an adult is to be used.* Thus:

Child's age in years.....	6
Add	12
	—
Divide by child's age.....	6)18(3)

and the dose for a child of six years is found to be one-third of the dose for an adult. This rule is not a law, however, for of narcotics children should receive less than this (one-half), and of purgatives or laxatives more than this (say two or three times).

MEDICINES AND PROPERTIES.

DOSES.

Acetanilid; febrifuge, anodyne.....	1 to 5 grains
Aconite root, tincture of; narcotic, sedative and nauseant...	1 to 3 drops 3 times a day
Aloes socotrine, powdered; purgative.....	5 to 10 grains
Aloes socotrine, pills of; purgative	2 to 3 pills at bedtime
Aloes socotrine, tincture of; purgative.....	1 to 3 drams at bedtime
Aloes and myrrh, tincture of; emmenagogue....	1 to 2 teaspoonfuls 2 or 3 times a day
Aloes and myrrh, pills of; emmenagogue	3 or 4 pills twice a day
Alum, powdered; astringent and emetic.....	3 to 30 grains
Alum, burned; escharotic.....	10 to 15 grains moistened with water applied externally
Ammonia, carbonate of; stimulant.....	5 to 6 grains every 2 to 4 hours
Ammonia, water of (spirits of hartshorn); stimu. and caustic..	8 to 12 drops diluted with water.
Ammonia aromatic, spirits of; stimulant.....	10 to 20 drops diluted in water
Ammonia liniment (volatile); rubefacient.....	applied externally

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MEDICINES AND PROPERTIES.	DOSES.
Ammoniac mixture; expectorant.....	tablespoonful 3 or 4 times a day
Ammonium chloride; expectorant.....	5 to 10 grains
Angelica root, fluid extract of; stimulant and aromatic..	teaspoonful 3 or 4 times a day
Angelica root, decoction of; stimulant and aromatic...	wineglassful 2 to 4 times a day
Anise-seed, essence of; aromatic and carminative.....	1 to 2 teaspoonfuls
Antimonial wine; emetic.....	2 to 3 teaspoonfuls
Antipyrine; febrifuge.....	3 to 5 grains
Arrowroot, Bermuda; nutritive and tonic.....	as a gruel
Arsenic, Donovan's compound solution of; alternative.....	5 to 10 drops 3 times a day
Arsenic, Fowler's solution of; alternative and febric.....	1 to 5 drops 3 times a day
Asafetida, pills of; anti-spasmodic.....	1 to 2 pills
Asafetida, milk of; anti-spasmodic.....	1 to 2 teaspoonfuls
Asafetida, tincture of; anti-spasmodic.....	25 to 40 drops
Balsam of copaiva; diuretic, laxative and stimulant....	20 to 30 drops 3 times a day
Balsam of fir; diuretic.....	10 to 15 drops
Balsam of Peru; stimulant and tonic.....	5 or 10 drops twice a day
Balsam of tolu, tincture of; stimulant and tonic.....	20 to 40 drops
Belladonna, tincture of; diaphoretic, diuretic and narcotic.....	3 to 5 drops
Belladonna, plaster of; anodyne and diaphoretic.....	applied externally
Belladonna, ointment of; anodyne.....	applied externally
Bismuth, subnitrate of; anti-spasmodic, absorbent, sedative..	5 to 10 grains 3 times a day
Bitter sweet, fluid extract of; emetic and narcotic.....	30 to 40 drops 3 times a day
Black drop (vinegar of opium); narcotic.....	10 to 12 drops
Black cohosh, decoction of; narcotic, diaphoretic and diuretic....	wineglassful 3 times a day.
Black cohosh, tincture of; narcotic, diaphoretic and diuretic....	teaspoonful 3 or 4 times a day.
Blackberry root, decoction of; astringent and tonic...wineglassful	3 or 4 times a day
Blackberry root, fluid extract of; astringent and tonic.....	teaspoonful 3 times a day
Blackberry root, syrup of; astringent.....	tablespoonful 3 to 6 times a day
Blue vitriol; emetic	1 to 3 grains
Blue mass pills; alterative and sialagogue.....	1 or 2 pills (5 grains each)
Boneset, infusion of; stimulant, sudorific and emmenagogue...I	to 2 tablespoonfuls 3 or 4 times a day.
Boneset, fluid extract of; stimulant, sudorific and emmenagogue....	30 to 40 drops 3 or 4 times a day.
Borax, powdered; nephritic and detergent.....	15 to 25 grains
Buchu, infusion of; diaphoretic and diuretic.....	tablespoonful 4 or 5 times a day
Buchu, fluid extract of; diaphoretic and diuretic.....	teaspoonful 3 or 4 times a day
Buckthorn, fluid extract of; hydragogue cathartic.....	teaspoonful at bedtime
Burdock, fluid extract of; herpetic anti-scorbutic.....	tablespoonful
Calomel; alterative and laxative.....	½ to 5 grains
Camphor, gum; anti-spasmodic and sedative.....	2 to 5 grains
Camphor, spirits of; anti-spasmodic and sedative.....	10 to 25 drops
Camphor, water of; anodyne and sedative.....	2 to 4 teaspoonfuls
Calamus root, fluid extract of; aromatic, stimulant and stomachic.....	teaspoonful
Caraway seed, infusion of; aromatic and carminative.....	tablespoonful
Cardamom seed, tincture of; aromatic and stimulant.....	1 to 2 teaspoonfuls
Cardamom, compound tincture of; stomachic.....	1 to 2 teaspoonfuls

MEDICINES AND PROPERTIES.	DOSES.
Cascara sagrada, fluid extract of; tonic laxative.....	10 to 30 drops
Catechu, powdered; astringent.....	15 to 30 grains
Catechu, tincture of; astringent.....	10 to 30 drops
Catnip, decoction of; diaphoretic, stomachic and corrective.....	tablespoonful
Cayenne pepper, powdered; stimulant.....	3 or 6 grains
Cayenne pepper, tincture of; stimulant.....	10 to 15 drops
Castor oil; purgative.....	1 to 2 tablespoonfuls
Chamomile flowers, cold infusion of; tonic and stomachic..	1 to 2 tablespoonfuls 3 times a day.
Chalk, prepared; antacid and astringent.....	10 to 30 grains in mucilage
Chalk mixture; antacid and astringent.....	2 or 3 teaspoonfuls
Chloroform; narcotic and sedative.....	10 to 60 drops in mucilage
Chloroform, liniment of; anesthetic and anodyne.....	applied externally
Cinnamon, powdered; astringent and stomachic.....	5 to 15 grains
Cinnamon, oil of; astringent and stomachic.....	2 to 4 drops
Cinnamon, essence of; astringent and stomachic.....	20 to 25 drops
Cloves, powdered; aromatic, carminative and stimulant.....	10 to 15 grains
Cloves, oil of; stimulant, aromatic and carminative.....	1 to 5 drops
Colombo root, decoction of; tonic.....	tablespoonful 3 times a day
Colchicum root, wine of; narcotic, diuretic and sedative..	10 to 30 drops 3 times a day
Colchicum seed, tincture of; narcotic, diuretic and sedative...	10 to 30 drops 3 times a day.
Corrosive sublimate; antisyphilitic.....	1-60 to $\frac{1}{8}$ grain 2 or 3 times a day
Cotton root, fluid extract of; emmenagogue, parturient and abortive...	20 to 30 drops
Cream tartar; aperient and refrigerant.....	teaspoonful in water
Cubebs, powdered; stimulant and diuretic.....	20 to 30 grains
Cubebs, fluid extract of; stimulant and diuretic.....	20 to 30 drops
Cubebs, tincture of; stimulant and diuretic.....	1 to 2 teaspoonfuls
Cubebs, oil of; stimulant and diuretic.....	10 to 12 drops on sugar
Dandelion, fluid extract of; alterative, aperient, tonic and diuretic..	1 to 2 teaspoonfuls
Dogwood bark, decoction of; tonic, astringent and stimulant..	wineglassful 2 or 3 times a day.
Dover's powder; diaphoretic.....	5 to 15 grains at bed-time
Elder flower, decoction of; alterative, diaphoretic and diuretic...	1 to 2 tablespoonfuls
Elm bark, infusion of; demulcent and diuretic	wineglassful
Epsom salts; cathartic.....	2 or 3 teaspoonfuls before breakfast
Ergot, powdered (fresh); astringent.....	15 to 30 grains
Ergot, fluid extract of; astringent.....	15 to 60 drops
Ergot, tincture of; astringent.....	1 teaspoonful
Ergot, wine of; astringent.....	1 teaspoonful
Fennel seed, infusion of; aromatic and carminative.....	tablespoonful
Fennel seed, oil of; aromatic and carminative.....	3 to 6 drops
Fever-root, decoction of; diuretic, cathartic and emetic.....	tablespoonful
Flaxseed, infusion of; demulcent.....	wineglassful every 3 or 4 hours
Flaxseed, poultice of; astringent.....	excellent for drawing
Flaxseed, oil and lime-water; astringent.....	applied to scalds and burns
Foxglove, powdered (digitalis); diuretic, narcotic and sedative....	$\frac{1}{2}$ to 1 grain 2 or 3 times a day.
Foxglove, tincture of; diuretic, narcotic and sedative..	5 to 15 drops 2 or 3 times a day

MEDICINES AND PROPERTIES.	DOSES.
Garlic, syrup of; expectorant.....	1 to 2 teaspoonfuls
Gaultheria, oil of (wintergreen); antirheumatic.....	2 to 10 drops
Gentian, tincture of; tonic.....	1 teaspoonful
Ginger, powdered; stimulant and carminative.....	20 to 30 grains
Ginger, tincture of; stimulant and carminative.....	15 to 30 drops
Glauber salts; aperient and cathartic.....	1 to 2 teaspoonfuls before breakfast
Gelsemium, fluid extract of; narcotic, sedative, diaphoretic and febrifuge..	2 to 5 drops
Gelsemium, tincture of; narcotic, sedative, diaphoretic and febrifuge..	5 to 10 drops
Gum arabic, mucilage of; demulcent.....	tablespoonful every 3 or 4 hours
Guaiacum, tincture of; diaphoretic and diuretic.....	teaspoonful 2 or 3 times a day
Henbane, tincture of; narcotic and anodyne.....	15 to 30 drops
Henbane, fluid extract of; narcotic and anodyne.....	5 to 15 drops
Hoarhound, decoction of; sudorific, pectoral, aperient and tonic.....	tablespoonful
Hoarhound, syrup of; sudorific and pectoral.....	tablespoonful
Hops, tincture of; nerve tonic and sedative.....	1 to 2 teaspoonfuls every 4 hours
Hydrastine (active principle of yellow root); astringent, tonic, stomachic, anti-bilious....	1 to 2 grains.
Hypophosphites, syrup of; tonic	½ to 1 teaspoonful 3 times a day
Iodine, tincture of; alterative and discutient.....	applied to scrofulous tumors
Iodine, ointment of; discutient.....	applied to scrofulous tumors
Iron, carbonate (rust) of; tonic.....	5 to 10 grains
Iron, syrup of iodine of; alterative, diuretic and tonic.....	5 to 10 drops twice a day
Iron tincture, muriate of; tonic.....	10 to 30 drops
Irish moss, infusion of; nutritive, demulcent and expectorant.....	tablespoonful
Ipecac, powdered; emetic and diaphoretic.....	20 grains
Ipecac, fluid extract of; emetic and diaphoretic.....	20 to 25 drops
Ipecac, wine of; emetic and diaphoretic.....	1 to 2 teaspoonfuls
Ipecac, syrup of, emetic and diaphoretic.....	teaspoonful repeated
Jalap, powdered, cathartic.....	15 to 30 grains
Juniper berries, infusion of; diuretic.....	wineglassful 3 or 4 times a day
Lactucarium; anodyne.....	5 to 10 grains
Lady's-slipper root, decoction of; nervine.....	tablespoonful
Laudanum; narcotic.....	5 to 20 drops
Lead, acetate (sugar) of; astringent and sedative....	1 to 3 grains every 3 or 4 hours
Lead, Goulard's extract of; anodyne and sedative..	1 ounce diluted with 1 pint of water; applied externally to reduce inflammation.
Licorice root, decoction of; demulcent and expectorant.....	wineglassful
Life-everlasting, decoction of; astringent, diaphoretic, stomachic..	1 to 2 tablespoonfuls
Liverwort, decoction of; astringent, demulcent and pectoral....	1 to 2 tablespoonfuls
Lobelia herb, infusion of; emetic and diaphoretic.....	2 teaspoonfuls
Lobelia herb, powdered; emetic and diaphoretic.....	10 to 15 grains
Lobelia seed, tincture of; diaphoretic, emetic and expectorant.....	20 to 40 drops
Magnesia, carbonate; antacid and laxative.....	15 to 60 grains
Magnesia, calcined; antacid and laxative.....	15 to 60 grains
May-apple root, powdered; cathartic, hydragogue and emetic..	15 to 20 grains at bedtime.
May-apple root, powdered; cathartic, hydragogue and emetic.....	15 to 20 grains at bedtime.
Manna; laxative.....	1 to 2 drachms before breakfast

MEDICINES AND PROPERTIES.	DOSES.
Manna, syrup of; laxative.....	1 to 2 tablespoonfuls before breakfast
Mercury with chalk; alterative.....	2 to 10 grains
Mercury, mass of (blue pill); cathartic.....	3 to 10 grains
Mercury, red precipitate ointment; stimulant.....	applied externally
Mercurial ointment (blue); resolvent, antiparasitic.....	applied externally
Morphine, sulphate of; anodyne and soporific.....	$\frac{1}{8}$ to $\frac{1}{4}$ grain
Mustard seed (black), ground; diuretic, emetic and stimulant....	$\frac{1}{2}$ to 1 teaspoonful
Mustard seed (white), ground; diuretic, emetic and stimulant.....	wineglassful
Nitrate of silver (crystals); astringent, antispasmodic..	1-6 to $\frac{1}{4}$ grain 2 or 3 times a day.
Nitrate of silver, lunar caustic (sticks); escharotic.....	applied externally
Nut-galls, tincture of; astringent.....	1 to 2 teaspoonfuls
Nut-galls, ointment of; astringent.....	1 to 2 teaspoonfuls
Nux vomica, tincture of; diuretic, excrement, stimulant and tonic..	15 drops 3 times a day.
Nux vomica, fluid extract of; diuretic, excrement, stimulant and tonic..	1 to 5 drops 2 or 3 times a day.
Opium, powdered; narcotic and stimulant.....	1 grain at bedtime
Opium, tincture of. (See Laudanum.)	
Opium, camphorated tincture of. (See Paregoric.)	
Paregoric; anodyne.....	1 to 2 teaspoonfuls
Pennyroyal, infusion of; diaphoretic, emmenagogue, stimulant..	wineglassful every hour
Peppermint, infusion of; stimulant and carminative...wineglassful	2 or 3 times a day
Peruvian bark, powdered; febrifuge and tonic.....	1 drachm 2 or 3 times a day
Peruvian bark, decoction of; febrifuge and tonic....wineglassful	3 or 4 times a day
Peruvian bark, fluid extract of; tonic and febrifuge....	30 to 60 drops 3 times a day
Pepsin, pure; digestant.....	15 to 60 grains
Pepsin, saccharated; digestant.....	30 grains to $\frac{1}{2}$ ounce
Pepsin, liquor; digestant.....	2 to 4 teaspoonfuls
Phenacetine; antipyretic, antineuralgic.....	2 to 5 grains
Pinkroot, infusion of; anthelmintic.....	tablespoonful before meals
Pinkroot, fluid extract of; anthelmintic.....	$\frac{1}{2}$ to 1 teaspoonful before meals
Pinkroot and senna, fluid extract of; anthelmintic, purgative..	teaspoonful before meals
Podophyllin (active principle of mandrake); diuretic, purgative..	1 to 3 grains at bedtime.
Potash, chlorate.....	10 to 15 grains dissolved in water
Potash, citrate; refrigerant and diaphoretic.....	20 to 25 grains
Potash, nitrate (saltpetre); refrigerant and diaphoretic.....	6 to 12 grains
Potassium, bromide of; antiscorbutic, nerve sedative.....	5 to 60 grains
Potassium, iodide of; alterative and antisyphilitic.....	5 to 15 grains 3 times a day
Rochelle salts; aperient.....	2 to 3 drachms before breakfast
Rhatany root, decoction of; astringent and tonic.....	tablespoonful
Rhatany root, tincture of; astringent and tonic.....	teaspoonful
Rhubarb, powdered; astringent and cathartic.....	20 to 30 grains
Rhubarb, tincture of; astringent and cathartic.....	1 to 2 teaspoonfuls
Rhubarb, fluid extract of; cathartic and astringent.....	25 to 40 drops
Rhubarb, syrup of; cathartic and astringent.....	2 or 3 teaspoonfuls
Rue herb, decoction of; tonic, anthelmintic and emmenagogue.....	tablespoonful
Saffron (American), infusion of; diaphoretic.....	2 to 3 teaspoonfuls

MEDICINES AND PROPERTIES.	DOSES.
Saffron (Spanish), infusion of; diaphoretic.....	1 to 2 teaspoonfuls
Sage, infusion of; sudorific and stomachic.....	wineglassful
Sassafras pith, infusion of; demulcent and anodyne..	1 or 2 teaspoonfuls; also applied to sore eyes.
Sassafras bark, infusion of; diaphoretic and stimulant..	wineglassful every 2 or 3 hours
Sarsaparilla, decoction of; alterative and deobstruent.....	teacupful 3 times a day
Sarsaparilla, fluid extract of; alterative and deobstruent..	teaspoonful 3 times a day
Sarsaparilla, compound syrup of; alterative, deobstruent..	tablespoonful 4 to 6 times a day.
Scammony; catnartic.....	5 to 15 grains at bedtime
Senega (snakeroot), fluid extract of; expectorant, stimulant and diuretic..	5 to 20 drops
Senna, decoction of; cathartic.....	1 to 2 tablespoonfuls
Senna, fluid extract of; cathartic.....	1 to 4 teaspoonfuls
Stramonium leaves, tincture of; narcotic, sedative, antispasmodic..	10 to 20 drops 2 or 3 times a day.
Stramonium leaves, ointment of; sedative.....	applied externally
Soda, bicarbonate; antacid.....	15 to 30 grains
Seidlitz powders; aperient.....	1 powder before breakfast
Sweet spirits of nitre; diaphoretic, diuretic and febrifuge.....	30 to 60 drops
Tansy (double), decoction of; sudorific, emmenagogue, anthelmintic..	1 to 2 table- spoonfuls.
Thyme, infusion of; aromatic and stomachic.....	wineglassful
Uva ursula leaves, decoction of; diuretic and tonic.....	wineglassful 3 or 4 times a day
Uva ursula, fluid extract of; diuretic and tonic....	½ to 1 teaspoonful 3 or 4 times a day
Waterpepper herb, tincture of; stimulant, diuretic and emmenagogue.....	teaspoonful
Wild cherry bark, cold infusion of; tonic, astringent, sedative..	tablespoonful 3 times a day.
Wild cherry bark, syrup of; sedative.....	tablespoonful 3 times a day
Witch-hazel; anodyne, astringent, sedative, styptic..	1 to 2 teaspoonfuls; also, ex- ternally to reduce inflammation.

GLOSSARY

Giving definitions of all medical and technical terms contained in this work.

A

- Abdomen** (ab-do'men). The belly; the cavity in the body between the thorax and the pelvis.
- Abdominal** (ab-dom'in-al). Pertaining to the abdomen.
- Aberration** (ab-er-a'shun). Deviation from the normal.
- Abirritant** (ab-ir'it-ant). Allaying irritation.
- Ablution** (ab-lu'shun). The process of cleansing the body.
- Abnormal** (ab-norm'al). Contrary to the natural law.
- Abolition** (ab-o-lish'un). Complete suspension, as of a function.
- Abort** (ab-ort'). To miscarry; to arrest the development of a disease.
- Abortion** (ab-or'shun). Premature expulsion of a fetus.
- Abortive** (ab-ort'iv). Prematurely born.
- Abrasion** (a-bra'shun). A wearing off of the skin or mucous membrane.
- Absinthe** (ab'sinth). A cordial containing oil of wormwood and aromatics.
- Absinthium** (ab-sinth'um). Wormwood; cardiac stimulant and stomachic tonic.
- Absorbent** (ab-sorb'ent). Taking up by suction; a drug that produces absorption of diseased tissue.
- Absorption** (ab-sorp'shun). The inhibition of one body by another, as of the lens after rupture of the capsule.
- Abstemious** (ab-ste'me-ous). Moderate in matters of diet.
- Abstinence** (ab'stin-ence). Voluntary privation of self-denial in diet.
- Abstract** (ab'strakt). A preparation containing the soluble principles of a drug evaporated and mixed with sugar of milk.
- Abstraction** (ab-strak'shun). Blood letting.
- Acacia** (ah-ka'she-ah). A genus of shrubs and trees. Gum arabic.
- Accelerate** (ak-sel'er-ate). To hasten; to quicken action.
- Accentuate** (ak-sen'tu-ate). To emphasize.
- Accentuation** (ak-sen-tu-a'shun). Increased distinctness.
- Access** (ak'ses). The beginning or onset of a disease.
- Accession** (ak-sesh'un). The same as access.
- Accouchement** (ak-koosh'ment). Delivery in child-bed.
- Acetate** (as'et-at). A salt of acetic acid.
- Achorion** (ah-ko're-on). A genus of fungous organisms in the skin.
- Acid** (as'id). A sour substance.
- Acidity** (as-id'it-e). Sourness; tartness; sharp to the taste.
- Acme** (ak'me). The crisis or height of a disease.
- Acne** (ak'ne). Inflammation of the sebaceous glands from retained secretion.
- Acne Rosacea** (ak'ne ro-za'she-ah). Chronic congestion of the skin of the face.
- Aconite** (ak'o-nit). Same as aconitum.
- Aconitum** (ak-on-i'tum). A genus of herbs and also the poisonous roots and leaves of monk's hood; cardiac sedative.
- Acrid** (ak'rid). Burning; pungent.
- Acute** (a-kut'). Rapid; severe; sharp; keen.
- Adaptation** (a-dap-ta'shun). The adjustment of the pupil to light variations.
- Adenitis** (ad-en-i'tis). Inflammation of a gland.
- Adenoid** (ad'e-noid). Resembling a gland.
- Adenoma** (ad-en'o-mah). A glandular tumor.
- Adenosis** (ad-en-o'sis). Any chronic abnormality of the glands.
- Adeps** (ad'eps). Lard.
- Adequate** (ad'e-quate). Equal; proportionate; fully sufficient.
- Adipose** (ad'i-pos). Fatty.
- Adipose Arteries** (ad'i-pos ar'ter-ez). Arterial branches, supplying the renal fat.
- Adipose Tissue** (ad'i-pos tish'u). Fat cells united by connective tissue.
- Adiposis** (ad-i-po'sis). Corpulence; fatty degeneration.
- Adult** (a-dult'). Having arrived at mature years; of full size and strength.
- Adynamia** (ad-in-a'me-ah). A deficiency or loss of vital power.
- Aeration** (a-er-a'shun). Admixture or impregnation with air.
- Aerial** (a-er'e-al). Pertaining to the air.
- Affinity** (afin'i-te). Relationship; a synonym of attraction.
- Afflatus** (a-fla'tus). A variety of acute erysipelas. A current of air.
- Affusion** (a-fu'shun). A pouring upon, as water on the body.
- Agaricus** (a-gar'i-kus). A genus of fungi.
- Agenesia** (ak-jen-e'ze-ah). Abnormal or imperfect development.
- Agenesis** (ah-jen'e-sis). The same as agenesia.
- Agent** (a'jent). A substance that produces changes in the body.
- Agglutinative** (a-glu'ti-na-tiv). Adhesive; a substance with adhesive properties.
- Agglutinin** (a-glu'ti-nin). A substance in the blood-serum or immunized individuals which has the property of agglutinating bacteria.
- Agility** (a-gil'i-te). The power of moving the limbs quickly. Activity.
- Agitation** (aj-i-ta'shun). Violent excitement; a shaking.
- Akimbo** (a-kim'bo). At an acute angle; said of the arms when the hands rest on the hips and the elbows project outward.
- Albumen** (al-bu'men). The white of an egg. Food material in a seed between the embryo and seed-coats.
- Albumin** (al-bu'min). A proteid animal or vegetable which is soluble in water and coagulated by heat.
- Albumin Acid** (al-bu'min as'id). That changed by the action of acid.
- Albuminate** (al-bu'min-ate). A basic compound of albumin.
- Albuminoid** (al-bu'min-oid). Resembling albumen. A substance resembling true proteids in origin and composition.

- Albuminuria** (al-bu-min-u're-ah). Presence of albumin in the urine.
- Albumon** (al-bu'mon). A protein found in the blood; it cannot be coagulated by heat.
- Alchemy** (al'kem-e). The supposed art of changing base metals into gold and of discovering the elixir of life.
- Aliment** (al'i-ment). Nourishment; food.
- Alimentary** (al-i-men'ta-re). Having the quality of nourishing.
- Alimentary Canal** (al-i-men'ta-re ka-nal'). The whole digestive tube from the mouth to the anus.
- Alimentation** (al-imen-ta'shun). The process of nourishment.
- Alimentation, Rectal** (al-i-men-ta'shun rec'tal). Nourishing by injection of food into the rectum.
- Alkali** (al'ka-li). An electropositive substance combining with an acid to form a neutral salt.
- Alkaline** (al'ka-lin). Having the properties of an alkali.
- Alkanet** (al'kan-et). The herb alkanna tinctoria; the root yields a red dye.
- Allay** (al-la'). To abate; to assuage; to subside.
- Alleviate** (al-e'vi-ate). To ease; to mitigate; to make more bearable.
- Allium** (al'e-um). A genus of plants.
- Allium Cepa** (al'e-um ce'pa). Common onion.
- Allium Sativum** (al'e-um sa-ti'vum). Garlic; a diuretic and stimulant.
- Allotropy** (a-lot'ro-pe). A variation of physical properties without a change in chemie composition.
- Alluvial** (al-lu've-al). Belonging to soil formed by deposits of mud.
- Alopecia** (al-o-pe'se-ah). Loss of the hair.
- Alterative** (al'ter-a-tiv). A medicine that alters the processes of nutrition and excretion, restoring the normal body functions.
- Alternately** (al-ter'nate-le). In a reciprocal succession; by turns; as night follows day and day follows night.
- Alternation of Generation** (al-ter-na'shun of jen-e-ra'shun). A form of reproduction in which members can produce new beings non-sexually, while in the final stage reproduction is always sexual.
- Alveole** (al-ve-ol). A small cell, cavity or depression in a surface; a tooth socket.
- Alvine** (al-vin). Pertaining to the belly or intestines.
- Alvine Concretion** (al-vin kon-kre'shun). Intestinal calculus.
- Alvine Discharges** (al'vin dis-charg'ez). The discharge of the bowels.
- Alvin Flux** (al'vin fluks). Diarrhœa.
- Alvus** (al'vus). The belly or its contents.
- Amalgam** (a-mal'gam). An alloy containing mercury.
- Amaurosis** (am-au-ro'sis). Partial or total blindness.
- Ambiguity** (am-bi-gu'i-te). Uncertain; doubtful; of double meaning.
- Amblyopia** (am-ble-o'pe-ah). Dimness of vision.
- Ameba** (am-e'bah). A genus of rhizo pods; an individual in the above genus.
- Ameboid** (a-me'boid). Having the movements of an ameba.
- Amelia** (ah-me'le-ah). Absence of the limbs, from birth or atrophic.
- Amelioration** (a-mel-i-o-ra'shun). Becoming better; improvement.
- Amenorrhœa** (a-men-o-re'a). Irregularity or suppression of the menses.
- Ammonium** (am-mo'ne-um). A hypothetic alkaline base existing only in combination.
- Amnesia** (am-ne'ze-ah.) A loss of memory for words.
- Amoeba** (am-e'bah). See ameba.
- Amputation** (am-pu-ta'shun). The operation of cutting off a limb or part of a limb.
- Amygdalitis** (am-ig-dal-it'tis). Tonsillitis.
- Amylaceous** (am-il-a'se-us). Containing starch.
- Amylolitic** (am-il-o-lit'ik). Converting starch into sugar.
- Analog or Analogue** (an'a-log). A part or organ similar in function to another but different in structure.
- Analogous** (an-al'a-gus). Conforming or answering to; bearing resemblance.
- Analysis** (an-al'i-sis). The resolution of a body into its elements.
- Analysis Gasometric** (an-al'i-sis gas-o-met'ric). That of gaseous compounds.
- Anam Ulcer** (an'am ul'sur). A form of phagedena common in the tropics.
- Anamnesis** (an-am-ne'sis). The past history of a disease.
- Anaphia** (an-a'fe-ah). A deficient sense of touch.
- Anaphoresis** (an-af-or-e'sis). Insufficient perspiration.
- Anasarca** (an-as-ar'kah). General dropsy.
- Anastomosis** (an-as-to-mo'sis). The junction of vessels or hollow organs.
- Anatomically** (an-a-tom'i-cal-e). In an anatomical manner; by means of dissection; according to anatomy.
- Anatomy** (an-at'o-me). The science of organic structure.
- Anchylosis** (an-kil-o'sis). See ankylosis.
- Anemia** (an-e'me-ah). A deficiency of blood or of red corpuscles.
- Anemic** (an-em'ik). Pertaining to anemia.
- Aneroid** (an'er-oid). Dispensing with fluid.
- Anesthesia** (an-es-the'ze-ah). A state of insensibility.
- Anesthetic** (an-es-thet'ik). A substance producing anesthesia.
- Aneurism** (an'u-rizm). A dilatation of an artery.
- Angina** (an-ji'nah). A sense of suffocation.
- Anginose** (an'jin-oz). Affected with angina.
- Angioleucitis** (an-je-o-lu-si'tis). Inflammation of the lymphatics.
- Animation** (an-i-ma'shun). The act of infusing life; the state of being animated.
- Ankylosis** (an-kil-o'sis). Union of the bones forming a joint resulting in a stiff joint.
- Annular** (an'u-lar). Ring-like.
- Annular Ligament** (an'u-lar lig'a-ment). The ligament around the wrist and ankle.
- Anodyne** (an'o-din). A medicine relieving pain.
- Antacid** (ant-as'id). An alkali; neutralizing acidity.
- Antagonist** (an-tag'o-nist). A drug neutralizing the effects of another, or a muscle opposing the action of another.
- Antaphrodisiac** (ant-af-ro-dis'i-ak). A medicine which cools the animal passion.
- Antecedent** (an-te-ced'ent). A person or thing that goes before, with reference to time, place, position, etc.
- Anterior** (an-ter'e-or). Situated before or in front of.
- Anteroposterior** (an-ter-o-pos-te're-or). From before; backward.
- Anthelmintic** (an-thel-min'tik). A remedy expelling worms.
- Antibilious** (an-te-bil'yus). Opposing biliousness.
- Antidote** (an'ti-dot). An agent counteracting the action of a poison.
- Antifermentative** (an-te-fer-men'ta-tiv). Arresting fermentation.
- Antimorbific** (an-te-mor-bif'ic). That which opposes disease.
- Antiperiodic** (an-te-per-i-od'ik). A remedy for periodical disease.
- Antiphlogistic** (an-te-flo-jist'ik). An agent reducing inflammation or fever.
- Antipruritic** (an-te-pru-rit'ik). Relieving itching.

- Antipyretic* (an-ti-pi-ret'ik). Reducing temperature.
- Antiscorbutic* (an-te-skor-bu'tik). A remedy for scurvy.
- Antiseptic* (an-te-sep'tik). Preventing or destroying the germs of putrefaction or suppuration.
- Antispasmodic* (an-te-spas-mod'ik). Counteracting or curing spasm.
- Antisyphilitic* (an-te-sif-i-lit'ik). A remedy for the relief of syphilis.
- Antitoxin* (an-te-toks'ine). Virus used to neutralize the action of toxin.
- Anuria* (an-u're-ah). An absence or deficiency of urine.
- Anus* (a'nus). The extremity of the rectum.
- Aperient* (ah-pe're-ent). Laxative; opening.
- Aperture* (a'per-tur). An opening or orifice.
- Apex* (a'peks). The tip, point or summit of anything.
- Aphasia* (ah-fa'se-ah). A loss of power of speech from cortical lesion.
- Aphasia Amnesic* (ah-fe'se-ah am-ne'sik). A want of memory for words.
- Aphasia Ataxic* (ah-fe'se-ah a-taks'ik). An inability to articulate words.
- Aphonia* (ah-fo'ne-ah). A loss of voice, due to peripheral lesion.
- Aphonia Clericorum* (ah-fo'ne-ah cler-i-co'rum). Clergymen's sore throat.
- Aphthae* (af'the). Small white ulcers of the mouth; thrush.
- Apthous* (af'thus). Marked by aphthae.
- Apis Mellifica* (ap'is mel-if'ik-a). The honey-bee.
- Apnea* (ap-ne'ah). Temporary absence of breathing.
- Apoplexy* (ap'o-pleks-e). Paralysis from rupture of a cerebral vessel.
- Apoplexy, Bulbar* (ap'o-pleks-e bulb'ar). Due to the rupture of a blood vessel in the medulla oblongata.
- Apothecary* (a-poth'e-ka-re). A druggist; a seller of drugs.
- Apparatus* (ap-a-ra'tus). Instruments; a number of organs which act together in the performance of a definite function.
- Appendage* (ap-pen'dage). That which is attached to an organ as a part of it.
- Appendicitis* (ap-pen-dis-i'tis). Inflammation of the appendix vermiformis.
- Appendix* (ap-pen'diks). An appendage; an adjunct.
- Approximate* (ap-proks'i-mate). To come near to; approaching; closely resembling.
- Arabinose* (ar'ab-in-os). A pentose; gum sugar from arabic acid.
- Arachnitis* (ar-ak-ni'tis). Inflammation of the arachnoid membrane.
- Arachnoid* (ar-ak'noid). Resembling a web.
- Arcanum* (ar-ka'num). A sweet medicine or nostrum.
- Area* (a're-ah). Any space with boundaries.
- Areola* (a-re'o-lah). A ring-like discoloration; colored ring around the nipple.
- Areolae* (a-re'o-le). The interstices in connective tissue.
- Areolar* (ar-e'o-lar). Pertaining to the areola; full of interstices.
- Aroma* (a-rom'ah). Intense perfume; odor.
- Aromatic* (a-ro-mat'ik). Spicy; fragrant; a spicy, stimulating drug.
- Aromatic Powder* (a-ro-mat'ik pow'der). A mixture of nutmeg, ginger, cinnamon and cardamom.
- Aromatic Tincture* (a-ro-mat'ik tinc'ture). An alcoholic solution of aromatic powder.
- Arteritis* (ar-te-ri'tis). Inflammation of an artery.
- Artery* (ar'ter-e). A vessel carrying blood from the heart.
- Arthritic* (ar-thrikt'ik). Relating to inflammation of the joints.
- Articulated* (ar-tik'u-la-ted). Jointed.
- Articulation* (ar-tik-u-la'shun). A joint or an arthrosis. The enunciation of words.
- Articulatory* (ar-tik'u-la-to-re). Pertaining to articulation.
- Artificial* (ar-ti-fish'al). Made or imitated by art.
- Arytenoid* (ar-it-e'noid). Cup-shaped or ladle-shaped.
- Ascaris* (as'kar-is). A genus of parasitic round-worms.
- Ascending* (as-send-ing). Rising.
- Ascending Degeneration* (as-send-ing de-jen-er-a'shun). A degeneration of nerve-fibres progressing from the periphery to the centre.
- Ascites* (as-si'tez). Dropsy of the abdomen.
- Asparagin* (as-par'a-gin). The organic principle of asparagus.
- Asparagus* (as-par'a-gus). A genus of plants of the lily family. It is a diuretic.
- Aspermous* (ah-sper'mus). Without seed.
- Asphyxia* (as-fiks'e-ah). The condition caused by the nonoxygenation of the blood. Suspended animation.
- Aspirate* (as'pi-rate). To breathe roughly.
- Aspiration* (as-pi-ra'shun). Inspiration; inhibition.
- Aspirator* (as'pir-a-tor). An instrument for extracting fluids from cavities.
- Assimilable* (as-im'il-a-bl). Capable of being assimilated.
- Assimilate* (as-im'i-late). To become similar. To perform the act of converting food to the substance of the body.
- Assimilation* (as-im-il-a'shun). The act of absorbing nutriment. A state of resemblance.
- Assumption* (as-sump'shun). The act of taking to oneself; adoption.
- Asthenia* (as-the'ne-ah). A loss of strength.
- Asthenopia* (as-then-o'pe-ah). Weak or painful vision.
- Asthma* (az'mah). Paroxysmal difficult breathing with oppression.
- Asthma, cardiac* (az'mah kar'di-ak). Difficult breathing due to heart disease.
- Asthmatic* (az-mat'ik). Subject to asthma.
- Astringent* (as-trin'jent). An agent producing contraction of organic tissues or the arrest of a discharge.
- Atmosphere* (at'mus-fer). The air or gaseous mixture surrounding the earth, fifteen pounds to the square inch.
- Atomizer* (at'o-mi-zer). An instrument for reducing a jet of liquid to a spray.
- Atrophia* (at-ro'fe-ah). See atrophy.
- Atrophy* (at-ro-fe). A wasting of a part from a lack of nutrition.
- Atropina* (at-ro-pin). The active principle of belladonna.
- Attar of Rose* (ot'ar). Oil of rose.
- Attenuated* (a-ten'u-a-ted). Wasted; thinned.
- Attenuation* (a-ten-u-a'shun). A thinning or weakening.
- Attic* (at'ik). The portion of the tympanum above the atrium.
- Auditory* (aw'di-to-re). Pertaining to the act or organs of hearing.
- Augment* (aug'ment). The increase of a disease or the period intervening between its attack and its height.
- Auricle* (au'rik-l). The external ear. One of the upper cavities of the heart.
- Auricular* (aw'rik-u-lar). Pertaining to the ear or cardiac auricle.
- Auriculoventricular* (aw-rik-u-lo-ven-trik'u-lar). Pertaining to both the auricle and ventricle.
- Auscultation* (aws-kul-ta'shun). A method of determining the condition of an organ by listening to the sounds produced by it.
- Autecic* (aw-te'sik). Living absolutely on the same organism.

Autopsy (aw'top-se). Examination of a corpse.
Auxiliary (awks-il'e-a-re). Aiding; assisting.
Axilla (aks-il'ah). The armpit.
Axillary (aks-il'a-re). Relating to the armpit.

B

Bacillus (bas-il'us). A genus of schizomycetes, the most important group of bacteria.
Bacteria (bak-te're-ah). Micro-organisms; microbes; schizomycetes.
Bacterial (bak-te're-al). Relating to or caused by bacteria.
Bactericidal (bak-te-ris-i'dal). Destroying bacteria.
Bactericide (bak-te'ris-id). See germicide.
Bacteriemia (bak-te-re-e'me-ah). The presence of bacteria in the blood.
Bacterin (bak'ter-in). Any vaccine prepared from a specific bacterium.
Bactrium (bak-te're-um). A genus of fission fungi.
Balsam (bawl'sam). A compound of resin and evaporative oils, fragrant and aromatic.
Balsamic (hawl'sam-ik). Resembling balsam; pertaining to balsam.
Balsamic Tincture (bawl'sam-ik tink-ture). Compound tincture of benzoin.
Barley (bar'le). A cereal used for food.
Barley-water (bar'le-wa'ter). A nutritious drink made of an infusion of barley.
Belladonna (bel-ah-don'ah). A poisonous plant, used as an anodyne; an antispasmodic.
Benignant (be-nig'nant). Not malignant; mild.
Benzoin (be'zoin). An antiseptic resin from styrax benzoin.
Bergamot Camphor, Oil of (ber'gam-ot kam'fer). An evaporative oil from rind of citrus bergamia.
Bergaptene (ber-gap'tene). An oily substance from bergamot oil.
Beriberi (ber'e-ber'e). An East Indian microbic disease characterized by weakness, anemia, dropsy, dyspnea and paraplegia.
Bibulous (bib'u-lus). Having the quality of absorbing water.
Bicapitate (bi-kap'it-at). Having two heads.
Bicapsular (bi-kap'su-lar). Having two capsules.
Bicarbonate (bi-kar'bo-nat). A compound of two equivalents of carbonic acid and one of a base.
Bicaudate (bi-kaw'date). Having two tails.
Bicellular (bi-sel'u-lar). Composed of two cells.
Biceps (bi'seps). Two-headed; applied to muscles.
Bichlorid (bi-klo'rid). A chlorid with twice as much chlorin as proto-chlorid.
Biennial (bi-en'e-al). Occurring every two years.
Biforate (bi-fo'rat). Having two apertures or pores.
Bifurcate (bi-fer'kat). Divided into two branches.
Bile (bil). A yellow, bitter liquid secreted by the liver.
Biliary (bil'e-a-re). Pertaining to the bile; conveying the bile.
Bilious (bil'yus). Pertaining to bile; having a disordered liver.
Binary (bi'na-re). Compounded of two elements.
Biogenesis (bi-o-gen'e-sis). The genesis of living beings from living beings.
Biologist (bi-ol'o-jist). One versed in biology.
Biology (bi-ol'o-je). The science of life and living things.
Biolysis (bi-ol'i-sis). The destruction of life; death.
Biolytic (bi-o-lit'ik). Tending to destroy life.
Biometer (bi-om'et-er). An instrument for measuring life sounds.
Biometry (bi-om'et-re). The measure of life.
Bioscopy (bi-os'ko-pe). Examination of the body to see if life is extinct.
Bismuth (biz'muth). A pinkish-white crystalline metal.
Blackheads (blak'heds). See comedo.

Bland (bland). Mild; nonirritating.
Blepharal (blef'ar-al). Relating to the eyelids.
Blepharism (blef'ar-ism). Spasm of the eyelid.
Blepharitis (blef-ar-i'tis). Inflammation of the edges of the eyelids.
Blister (blis'ter). A vesicle containing serum.
Blood (blud). The nutritive fluid circulating in the arteries and veins.
Bloodless (blud'les). Without blood.
Bloodless Operation (blud'less op-er-a'shun). One in which the blood is expelled by compresses from the part to be operated on.
Blue Baby (blu ba'be). A color; a baby with blue disease.
Blue Blindness (blu blind'ness). Inability to distinguish a blue color.
Blue Disease (blu dis-ez'). See cyanopathy.
Blue Flag (blu flag). See iris.
Blue Mass (blue mas). A compound pill of mercury.
Blue Ointment (blu oint'ment). Mercurial ointment.
Blue Stone (blu stone). See blue vitriol.
Blue Vision (blu vizh'un). See cyanopia.
Blue Vitriol (blu vit'ri-ol). Sulphate of copper; bluestone.
Body (bod'e). The animal frame with its organs.
Boil (boil). A localized abscess of the skin.
Bole (bol). Fine clay, formerly used as an astringent.
Bolus (bo'lus). A mass of masticated food ready to swallow.
Borax (bor'ax). Sodium diborate used as an antiseptic.
Bovine (bo'vin). Pertaining to or derived from the ox or cow.
Bowel (bow'el). The intestines.
Bowel Complaint (bow'el kom-plant'). Diarrhoea.
Brachia (brak'e-ah). See brachium.
Brachial (brak'e-al). Pertaining to the arm.
Brachium (brak'e-um). The arm from the shoulder to the elbow.
Bronchi (bron'ki). See bronchus.
Bronchia (bron'ke-ah). A branch of the wind-pipe.
Bronchiole (bron'ke-ol). A minute bronchial tube.
Bronchitis (bron-ki'tis). Inflammation of the bronchial tubes.
Bronchopathy (bron-kop'a-the). Any disease of the bronchi.
Bronchopneumonia (bron-ko-nu-mo'ne-ah). Inflammation of the lungs beginning at the bronchi.
Bronchotomy (bron-kot'o-me). Incision of the bronchus.
Bronchus (bron'kus). One of the main branches of the trachea.
Bruit (bru'e). An abnormal sound in auscultation.
Bubo (bu'bo). An inflammation and a swelling of the lymphatic glands of the groin.
Bugleweed (bu'gl-weed). The herb hycopus virginicus used as a narcotic and as an astringent.
Bulb (bulb). The expansion of a canal or vessel; the oblongata and pons.
Bulimia (bu-lim'e-ah). Excessive, morbid hunger.
Bullate (bul-late). Blistered; inflated.
Bullation (bul-a'shun). Inflation; division into small compartments.
Bursa (bur'sah). A small sac interposed between movable parts.
Bursal (bur'sal). Pertaining to a bursa or sac.
Bursalis (bur-sa'lis). The obturator internus muscle.
Bursitis (bur-si'tis). Inflammation of a bursa.
Butane (bu'tan). An anesthetic substance from petroleum.
Buttock (but'ok). One of the rounded parts of the gluteal region; the rump.

C

- Cacao** (ka-ka'o). See theobroma.
- Cacao Butter** (ka-ka'o but'ter). The oil of theobroma.
- Cachexia** (ka-keks'e-ah). A depraved condition of nutrition.
- Calcareous** (kal-ka're-us). Having the nature of lime.
- Calcination** (kal-sin-a'shun). The process of expelling by heat the evaporative elements of a substance.
- Calcined** (kal'sind). Subjected to calcination.
- Calcium** (kal'se-um). A metal; the basis of lime.
- Calculi** (kal'ku-li). Plural of calculus.
- Calculus** (kal'ku-lus). A stone-like concretion formed in the body.
- Calf** (kaf). The fleshy part of the leg below the knee.
- Calisthenics** (kal-is-then'iks). A system of light gymnastics.
- Callosum** (kal-lo'sum). The bridge of white nerve substance joining the hemisphere of the brain.
- Callous** (kal'us). Hard; indurated.
- Callus** (kal'us). A callosity; a new bony deposit about a fracture.
- Cancelli** (kan-sel'li). The divisions of the interior of bone.
- Cancer** (kan'ser). See carcinoma.
- Canker** (kan'ker). A cancerous or gangrenous sore.
- Cannabis** (kan'na-bis). Hemp; a genus of narcotic, antispasmodic and aphrodisiac plants.
- Cantharides** (kan-thar'i-dez). The plural of cantharis.
- Cantharis** (kan'thar-is). Spanish fly; dried and powdered beetle cantharis vesicatoria.
- Canthus** (kan'thus). A cavity at the extremities of the eyelids; an angle of the eye.
- Capillary** (kap'il-ar-e). A minute blood vessel, like a hair.
- Capsicum** (kap'si-kum). Cayenne pepper; a powerful stimulant.
- Capsular Ligament** (kap'su-lar lig'a-ment). A ligament around a movable joint.
- Capsule** (kap'sul). A membranous sac inclosing a part.
- Carbo Hydrate** (kar'bo hi'drate). A compound of carbon with hydrogen and oxygen, the latter being in the proportion to form water.
- Carbon** (kar'bon). A nonmetal occurring in the forms of diamond, graphite and charcoal, the latter only being used in medicine.
- Carbonated** (kar'bon-at-ed). Containing or impregnated with carbonic acid.
- Carbuncle** (kar'kunk-l). A large circumscribed inflammation of the subcutaneous tissue.
- Carcinoma** (kar-sin-o'mah). A malignant tumor with the production of epithelioid cells; cancer.
- Cardia** (kar'de-ah). The heart; an orifice of the stomach.
- Cardiac** (kar'de-ak). Pertaining to the heart or cardia.
- Cardiagra** (kar-de-a'grah). Gout of the heart.
- Cardialgia** (kar-de-al'je-ah). Heartburn; pain in the heart.
- Cardiocele** (kar'de-o-sel). Hernia of the heart.
- Cardiology** (kar-de-ol'o-je). The science of the heart.
- Carminative** (kar-min'a-tiv). A medicine expelling flatus.
- Carotid** (kar-ot'id). The principal artery of the neck.
- Carpal** (kar'pal). Pertaining to the carpus or wrist.
- Carpus** (kar'pus). The wrist.
- Cartilage** (kar'ti-laj). Gristle; a nonvascular elastic tissue, softer than bone.
- Cartilaginous** (kar-til-aj'in-us). Of the nature of cartilage.
- Caruncle** (kar'un-kl). A small, fleshy growth.
- Catalysis** (ka-tal'i-sis). A chemic reaction promoted by the presence of a third unaffected substance. Dissolution; decay; deterioration.
- Catamenia** (kat-a-me'ne-ah). The menses.
- Cataplasm** (kat'a-plazm). A poultice.
- Catarrh** (ka-tar'). Inflammation of the mucous membrane.
- Cathartic** (ka-thar'tik). A purgative medicine; a medicine which opens the bowels freely.
- Catheter** (kath'e-ter). A tube for introduction through a narrow canal into a cavity, usually the bladder.
- Catheterism** (kath'et-er-ism). The use of the catheter.
- Catholicum** (kath-ol'i-kon). A panacea; a universal medicine.
- Caudate** (kaw'dat). Having a tail.
- Caudate Lobe** (kaw'dat lob). The tail-like process of the liver.
- Causalgia** (kaw-zal'ge-ah). An intense burning neuralgia.
- Causation** (kaw-za'shun). The act of causing or producing.
- Caustic** (kaws'tik). A substance which burns living tissues.
- Caustic Arrows** (kaws'tik ar'rows). Conic sticks charged with caustic material.
- Caustic, Lunar** (kaws'tik, lu'nar). Silver nitrate cast into sticks.
- Caustic, Mitigated** (kaws'tik, mit'i-ga-ted). Silver nitrate fused with potassium nitrate.
- Caustic Potash** (kaws'tik pot'ash). Potassium hydrate; a powerful potash used in medicine and the arts for cauterizing and cleansing purposes, and in the manufacture of soft soap.
- Caustic Soda** (kaws'tik so'da). Sodium hydrate; similar in properties and uses to caustic potash, the soaps made with it, however, being hard.
- Cauterization** (kaw-ter-i-za'shun). The application of a cautery.
- Cautery** (kaw'ter-e). A substance or instrument for burning or disorganizing a part.
- Cavitary** (kav'it-a-re). Hollow; having a body-cavity or intestinal tract.
- Cecum** (se'kum). The blind pouch at the head of the large intestine.
- Cellular** (sel'u-lar). Composed of cells.
- Cellulose** (sel'u-los). The supporting structure or frame work of plant tissue.
- Cephalalgia** (sef-al-al'je-ah). Pain in the head.
- Cephalic** (sef-al'ik). Pertaining to the head.
- Cera** (se'rah). Wax.
- Cerate** (se'rate). A composition having wax for a basis.
- Ceratum** (se-ra'tum). A cerate.
- Cerebellum** (ser-e-bel'lum). The lower part of the brain.
- Cerebral** (ser'e-bral). Relating to the brain.
- Cerebritis** (ser-e-bri'tis). Cerebral inflammation.
- Cerebrosid** (ser'e-bro-sid). Any one of the group of chemic substances containing nitrogen but no phosphorus, found in nerve tissue.
- Cerebrospinal** (ser-e-bro-spi'nal). Relating to the brain and spine.
- Cerebrum** (ser'e-brum). The chief part of the brain; the center of reasoning faculties.
- Cerumen** (se-ru'men). The wax or yellow matter secreted by the ear.
- Cervical** (ser'vi-kal). Pertaining to the neck or to a cervix.
- Cervix** (ser'viks). The neck; any neck-like part.
- Cessation** (ces-sa'shun). To stop; to rest; to pause; ceasing from action.
- Cesspool** (ses'pool). A hole sunk in the earth to receive drainage.

- Cevadin* (sev'ad-in). An alkaloid from saba-dilla.
- Chalybeate* (ka-lib'e-at). Any water or liquid containing iron.
- Chancre* (shang'ker). The primary or hard syphilitic ulcer.
- Chancroid* (shang-kroid). Resembling a chancre.
- Chancrous* (shang'krous). Of the nature of a chancre.
- Charcoal* (char'kol). Coal produced from wood by smothered combustion.
- Charlatan* (shar'la-tan). A quack.
- Charlantry* (shar'lat-an-re). Quackery.
- Chemical* (kem'i-kal). Pertaining to chemistry. See chemistry.
- Chemistry* (kem'is-tre). The science of the molecular and atomic structure of bodies.
- Chilblain* (chil'blan). Cutaneous inflammation due to cold.
- Chloretone* (klo're-ton). A white crystalline substance used as a hypnotic and local anesthetic.
- Chlorin* (klo'rin). A nonmetallic gaseous element.
- Chlorinated* (klo'rin-a-ted). Charged with chlorin. See chlorin.
- Chlorite* (klo'rite). A salt of chlorous acid.
- Cholagog* (kol'ag-og). A medicine that promotes the flow of bile.
- Cholagogue* (kol'ag-og). Same as cholagog.
- Choleric* (kol'er-ic). Abounding with bile. Easily irritated.
- Chondroma* (kon-dro'mah). A cartilaginous tumor.
- Chorea* (ko-re'ah). Saint Vitus's dance; involuntary muscular twitches.
- Choreoid* (ko're-oid). Pertaining or similar to chorea.
- Chorioid* (ko're-oid). See choroid.
- Choroid* (ko'roid). The second or vascular tunic of the eye.
- Choroiditis* (ko-roid-i'tis). Inflammation of the choroid.
- Chromium* (kro'me-um). A hard, gray, metallic element.
- Chronic* (kron'ik). Long continued; the reverse of acute.
- Chyle* (kil). The milky fluid found in the mesenteric lymph-vessels during absorption.
- Chylopoietic* (ki-lo-poi-et'ik). Chyle-producing.
- Chyme* (kim). The food that has undergone gastric but not intestinal digestion.
- Cicatrix* (se-ka'trix). A scar from a wound.
- Cicatrization* (sik-a-triz-a'shun). The process of healing.
- Cicatrise* (sik'a-triz). To heal.
- Cilia* (sil'e-ah). The eyelashes; hair-like processes of certain cells.
- Ciliary* (sil'e-a-re). Pertaining to the cilia.
- Ciliary Body* (sil'e-a-re bod'e). The ciliary muscle and processes.
- Cinchona* (sin-ko'nah). A genus of trees and their bark yielding quinin.
- Cinchonism* (sin'kon-ism). The systemic effects of quinin in overdose.
- Circumscribed* (ser'kum-scribed). Clearly defined, as an abscess.
- Citrate* (si'trate). A salt of citric acid.
- Citrus* (sit'rus). A genus of trees yielding lemons, limes, and oranges.
- Clarificant* (klar'if-ik-ant). A substance for clearing a solution.
- Clarified* (klar'i-fied). To purify; to make clear.
- Clavicle* (klav'i-ke). The collar-bone joining the sternum and scapula.
- Climacteric* (kll-mak'tre-ik). A critical period in human life or a period in which some great change is supposed to take place in the human constitution.
- Clinic* (klin'ik). Bedside instruction.
- Clinical* (klin'ik-al). Pertaining to a sick-bed or clinic.
- Clonic* (klon'ik). Shaking; convulsive; irregular.
- Clyster* (klis'ter). A rectal injection; an enema.
- Coagulate* (ko-ag'u-late). To change from a liquid to a denser state.
- Coagulation* (ko-ag-u-la'shun). A clotting.
- Coagulum* (ko-ag'u-lum). A clot or mass of thickened blood.
- Coalesce* (ko-a-les'). To grow together; to unite as separate bodies, or separate parts into one body.
- Coalescence* (ko-al-es'ens). The union of two or more parts.
- Coaptation* (ko-ap-ta'shun). The adjustment of the edges of fractures.
- Cocain* (ko'kain). An alkaloid from coca; it is a powerful local anesthetic and internally is used as a narcotic.
- Coccus* (kok'us). A cell or capsule.
- Coccyx* (kok'siks). The last bone of the spinal column.
- Cochineal* (coch'i-neal). *Coccus cacti*; dried insects used as coloring matter.
- Cocoa* (ko'ko). See cacao. A name given to a simple preparation of the ground kernels of the cacao or chocolate-tree.
- Coco-nut Oil* (ko'ko-nut oil). The oil from the fruit of the palm.
- Codein* (ko'de-in). One of the alkaloids derived from opium.
- Coil* (koll). A spiral.
- Coil Gland* (koil gland). A sweat gland.
- Colchicum Autumnale* (kol'chick-um au-tum'nal). Meadow saffron. It is an emetic and drastic cathartic. It is used in gout and in rheumatic affections.
- Cold* (kold). Coryza; catarrh of the respiratory tract.
- Collapse* (kol-laps'). A marked depression of the vital activities of the body.
- Colliquative* (kol-lik'wa-tiv). Profuse or excessive, so as to cause exhaustion; said of the discharges, as a colliquative sweat.
- Collision* (kol-li'shun). The coming together of two bodies; a concussion.
- Collodion* (kol-o'de-on). Same as collodium.
- Collodium* (kol-o'de-om). A dressing for wounds, made by dissolving gun-cotton in ether and alcohol.
- Colloid* (kol'oid). Glue-like; a noncrystallizable organic substance.
- Colloid Cancer* (kol'oid kan'ser). Carcinoma with colloid degeneration.
- Colloid Cyst* (kol'oid cist). A cyst with jelly-like contents.
- Colloma* (kol-o'mah). A cyst containing colloid matter.
- Collum* (kol'um). The neck.
- Collutorium* (kol-u-to're-um). A mouth wash; a gargle.
- Collyrium* (kol-ir'e-um). A medical lotion for the eyes.
- Coloboma* (kol-o-go'mah). A fissure, especially of parts of the eye.
- Colocentesis* (ko-lo-sen-ti'sis). Surgical puncture of the colon.
- Coloenteritis* (ko-lo-en-ter-i'tis). Inflammation of the small and large intestines.
- Colon* (ko-lon). The part of the large intestine from the cecum to the rectum.
- Coma* (ko'mah). An abnormally deep sleep; stupor.
- Comatose* (ko'ma-tos). In a condition of coma.
- Combustion* (kom-bus'chun). The state or operation of burning.
- Comedo* (kom'e-do). Blackhead; a worm-like mass in an obstructed sebaceous duct.
- Comminution* (kom-min-u'shun). The process of breaking into pieces.
- Commiphora* (kom-If'o-rah). The genus of trees furnishing myrrh and balm of Gilead.

- Commissure** (kom'mis-ur). A joining or uniting.
- Compensation** (kom-pen-sa'shun). The state of counterbalancing a defect of structure or function.
- Complemental Air** (kom-ple-men'tal air). That inhaled after ordinary breathing.
- Complexus** (kom-pleks'us). The totality of the symptoms of a disease.
- Complication** (kom-pli-ka'shun). A combination of diseases or morbid conditions.
- Compress** (kom'pres). Folded cloths for local pressure.
- Compression** (kom-presh'un). The forcing together of a substance.
- Conarium** (ko-na're-um). The pineal gland of the brain.
- Concave** (kon'kav). Presenting a hollowing incurvation.
- Concavity** (kon-kav'i-te). A depression or fossa.
- Concentrated** (kon'sen-tra-ted). Made stronger or purer.
- Concentric** (kon-sen'trik). Having a common center.
- Conception** (kon-sep'shun). The fecundation of the ovum.
- Conception Imperative** (kon-sep'shun im-per'a-tiv). A false idea dominating an insane person's actions.
- Concoction** (kon-kok'shun). The boiling of two substances together.
- Concomitant** (kom-kom'it-ant). Accompanying, as symptoms.
- Concrete** (kon-kret'). Solidified or condensed.
- Concretion** (kon-kre'shun). A calculus; an osseous deposit; abnormal union of adjacent parts.
- Concussion** (kon-kush'un). A shaking.
- Concussion of the Brain** (kon-kush-un). Shock or agitation of the brain caused by impact with another body.
- Condiment** (kon'di-ment). Seasoning; sauce; that which is used to give relish to meat or other food.
- Conductive** (kon-duk'tiv). Having the power to conduct.
- Conductivity** (kon-duk-tiv'i-te). The capacity for conducting.
- Conductor** (kon-duk'tor). An instrument directing a surgical knife.
- Conduit** (kon'dit). Any medium of transmission as the nerves and blood vessels.
- Condyle** (kon'dil). Any rounded prominence, such as occurs in the joints of many bones especially the femur, humerus and lower jaw.
- Confection** (kon-fek'shun). A sweet excipient in pharmacy.
- Confinement** (kon-fin'ment). The period of parturition.
- Congelation** (kon-jel'a-shun). A freezing; frost-bite.
- Congenital** (kon-jen'i-tal). Existing from birth, innate.
- Congestion** (kon-jes'chun). An excessive accumulation of blood in an organ with disorder of its functions.
- Conium Maculatum** (kon-i'um mak-u-la tum). Poison hemlock. The leaves and seeds are sedative and narcotic.
- Conjugation** (kon-ju-ga'shun). A form of reproduction or celi division.
- Conjugation Nucleus** (kon-ju-ga'shun nu'kle-us). The segmentation-nucleus.
- Conjunctiva** (kon-junk-ti'vah). The mucous membrane of the eye.
- Conjunctivitis** (kon-junk-tiv-i'tis). Inflammation of the conjunctiva.
- Conserve** (kon-serv'). A confection.
- Consistence** (kon-sis'tens). The degree of density or hardness.
- Constipation** (kon-sti-pa'shun). A sluggish action of the bowels.
- Constitution** (kon-sti-tu'shun). Composition; the general temperament of the body.
- Constrict** (kon-strikt'). To draw together in one part.
- Constrictor** (kon-strik'tor). A contracting or compressing muscle.
- Contagion** (kon-ta'jun). The process of transfer of specific diseases. The act of taking a disease by contact.
- Contagious** (kon-ta'jus). Having the character of contagion.
- Contagium** (kon-ta'je-um). Germs of specific diseases. Contagion.
- Contamination** (kon-tam-i-na'shun). The act of polluting; pollution; defilement; taint.
- Contiguity** (kon-tig-u'i-te). Actual contact.
- Continuity** (kon-tin-u'i-te). Uninterrupted connection.
- Contorted** (kon-tor'ted). Twisted.
- Contortion** (kon-tor'shun). A twisting or wresting of a limb or member of the body out of its natural situation.
- Contract** (kon-trakt'). To draw the parts together; to shrink; to acquire by contagion.
- Contractile** (kon-trak'til). Having the power to contract.
- Contraction** (kon-trak'shun). Decrease of volume; shortening.
- Contracture** (kon-trak'chur). A state of permanent rigidity.
- Contuse** (kon-tuz'). To bruise.
- Contusion** (kon-tu'zhun). A bruise.
- Convalescence** (kon-va-les'ence). The period of recovery after a disease.
- Convergence** (kon-ver'gens). A coming together.
- Convex** (kon'veks). Curved outward on the external surface.
- Convolved** (kon'vo-lu-ted). Rolled one part on another.
- Convolution** (kon-vo-lu'shun). A fold, twist or coil of any organ.
- Convulsion** (kon-vul'shun). A violent involuntary contraction; a spasm or fit.
- Co-ossify** (ko-os'si-fi). To become united by ossification; to form one bone; as, several bony elements co-ossify in man to form the sphenoid bone.
- Copious** (ko'pi-us). Abundant; plentiful; in great quantities.
- Coracoid** (kor'ak-oid). Shaped like a crow's beak.
- Cordial** (kor'jal). An aromatic, spirituous stimulant.
- Coriaceous** (kor-ri-a'shus). Leather-like; elastic and tough.
- Corm** (korm). A bulb-like, solid, fleshy subterranean stem. A colony of persons.
- Corn** (korn). A local thickening and induration of the skin, as on the toes.
- Cornea** (kor'ne-ah). The transparent anterior part of the eyeball.
- Corneal** (kor'ne-al). Pertaining to the cornea.
- Corneoritis** (kor-ne-o-ri'tis). Inflammation of both cornea and iris.
- Cornu** (kor'nu). A horn-shaped structure.
- Coronary** (kor'o-na-re). Encircling, as a vessel or nerve.
- Coroner** (kor'o-ner). An officer who holds inquests on those dead from violence.
- Corpora** (kor'po-rah). Plural of corpus. Human bodies, living or dead.
- Corporeal** (kor-po're-al). Having a body; consisting of material substance.
- Corpulency** (kor'pu-len-se). Obesity; largeness of the body; fleshiness.
- Corpus** (kor'pus). A body; the human body.
- Corpuscle** (kor'pus-l). A minute body; a cell.
- Corrective** (kor-rek'tiv). A substance modifying the action of drugs.
- Correlation** (kor-re-la'shun). Interdependence; reciprocal relation.

- Corroborant** (kor-ob'o-rant). A tonic, invigorating remedy.
- Corroborative** (kor-ob'o-ra-tiv). A medicine that strengthens; a corroborant.
- Corrosive** (kor-o'siv). A substance that eats away or destroys.
- Cortex** (kor'teks). The external gray layer of the brain.
- Cortical** (kor'tik-al). Pertaining to the cortex.
- Cortical Cataract** (kor'tik-al kat'a-ract). Opacity in the cortex of the lens.
- Cosmetic** (kos-met'ik). Making beautiful; a remedy for beautifying the skin.
- Cosmetic Operation** (kos-met'ik op-er-a'shun). An operation for lessening unsightliness.
- Cosmolin** (koz'mo-lin). See petrolatum.
- Costal** (kos'tal). Pertaining to the ribs.
- Costal Cartilage** (kos'tal kar'ti-laj). The anterior cartilaginous extremity of a rib.
- Costal Respiration** (kos'tal res-pi-ra'shun). Respiration carried on chiefly by the chest muscles.
- Costive** (kos'tiv). Affected with constipation.
- Costiveness** (kos'tiv-nes). Abnormality of digestion marked by hardness and retention of the discharge of the bowels.
- Counter-irritant** (koun'ter-er'ri-tant). A medicine which relieves irritation in one organ by increasing it in another.
- Cranial** (kra'ne-al). Pertaining to the skull.
- Cranium** (kra'ne-um). The skull; the bony case of the brain.
- Crassamentum** (kras-a-men'tum). A clot, as of blood.
- Crepitus Indux** (krep'i-tus in'dux). The crackling rale heard at the beginning of croupous pneumonia.
- Crepitus Redux** (krep'i-tus re'dux). A crackling rale indicating the recession of pneumonia.
- Crescent** (kres'ent). Having the shape of a new moon.
- Crescentic** (kres-en'tik). Moon-shaped.
- Cresol** (kre'sol). Cresylic acid, a coal-tar product.
- Cretin** (kre'tin). One affected with cretinism.
- Cretinism** (kre'tin-ism). The condition of a cretin. An endemic disease characterized by idiocy, goiter and a deficient development of the organism.
- Crisis** (kri'sis). The turning point in a disease.
- Crude** (krud). In the natural form; raw.
- Crus** (krus). The leg; a leg-like structure.
- Crypt** (kript). A small sac or follicle; a glandular cavity.
- Cryptogram** (krip'to-gram). A flowerless plant.
- Cryptitis** (krip-ti'tis). Inflammation of a crypt.
- Crystals** (kris'tals). Solid substances of definite geometric form, resulting from the action of natural forces.
- Crystalline** (kris'tal-en). Like a crystal.
- Curd** (kurd). The coagulum of milk.
- Cutaneous** (ku-ta'ne-us). Pertaining to the skin.
- Cuticle** (ku'ti-kl). The epidermis or scarf skin.
- Cutis** (ku'tis). The derma or true skin.
- Cutization** (ku-tiz'a-shun). A change into dermic tissue.
- Cyanopathy** (si-an-op'a-the). See cyanosis.
- Cyanopia** (si-an-o'pe-ah). A perverted state of the vision rendering all objects blue.
- Cyanopsia** (si-an-op'se-ah). See cyanopia.
- Cyanosis** (si-an-o'sis). Blue discoloration of skin from nonoxidation of blood.
- Cyanotic** (si-an-ot'ik). Pertaining to cyanosis.
- Cyclotomy** (si-klot'o-me). An operation for the relief of glaucoma consisting of an incision through the ciliary body.
- Cynanche** (sin-an'ke). An inflammatory disease of the throat.
- Cyst** (sist). A membranous sac containing fluid.
- Cysticus** (sis'tik-us): Any one member of a family of tapeworms which in the course of development form the cysticercus or bladder-worm.
- Cystitis** (sis-ti'tis). Inflammation of the bladder.

D

- Debauch** (de-boch'). Excess in eating or drinking. Intemperance.
- Debilitant** (de-bil'it-ant). An agent allaying excitement.
- Debilitated** (de-bil'i-tated). To weaken; to impair the strength of.
- Debility** (de-bil'i-te). Weakness; feebleness; languor of body.
- Deciduous** (de-sid'u-us). Shedding; falling; not perennial or permanent.
- Decoction** (de-kok'shun). Result obtained by boiling substances in a fluid.
- Decomposition** (de-kom-po-zish'un). Putrefaction; the analysis of a body.
- Decrepitude** (de-krep'i-tude). The broken state of the body, produced by decay and the infirmities of age.
- Decubital** (de-ku'bit-al). Relating to a bed-sore or to decubitus.
- Defecation** (def-e-ka'shun). The evacuation of the bowels.
- Defect** (de-fekt'). An imperfection; an absence of a part or organ.
- Defervescence** (de-fer-ves'ens). Abatement or decrease of a fever.
- Deformity** (de-for'mi-te). Physical malformation or distortion.
- Degeneration** (de-jen-er-a'shun). Deterioration in structure of a tissue or an organ.
- Deglutition** (deg-lu-tish'un). The act or power of swallowing.
- Dejection** (de-jek'shun). Discharge of the bowels.
- Deleterious** (del-e-te'ri-ous). Injurious; pernicious; unwholesome.
- Deliquescent** (del-i-ques'ent). Liquefying from absorption of atmospheric moisture.
- Delirium** (de-lir'e-um). Mental aberration due to disease; wandering of the mind.
- Delta Fornices** (del'ta for'ni-ces). See lyra fornices.
- Deltoid** (del'toid). Delta shaped; a muscle of the shoulder.
- Delusion** (de-lu'shun). A false judgment of objective things.
- Demarcation** (de-mar-ka'shun). The act of marking the limits of; separation, as into a class.
- Demented** (de-men'ted). Deprived of reason.
- Dementia** (de-men'she-ah). Profound mental incapacity.
- Demulcent** (de-mul'sent). A medicine having a soothing effect.
- Dentin** (den'tin). The bony structure of the teeth.
- Dentition** (den-tish'un). The cutting of the teeth and the period of the same.
- Deobstruent** (de-ob'stru-ent). A medicine having the power of removing obstructions from the passages of the body.
- Deplete** (de-plet'). To empty.
- Depression** (de-presh'un). A hollow or fossa; a depressed condition.
- Deprivation** (dep-ri-va'shun). The act of depriving; a taking away.
- Depuration** (dep-u-ra'shun). Cleansing from impurities.
- Derangement** (de-ranj'ment). Disorder of intellect; insanity.
- Dermalgia** (der-mal'je-ah). Neuralgia of the skin.
- Dermic** (der'mik). Pertaining to the skin.
- Dermopathy** (der-mop'a-the). Any disease of the skin.

- Desiccate* (des'f-kate). To become dry.
- Despumation* (des-pu-ma'shun). The formation of froth.
- Desquamation* (des-kwam-a'shun). Scaling of the cuticle.
- Detergent* (de-ter'jent). Cleansing; purging.
- Deteriorate* (de-te'ri-o-rate). To grow worse; to be impaired in quality; to degenerate.
- Deterioration* (de-te-ri-o-ra'shun). The state of growing worse.
- Determination* (de-ter-min-a'shun). Tendency to flow to; more plentiful than is normal.
- Detritus* (de-tri'tus). Waste matter from disorganization.
- Dexter* (deks'ter). Upon the right side.
- Dextral* (deks'tral). Pertaining to the right side.
- Diabetes* (di-a-be'tes). A disease characterized by an excessive flow of urine.
- Diabetic* (di-a-bet'ik). One affected with diabetes.
- Diabetid* (di-a-be'ted). A cutaneous manifestation of diabetes.
- Diacetate* (di-as'et-at). A salt of diacetic acid.
- Diagnosis* (di-ag-no'sis). The recognition of a disease from its symptoms.
- Diaphoresis* (di-a-for-e'sis). The production of perspiration.
- Diaphoretic* (di-a-fo-ret'ik). An agent producing perspiration.
- Diaphragm* (di'a-gram). The muscular wall between the thorax and the abdomen.
- Diarrhea* (di-a-re'ah). Frequent evacuation of the bowels.
- Diarrhœa* (di-a-re'ah). See diarrhea.
- Diarthrosis* (di-ar-thro'sis). A freely movable articulation.
- Diastase* (di'a-stase). A nitrogenous ferment in malt.
- Diastole* (di-as'tole). The period of dilatation of the heart.
- Diathesis* (di-a-the'sis). A constitutional predisposition to disease.
- Dicrotic* (di-krot'ik). Double-beating as observed in certain pathologic conditions of the pulse.
- Diet* (di'et). Food; a system of ailment.
- Dietetic* (di-e-tet'ik). Pertaining to diet.
- Dietetical* (di-e-tet'i-kal). Rules for regulating the kind and quantity of the food to be eaten.
- Differentiate* (dif-fer-en'shi-ate). To become specifically distinct and separate.
- Differentiation* (dif-fer-en'shi-a'shun). A specialization of tissues, organs or functions.
- Diffusible* (dif-fu'zi-ble). Capable of rapid spreading.
- Diffuse* (dif-fuze). To scatter or spread about.
- Digestion* (di-jes'shun). Conversion of food into chyme and chyle.
- Dilatation* (dil-a-ta'shun). An expansion of a vessel or an organ.
- Diluent* (dil'u-ent). A medicine increasing the fluidity of secretions.
- Dilution* (di-lu'shun). A weakening with water.
- Diminution* (dim-i-nu'shun). The act of lessening; a making smaller.
- Dinus* (dinus). Vertigo or dizziness.
- Dioxid* (di-oks'id). A compound containing two atoms of oxygen and one of a base.
- Diploe* (dip'lo-e). The cellular bony tissue between the cranial tables.
- Discharge* (dis-charj'). A morbid secretion; an evacuation.
- Discrete* (dis-kret'). Separate; distinct: opposed to confluent.
- Discutient* (dis-ku'shent). A medicine removing a swelling or effusion.
- Disease* (diz-ez'). A pathologic condition of any part or organ of the body.
- Disinfect* (dis-in-fekt'). To free from infectiousness.
- Disinfectant* (dis-in-fek'tant.) An agent destroying germs.
- Disinfection* (dis-in-fek'shun). Purification from that which infects.
- Disintegrate* (dis-in'te-grate). To fall to pieces; to crumble.
- Dislocation* (dis-lo-ka'shun). Throwing out of the natural position.
- Dispensation* (dis-pen-sa'shun). Distribution; the act of dealing out to different persons or places.
- Disseminated* (dis-sem'i-na-ted). Scattered.
- Dissemination* (dis-sem-i-na'shun). A scattering as of disease germs.
- Distal* (dis'tal.) Peripheral; away from the center.
- Distended* (dis-tend'ed). A stretch or spread in all directions.
- Distension* (dis-ten'shun). A stretching and expanding.
- Distillate* (dis'til-at). The substance distilled over.
- Distillation* (dis-til-la'shun). The process of converting a fluid to a vapor and then reducing it again to its first form.
- Diuresis* (di-u-re'sis). An excessive secretion of urine.
- Diuretic* (di-u-ret'ik). A medicine increasing the flow of urine.
- Divergence* (di-ver'gens). The act or state of receding from each other.
- Diverticulum* (di-ver-tik'u-lum). A small cul-de-sac or pouch.
- Dolomite* (dol'o-mite). A granular magnesian carbonate of lime.
- Dolomitic* (dol-o-mit'ik). Pertaining to dolomite.
- Domestic* (do-mes'tik). Belonging to the home.
- Dorsal* (dor'sal). Pertaining to the back.
- Dosage* (do-saj). The regulating of the doses of drugs.
- Douche* (doosh). A stream of water directed against a part or one used to flush a cavity.
- Dover's Powder* (do'vers pow'der). A powder containing ten per cent. each of opium and ipecac.
- Drachm or Dram* (dram). A weight of sixty grains.
- Draft* (draft). A quantity of liquid medicine taken at one time.
- Dram* (dram). A weight of sixty grains.
- Drastic* (dras'tik). A powerful and irritating purgative.
- Draught or Draft*. See Draft.
- Dropsical* (drop'si-kal). Pertaining to dropsy.
- Dropsy* (drop-si). An effusion of fluid into the tissues or cavities of the body.
- Duodenum* (du-o-de-num). The first part of the small intestines.
- Dura or Dura Mater* (du-rah ma'ter). The outer membrane of the brain and spinal cord.
- Duration* (du-ra'shun). Continuance in time.
- Dysaphe* (dis'a-fe). Disordered sense of touch.
- Dysbasia* (dis-ba'ze-ah). Difficulty in walking.
- Dysecoia* (dis-e-koi'ah). Subnormal acuteness of hearing.
- Dysentery* (dis'en-ter-e). Inflammation and ulceration of the intestinal mucous membrane with bloody evacuations.
- Dysgraphia* (dis-graf'e-ah). An inability to write properly.
- Dyslalia* (dis-la'le-ah). A structural defect of speech; stuttering.
- Dyslogia* (dis-lo'je-ah). An inability to reason.
- Dysmenorrhœa* (dis-men-o-re'ah). Painful menstruation.
- Dysneuria* (dis-nu're-ah). An impairment of nerve function.
- Dysopia* (dis-o'pe-ah). Same as dysopsia.
- Dysopsia* (dis-op'se-ah). Painful or defective vision.
- Dyspepsia* (dis-pep'se-ah). Impaired or imperfect digestion.

- Dyspeptic* (dis-pep'tik). Pertaining to or affected with dyspepsia.
Dysphoria (dis-fo're-ah). Restlessness.
Dysphrasia (dis-fra'ze-ah). Imperfect speech.
Dyspnea (disp-ne'ah). Difficult or labored breathing.
Dysuria (dis-u're-ah). Difficulty in discharging the urine attended with pain and a sensation of heat.

E

- Ecchymosis* (ek-che-mo'sis). A bruise showing on the skin; a black and blue spot.
Echinococcus (e-ki-no-kok'kus). A parasitic larva to a tapeworm peculiar to the dog, but found in other animals and in man, where it produces fatal tumors in the lungs and liver.
Ecstasy (eks'ta-se). Excessive excitement; loss of mental control.
Ectoderm (ek'to-derm). An outer layer or membrane, as the epidermal layer of the skin.
Ectopia (ek-to'pe-ah). An abnormality of position, usually congenital.
Ectopic (ek-top'ik). Pertaining to ectopia.
Eczema (ek'ze-mah). Inflammation of the skin with exudation of lymph.
Edema (e-de'mah). Accumulation of serum in the cellular tissue.
Edematous (e-dem'a-tus). Relating to or marked by edema.
Effeminate (ef-fem'i-nate). Having the qualities of the female sex.
Effervescent (ef-fer-ves'ent). Gently boiling or bubbling by means of the disengagement of gas.
Efete (ef-fete'). Barren; not capable of producing, as an animal, soil, etc.
Efficacious (ef-fi-ka'shush). Producing the effect intended.
Efflorescence (ef-flo-re'sens). Redness of the skin; rash.
Effluvium (ef-flu've-um). Exhalation; vapor; odor.
Effusion (ef-fu'shun). Escape of fluid into body tissues or cavities.
Efflux (ef'flux). To run or flow away.
Ejection (e-jek'shun). The process of casting out.
Elaterium (el-a-te'ri-um). A cathartic substance obtained from the fruit of the squirting cucumber.
Electuary (e-lek'tu-a-re). A medicine whose ingredients are mixed with a syrup.
Elephantiasis (el-e-fan-ti'a-sis). A chronic edematous disease of the skin with hypertrophy of the cellular tissue.
Elimination (e-lim-i-na'shun). The act of discharging by the pores; excretion.
Elongation (e-lon-ga'shun). An imperfect laxation occasioned by the stretching or lengthening of the ligaments.
Emaciation (e-ma-she-a'shun). A loss of flesh; leanness.
Emanation (em-a-na'shun). An effluvium; that which proceeds from a body.
Embolism (em'bol-ism). The obstruction of a blood vessel by an embolus.
Embolus (em'bo-lus). A blood-clot or other body carried by the blood current and obstructing circulation at the point of lodgment.
Emesis (em'e-sis). The act of vomiting.
Emetic (e-met'ik). An agent causing vomiting.
Eminence (em'i-nence). Elevation or height; a rising ground.
Emmenagogue (em-men'a-gog). A medicine which promotes the menstrual flow.
Emollient (e-mol'yent). An agent that softens tissues.
- Emphysema* (em-fi-se'mah). A swelling produced by air in the tissues.
Empirical (em-pir'ik-al). Known by experience; derived from experiment; used and applied without science.
Empyema (em-pi-e'mah). Pus in the pleural cavity.
Empyreuma (em-pi-ru'ma). Burnt smell; the odor of animal or vegetable substances when burned in close vessels.
Empyreumatic (em-pi-ru-mat'ik). Pertaining to empyreuma.
Emulsion (e-mul'shun). A milky fluid obtained by suspending oil in water.
Encephalic (en-se-fal'ik). Pertaining to the brain.
Encephalon (en-sef'a-lon). The brain.
Endemic (en-dem'ik). A disease peculiar to a people or nation.
Endermatic (en-der-mat'ik). Relating to a method of administering medicines through the skin by rubbing.
Endermic (en-der'mik). See endermatic.
Endocarditis (en-do-kar-di'tis). Inflammation of the lining membrane of the heart.
Endocardium (en-do-kar'di-um). The transparent lining membrane of the heart.
Enema (en'e-mah). A rectal injection of medicine or food.
Energetic (en-er-jet'ik). Forcible; powerful; efficacious.
Energy (en'er-je). The power of doing work.
Engender (en-jen'der). To produce; to cause to exist.
Engorgement (en-gorj'ment). Vascular congestion.
Enteric (en-ter'ik). Pertaining to the intestine.
Enteritis (en-ter-i'tis). Inflammation of the intestines.
Environment (en-vi'ron-ment). The aggregate of surrounding influences.
Ephemera (e-fem'e-rah). A fever of one day's continuance only.
Epidemic (ep-i-dem'ik). A prevailing disease among a people or nation.
Epidermis (ep-e-der'mis). The outer layer of the skin.
Epigastrium (ep-e-gas'tre-um). The region over the stomach.
Epiglottis (ep-e-glot'is). A thin cartilaginous plate over the larynx.
Epiglottitis (ep-e-glot-i'tis). Inflammation of the epiglottis.
Epilepsy (ep'il-ep-se). A nervous disease with loss of consciousness and tonic and clonic convulsions.
Epileptiform (ep-il-ep'ti-form). Resembling epilepsy.
Epilose (ep'i-los). Without hair; bald.
Epispastic (ep-i-spas'tik). A blister.
Epistaxis (ep-is-taks'is). Hemorrhage from the nose.
Epithelial (ep-ith-e'le-al). Pertaining to epithelium.
Epithelium (ep-ith-e'le-um). The cells covering all cutaneous and mucous surfaces together with the secreting cells of glands developed from ectoderm.
Epizootic (ep-e-zo-ot'ik). An epidemic among animals.
Epoch (ep'ock). Any fixed time or period.
Epulis (ep-u'lis). A small, elastic tumor of the gums.
Ergot (er'got). A fungus parasitic upon rye.
Ergotin (er'go-tin). A name for various active extracts of ergot.
Erigeron (e-rig'e-ron). A genus of herbs.
Erosin (e-ro'shun). Ulceration; an eating or wearing away.
Eruktion (e-ruk-ta'shun). Belching.
Eruption (e-rup'shun). A breaking out, as in a skin disease.

Eruptive (e-rup'tiv). Characterized by a rash or an eruption.

Erysipelas (er-i-sip'e-las). An acute specific inflammation of the skin and subcutaneous tissues, accompanied by fever and constitutional disturbances.

Erysipelatous (er-i-si-pel'a-tus). Pertaining to erysipelas.

Erythema (er-ith-e'mah). A superficial blush or redness of the skin.

Eschar (es'kar). A dry slough or crust of dead tissue.

Escharotic (es-kar-ot'ik). A substance producing an eschar.

Esophagus (e-sof-a-gus). Canal from the pharynx to the stomach.

Essence (es-ens). The inherent qualities of a drug.

Ester (es'ter). A compound ether containing both an acid and an alcohol radicle.

Ether (e'ther). The subtle fluid filling all space. It is an anesthetic.

Etiology (et-e-ol'o-je). The science of the causes of disease.

Eustachian Artery (u-sta'ke-an ar'ter-e). A branch of the vidian artery.

Evacuant (e-vak'u-ant). A medicine which causes evacuations of the bowels.

Evacuation (e-vak-u-a'shun). Defecation; the act of emptying or clearing the contents.

Evaporate (e-vap'o-rate). To convert from a solid or liquid state into vapor.

Evaporation (e-vap-o-ra'shun). A turning into vapor.

Evince (e-vince'). To manifest; to make evident.

Evolution (ev-o-lu'shun). The process of developing from a simple to a complex, specified, perfect form.

Evulsion (e-vul'shun). A forcible tearing away of a part.

Exacerbation (eks-as-er-ba'shun). Increased severity of symptoms.

Exaggerated (eks-a'ger-a-ted). Enlarged; unduly increased.

Exanthem or Exanthema (eks-an'them). An eruption of the skin.

Exanthematous (eks-an-them'a-tus). Pertaining to an exanthem.

Excipient (eks-sip'e-ent). Any substance combined with an active drug to give the latter an agreeable or convenient form.

Excitant (eks-si'tant). A medicine which arouses the vital activity of the body.

Exclusion (eks-klu'shun). A shutting out; the state of being excluded.

Excoriation (eks-ko-re-a'shun). A wound of the skin caused by rubbing.

Excrement (eks'kre-ment). The feces.

Excrementitious (eks-kre-men-tish'us). Pertaining to the feces.

Excrescence (eks-kres'cence). An abnormal outgrowth on the body; as a wart.

Excreta (eks-kre'tah). The natural discharges of the body.

Excrete (eks-kret'). To throw off effete material.

Excretion (eks-kre'shun). The discharge of the waste products of the body.

Excretory (eks'kre-to-re). Pertaining to excretion.

Excruciating (eks-kru'si-a-ting). Torturing; tormenting; most severe pain.

Exertion (ex-er'shun). The act of putting into motion; effort; a striving or struggling.

Exfoliation (eks-fo-le-a'shun). The scaling off of dead tissue.

Exhalation (eks-hal-a'shun). The vapor given off by the body.

Exhaustion (eks-aws'chun). Great loss of vital power.

Exhilarant (eks-il'a-rant). An agent enlivening the mind.

Exhilarating (eks-il'a-rat-ing). Enlivening; giving life and vigor to the spirit.

Exhumation (eks-hu-ma'shun). Disinterment of a corpse.

Exostosis (eks-os-to'sis). An abnormal outgrowth of a bone.

Expectorant (eks-pek'to-rant). A medicine promoting a secretion of bronchial mucous.

Expectoration (eks-pek-to-ra'shun). The expulsion of the secretions from the chest.

Expiration (eks-pi-ra'shun). The act of breathing out; conclusion; end; close.

Exsiccation (eks-sik-ka'shun). The process of drying by heat.

Extensor (eks-ten'sor). A muscle which causes extension of a part.

Exterminator (eks-ter'min-a-tor). That which destroys.

External (eks-ter'nal). Outer.

Extravasation (eks-tra-va-sa'shun). An effusion of fluid into the tissues.

Extremity (eks-trem'i-te). A limb; an end or a termination.

Exudation (eks-u-da'shun). A morbid oozing out of fluids; sweating.

F

Facial (fa'shal). Pertaining to the face.

Facies (fa'she-ez). The countenance.

Facultative (fak'ul-ta-tive). Pertaining to functional or acquired power.

Faculty (fak'ul-te). Specific power. The corps of professors in a college.

Faradic (far-ad'ik). Pertaining to induced electric currents.

Faradization (far-a-di-za'shun). The treatment of a nerve with faradic or induced currents of electricity.

Farina (far-e'nah). The powdered starch of grain.

Farinaceous (far-in-a'she-us). Having the nature of farina.

Fascia (fash'e-a). A thin covering of the muscles.

Fascination (fas-in-a'shun). Inexplicable or hypnotic influence.

Faucet (faw'set). A fixture for drawing liquid from a vessel.

Febricula (feb-rik'u-lah). A mild fever of short duration.

Febrifacient (feb-ri-fa'shent). Producing fever.

Febrifuge (feb're-fuj). An agent that lessens fever.

Febrile (feb'ril). Pertaining to fever.

Feces (fe'sez). Excrement; the discharge of the bowels.

Feculent (fek'u-lent). Foul with impure substances; abounding with sediment matter.

Femoral (fem'or-al). Pertaining to the femur.

Femur (fe'mur). The thigh-bone.

Ferment (fer'ment). A substance which in small quantities is capable of setting up changes in another substance without itself undergoing much change.

Ferruginous (fer-ru'ji-nus). Containing iron.

Fetid (fet'id). Having an offensive smell.

Fetor (fe'tor). Any strong, offensive smell.

Fetus (fe'tus). The product of conception after the fourth month of gestation.

Fiber (fi'ber). A filamentary or thread-like structure.

Fibrin (fi'brin). A nitrogenous proteid coagulating in exposed blood.

Fibrinous (fi'brin-us). Composed of fibrin.

Fibroid (fi'broid). Having a fibrous structure.

Fibrosis (fi-bro'sis). The development of fibrous tissue in an organ.

- Fibrous** (fi'brus). Consisting of or pertaining to fibers.
- Filtration** (fil-tra'shun). The process of straining or filtering.
- Filament** (fil'a-ment). A thread-like structure.
- Fimbria** (fim'bre-ah). A fringe.
- Fissure** (fish'ur). A groove or cleft.
- Fistula** (fis'tu-lah). An abnormal tube-like passage in the body.
- Flaccid** (flak'sid). Soft, flabby and relaxed.
- Flagellation** (flaj-el-a'shun). Flogging, recommended as a means of checking postpartum hemorrhage.
- Flashing-point** (flash'ing-point). The temperature at which gas from an oil will ignite if brought into contact with a flame.
- Flatulence** (flat'u-lence). The presence of gas in the digestive canal.
- Flatus** (fla-tus). Gas in the alimentary canal.
- Flector** (flek'tor). A flexor.
- Flexibilitas** (fleks-i-bil'i-tas). Flexibility.
- Flexibilitas Cereæ** (fleks-i-bil'i-tas se're-a). A cataleptic condition in which the limbs remain fixed as they are placed.
- Flexible** (fleks'i-ble). That which may be bent.
- Flexor** (fleks'or). A muscle that bends or flexes a part.
- Flexura** (fleks-u'rah). A bending or curve in an organ.
- Flocculent** (flok'ku-lent). Containing shreds; flaky.
- Fluctuation** (fluk-tu-a'shun). A wave-like motion.
- Flushing** (flush'ing). To cleanse by forcing water through. A glow of red in the face.
- Flux** (fluks). Dysentery; a liquid flow or discharge.
- Fœtus** (fe'tus). Same as fetus.
- Follicle** (fol'ik-l). A small secretory cavity or sac.
- Follicular** (fol'ik'u-lar). Containing follicles.
- Fomentation** (fo-men-ta'shun). The application of warm liquids to the body.
- Fontanel** (fon-tan-el'). A membranous space at the junction of the cranial bones in an infant, due to incomplete ossification.
- Foramen** (for-a'men). A passage or an opening.
- Forceps** (for'seps). A two-bladed instrument for grasping objects firmly.
- Formication** (for-mi-ka'shun). A creeping sensation.
- Formula** (form'u-lah). A prescribed method; a recipe.
- Fornices** (for'ni-ses). Plural of fornix.
- Fornicolum** (for'ne-kol-um). Anterior pillar of fornix.
- Fornix** (for'niks). An arched portion of the brain composed of the two hippocampus and their respective fimbrias.
- Fortification Spectrum** (for-ti-fi-ka'shun spek'trum). See teichopsia.
- Fracture** (frak'chur). The breaking of a bone.
- Frenzy** (fren'ze). Violent mania.
- Friable** (fri'a-bl). Easily broken or pulverized.
- Friction** (frik'shun). The act of rubbing.
- Frigid** (frij'id). Cold; stiff; apathetic; distant; unfeeling; irresponsible.
- Fugacious** (fu-ga'shush). Flying or fleeing away; volatile.
- Fulcrum** (ful'krum). A prop or support.
- Fuming** (fum'ing). Smoking; raging; fretting.
- Function** (funk'shun). The normal or special action of a part.
- Functional** (funk'shun-al). Pertaining to function.
- Fundament** (fun'da-ment). The base; the anus.
- Fungi** (fun'ji). A section of saprophytic cryptogams.
- Fungoid** (fun'goid). Having the appearance or character of a fungus.
- Fungous** (fun'gus). Pertaining to a fungus.
- Fungus** (fun'gus). A spongy, morbid growth.
- Fusion** (fu'shun). The process of liquefying a solid by heat.
- Fustigation** (fus-ti-ga'shun). Flagellation, as in passage.

G

- Galvanic** (gal-van'ik). Pertaining to galvanism.
- Galvanism** (gal'van-ism). A form of electricity produced by chemic reaction.
- Galvanization** (gal-van-i-za'shun). The transmission of a galvanic current through a part of the body.
- Ganglioma** (gang-le-o'mah). A swelling of a lymphatic gland.
- Ganglion** (gan'gli-on). A semi-independent nervous center. An enlarged lymphatic gland.
- Ganglionic** (gang-le-on'ik). Pertaining to a ganglion.
- Gangrene** (gang'gren). The mortification or death of soft tissue.
- Gargle** (gar'gl). A wash for the throat. To wash the throat.
- Garlic** (gar'lik). The plant *Alium Sativum*. It is a tonic.
- Gaseous** (gas'e-us). Of the nature of gas.
- Gastric** (gas'trik). Pertaining to the stomach.
- Gastricism** (gas-tris'ism). Dyspepsia.
- Gastritis** (gas-tri'tis). Inflammation of the stomach.
- Gastroenteric** (gas-tro-en-ter'ik). Pertaining to both stomach and intestines.
- Gastroenteritis** (gas-tro-en-ter-i'tis). Inflammation of the stomach and bowels.
- Gastrointestinal** (gas-tro-in-tes'tin-al). See gastroenteric.
- Gelatin** (jel'a-tin). A nitrogenous principle obtained by boiling certain animal tissues, as cartilage, ligaments, etc.
- Gelatinous** (je-lat'i-nous). Resembling gelatin; jelly-like.
- Generation** (jen-er-a'shun). The begetting of offspring.
- Generative** (jen-er-a'tive). Pertaining to generation.
- Genital** (jen'i-tal). Pertaining to the organs of generation.
- Genitalia** (jen-i-ta'li-ah). The organs of generation.
- Genitourinary** (jen-i-to-u'ri-na-re). Pertaining to both genital and urinary organs.
- Germicide** (jer'mi-sid). An agent destroying germs.
- Germination** (jer-min-a'shun). The development of a seed or germ.
- Geromorphism** (jer-o-morf'ism). The appearance of age in a young person.
- Gerontic** (jer-on'tik). Pertaining to old age.
- Gestation** (jes-ta'shun). The act of carrying young in the womb from conception to delivery.
- Giddiness** (gid'e-nes). A sensation of whirling.
- Ginglymus** (ging'glim-us). A hinge-joint.
- Glairy** (glar'e). Slimy; albuminous.
- Gland** (glan'd). An organ which secretes some fluid from the blood.
- Glandular** (glan'du-lar). Pertaining to a gland.
- Glaucoma** (glaw-ko'mah). A disease of the eye characterized by increased intraocular tension.
- Gleet** (glete). A mucous discharge, especially from the urethra; a thin ichor running from a sore.
- Gleety** (gle'te). Resembling or affected with a gleet.
- Glioma** (gli-o'mah). Tumor composed of neuroglia.
- Globular** (glob'u-lar). Shaped like a globe.
- Globule** (glob'ul). A small spheric body.
- Glossa** (glos'ah). The tongue.

- Glossography** (glos-og'ra-fe). A description of the tongue.
- Glossohyal** (glos-o-hi'al). Pertaining to the tongue and hyoid bone.
- Glottis** (glot'tis). Aperature between the arytenoid cartilages of the larynx.
- Gluteal** (glu'te-al). Pertaining to the buttocks.
- Glutinous** (glu'ti-nus). Resembling or containing glue.
- Glycerin** (glis'er-in). The sweetish principle of oils and fats.
- Glycyrrhiza** (glis'er-i'zah). A genus of plants and also the demulcent root of licorice root.
- Gnathitis** (na-thi'tis). Inflammation of the jaw.
- Gnathoplasty** (na'tho-plas-te). A plastic operation; the jaw.
- Goiter or Goitre** (goi'ter). An enlargement of the thyroid gland.
- Gonagra** (gon-a'grah). Gout of the knee.
- Gonocystic** (gon-e-sis'tik). Pertaining to the seminal vesicles.
- Gonocystitis** (gon-e-sis-ti'tis). Inflammation of a seminal vesicle.
- Gonyalgia** (gon-e-al'je-ah). Pain in the knee.
- Gonyocele** (gon'e-o-sel). White swelling of the knee.
- Gout** (gowt). A disease associated with joint inflammation, swelling, uric acid in the blood, etc.
- Granular** (gran'u-lar). Composed of grains or granulations.
- Granulation** (gran-u-la'shun). Formation of small elevations on a healing surface.
- Granule** (gran'ul). A small rounded grain. A spore.
- Graphite** (graf'ite). A native form of carbon.
- Gray Matter** (gra mat'ter). The cortical substance of the brain.
- Grip or Grippe** (grip). See influenza.
- Groin** (groin). The depression between thigh and trunk.
- Groove** (groov). A furrow, channel, crease or fold.
- Grumous** (gru'mus). Thick; viscid; clotted.
- Gullet** (gul'et). See esophagus.
- Gutta-percha** (gut'ah-per'cha). The flexible concrete juice of an East India tree. It is used as a protective application.
- Gymnastics** (jim-nas'tiks). Systematic bodily exercise.
- Gypsum** (jip'sum). Native calcium sulphate.
- H**
- Hallucination** (hal-lu-si-na'shun). A false perception or image.
- Harmonia** (har-mo'ne-ah). A suture between two bones in which the opposed surfaces are smooth.
- Harmonious** (har-mo'ne-us). Having the parts proportioned to each other.
- Harmonizing** (har'mo-niz-ing). See harmonia.
- Hartshorn** (hartz'horn). Ammonia.
- Haschisch** (hash'ish). A narcotic and intoxicating preparation of the plant called Indian hemp.
- Hectic** (hek'tik). The fever of advanced disease.
- Hectic Flush** (hek'tik flush). Reddening of the cheeks in tuberculosis.
- Helonin** (hel-o'nin). An extract. It is diuretic and anthelmintic.
- Hematemesis** (hem-a-tem'e-sis). The vomiting of blood.
- Hematimeter** (hem-a-ti-me'ter). See hematocytometer.
- Hematocytometer** (hem-at-o-si-tom'et-or). A device for counting the corpuscles in a given volume of blood.
- Hematoma** (hem-a-to'mah). A tumor containing blood.
- Hemicrania** (hem-e-kra'ne-ah). Neuralgia of half of the head. Imperfect development of half of the skull.
- Hemiplegia** (hem-e-ple'je-ah). Paralysis of one side of the body.
- Hemoptysis** (hem-op'ti-sis). The spitting of blood.
- Hemorrhage** (hem'or-age). A flow of blood from the vessels.
- Hemorrhoid** (hem'or-oid). A pile; a small blood tumor at the anus opening.
- Hepatic** (he-pat'ik). Pertaining to the liver.
- Hepatica** (he-pat'i-ka). Medicines affecting the liver.
- Hepatitis** (hep-a-ti'tis). Inflammation of the liver.
- Herbivorous** (her-biv'o-rus). Eating vegetation.
- Heredity** (he-red'i-te). The influence of parents upon offspring.
- Hermetic** (her-met'ik). Protected from air; air tight.
- Hernia** (her'ne-ah). The protusion of a viscus from its normal position.
- Herpes** (her'pez). A skin disease with patches of distinct blisters.
- Hiccough** (hik'kup). A spasmodic inspiration suddenly arrested by an involuntary closure of the glottis.
- Hiccup** (hik'kup). Same as hiccough.
- Hinge-joint** (hinj'-joint). See diarthrosis.
- Hippocampus** (hip-po-kam'pus). Either of two convolutions of the brain—hippocampus major being a large white curved body in the inferior cornu of the lateral ventricles of the brain and hippocampus minor a small eminence of white substance in the posterior cornu.
- Hippocratic** (hip-po-krat'ik). Of or belonging to Hippocrates, a celebrated physician of Greece, regarded as the father of medicine.
- Homogenesis** (ho-mo-jen'e-sis). The generation of offspring experiencing the same cycle of developmental changes as the parent.
- Homogenous** (ho-moj'e-nus). With like offspring.
- Homogeny** (ho-moj'e-ne). With like offspring.
- Hordeum** (hor'de-um). Barley.
- Humanity** (hu-man'i-te). The quality of being human.
- Humeral** (hu'mer-al). Pertaining to the humerus.
- Humerus** (hu'mer-us). The large bone of the upper arm.
- Humid** (hu'mid). Moist; damp.
- Humor** (hu'mor). Any fluid of the body.
- Humus** (hu'mus). A dark material from decaying vegetable matter.
- Hyaline** (hi'a-lin). Glassy; crystalline; transparent.
- Hydracid** (hi-dras'id). Any hydrogen acid containing no oxygen.
- Hydragog** (hi'dra-gog). Purgative; causing watery discharges.
- Hydrocephalic** (hy-dro-sef'a'lik). Pertaining to hydrocephalus.
- Hydrocephalus** (hy-dro-sef'al-us). A collection of water in the head; dropsy of the brain.
- Hydrochloric** (hi-dro-klo'rik). Consisting of hydrogen and chlorine.
- Hydrogen** (hi'dro-jen). An elementary substance existing at ordinary temperatures as a colorless, tasteless and inodorous gas, the lightest of all known substances. It forms one-ninth of the weight of water and is present in almost all organic compounds.
- Hydropathic** (hi-dro-path'ik). Pertaining to hydropathy.
- Hydropathy** (hi-drop'a-the). The treatment of disease by the use of water.

Hydrothorax (hi-dro-tho'raks). Dropsy of the chest.
Hygiene (hi'je-en). The science of health.
Hygienic (hi-je-en'ik). Pertaining to hygiene.
Hylic (hi'lik). Pertaining to the pulp tissues of the embryo.
Hyloma (hi-lo'mah). Any tumor arising in hylic or pulp tissues.
Hymen (hi'men). The membrane which covers the mouth of the vagina.
Hyoid Bone (hi'oid bone). The bone at the root of the tongue.
Hyperesthesia (hi-per-es-the'se-ah). Excessive sensibility.
Hypermnesis (hi-per-m-ne'sis). An abnormal power of memory.
Hyperosmia (hi-per-oz'me-ah). A morbidly acute sense of smell.
Hypertrophic (hi-per-tro'fik). Affected with hypertrophy.
Hypertrophy (hi-per'tro-fe). Abnormal increase in the size of an organ or a part.
Hypnotic (hip-not'ik). An agent causing sleep.
Hypochondrium (hi-po-kon'dre-um). The region of the abdomen at each side of the epigastrium.
Hypodermatomy (hi-po-der-mat'o-me). Subcutaneous incision.
Hypodermatic (hi-po-der-mat'ik). See hypodermic.
Hypodermic (hi-po-der'mik). Subcutaneous; applied to injections of medicines.
Hypogastrium (hip-o-gas'tri-um). The lower part of the abdomen.
Hypophosphite (hi-po-fos'fit). A salt of hypophosphorous acid.
Hyposmia (hi-poz'me-ah). A diminution in the sense of smell.
Hypothalamus (hi-po-thal'am-us). Name given to the structures of the fore-brain under the thalamus.
Hypotrophy (hi-pot'ro-fe). Defective nutrition.
Hysteria (his-ter'e-ah). A nervous affection in which the patient loses control of the emotions through loss of will-power.
Hysterical (his-te're-al). Of the nature of hysteria.

I

Ichor (i'kor). A colorless matter flowing from an ulcer.
Ichthyocolla (ik-the-o-kal'ah). Isinglass; fish-glue; a gelatin made from the air gladders of a fish.
Ichthyol (ik'the-ol). A liquid prepared from mineral pitch and used in skin diseases.
Icteroid (ik'ter-oid). Resembling jaundice.
Idiocy (id'e-o-se). A condition of extreme mental deficiency.
Idiopathic (id-e-o-path'ik). Spontaneous; primary.
Idiosyncrasy (id-e-o-sin'kra-se). Individual peculiarity.
Idiot (id'e-ot). A person with defective mental development.
Illuminant (il-lu'mi-nant). That which affords light.
Imitable (im'i-ta-ble). Capable of being imitated or copied.
Immersed (im-merst'). Covered by water or other fluid; plunged.
Immersion (im-mer'shun). The plunging of a body into a liquid.
Immune (im-mun'). Safe from attack; protected by vaccination.
Immunity (im-mu'ni-te). Freedom from risk of infection.
Immunization (im-mu-ni-za'shun). The act of rendering immune.
Impervious (im-per've-us). Not permitting a passage.
Impetigo (im-pet'i-go). An acute pustular inflammation of the skin.
Impotence (im'po-tense). Want of strength or power, physical, intellectual, or moral; weakness; defect of power to perform anything.
Impregnate (im-preg'ate). To fertilize or make pregnant.
Impregnation (im-preg-na'shun). The act of impregnating; the state of becoming impregnated.
Impressible (im-pres'ible). Capable of being impressed.
Impression (im-presh'un). A hollow or depression.
Impurity (im-pu'ri-te). That which is impure; foul matter.
Inanimate (in-an'i-mate). Destitute of life; dead; dull; inactive.
Inanition (in-ah-nish'un). Emptiness; exhaustion from fasting.
Inarticulate (in-ar-tik'u-late). Vocal sounds not arranged into syllables.
Incoherent (in-ko-he'rent). Not connected or coherent.
Incontinence (in-kon'ti-nense). Involuntary evacuation.
Incubation (in-ku-ba'shun). The time elapsing from exposure to a disease until symptoms appear.
Incus (in'kus). The middle bone of the inner ear.
Indigenous (in-dij'e-nus). Native; produced in a country.
Indolent (in'do-lent). Sluggish; of slow growth.
Indurated (in-du-ra'ted). Hardened.
Induration (in-du-ra'shun). The hardening of a tissue or part.
Indurative (in'du-ra-tiv). Pertaining to induration.
Inebriant (in-e'bre-ant). An intoxicating substance.
Inebriation (in-e-bre-a'shun). A drunken condition.
Inertia (in-er'shah). Sluggishness; inactivity.
Infant (in'fant). A baby, less than two years of age.
Infantile (in'fan-til). Pertaining to infancy.
Infantile Paralysis (in'fan-til pa-ral'i-sis). Acute inflammation of the anterior horns of the gray matter of the spinal cord.
Infection (in-fek'shun). The communication of disease germs.
Inferior (in-fe'ri-or). Lower.
Infiltration (in-fil-tra'shun). A fluid effusion into an organ or a tissue.
Infinite (in'fi-nite). Immeasurable, boundless; vast; countless; unbounded.
Infirm (in-ferm'). Weak or feeble.
Inflammation (in-flam-ma'shun). A morbid condition with pain, heat, swelling and disordered function.
Inflammatory (in-flam-ma-to-re). Pertaining to inflammation.
Inflation (in-fla'shun). Distended with air.
Inflexion (in-flek'shun). A bending inward.
Influenza (in-flu-en'zah). A contagious epidemic catarrhal fever with great prostration and varying symptoms and sequels; grip.
Influx (in'fuks). An inflow.
Infusion (in-fu'shun). Extracting properties by steeping. The slow injection of liquid into a vein.*
Ingesta (in-jes'tah). Substances introduced into the body as food.
Ingestion (in-jes'chun). The introduction of food into the body.
Ingredient (in-gre'de-ent). Any part of a compound.
Inguinal (in'gwin-al). Pertaining to the groin.
Inhalation (in-ha-la'shun). The inbreathing of air.

Inhaled (in-hald'). See inhalation.
Injection (in-jek'shun). The forcing of a liquid into a cavity, part or vessel of the body.
Innervation (in-ner-va'shun). A state of nervelessness; special activity excited in any part of the nervous system.
Innominate (in-nom'i-nate). Nameless. A term applied to many parts of the body in place of more specific names.
Inoculation (in-ok-u-la'shun). The introduction of specific virus into the system.
Inodorous (in-o'dor-us). Having no smell.
Inosculating (in-os'ku-lat-ing). Directly joining.
Insidious (in-sid'e-us). Not manifest; hidden or stealthy.
Insidious (in-sip'id). Wanting the qualities which affect the organs of taste; flat in taste.
Insoluble (in-sol'u-ble). Incapable of solution.
Insomnia (in-som'ne-ah). Inability to sleep.
Inspiration (in-spi-ra'shun). The inhalation of air into the lungs.
Integument (in-teg'u-ment). A covering, especially the skin.
Intellect (in'tel-ekt). The mind or the reasoning power.
Intellection (in-tel-ek'shun). Mental activity.
Intemperance (in-tem'per-ance). The immoderate use of food or drink or both.
Intensity (in-ten'si-te). A high degree of power or activity.
Intercellular (in-ter-sel'u-lar). Between cells.
Intercostal (in-ter-kos'tal). Between the ribs.
Interglobular Spaces (in-ter-glob'u-lar spa'sez). Certain irregular areas near the outside of the teeth.
Interlobular (in-ter-lob'u-lar). Between lobules.
Interment (in-ter'ment). The burial of the dead.
Intermittent (in-ter-mit'ent). Occurring at intervals.
Internal (in-ter'nal). On the inside.
Interstices (in-ter'sti-sez). Spaces; intervals; pores.
Interstitial (in-ter-stish'al). Lying or placed between.
Intestinal (in-tes'ti-nal). Pertaining to the intestines of the animal body.
Intestine (in-tes'tine). The digestive tube from the stomach to the anus.
Intima (in'tim-ah). The innermost coat of the vessels.
Intimitis (in-tim-i'tis). Inflammation of an intima.
Intraocular (in-trah-ok'u-lar). Within the globe of the eye.
Intravenous (in-trah-ve'nus). Within a vein.
Intrinsic (in-trin'sik). Inherent; inward. Peculiar to a part.
Introversion (in-tro-ver'shun). A turning inward.
Intuitively (in-tur'i-tive-le). By immediate perception; without reasoning.
Intussusception (in-tus-sus-sep'shun). The falling of one part of an intestine into another.
Inunction (in-ungk'shun). The act of rubbing in an ointment.
Iodid (i'o-did). A compound of iodine.
Iodin (i'o-din). A poisonous nonmetallic element with a metallic luster, used in medicine as an alterative.
Iodoform (i-o'do-form). A yellow antiseptic powder used largely in medicine.
Ipecac (ip'e-kak). See ipecacuanha.
Ipecacuanha (ip-e-kak-u-an'ha). The roots of tropical herbs and shrubs used as an emetic, expectorant and cholagog.
Iridectomy (ir-id-ek'to-me). The cutting of part of the iris.
Iris (i'ris). The colored membrane of the anterior part of the eye.

Iritis (i-ri'tis). Inflammation of the iris.
Irrigate (ir'ri-gate). To wash out.
Irritable (ir'ri-ta-ble). Easily inflamed or irritated.
Irritation (ir-ri-ta'shun). Excitement; stimulation.
Isinglass (i'zing-glas). A pure gelatin made chiefly from the air bladders of sturgeons.
Isolation (i-so-la'shun). The seclusion of patients with contagious diseases.

J

Jactitation (jak-ti-ta'shun). Restlessness; a moving to and fro.
Jamaicin (ja-ma'sin). Bitter cathartic substance from the bark of the cabbage-tree.
Jaundice (jawn'dis). A yellow coloration of the skin.
Jaw (jaw). Either of the two maxillary bones serving the purpose of seizing and masticating the food.
Jecur (je'ker). The liver.
Jejunal (je-ju'nal). Pertaining to jejunum.
Jejunitas (je-ju'ni-tas). Fasting.
Jejunum (je-ju'num). The upper two-fifths of the small intestine.
Jugal (ju'gal). Connecting or uniting.
Jugular (ju'gu-lar). Pertaining to the throat.
Jugulation (jug-u-la'shun). The swift arrest of disease by therapeutics.
Julep (ju'lep). A sweetened liquid medicine.

K

Kalium (ka'le-um). See potassium.
Karyon (kar'e-on). The cell-nucleus.
Karyoplasm (kar'e-o-plasm). The nuclear substances of a cell.
Kefir (ke'fer). See kephyr.
Kenophobia (ken-o-fo'be-ah). A fear of large empty spaces.
Kephr (ke'fer). A variety of fermented milk.
Kerasin (ker'a-sin). A cerebrosid occurring in brain-tissue.
Keratitis (ker-a-ti'tis). Inflammation of the cornea.
Kerion (ke're-on). A pustular scalp disease.
Kidney (kid'ne). The organ secreting urine.
Kinesiotherapy (kin-e-sip'a-the). The gymnastic treatment of disease.
Kinesodic (kin-e-sod'ik). Pertaining to motor impulses.
Kinesthesia (kin-es'the-sis). The sense by which muscular movement is appreciated.
Kleptomania (klep-to-ma'ne-ah). A morbid desire to steal.
Kola (ko'lah). The seeds of *Cola Acuminata*, used as a nervine and cardiac stimulant.
Kumis (koo'mis). Fermented mare's milk.

L

Labia (la'bi-ah). The lips.
Lachrymal (lak'ri-mal). Pertaining to or secreting tears.
Lactation (lak-ta'shun). The function of secreting and excreting milk.
Lacteal (lak'te-al). Pertaining to milk. One of the lymphatics of the small intestine that takes up chyle.
Lactopeptine (lak-to-pep'tin). The proprietary name for a mixture of pepsin diastase and pancreatin with lactic and hydrochloric acid.
Lamina (lam'in-ah). A thin layer or scale.
Laminated (lam'i-na-ted). Arranged in layers.
Lamination (lam-i-na'shun). Arrangement in plates or layers.
Lancet (lan'set). A two-edged surgical knife.

- Lancinating* (lan'si-na-ting). Piercing; darting; as a pain.
- Languor* (lan'gwer). Lassitude; feebleness; weakness.
- Larva* (lar'va). An insect in its earliest form after leaving the egg.
- Laryngitis* (lar-in-ji'tis). Inflammation of the larynx.
- Laryngophthisis* (lar-in-gof-thi'sis). Tuberculosis of the larynx.
- Laryngoplasty* (lar-in'go-plas-te). Plastic surgery of the larynx.
- Laryngoscope* (lar-in'go-skop). An instrument for the examination of the larynx.
- Laryngoscopy* (lar-in-gos'ko-pe). Inspection of the larynx.
- Laryngospasm* (lar-in-go-spasm). Spasmodic contracture of the glottis.
- Laryngotomy* (lar-in-got'o-me). The operation of cutting into the larynx.
- Larynx* (lar'ingks). The upper part of the windpipe; organ of voice.
- Lassitude* (las'si-tude). Weakness; exhaustion; dullness; weariness.
- Latent* (la'tent). Concealed; not manifest.
- Lateral* (lat'er-al). Pertaining to the side.
- Laudanum* (lod'an-um). Tincture of opium.
- Lavandula* (lav-an'du-lah). A genus of plants.
- Laxative* (laks'a-tiv). A mild purgative.
- Leech* (lech). A blood-sucking aquatic worm.
- Legume* (leg'um). A pod or cod, as a pea-pod as a peascod.
- Legumin* (leg-u'min). A nitrogenous proteid from legumes, as peas, beans, etc.
- Leptandra* (lep-tan'drah). The laxative root of veronica virginica.
- Leptandrin* (lep-tan'drin). A purgative resinoid from leptandra.
- Lesion* (le'zhun). Structure tissue-change from injury or disease; a hurt or wound.
- Lethargy* (leth'ar-je). A condition of drowsiness.
- Leucorrhœa* (lu-ko-re'ah). A white discharge from the vagina.
- Lichen* (li'ken). A papular inflammation of the skin.
- Licorice* (lik'o-ris). The root and extract *Glycyrrhiza glabra*.
- Lienteric* (li-en-ter'ik). Pertaining to a special form of diarrhœa.
- Ligament* (lig'a-ment). A band of fibrous tissue binding parts together.
- Ligamentum* (lig-a-men'tum). A ligament.
- Ligation* (li-ga'shun). The operation of tying, as of an artery.
- Ligature* (lig'a-chur). The material used for tying.
- Lincture* (link'ture). A soothing cough medicine.
- Liniment* (lin'i-ment). A liquid preparation for external use.
- Liquid* (lik'wid). A substance that flows.
- Liquorice* (lik'o-ris). Same as licorice.
- Lithontriptic* (lith-on-trip'tik). A medicine which destroys a stone in the bladder.
- Lithotomy* (li-thot'o-me). The operation of cutting for stone in the bladder.
- Lithotripsy* (li-thot'ri-te). The operation of breaking a stone in the bladder into small pieces capable of being voided.
- Livid* (liv'id). Discolored from the effects of congestion or contusion; black and blue.
- Lobe* (lob). A rounded division of an organ.
- Lobule* (lob'ul). A small lobe.
- Lochia* (lo-ki'ah). The evacuations which follow childbirth.
- Locomotion* (lo-ko-mo'shun). Animal movement.
- Longevity* (lon-jev'i-te). Long life.
- Lotion* (lo'shun). Any medicinal solution for external use.
- Lumbago* (lum-ba'go). Pain in the loins.
- Lumbar* (lum'bar). Pertaining to the loins.
- Lunar Caustic* (lu'nar kaws'tik). Silver nitrate.
- Lung* (lung). One of the two organs of respiration.
- Lymph* (limf). A colorless alkaline fluid in the lymphatics.
- Lymphatics* (lim-fat'iks). The lymph-tubes of the body; vessels which carry lymph.
- Lyra of the Fornix* (li'rah for'niks). The harp-like portion of the fornix formed by cross-lying fibers running from one crus fornicis to the other as they come together.
- Lysis* (li'sis). Gradual decline of a disease, especially a fever.

M

- Maceration* (mas-er-a'shun). Steeping in fluid; softening.
- Magnesia* (mag-ne'ze-ah). Magnesium oxid; a laxative.
- Malady* (mal'a-de). An illness or disease.
- Malaise* (ma-laz'). A feeling of uneasiness or discomfort.
- Malaria* (ma-la'ri-a). An infectious disease caused by a blood-parasite.
- Malarial Fever* (ma-la're-al fe'ver). The periodic fever of malaria.
- Malassimilation* (mal-as-sim-i-la'shun). Imperfect assimilation or nutrition; faulty digestion, conversion and appropriation of nutriment.
- Malformation* (mal-for-ma'shun). Ill or wrong formation. An abnormal shape or structure.
- Malignant* (ma-lig'nant). Virulent; fatal.
- Malleolus* (mal-le'o-lus). A projection of either bone of the lower leg where it joins the ankle.
- Malleus* (mal'e-us). A small bone of the internal ear.
- Mamma* (mam'ah). The breast; an organ for secreting milk.
- Mammary* (mam'a-re). Pertaining to the mammas.
- Maniacal* (man-ni'a-kal). Having the nature of madness.
- Manikin* (man'i-kin). A model of a human being.
- Manipulation* (ma-nip-u-la'shun). Manual treatment; handling.
- Manipulus* (ma-nip'u-lus). A handful.
- Marginal* (mar'jin-al). Pertaining to, or at, the border of.
- Marsh-fever* (marsh-fe'ver). Malarial fever.
- Marvelous* (mar've-lus). Wonderful; strange; exciting wonder or some degree of surprise.
- Massage* (mas-sazh'). Manipulation; methodic pressure; friction and kneading of the body.
- Mastication* (mas-ti-ka'shun). The act or operation of masticating or chewing food.
- Masticatory* (mas'ti-ka-to-re). Chewing; adapted to perform the office of chewing food.
- Mastitis* (mas-ti'tis). Inflammation of the breast.
- Matrix* (ma'triks). A producing or containing substance; intercellular tissue, as of cartilage. The womb.
- Mature* (ma-chur'). Ripe; fully developed.
- Maturity* (ma-tu'ri-te). Ripeness; the state or quality of being mature.
- Matzoon* (mat'zun). Milk treated with a peculiar ferment.
- Maxilla* (maks-il'ah). One of the upper or lower jawbones.
- Maxillary* (maks'il-a-re). Pertaining to the jaws.
- Maximum* (maks'i-mum). The height of a disease. The largest quantity.

- Meatus** (me-a'tus). A passage or opening.
- Meconium** (me-ko'ni-um). The first fecal discharges of a new-born infant.
- Medulla** (me-dul'lah). The marrow in various cavities or any fatty substance resembling marrow. The spinal cord.
- Medullary** (med'ul-la-re). Pertaining to, consisting of, or resembling marrow.
- Membrane** (mem'bran). A thin enveloping or lining substance.
- Membranous** (mem'bran-us). Having the nature of a membrane.
- Meningeal** (men-in'je-al). Pertaining to the meninges.
- Meninges** (men-in'jez). The membrane of the brain and cord.
- Meningitis** (men-in-ji'tis). Inflammation of the meninges.
- Menopause** (men'o-pauz). The end of the menstrual life.
- Menses** (men'ses). The monthly flow of females.
- Menstrual** (men'stru-al). Pertaining to menstruation.
- Menstruation** (men-stru-a'shun). Function of the female producing menstrual flow.
- Menstruum** (men'stru-um). A solvent.
- Mesenteric** (mes-en-ter'ik). Pertaining to the mesentery.
- Mesentery** (mes'en-ter-e). The peritoneal attachment of the small intestine.
- Metabolism** (met-ab'o-lism). A change in the intimate condition of cells, constructive or destructive.
- Metamorphosis** (met-a-mor'fiz-m). See metamorphosis.
- Metamorphopsia** (met-a-mor-fop'se-ah). A visual defect with an apparent distortion of objects.
- Metamorphosis** (met-a-mor'fo-sis). Transformation; structural change.
- Metastasis** (me-tas'ta-sis). A change in the seat of a disease.
- Meteorology** (me-te-or-ol'o-je). The science which treats of atmospheric phenomena.
- Meter** (me'ter). The unit of linear measure of the metric system.
- Miasma** (mi'azm). See miasma.
- Miasma** (mi-as'ma). Infection floating in the air.
- Microbic** (mi-kro'bik). Pertaining to microbes.
- Micrococcus** (mi-kro-kok'kus). A genus of fission-fungi in which the cells are spherical or oval.
- Micrology** (mi-krol'o-je). The science of microscopic objects.
- Microorganism** (mi-kro-or'gan-izm). A minute living body.
- Microscopic** (mi-kro-skop'ik). Minute; very small; visible only by the aid of a microscope.
- Microscopist** (mi-kro'skop-ist). One skilled in microscopy.
- Microscopy** (mi-kros'ko-pe). The use of the microscope.
- Micturition** (mik-tu-rish'un). The act of voiding urine.
- Midwife** (mid'wif). A woman who assists women in childbirth.
- Migraine** (mi-gran'). A headache characterized by a vehement pain confined to one side of the head.
- Mildew** (mil'du). The common name for any one of a number of small fungi destructive to living plants and dead vegetable substances.
- Miliaria** (mil-e-a're-ah). Sudamina; a disorder of the sweat-glands with obstruction of their ducts.
- Minim** (min'im). The smallest liquid measure; about equal to a drop.
- Minimum** (min'i-mum). The smallest amount.
- Miscarriage** (mis-kar'age). The expulsion of the fetus between the fourth and sixth months of pregnancy. Abortion.
- Mitigated** (mit'i-ga-ted). Made milder.
- Mitral** (mi'tral). Miter-like; applied to the left auriculoventricular valve of the heart.
- Mitral Valves** (mi'tral valves). The valves of the heart.
- Mobile** (mo'bil). Movable.
- Mobile spasm** (mo'bile spazm). A form of tonic spasm with slow and irregular movements of the limbs.
- Mobility** (mo-bil'i-te). The property of being easily moved.
- Molecular** (mo-lek'u-lar). Pertaining to molecules.
- Molecule** (mol'e-kul). The smallest quantity of a substance that may exist and preserve its characteristic qualities.
- Molluscum** (mol-lus'kum). A chronic skin disease with pulpy tumors.
- Momentous** (mo-men'tus). Very important; weighty; of the greatest consequence.
- Monogamous** (mo-nog'a-mus). Upholding the practice of marrying only one.
- Monoxid** (mon-oks'id). An oxid with one oxygen atom.
- Monster** (mon'ster). An organism of abnormal development, especially one in which parts or organs are duplicated; a prodigy; a marvel.
- Monstrosity** (mon-stros'i-te). The condition of a monster; a monster.
- Monstrous** (mon'strus). Unnatural in form; out of the common course of nature; frightful; horrible.
- Morbid** (mor'bid). Diseased; sickly; not sound and healthful.
- Morbidity** (mor-bid'i-te). The proportion of disease to health in a community.
- Morbific** (mor-bif'ik). Causing disease.
- Morphea** (mor-fe'ah). A skin disease in which pinkish patches show in firm lesions often leaving a scar-like marking upon their disappearance.
- Mortal** (mor'tal). Liable to death; deadly.
- Mortality** (mor-tal'i-te). The death rate. The state of being mortal.
- Mortification** (mor-ti-fi-ka'shun). See gangrene.
- Mortify** (mor'ti-fi). To lose vitality and organic structure while yet a portion of a living body; to gangrene.
- Motile** (mo'til). Capable of spontaneous motion.
- Mucopurulent** (mu-ko-pur'u-lent). Containing mucus and pus.
- Mucous Membrane** (mu'cus mem'bran). The membrane lining all the cavities of the body which open externally.
- Mucus** (mu'kus). The viscid liquid secretion of mucous membrane.
- Mullein** (mul'in). See verbascum.
- Muscarin** (mus'ka-rin). An alkaloid from fly-fungus.
- Musculomembranous** (mus-ku-lo-mem'bran-us). Composed of muscle and membrane.
- Mutilation** (mu-ti-la'shun). The loss of a member of an organ.
- Myalgia** (mi-al'je-ah). Pain in the muscles.
- Myelitis** (mi-el-i'tis). Inflammation of the spinal cord.
- Myelon** (mi'el-on). The spinal cord.
- Myopia** (mi-o'pe-ah). Near-sightedness; a visual defect from focalization of the image in front of the retina.
- Myopic** (mi-op'ik). Pertaining to myopia.
- Myrrh** (mur). A gum resin from Commiphora Myrrha; it is a stimulant tonic.

N

Nanism (nan'izm). Dwarfishness; the state of being undersized.
Nanous (nan'us). Dwarfed.
Nape (nap). The back of the neck; the nucha.
Narcotic (nar-kot'ik). A hypnotic allaying pain.
Nares (na'rez). Plural of naris.
Naris (na'riz). The nostril.
Nasal (na'sal). Pertaining to the nose.
Nasal Bones (na'sal bones). Two small bones forming the arch of the nose.
Nasitis (na-zi'tis). Inflammation of the nose.
Nausea (naw'se-ah). Sickness at the stomach; a desire to vomit.
Nauseant (naw'se-ant). A substance which produces nausea.
Necrosis (ne-kro'sis). The death of a circumscribed piece of tissue.
Nematoid (nem'a-toid). Resembling a thread. A thread-worm.
Nephritic (ne-frit'ik). Pertaining to the kidneys.
Nephritis (ne-fri'tis). Inflammation of the kidneys.
Nervine (nerv'ine). A medicine which soothes nervous excitement.
Neuralgia (nu-ral'je-ah). Pain in a nerve.
Neurilemma (nu-ril-em'ah). The sheath incasing a nerve.
Neuroglia (nu-rog'le-ah). The reticulated framework of the substance of the brain and spinal cord.
Neurolemma (nu-rol-em'ah). See neurilemma.
Neuroma (nu-ro'mah). A nerve-tumor.
Neurosis (nu-ro'sis). Any disease of the nerves in which no structural change is apparent.
Nevus (ne'vus). A birth-mark.
Nidus (ni'dus). A nest. A cluster. A focus of infection.
Nitre (ni'ter). Saltpeter; nitrate of potash.
Nitrogen (ni'tro-jen). A colorless nonmetallic, gaseous element. A main constituent of air.
Nitrogenous (ni-troj'e-nus). Containing nitrogen.
Nitroglycerin (ni-tro-glis'er-in). An oily, toxic, explosive liquid.
Noctambulation (nok-tam-bu-la'shun). Sleep-walking.
Nocturnal (nok-ter'nal). Pertaining to the night.
Nodal (no'dal). Relating to a node.
Node (nod). An indurated swelling on a tendon or a bone.
Nodular (nod'u-lar). Covered with nodes.
Nonviable (non-vi'a-ble). Not able to live.
Normal (nor'mal). Healthy; natural.
Normoblast (nor'mo-blast). A blood corpuscle of normal size.
Nosography (no-sog'ra-fe). A description of disease.
Nosology (no-sol'o-je). The science of diseases; the scientific classification of diseases.
Nostalgia (nos-tal'je-ah). Homesickness.
Nostrum (nos'trum). A quack or patent medicine.
Noxious (nok'shus). Harmful; poisonous.
Nucha (nu'kah). See nape.
Nuclear (nu'kle-ar). Pertaining to the nucleus.
Nucleus (nu'kle-us). The controlling center of a muscle or organ. The central element in a compound.
Nutrient (nu'tri-ment). Anything that nourishes.
Nutritious (nu-trish'us). Yielding nourishment.
Nutritive (nu'tri-tiv). Affording nutrition.

O

Obese (o-bes'). Extremely fat; corpulent.
Obesity (o-bes'i-te). Fatness; corpulence.
Object-blindness (ob'jekt blind'nes). An inability to comprehend objects seen.
Oblique (ob-lek'). Slanting; inclined.
Oblongata (ob-lon-ga'tah). The medulla oblongata.
Obstetrician (ob-ste-trish'an). One who practices obstetrics.
Obstetrics (ob-stet'riks). The science of the care of women during pregnancy, childbirth and the puerperium.
Obstinate (ob'ste-nate). Not yielding to treatment; not easily subdued.
Occipital (ok-sip'i-tal). Pertaining to the occiput.
Occiput (ok'si-put). The back part of the head.
Occlusion (ok-klu'shun). The blocking up of an opening.
Ocher or Ochre (o'ker). Yellow colored clay.
Odorant (o'dor-ant). Odorous; fragrant; a perfume.
Odoriferous (o-dor-if'er-us). Yielding an odor; sweet of scent.
Officinal (off-is'in-al). For sale by pharmacists.
Ointment (oint'ment). A soft, greasy substance or compound used for smearing over any surface, particularly the body or a diseased part.
Oleaginous (o-le-aj'in-us). Having the nature of oil.
Olfaction (ol-fak'shun). The sense of smell.
Olfactory (ol-fak'to-re). The organ of smell; pertaining to smelling; having the sense of smell.
Opacity (o-pas'i-te). Nontransparency; darkness; obscurity.
Opalisin (o-pal-is'in). A proteid in human milk.
Ophthalmic (off-thal'mik). Pertaining to the eye.
Ophthalmoscope (of-thal'mo-skope). A perforated mirror used in inspecting the interior of the eye.
Opiate (o'pe-ate). An opium preparation; a hypnotic.
Optic (op'tik). Pertaining to the eye.
Orbicular (or-bik'u-lar). Circular; spheric.
Orbicular Bone (or-bik'u-lar bone). The round prominence at the end of the incus.
Orbicular Ligament (or-bik'u-lar lig'a-ment). The circular ligament surrounding the head of the radius.
Orbicularis (or-bik-u-la'ris). A name given to muscles whose fibres encircle an orifice.
Orbit (or'bit). The bony cavity for the eyeball.
Orbital (or'bit-al). Pertaining to the orbit.
Organic (or-gan'ik). Pertaining to or having organs.
Organism (or'gan-ism). A living, organized being.
Orifice (or'i-fis). The mouth or aperture of a tube, pipe or other cavity.
Orolingual (o-ro-ling'gwal). Pertaining to the mouth and tongue.
Orthopnea (or-thop'ne-a). A disease in which a person can breathe only when sitting up.
Oscheitis (os-ke-i'tis). Inflammation of the scrotum.
Oscillation (os-sil-la'shun). A swinging or vibration.
Oscitation (os-si-ta'shun). The act of yawning or gaping.
Osculation (os-ku-la'shun). Anastomosis; the act of kissing.
Osseous (os'e-us). Bony; resembling bone.
Ossification (os-si-fi-ka'shun). The change or process of change of flesh or other matter of animal bodies into bony substances.
Otoscope (o'to-skope). An instrument for inspecting the ear.

Ovary (o'va-re). The organ of the female in which ova are formed in animals.
Ovariectomy (o-va-ri-ot'o-me). A surgical operation in which an ovary is taken out.
Ovule (o'vul). The unimpregnated ovum. Any small egglike structure.
Ovum (o'vum). The female reproductive cell of an animal or vegetable; an egg.
Oxid (oks'id). Any binary combination of oxygen.
Oxidation (oks-i-da'shun). The conversion into an oxid.
Oxygen (oks'i-jen). One of the gaseous elements; the supporter of life and combustion.
Oxygenation (oks-i-jen-a'shun). Saturation with oxygen.
Oxyuris (oks-i-u'ris). A genus of nematoid worms.
Ozen (o-ze'nah). A fetid nasal ulceration and discharge.
Ozone (o'zon). An allotropic form of oxygen used as an antiseptic and oxidizing agent.

P

Pabulum (pab'u-lum). Food; anything nutritive.
Palatableness (pal'a-ta-ble-nes). The quality of being agreeable to the taste.
Palate (pal'ate). The roof of the mouth and floor of the nose.
Palatitis (pal-a-ti'tis). Inflammation of the palate.
Palliate (pal'e-ate). To soothe or mitigate.
Palliative (pal'e-a-tiv). Mitigating; relieving.
Pallor (pal'or). Paleness.
Palpable (pal'pa-ble). Easily perceived and detected; unmistakable; plain.
Palpitation (pal-pi-ta'shun). Violent pulsation, as of the heart.
Palsy (pawl'se). See paralysis.
Panacea (pan-a-se'ah). A remedy for all diseases.
Panada (pa-na'da). A food made by pouring boiling water over toasted bread, sweetening and flavoring with mace, nutmeg or wine.
Pancreas (pan'kre-us). A racemose gland in the abdomen; the sweetbread.
Pancreatic (pan-kre-at'ik). Relating to the pancreas.
Pancreatin (pan'kre-a-tin). A ferment from the juice of the pancreas.
Papillae (pa-pil'la). A nipple of the breast. The minute elevations on the surface of the skin, as on the tongue.
Papular (pap'u-lar). Consisting of papules.
Papule (pap'ul). A small elevation of the skin.
Paralysis (pa-ral'i-sis). Loss of sensation or voluntary motion.
Paralytic (par-ah-lit'ik). A person affected with paralysis.
Paraplegia (par-ah-ple'je-ah). Paralysis of the legs.
Parasite (par'a-site). An organism that inhabits another organism and obtains nourishment from it.
Parasiticide (par-a-sit'i-side). A substance destroying parasites.
Paregoric (par-e-gor'ik). A camphorated tincture of opium.
Parenchyma (pa-ren'ki-mah). The tissue outside the blood vessels and derived from the blood; the cellular and fibrous substance of the glands and other solid organs.
Parenchymatitis (par-en-kim-a-ti'tis). Inflammation of the parenchyma.
Parietal (pah-ri'e-tal). Pertaining to a wall.
Parietal Bones (pah-ri'e-tal bones). The bones forming the cranial sides and roof.

Parotid (pa-rot'id). Situated near the ear.
Parotid Glands (pa-rot'id glands). The glands of the cheeks which secrete the saliva.
Paroxysm (par'oks-izm). A period of increase or crisis of a disease.
Paroxysmal (par-oks-is'mal). Pertaining to paroxysm.
Parturition (par-tu-rish'un). The act of giving birth to young.
Pasteurism (pas-ter'ism). Vaccination.
Pasteurization (pas-ter-i-za'shun). The destruction by heating of microbic life in a substance.
Patella (pa-tel'lah). The kneecap or cap of the knee.
Patency (pa'ten-se). The condition of being open.
Pathetic (path-et'ik). That which appeals to or stirs the passions.
Pathogenic (path-o-gen'ik). Causing disease.
Pathognomonic (path-og-no-mon'ik). Characteristic; peculiar to.
Pathognomy (path-og'no-me). The science of the signs by which disease is recognized.
Pathologic (path-o-loj'ik). Pertaining to pathology.
Pathologist (pa-thol'o-jist). A specialist in pathology.
Pathology (pa-thol'o-je). The science of diseases.
Peat (peet). Partially carbonized vegetable material in bogs.
Pectoral (pek'to-ral). Pertaining to the breast. A remedy for chest diseases.
Pectoralis (pek-tor-a'lis). A muscle of the breast.
Pedicle (ped'ik-l). The stalk or attachment of a tumor.
Pediculus (pe-dik'u-lus). The lice that infest man.
Peduncle (pe'dung-kl). A supporting part.
Pedunculated (pe-dung'ku-lat-ted). Having a peduncle.
Pelvis (pel'vis). The bony basin of the trunk formed by the innominate bones and the sacrum.
Pemphigus (pem'fig-us). A skin disease with an eruption of blisters.
Pendulous (pen'du-lus). Hanging or drooping.
Pepsin (pep'sin). A ferment found in gastric juice.
Peptone (pep'tone). A proteid derived from any native proteid through the action of hydralizing agents.
Peptonized (pep'ton-izd). Converted into peptones.
Peptonoid (pep'ton-oid). A substance resembling a peptone.
Perception (per-sep'shun). The acquiring of impressions through the senses.
Perceptivity (per-sep-tiv'i-te). Capacity to receive impressions.
Percolation (per-ko-la'shun). The process of extracting soluble constituents from powdered substances by allowing a solvent to trickle slowly through.
Percussion (per-kush'un). Diagnosis by striking the body a sharp slight blow.
Perflation (per-fla'tion). The act of blowing through.
Perforate (per'fo-rate). To pierce with holes.
Perforator (per'fo-ra-tor). An instrument to open the skull.
Pericarditis (per-e-kar-di'tis). Inflammation of the pericardium.
Pericardium (per-e-kar'de-um). Membranous sac around the heart.
Perineum (per-i-ne'um). The space between the thighs from anus to genitalia.
Periodic (pe-re-od'ik). Occurring at intervals.
Periodicity (pe-re-o-dis'i-te). Recurrent at regular intervals.

- Periodontitis** (pe-re-o-don-ti'tis). Inflammation of the membrane of a tooth-socket.
- Periosteal** (per-e-os'te-al). Pertaining to periosteum.
- Periosteitis** (per-e-os-te-i'tis). Inflammation of the periosteum.
- Periosteum** (per-e-os'te-um). The fibrous membrane investing the surface of bones except at the points of tendinous and ligamentous attachment, and on the articular surfaces where cartilage is substituted.
- Periostitis** (per-e-os'ti'tis). See periosteitis.
- Peripheral** (per-if'er-al). Pertaining to the periphery.
- Periphery** (per-if'er-e). The circumference or bounding line.
- Peristalsis** (per-isi-tal'sis). The vermicular motion of the bowels.
- Peristaltic** (per-i-stal'tik). Belonging to the vermicular contraction and motion of vascular canals, as the alimentary, the circulating, and the generative tubes.
- Peristole** (per-is'to-le). The same as peristalsis.
- Peritoneal** (per-i-to-ne'al). Pertaining to the peritoneum.
- Peritoneum** (per-i-to-ne'um). Serous membrane lining of the abdomen.
- Peritonitis** (per-i-ton-i'tis). Inflammation of the peritoneum.
- Perityphlitis** (per-i-tif-li'tis). Inflammation around the cecum.
- Permanganate** (per-man'ga-nate). A salt of permanganic acid.
- Permeable** (per'me-a-ble). Pervious; capable of being passed through without rupture, as solid matter.
- Permeate** (per'me-ate). To pass through the pores of a substance; to saturate.
- Pernicious** (per-nish'us). Highly destructive; fatal.
- Peroxid** (per-ok's'id). An oxid with the highest amount of oxygen.
- Perpetuation** (per-pet-u-a'shun). The act of making perpetual or preserving from extinction through an endless existence, or for an indefinite period of time.
- Perspiration** (per-spi-ra'shun). Excretion of liquid from the skin; sweating.
- Pervious** (per've-us). Permitting penetration.
- Pessary** (pes'sah-re). An instrument placed in the vagina to support the uterus.
- Pestilence** (pes'ti-lence). Any deadly epidemic disease.
- Petechia** (pe-te'ke-ah). A small spot of discoloration beneath the epidermis.
- Petechial** (pe-te'ke-al). Pertaining to petechias.
- Petrolatum** (pet-ro-la'tum). Soft, unctuous substance obtained from petroleum.
- Petrous** (pe'trus). Resembling stone.
- Phagedena** (faj-e-de'nah). Gangrenous ulceration; a spreading obstinate ulcer.
- Pharmaceutic** (far-mah-su'tik). Pertaining to drugs.
- Pharmacist** (far'ma-sist). An apothecary or a druggist.
- Pharyngeal** (far-in'je-al). Pertaining to the pharynx.
- Pharynx** (far'ingks). The muscular sac behind the mouth.
- Phenol** (fe'nol). Carboic acid.
- Phenomenon** (fe-nom'e-non). A symptom. Uncommon occurrence.
- Phlebitis** (fleb-i'tis). Inflammation of a vein.
- Phlebotomy** (fle-bot'o-me). The act or practice of opening a vein for letting blood.
- Phlegm** (flem). Watery humor; mucus from the bronchi.
- Phlegmatic** (fleg-mat'ik). Pertaining to phlegm. Slow, dull.
- Phlegmon** (fleg'mon). Suppurative inflammation of areolar tissue.
- Phlegmonous** (fleg'mon-us). Of the nature of a phlegmon.
- Phlogistic** (flo-jis'tik). Inflammatory.
- Phlyctena** (flik-te'nah). A vesicle with serous contents; a blister.
- Phlyctenular** (flik-ten'ular). Having the nature of Phlyctenule.
- Phlyctenule** (flik-ten'ul). A minute vesicle or phlyctena.
- Phosphate** (fos'fate). A salt of phosphoric acid.
- Phosphorated** (fos'for-a-ted). Combined with phosphorus.
- Phosphorus** (fos'for-us). One of the elements in bone and nerve tissue.
- Phrenic** (fren'ik). Pertaining to the diaphragm.
- Phthisical** (this'ik-al). Of, belonging to, or suffering from phthisis.
- Phthisis** (thi'sis) or (ti'sis). A wasting or consumption.
- Physiognomy** (fiz-e-og'no-me). The act of reading character by the study of the face.
- Physiology** (fiz-e-ol'o-je). The science of the functions of the body.
- Physiolysis** (fiz-e-ol'i-sis). The falling to pieces of dead tissue.
- Physostigma** (fi-so-stig'mah). A genus of plants.
- Pigment** (pig'ment). An organic coloring matter.
- Pith** (pith). The marrow of bones. The spinal cord.
- Pityriasis** (pit-i-ri'a-sis). A scaly skin disease.
- Placenta** (pla-sen'tah). The flat, round, spongy body forming the organ of nutrition for the fetus; the after birth.
- Plasma** (plas'mah). The fluid part of the blood and lymph.
- Plasmodium** (plas-mo'de-um). The motile mass of protoplasm formed by the organic fusion of two or more amebiform bodies.
- Plastic** (plas'tik). Capable of being molded.
- Plasticity** (plas-tis'i-te). The state of being plastic.
- Plethora** (pleth'o-rah). Abnormal fullness of the blood-vessels.
- Plethoric** (pleth'o-rik). Pertaining to plethora. Full blooded.
- Pleura** (plu'rah). The serous membrane enveloping the lungs.
- Pleurisy** (plu'ri-se). See pleuritis.
- Pleuritis** (plu-ri'tis). Inflammation of pleura.
- Pleurodynia** (plu-ro-din'e-ah). Pain in the intercostal muscles.
- Plexus** (pleks'us). A union of fibers, vessels or nerves in the form of network.
- Pneumothorax** (nu-mat-o-tho'raks). See pneumothorax.
- Pneumogastric** (nu-mo-gas'trik). Pertaining to the lungs and stomach.
- Pneumothorax** (nu-mo-tho'raks). Gas or air in the pleural sac.
- Polluted** (pol-lut'ed). Defiled; dishonored.
- Polygamous** (po-lig'a-mus). Relating to or consisting in polygamy; having a plurality of wives.
- Polygamy** (po-lig'a-me). The state of having more than one wife or husband at the same time.
- Polypus** (pol'e-pus). A pedunculated tumor found in the nose, ear, rectum, etc.
- Pomade** (po-made'). A perfumed ointment.
- Pons** (ponz). A process of bridge or tissue connecting two parts.
- Pore** (por). A minute circular opening as in the skin.
- Portable** (port'a-ble). That may be carried.
- Posterior** (pos-te're-or). Situated behind; toward the rear.
- Post-mortem** (post mor'tem). An examination of a body made after death.
- Post-partum** (post par'tum). Subsequent to child-birth.
- Posture** (pos'chur). Position; attitude.
- Potable** (po'ta-ble). Something that may be drunk; a beverage.
- Potash** (pot'ash). Potassium hydroxid.

- Potassium** (po-tas'se-um). The metallic base of potash.
- Potion** (po'shun). A draft. A dose.
- Precipitate** (pre-sip'i-tate). A substance separated by precipitation.
- Precipitation** (pre-sip-i-ta'shun). The process of having solids fall to the bottom from liquids that hold them in solution.
- Predisposing** (pre-dis-po'zing). Inclined to, as a disease.
- Predisposition** (pre-dis-po-zish'un). A natural tendency.
- Pregnancy** (preg'nan-se). The condition of being with child.
- Pregnant** (preg'nant). Being with young, as a female; breeding.
- Prehension** (pre-hen'shun). The act of grasping.
- Premature** (pre'ma-chur). Occuring before the proper time.
- Premonitory** (pre-mon'i-to-re). Having the character of a warning; indicating the onset of a disease.
- Preservative** (pre-serv'a-tiv). Tending to keep from decay.
- Preventative** (pre-vent'a-tiv). See preventive.
- Preventive** (pre-ven'tiv). Anticipating; tending to hinder; hindering the access of; as a medicine preventive of disease.
- Primipara** (pri-mep'a-rah). A woman bearing or giving birth to her first child.
- Primitive** (prim'i-tiv). Original.
- Primordial** (pri-mor'de-al). Pertaining to the beginning.
- Probe** (prob). To examine a wound or sore by piercing it with a sharp instrument.
- Process** (pros'es). Experiment. Any protuberance or eminence.
- Procreation** (pro-kre-a'shun). Reproduction or generation of young.
- Profunda** (pro-fun'dah). A deep-seated artery.
- Prognosis** (prog-no'sis). Prediction of course and end of a disease.
- Prognostic** (prog-nos'tik). Pertaining to the prognosis.
- Prolapsus** (pro'lap-sus). The falling down of a part.
- Proliferation** (pro-lif-er-a'shun). Cell-genesis; reproduction.
- Prolific** (pro-lif'ik). Fruitful; generating abundantly.
- Pronate** (pro'nate). To render prone.
- Pronation** (pro-na'shun). The downward turning of the palm.
- Pronator** (pro-na'tor). A muscle pronating a part.
- Prone** (prone). Face downward.
- Propagate** (prop'a-gate). To have young or issue; to increase and multiply.
- Propagation** (prop-a-ga'shun). The spreading or extension of anything.
- Prophylactic** (pro-fil-ak'tik). Pertaining to prophylaxis.
- Prophylaxis** (pro-fil-aks'is). The prevention of a disease.
- Prostration** (pros-tra'shun). Extreme nervous exhaustion.
- Proteid** (pro'te-id). See protein.
- Protein** (pro'te-in). An organic substance found in various forms of animals and plants; albumen.
- Protoplasm** (pro'to-plazm). Primitive organic cell-matter; germinal matter.
- Protoplasmic** (pro-to-plaz'mik). Pertaining to protoplasm.
- Protoplast** (pro'to-plast). An embryonic cell; protoplasm.
- Protractor** (pro-trak-tor). A muscle drawing forward.
- Protuberance** (pro-tu'ber-ance). A projecting part.
- Prurigo** (pru-ri'go). A chronic papular skin disease with intense itching.
- Pruritus** (pru-ri'tus). Intense itching.
- Pseudo** (su'do). False.
- Psoriasis** (so-ri'a-sis). A chronic inflammatory skin disease.
- Psychic** (si'kik). Pertaining to the mind or soul.
- Psychical** (si'kik-al). See psychic.
- Ptyalism** (ti'a-lism). A morbid and copious excretion of saliva.
- Ptyalin** (ti'a-lin). An amylolytic ferment of saliva.
- Puberty** (pu'ber-te). The age of capability of reproduction.
- Pubis** (pu'bis). The pubic bone.
- Puerperal** (pu-er'per-al). Pertaining to or following child birth.
- Puerperium** (pu-er-pe're-um). The period from delivery to the completion of involution.
- Pulmonary** (pul'mo-na-re). Pertaining to the lungs.
- Pulmonic** (pul-mon'ik). Pertaining to the lungs.
- Pulsation** (pul-sa'shun). A beating or throbbing sensation.
- Pulse** (pulse). The beating or rythmic throbbing of the heart.
- Pultaceous** (pul-ta'shus). Pap-like; mushy; soft.
- Pulverization** (pul-ver-i-za'shun). The act of reducing to a powder.
- Pungent** (pun'jent). Acid; penetrating; severe; biting.
- Purgation** (pur-ga'shun). Evacuation of the bowels; cleansing.
- Purgative** (pur'ja-tive). An agent producing watery evacuations.
- Purify** (pu'ri-fi). To cleanse, to free from extraneous matter.
- Purpura** (pur'pu-rah). Hemorrhages into the true skin.
- Purpuric** (pur'pu-rik). Pertaining to purpura.
- Purulent** (pu'ru-lent). Having the character of pus.
- Pus** (pus). The fluid product of suppuration.
- Pustular** (pus'tu-lar). Consisting of pustules.
- Pustule** (pus'tul). An elevation of the cuticle with an inflamed base containing pus.
- Putrefaction** (pu-tre-fak'shun). Organic decomposition; decay.
- Putrid** (pu'trid). Showing putrefaction; rotten.
- Pyemia** (pi-e'me-ah). A condition in which pyogenic bacteria circulate in the blood and form abscesses wherever they lodge.
- Pyogenic** (pi-o-jen'ik). Developing or secreting pus.
- Pylorus** (pi-lo'rus). The lower orifice of the stomach leading into the small intestines.
- Pyrosis** (pi-ro'sis). A gastric burning pain with eructations or belching.
- Pyuria** (pi-u're-ah). The pressure of pus in the urine.
- Radial** (ra'de-al). Pertaining to the radius.
- Radicle** (rad'ik-l). The primary root or stem of the embryo.
- Radius** (ra'de-us). The small bone of the forearm.
- Ramification** (ram-e-fi-ka'shun). Branching of an organ or a part.
- Ramollescence** (ram-ol-les'sense). Softening of a part.
- Rancid** (ran'sid). Fetid or sour, as fat.
- Rarefaction** (rar-e-fak'shun). Decreasing the density of air.
- Reaction** (re-ak'shun). Responsive action.
- Recreation** (rek-re-a'shun). Refreshment of strength and spirits after toil.
- Rectum** (rek'tum). The lower part of the large intestine.
- Rectus** (rek'tus). In a straight line. Name of certain muscles.
- Recumbent** (re-kum'bent). Reclining.
- Recuperation** (re-ku-per'a-shun). Convalescence; return to health.

- Recurrent** (re-kur'rent). Returning after intermissions, as a fever.
- Reducible** (re-du'si-bl). Capable of reduction.
- Refrigerant** (re-frij'er-ant). A medicine that allays fever or heat.
- Regimen** (rej'i-men). The methodic use of food.
- Regurgitation** (re-gur-ji-ta'shun). An eructation or throwing back. Vomiting.
- Rejuvenescence** (re-ju-ve-nes'sense). A renewal of youth.
- Relapse** (re-laps'). A recurrence of a disease during convalescence.
- Relaxation** (re-laks-a'shun). Diminution of tension; languor; a looseness.
- Remission** (re-mish'un). A temporary subsidence of disease or pain.
- Remittent** (re-mit'ent). Alternately abating and returning.
- Renal** (re'nal). Pertaining to the kidneys.
- Reproduction** (re-pro-duk'shun). The begetting of young.
- Residual** (re-zid'u-al). Remaining.
- Residue** (rez'i-du). That which remains.
- Residuum** (re-zid'u-um). The balance or remainder.
- Resin** (rez'in). A somewhat hardened substance usually of a brownish or amber color, existing in nearly all plants and abundant in many.
- Resinoid** (rez'in-oid). Resembling resin.
- Resinous** (rez'in-us). Having the nature of resin.
- Resolvent** (re-solv'ent). That which has the power to disperse inflammation.
- Respiration** (res-pi-ra'shun). Inspiration and expiration of air by the lungs.
- Respiratory** (re-spir'a-to-re). Pertaining to respiration.
- Restorative** (re-stor'a-tive). Having the power to renew strength and vigor.
- Resuscitation** (re-sus-si-ta'shun). The bringing to life of one apparently dead.
- Retching** (rech'ing). An unsuccessful attempt at vomiting.
- Reticulated** (re-tik'u-la-ted). Having net-like meshes.
- Retina** (ret'i-nah). Internal membrane of the eye.
- Retinitis** (ret-i-ni'tis). Inflammation of the retina.
- Retraction** (re-trak'shun). Shortening; drawing backward.
- Retroflexion** (re-tro-fiek'shun). A bending or flexing backward.
- Retrograde** (ret'ro-grade). Receding or going backward.
- Retroversion** (re-tro-ver'shun). A turning back.
- Revivification** (re-viv-i-fi-ka'shun). Resuscitation; renewal of life; the act of recalling to life.
- Revulsion** (re-vul'shun). The withdrawal of blood from a diseased to a healthy part.
- Rheum** (room). An increased action of the excretory vessels of any organ.
- Rheumatism** (ru'ma-tism). A disease with fever, pain, inflammation and swelling of the joints.
- Rheumatoid** (ru'ma-toid). Resembling rheumatism.
- Rhizome** (ri'zom). A subterranean stem.
- Rhizomelic** (re-zom'el-ik). Affecting the roots of members.
- Rhizopoda** (ri-zo-po'dah). Same as sarcodina.
- Rhythm** (rith'm). A measured periodic movement.
- Rigidity** (ri-jid'i-te). Stiffness; immobility.
- Rigor** (ri'gor). A violent chill.
- Rochelle Salt** (ro-shel' salt). The tartrate of potash and soda.
- Roseola** (ro-ze'o-lah). A rose-colored efflorescence on the skin.
- Rotation** (ro-ta'shun). Turning on the axis.
- Rotation-joint** (ro-ta'shun-joint). A lateral ginglymus.
- Rotator** (ro-ta'tor). A muscle turning a part.
- Rubefacient** (ru-be-fa'shent). A medicine that reddens the skin.
- Rudimentary** (ru-di-men'ta-re). Undeveloped; not formed.
- Rupia** (ru'pe-ah). A syphilitic eruption with incrustated foul ulcers.
- Rupture** (rup'chur). The breaking or laceration of an organ.
- Sabadilla** (sab-a-dil'ah). The dried seeds of *schoenocaulon officinale*. It is a drastic cathartic.
- Saccharine** (sak'kah-rine). Containing sugar.
- Sacrum** (sa'krum). The large triangular bone above coccyx.
- Salicylate** (sal-i'sil-ate). A salt of salicylic acid.
- Saline** (sa'lin). Salty; containing salt.
- Saliva** (sa-li'vah). The secretion of the salivary glands. Spittle.
- Salivation** (sal-i-va'shun). The act of producing an increased secretion of saliva.
- Salutary** (sal'u-ta-re). Promotive of health.
- Sanguine** (san'gwin). Hopeful; cheerful.
- Sanies** (sa'ni-ez). A thin, reddish discharge from wounds or sores.
- Sanitary** (san'i-ta-re). Pertaining to health.
- Sanitation** (san-i-ta'shun). The act of making healthy.
- Santonica** (san-ton'i-ka). The flowerheads of *Artemesia pauciflora*; levant wormseed. It is a vermifuge.
- Santonin** (san'ton-in). The active principle of santonica.
- Saphena** (saf-e'nah). A name given to two large veins of the leg.
- Saprophyte** (sap'ro-fite). A plant deriving its sustenance from dead organic matter.
- Saprophytic** (sap-ro-fit'tik). Pertaining to saprophytes.
- Sarcodina** (sar-ko-di'nah). A class of protozoa moving and feeding by means of pseudopodia.
- Saturated Compound** (sat'u-ra-ted kom'pound). A chemic compound in which the combining capacities of all the elements are satisfied.
- Scapula** (skap'u-lah). A large, flat, triangular bone of the shoulder.
- Schizomycetes** (skiz-o-mi-se'tez). The fission fungi; bacteria.
- Sciatic** (si-at'ik). Pertaining to the hip.
- Scirrhus** (skir'us). A hard form of carcinoma.
- Scleroderma** (skle-ro-der'mah). A chronic indurated skin disease.
- Sclerotic** (skle-rot'ik). The firm, white, outer coat of the eye.
- Scorbutic** (skor-bu'tik). A person affected with scurvy.
- Scrofula** (skrof'u-lah). A constitutional condition with granular tumor and a tuberculous tendency.
- Scrofulous** (skrof'u-lus). Affected with scrofula.
- Scrotum** (skro'tum). The pouch containing the testes.
- Scurvy** (skur've). A form of purpura due to deficient and improper diet.
- Scutiform** (sku'ti-form). Having the form of a shield.
- Sebaceous** (se-ba'shush). Pertaining to fat or suet.
- Seborrhea** (seb-or-re'ah). An abnormal secretion of the sebaceous glands.
- Secretion** (se-kre'shun). Function of glands and follicles. Substance secreted.
- Secretory** (se'kre-to-re). Performing secretion.
- Sedative** (sed'a-tive). Soothing. An agent allaying irritability.
- Sedentary** (sed'en-ta-re). Occupied in sitting.
- Sediment** (sed'i-ment). Matter settling from a liquid.

- Seidlitz Powder** (sed'iltz pow'der). An aperient compound effervescing powder containing potassium bitartrate and sodium carbonate.
- Semiflexion** (sem-i-flek'shun). Bending half over.
- Seminal** (sem'i-nal). Pertaining to seed or semen, or to the elements of reproduction.
- Senile** (se'nil). Pertaining to old age.
- Sensitive** (sen'si-tive). Capable of feeling.
- Sensual** (sen'shu-al). Pertaining to or affecting the senses or bodily organs of perception.
- Sepsis** (sep'sis). Infection of the human system from putrid matter in the blood.
- Septic** (sep'tik). Relating to sepsis.
- Septum** (sep'tum). A dividing membrane or wall.
- Sequel** (se'kwel). A supervening disease.
- Sequela** (se-kwe'la). The results of a disease.
- Seromucous** (se-ro-mu'kus). Composed of serum and mucus.
- Serous** (se'rus). Having the nature of serum.
- Serratus** (ser-a'tus). A muscle of the thorax.
- Serum** (se'rum). The fluid constituent of the blood separated by coagulation.
- Sewage** (su'aj). The refuse matter carried off in a sewer.
- Sewerage** (su'er-aj). The system of sewers.
- Sexual** (seks'u-al). Pertaining to sex.
- Sexuality** (seks-u-al'i-te). The collective differences which in individuals make one male and another female.
- Sialogogue** (si-a'l'o-gog). A medicine which promotes the flow of saliva.
- Silica** (sil'ik-ah). Silicon dioxide, found in quartz.
- Simulation** (sim-u-la'shun). The counterfeiting of disease.
- Sinapism** (sin'a-pism). A mustard plaster.
- Sinew** (sin'u). The tough fibrous tissue which unites a muscle to a bone.
- Sinus** (si'nus). A hollow, cavity, recess or pocket.
- Skeptical** (skep'tik). One who doubts the truth of any statement.
- Slough** (sluf). The separated dead matter in an ulceration.
- Sloughing** (sluf'ing). The formation of a slough.
- Soda Bicarbonate** (so'dah bi-kar'bon-ate). Baking soda. It is antipyretic and antiseptic.
- Solidism** (sol'id-ism). The theory that ascribes disease to condensation or rarefaction of the solid tissues.
- Soluble** (sol'u-ble). Capable of being dissolved.
- Solution** (so-lu'shun). The critical period of a disease. A dilution.
- Solvent** (sol'vent). A fluid that dissolves or makes a solution of any other body.
- Somnolence** (som'no-lense). The condition of drowsiness.
- Sonorous** (so-no'rus). Resonant; ringing.
- Soporific** (sop-or-rif'ik). A medicine that has the quality of inducing sleep.
- Sordes** (sor'dez). Foul matter; excretions. The dark brown matter that gathers on the tongue and teeth in low fever.
- Spasm** (spazm). A convulsive muscular contraction.
- Spasmodic** (spaz-mod'ik). Sudden; violent; over-strained; unnatural.
- Specific** (spe-sif'ik). Peculiar; special. A remedy of peculiar value.
- Spectrum** (spek'trum). A color-band from a ray of decomposed light.
- Speculum** (spek'u-lum). An instrument for dilating and keeping open certain parts of the body to facilitate examination.
- Spermaceti** (sper-mak'se-te). A fatty substance from the head of the sperm whale used as an emollient.
- Sphincter** (sfingk'ter). A muscle constructing an orifice.
- Spinal** (spi'nal). Of or pertaining to the backbone.
- Spinous** (spi'nus). Pertaining to the spine.
- Spontaneous** (spon-ta'ne-us). Taking place without aid or volition.
- Sporadic** (spo-rad'ik). Occurring singly or apart from other things of the same kind; separate.
- Sputum** (spu'tum). Expecterated matter.
- Spittle**.
- Squamous** (skwa'mus). Covered with or consisting of scales.
- Stagnation** (stag-na'shun). Cessation of motion.
- Stearin** (ste'ar-in). A compound of stearic acid and glyceryl found in the harder animal fats.
- Stench** (stench). An ill smell; an offensive odor.
- Stercoraceous** (ster-ko-ra'shus). Having the nature of feces.
- Sterility** (ster-il'i-te). The condition of being barren.
- Sterilization** (ster-il-iz-a'shun). The destruction of germs.
- Sternum** (ster'num). The flat bone of the breast.
- Stertorous** (ster'tor-us). Breathing with a sonorous sound.
- Stethoscope** (steth'o-skope). A tube for conveying sounds in auscultation.
- Sthenic** (sthen'ik). Strong; active.
- Stiff-neck** (stif-nek). See torticollis.
- Stigmatism** (stig'ma-tizm). A condition of the refractive media of the eye in which rays of light from a point are accurately brought to a focus on the retina.
- Stimulant** (stim'u-lant). Anything which stimulates.
- Stimulate** (stim'u-late). To excite the organic action of. Incite; urge; instigate.
- Stimulus** (stim'u-lus). Anything exciting an organ.
- Stomach** (stum'ak). The chief digestive organ of the body.
- Stomachic** (sto-mak'ik). A stimulant to the stomach.
- Stomatitis** (stom-a-ti'tis). Inflammation of the mouth.
- Stool** (stul). A discharge from the bowels.
- Strabismus** (stra-bis'mus). A condition in which the visual axes fail to meet at the objective point from inco-ordination of the eye-muscles; squint.
- Strangulation** (stran-gu-la'shun). A choking or throttling.
- Strangury** (stran'gu-re). A painful discharge of urine.
- Strata** (strat'ah). Plural of stratum.
- Stratum** (stra'tum). A layer of lamina.
- Stricture** (strik'tur). The morbid contraction of a passage of the body.
- Stroma** (stro'mah). The foundation tissue of an organ.
- Strumous** (stru'mus). Scrofulus.
- Strychnia** (strik'ni-ah). An alkaloid of nuxvomica.
- Stupor** (stu'por). The condition of insensibility.
- Styloid** (sti'lloid). Resembling a stylus.
- Stylomastoid** (sti-lo-mas'toid). Pertaining to the styloid and mastoid processes.
- Stylus** (sti'lus). A sound.
- Stype** (stip). A cotton tampon.
- Styptic** (stip'tik). Having the property of checking hemorrhage. A medicine that causes vascular contraction of the blood-vessels.
- Subacid** (sub-as'id). Slightly acid.
- Subclavian** (sub-kla've-an). Under the collar-bone.

- Subcutaneous** (sub-ku-ta'ne-us). Under the skin.
- Sublimate** (sub'li-mate). The product of sublimation.
- Sublimation** (sub-li-ma'shun). Vaporization and recondensation.
- Sublingual** (sub-lin'gwal). Beneath the tongue.
- Submaxillary** (sub-maks'il-a-re.) Beneath the inferior maxilla.
- Subnormal** (sub-nor'mal). Below the normal.
- Subordination** (sub-or-di-na'shun). Under control.
- Subsultus** (sub-sul'tus). Any morbid tremor or twitching.
- Sudamina** (su-dam'i-nah). Minute transparent vesicles arising on the skin toward the favorable termination of various diseases which have been attended by perspiration.
- Sudoriferous** (su-dor-if'er-us). Carrying sweat.
- Sudorific** (su-dor-if'ik). A medicine which produces sweat.
- Suffocation** (suf-fo-ka'shun). A stoppage of respiration.
- Sulphate** (sul'fate). A salt of sulphuric acid.
- Sulphid** (sul'fid). A combination of sulphur with an element.
- Sulphurated** (sul'fu-ra-ted). Combined with sulphur.
- Superficial** (su-per-fish'al). Confined to the surface.
- Supernatural** (su-per-nat'u-ral). Above the power of natural laws.
- Supervene** (su-per-vene'). To come upon as something extraneous; to be added to.
- Suppository** (sup-poz'i-to-re). A solid medicine melting at body temperature for introduction into the rectum or the vagina.
- Suppression** (sup-presh'un). Concealment; retention.
- Suppurate** (sup'pu-rate). To generate pus.
- Suppuration** (sup-pu-ra'shun). The formation of pus.
- Surgery** (sur'jer-e). Branch of treatment by operative procedures.
- Susceptible** (sus-sep'ti-ble). Sensitive to an influence; liable to become affected with a disease.
- Suture** (su'ture). Junction of cranial bones. In surgery, a stitch.
- Symmetry** (sim-me-tre). A harmonious correspondence of parts.
- Sympathetic** (sim-pa-thet'ik). Reciprocal action by different parts of the body.
- Symptom** (simp'tum). Any affection which accompanies disease. A perceptible change in the body or its functions.
- Symptomatic** (simp-to-mat'ik). Pertaining to a symptom.
- Synchronous** (sin'kro-nus). Occurring at the same time.
- Syncope** (sin'ko-pe). Swooning or fainting; a temporary suspension of respiration and circulation.
- Syphilis** (sif'il-is). A chronic, infectious venereal disease, which may also be hereditary.
- Syphilitic** (sif-i-lit'ik). Pertaining to or infected with syphilis.
- Syphon** (si'fon). A tube or pipe.
- Syrup** (sir'up). A concentrated solution of sugar in an aqueous fluid.
- System** (sis'tem). Methodic arrangement of parts. The animal economy.
- Systole** (sis'to-le). The contraction of the heart and arteries.
- Taenia Solium** (te'ne-ah so'le-um). The common long tapeworm.
- Taint** (taint). An infection; spot; blemish.
- Tampon** (tam'pon). A plug of lint or cotton, etc.
- Tartar** (tar'tar). A deposit inerusting the teeth, composed chiefly of phosphate of calcium.
- Teichopsia** (ti-kop'se-ah). Temporary dullness of sight with subjective images, often an accompaniment of migraine.
- Temple** (tem'ple). Flat, depressed portion of the head between the eye and the ear.
- Temporal** (tem'po-ral). Pertaining to the temple.
- Temporalis** (tem-po-ra'lis). The temporal muscle.
- Tenacious** (te-na'shus). Adhesive; tough.
- Tepid** (tep'id). About blood heat.
- Teratism** (ter'a-tism). An anomaly of conformation, whether congenital or acquired; a monstrosity.
- Tetanic** (te-tan'ik). A medicine which acts on the nerves and through them on the muscles.
- Tetanus** (tet'a-nus). A disease with spasmodic and continuous contraction of the muscles.
- Textural** (teks'tur-al). Pertaining to any tissue.
- Thalamus** (thal'a-mus). A mass of gray matter at the base of the brain projecting into and bounding the third ventricle.
- Thein** (the'in). Active principle of tea; same as caffein.
- Theobroma** (the-o-bro'mah). A genus of trees. The seeds of theobroma-cacas furnish chocolate and cocoa.
- Therapeutics** (ther-a-pu'tiks). That branch of medical science which relates to the discovery and application of remedies for diseases.
- Thoracic** (tho-ras'ik). Pertaining to the chest.
- Thorax** (tho'raks). The bones of the chest.
- Thrombus** (throm'bus). A blood clot in a vessel at the point of obstruction.
- Thyme** (time). See thymus.
- Thymus** (thi'mus). A genus of labiate plants. A granular organ in the anterior superior mediastinum, usually disappearing in adult life.
- Thyroid** (thi'roid). Scutiform; shield-shaped.
- Tincture** (tink'tur). Spirits containing medicinal substances in solution.
- Tissue** (tish'u). An aggregation of similar cells and fibers forming a distinct structure.
- Tonic** (ton'ik). A medicine which tends to restore normal tone.
- Tonsils** (ton'sils). The glands in the sides of the throat.
- Torpid** (tor'pid). Having lost motion or the power of exertion and feeling; dull; sluggish.
- Torpor** (tor'por). Abnormal inactivity.
- Torsion** (tor'shon). The act of twisting.
- Torticollis** (tor-ti-kol'lis). Contraction of cervical muscles with bending of head.
- Tourniquet** (toor'ni-ket). An instrument to compress arteries.
- Toxin** (toks'ine). A poisonous albumin produced by bacterial action.
- Trachea** (tra'ke-ah). The wind-pipe.
- Tracheotomy** (tra-ke-ot'o-me). The operation of making an opening into the wind-pipe, as in cases of suffocation.
- Trachoma** (tra-ko'mah). Granular lids; a form of conjunctivitis.
- Transection** (tran-sek'shun). A cross-section.
- Translucent** (trans-lu'sent). Partly transparent.
- Transpiration** (tran-spi-ra'shun). The act or process of transpiring.
- Transudate** (trans'u-date). A substance resulting from transudation.
- Transudation** (trans-u-da'shun). An oozing of a fluid through a membrane, especially a serum through vessel walls.
- Transude** (tran-sued'). To pass through the pores.
- Transverse** (trans-vers'). Lying across.
- Traumatic** (traw-mat'ik). A medicine useful in the cure of wounds.

- Traumatism** (traw'ma-tizm). The condition of one suffering from injury.
- Tremor** (trem'or). An involuntary trembling.
- Triturate** (trit'u-rate). To bruise. To rub or grind to a powder.
- Tubercle** (tu'ber-kl). A small eminence. A small nodule of granular cells constituting the specific lesion of the tubercle bacillus.
- Tuberculosis** (tu-ber-ku-lo'sis). An infectious disease due to a specific bacillus, characterized by the formation of tubercles.
- Tumefaction** (tu-me-fak'shun). A swelling of a part.
- Turbidity** (tur-bid'i-te). The condition of being troubled or disturbed.
- Turpentine** (tur'pen-tine). A substance taken from the pine tree. It is antiseptic and stimulant.
- Tympanic** (tim-pan'ik). Pertaining to the tympanum.
- Tympanum** (tim'pa-num). The drum of the ear.
- Typhlitis** (tif-li'tis). Inflammation of the cecum.
- Typhoid** (ti'foid). A condition of great muscular weakness.
- Typhus** (ti'fus). A contagious fever.
- Typical** (tip'ik-al). Characteristic.
- Tyrotaxon** (ti-ro-toks'i-kon). A ptomaine from decomposed milk and cheese.
- Ulcer** (ul'ser). Suppuration upon a free surface; an open sore.
- Ulcerate** (ul'ser-ate). To produce an ulcer.
- Ulceration** (ul-ser-a'shun). The process of ulcer-formation.
- Ulcerous** (ul'ser-us). Having the character of an ulcer.
- Ulna** (ul'nah). The large bone of the forearm.
- Ulnar** (ul'nar). Pertaining to the ulna.
- Umbilicated** (um-bil'i-ka-ted). Having a depression like the navel.
- Umbilicus** (um-bi-li'kus). The navel; the round depressed cicatrix in median line of abdomen.
- Uction** (ungk'shun). The act of anointing, an ointment.
- Unctuous** (unk'shus). Greasy.
- Unguentum** (un-gwent'um). An ointment; a soft, fatty medicated mixture.
- Unilateral** (u-ne-lat'er-al). Affecting but one side.
- Urate** (u'rate). A combination of uric acid with a base.
- Urea** (u're-ah). An animal substance found in urine.
- Uremia** (u-re'mi-ah). The symptoms due to a tonic condition of the blood from accumulation of substances normally excreted by the kidneys.
- Uremic** (u're-mik). Due to or marked by uremia.
- Ureter** (u-re'ter). The excretory duct of the kidneys.
- Urethra** (u-re'thra). The excretory canal of the bladder.
- Urethral** (u-re'thral). Pertaining to the urethra.
- Urethritis** (u-re-thri'tis). Inflammation of the urethra.
- Uric Acid** (u'rik a'sid). The acid contained in the urine.
- Urinary** (u'ri-na-re). Of or pertaining to urine or the organs which secrete it.
- Urine** (u'rin). The excretion of the kidneys.
- Urinemia** (u-ri-ne'mi-ah). The presence of urinary constituents in the blood.
- Uriniferous** (u-ri-nif'er-ous). Producing and carrying urine.
- Urticaria** (ur-ti-ka'ri-ah). Nettle-rash; a skin eruption with itching lasting only a short time.
- Uterine** (u'ter-in). Pertaining to the uterus.
- Uterus** (u'te-rus). The womb; the hollow female organ of gestation.
- Uvula** (u-vu-la). The soft part of the palate.
- Vaccination** (vak-si-na'shun). Inoculation with vaccine to protect against small-pox.
- Vaccine** (vak'sine). Any substance containing the virus of cow-pox.
- Vagina** (va-je'nah). The canal from the vulva to the uterus.
- Valerian** (va-le're-an.) A plant of the genus valeriana.
- Valeriana** (va-le-re-a'nah). A genus of plants; also the rhizome and rootlets of valeriana officinalis; it is an antispasmodic and stimulant.
- Valerianate** (val-e're-an-ate). A salt of valerianic acid.
- Varicose** (var'i-kos). Swollen; knotted.
- Varioloid** (var'e-o-loid). The slight form of small-pox as modified by vaccination.
- Vascular** (vas'ku-lar). Pertaining to vessels.
- Venesection** (ve-ne-sek'shun). The opening of a vein for the purpose of letting blood.
- Venous** (ve'nus). Pertaining to a vein.
- Ventilation** (ven-ti-la'shun). The supplying of fresh air.
- Ventral** (ven'tral). Belonging to the belly.
- Ventricle** (ven'trik-l). A small belly-like cavity.
- Verbascum** (ver-bas'kum). A genus of plants.
- Vermicular** (ver-mik'u-lar). Worm-like.
- Vermiform Appendix** (ver'mi-form ap-pen'diks). A worm-shaped tube opening into the cecum.
- Vermifuge** (ver'mi-fuj). An agent expelling intestinal worms.
- Vertebra** (ver'te-bra). A bone of the spinal column.
- Vertigo** (ver'ti-go). Giddiness; dizziness.
- Vesicant** (ves'i-kant). A blistering application or plaster.
- Vesication** (ves-i-ka'shun). The production of a blister.
- Vesicle** (ves'i-kl). A small blister or sac.
- Vesicular** (ve-sik'u-lar). Having vesicles.
- Vesiculation** (ve-sik-u-la'shun). The formation of vesicles.
- Veterinary** (vet'er-i-na-re). Pertaining to the art of healing or treating the diseases of domestic animals.
- Vibration** (vi-bra'shun). A swinging back and forth or rapidly repeated oscillatory movement.
- Vicarious** (vi-ka're-us). Taking the place of another. The assumption of the function of one organ by another.
- Vidian Artery** (vid'i-an ar'ter-e). A branch of the internal maxillary artery which passes through the vidian canal and is distributed to the pharynx and Eustachian tube.
- Virile** (vir'il). Pertaining to a man as distinguished from a woman.
- Virulence** (vir'u-lence). Noxiousness; malignity; injurious to life.
- Virulent** (vir'u-lent). Having the nature of poison.
- Virus** (vi'rus). Contagious poisonous matter, especially that produced by and capable of transmitting a disease.
- Viscera** (vis'se-ra). The contents of the body cavities.
- Visceral** (vis'sur-al). Pertaining to the viscera; that cavity of the body which contains the viscera.
- Viscid** (vis'sid). Sticky; having a thick or sticky consistency.
- Viscus** (vis'kus). Any organ inclosed within the cranium, thorax, abdominal cavity or pelvis.
- Vision** (vizh'un). Sight.
- Visionary** (vi'zhun-a-re). Imaginary; unreal; fantastic; fanciful; dreamy; whimsical.
- Visual** (viz'u-al). Pertaining to vision.
- Vita** (vi'tah). Life.
- Vital** (vi'tal). Pertaining to life.

Vitalism (vi'tal-izm). The theory that bodily functions are due to a distinct vital principle.

Vitality (vi-tal'i-te). The vital principle of life.

Vitals (vi'talz). The organs essential to life.

Vitiate (vish'e-ate). To render vicious, faulty, defective or impure.

Vivacity (vi-vas'i-te). Natural vigor. Power of living; longevity.

Vivisection (viv-i-sek'shun). Scientific dissection of or experimentation upon living animals.

Void (void). To emit; to send out; to evacuate.

Volatile (vol'a-til). Having the quality of passing off by spontaneous evaporation.

Voluptuous (vo-lup'tu-us). Given to the enjoyment of luxury and pleasure. Indulging to excess in sensual gratifications.

Voracious (vo-ra'shus). Having an insatiable appetite.

Vulva (vul'vah). The external female genitals.



GENERAL ARRANGEMENT

Although contained in one volume this work is divided into twenty Books, which in their turn are subdivided into chapters or parts.

At the back of the whole work will be found a complete General Index of all matters contained in the different Books and their subdivisions, so that any disease or any remedy in any part of the work may be quickly located. But, in addition to this General Index, each chapter or part is prefixed with a special index of its own, thus giving immediate location of items to be consulted in the special subject at the time under consideration. For example, let us take the common disease Asthma. On consulting the General Index we find the main article to be on page 523. Turning to the index at the beginning of this chapter (Part VI of Book IV) we may find the causes, symptoms and varieties of Asthma.

If what we wish is not found in this general article, we again refer to the General Index; and we have special treatments of the disease in other parts of the work, such as Simple Remedies, Prescriptions, Homeopathic Treatment, Exercises, etc. This plan has been carried out all through the work.

IMPORTANT

READ CAREFULLY

ATENTION is directed to the fact that all through this book the doses mentioned are for **ADULTS**, except where the treatment is specifically for a child.

PLEASE NOTE particularly the footnote on pages 1233 to 1248 inclusive.

Also note full directions given on pages 1224 and 1719, to determine doses for children.

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