THE FARMER

AND HIS

ASSOCIATES.

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W. S. HAMES, M. D.

THE REFLECTOR

A Brief Resume of Facts condensed for ready reference embracing

Cookery, Household Economy, Poultry, Stock and Farm; *together with* Diseases of Man Beast and Fowl *and* History Cause, Symptoms and Rational Treatment :: :: :: :: ::

By

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Preface

After several years in the practice of medicine, and mixing and mingling with many classes of people, it dawned upon the writer the necessity of a short, concise work, adapted to every day use among those who were neither versed nor had the time or inclination to delve into volumes that seemingly failed to unfold the subject in an attractive and interesting manner. To meet this requirement prompted me to hazard the task of compiling and devising a book suitable to meet this demand. The subjects of home economy, cookery, farm, poultry and stock, as well as a treatise on the various forms of diseases of man and beast, have been discussed in the most simple language. All unnecessary verbiage has been omitted.

I have perused and am under obligations to such authors as Drs. Goss, Ballenger, Hughes, Johnson, Merrell, Seudder and others of less prominence. Each subject has been treated in a way to convey the idea sought, in the fewest words and simplest form. To hold the attention of the reader and cause him to understand and become so familiar with the subject that the thought becomes his own, has been the head-light of attraction from the beginning. A brief description of most all the diseases that attack the human body, with a terse outline of proper treatment upon a scientific and philosophical basis, sufficient to make plain the best management in such cases, appears feasible.

Truth is the property of no one, and briefly stated, the object of the present volume is to present a condensed statement of such essential facts pertaining to each subject herein described as will form the groundwork for a more rational employment in everyday life.

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THE REFLECTOR

Domestic Department

CHAPTER I.

In the early ages the human family lived very closely to nature, and obtained their substance at first hand. Their food was the most natural and used without much change in its simple character. Nuts of different kinds and fruits of every variety were their sources of life. This manner of living had great influence on their longevity.

But the culinary art, to keep pace with other advances of civilization, has had to change to meet the requirements of an advancing age. Thus, by a change of diet to conform to other methods of domestic life, we have, in a sense, merited the name of a nation of dyspeptics. In our artificail state of society, to keep up appearances, excessive indulgence has furnished a fertile field for the operations of the patent medicine man and a lucrative business for the dentist. The quantity of food resessary to bodily health depends greatly on the requirements of individuals engaged in sedentary employment, or of persons with weak constitutions or impaired digestion, as also whether employed in the open air or within doors, much also depending on the temperature. Preference should be given to the food which most readily yields

the materials required by nature in the formation of the human body. Food, as generally prepared, contains 50 per cent of water, which would increase the quantity to 46 ozs., or 3 lbs. and 14 ozs., with at least an equal weight of water in addition daily. The analysis of nutritious elements in 100 parts are as follows, viz:—

Indian meal, 12.30; barley, 14; wheat, 14.06; oats, 19.91; raw cucumbers, 2; raw melons, 3; boiled turnips, 4½; milk, 7; cabbage, 7½; currants, 10; whipped eggs, 13; beets, 14; apples, 16; peaches, 20; boiled codfish, 21; broiled venison, 22; potatoes, 22½; fried veal, 24; roast pork, 24; roast poultry, 26; raw beef, 26; raw grapes, 27; raw plums, 29; broiled mutton, 30; oat-meal porridge, 75; rye bread, 79; boiled beans, 87; boiled rice, 88; barley bread, 88; wheat bread, 90; baked corn bread, 91; boiled barley, 92; butter, 93; boiled peas, 93; raw oils, 94.

COMPARISON OF FOOD VALUE.

Oysters, 22; milk, 24; lobsters, 50; cream, 56; codfish, 68; eggs, 72; turbot, 84; mutton, 87; venison, 89; veal, 92; fowl, 94; herring, 100; beef, 100; duck, 104; salmon, 108; pork, 116; butter, 124; cheese, 155.

Percentage of Heat Development.

Butter, 79; cocoa, 69; bacon, 54; flour, 46; sugar, 42; oat-meal, 42; biscuit, 42; corn, 38; rice, 38; peas, 36; cheese, 36; bread, 27; beef, 27; eggs, 16; potatoes, 12; fish, 9; parsnips, 8; milk, 7; carrots, 5; beer, 4.

Lost By Cooking.

100 lbs. raw beef, 67 lbs. roast.
 100 lbs. raw beef, 74 lbs. boiled.
 400 lbs. raw mutton, 75 lbs. roast.
 100 lbs raw fowl, 80 lbs. roast.
 100 lbs. raw fowl, 87 lbs. boiled.
 100 lbs. raw fish, 94 lbs. boiled.

Percent of Sugar.

Grape, 14.9; cherry, 10.8; mulberry, 9.2; gooseberry, 7.2; apple, 7.9; pear, 9.4; currant, 6.1; peach, 1.6; strawberry, 5.7; raspberry, 4.0.

Degrees of Starch Rated on 100 Per Cent.

Peas and beans, 43; buckwheat, 52; potatoes (75 per cent water), 14; rye flour, 50; oatmeal, 75; wheat flour, 60; barley flour, 69; rice flour, 84; corn meal, 78.

Weight by Measure.

Wheat flour, 1 lb. is 1 quart.

Corn meal, 1 lb. 2 ozs. is 1 quart.

Butter, soft, 1 lb. is 1 quart.

Loaf sugar, crushed, 1 lb. is 1 quart.

Granulated sugar, 1 lb. 1 oz. is 1 quart.

Best brown sugar, 1 lb., 2 oz. is 1 quart.

Eggs, 10 eggs are 1 pound.

Flour, 8 quarts are 1 peck.

Flour, 4 pecks are 1 bushel.

Liquids.

16 large tablespoonfuls are $\frac{1}{2}$ pint.

8 large tablespoonfuls are 1 gill.

4 large tablespoonfuls are $\frac{1}{2}$ gill.

2 gills are $\frac{1}{2}$ pint.

2 pints are 1 quart.

4 quarts are 1 gallon.

A common sized tumbler holds a $\frac{1}{2}$ pint.

A common sized wine glass, $\frac{1}{2}$ gill.

25 drops are equal to 1 teaspoonful.

Properties of Food.

100 Parts.	Water.	Muscle.	Fat.
Cumbers -----	97.0	1.5	1.0
Turnips -----	94.4	1.1	4.
Cabbage -----	90.0	.4	5.
Milk, cows -----	86.0	.5	8.
Apples -----	84.0	.5	10
Mutton -----	44.0	18.	32
Beef -----	50.0	15.	30
Chicken -----	46.0	18.	32
Lamb -----	50.	11.	35
Pork -----	38.5	10.	50
Beans -----	14.8	24.	57.7

Buckwheat -----	14.2	8.6	75.4
Barley -----	14.	15.0	68.8
Eggs, yolk -----	79.	15.	27.
Eggs, white -----	53.	17.	0.
Veal -----	68.5	10.1	1.65

Digestive Time-Table.

Apples, sweet, 1 hour, 30 minutes; apples, sour, 2 hours; eggs, fried, 3 hours, 30 minutes; rice, boiled, 1 hour, sago, boiled, 1 hour, 45 minutes; soup, beef, 4 hours; soup, vegetable, 4 hours; soup, chicken, 3 hours; soup, oyster, 3 hours, 30 minutes; salmon, 4 hours; trout, boiled, 1 hour, 30 minutes; tripe, 1 hour; tapioca, 2 hours; turkey, 2 hours; turnips, 3 hours, 30 minutes; potatoes, 3 hours, 30 minutes; pork roast, 5 hours, 15 minutes; pork, boiled, 3 hours, 15 minutes; raw pork, 3 hours; roast goose, 2 hours; beef liver, 2 hours; lamb, 2 hours, 30 minutes; milk, boiled, 2 hours; raw milk, 2 hours, 15 minutes; oysters, raw, 3 hours, 15 minutes; roast, 3 hours, 15 minutes; stewed, 3 hours, 30 minutes; parsnips, 2 hours, 30 minutes; duck, 4 hours; custard, 2 hours, 45 minutes; codfish, 2 hours; cheese, 3 hours, 30 minutes; cabbage, raw, 2 hours; boiled, 4 hours, 30 minutes; butter, 3 hours, 30 minutes; bread, wheat, 3 hours, 30 minutes; corn, 3 hours, 15 minutes; beets, boiled, 3 hours, 45 minutes; beef, rare, 3 hours, dried, 3 hours, 30 minutes, fried, 4 hours.

One pound of oatmeal will furnish as much nutrition as two pounds of bread and more than three pounds of lean veal.

One pound of butter is equal to nine pounds of potatoes, twelve pounds of milk and more than five pounds of lean beef.

One pound of brown sugar is equal to two pounds of ham, or eight pounds of cabbage.

The day laborer requires twenty-three ounces of dry, solid food, daily, one-fifth nitrogenous.

A fish diet is well adapted to sustain intellectual or brain labor. What is necessary to a healthful condition may be more clearly understood by a knowledge of the chemical elements of the human body. A body of 154 pounds contains, approximately, 14 gallons of water (consisting of oxygen 111 pounds and of hydrogen 14 pounds), carbon 21 lbs., nitrogen

3 lbs. 8 ozs., calcium 2 lbs., sodium $2\frac{1}{4}$ ozs., chlorine 2 ozs., 47 grains; iron 100 grains, magnesium 12 grains, silicon 2 grains. After death, the human body is, by gradual decay, slowly resolved into its component parts, which elements are again used in the complex and wonderful laboratory of nature, to vivify the countless forms of vegetable life. These in their turn fulfill their appointed law by yielding up their substances for the formation of other bodies. What a suggestive comment on mortal ambition to witness the inhabitants of Egypt engaged in what they consider a lucrative business of exhuming the bones of the ancient inhabitants from the catacombs where they have been entombed for thousands of years and transporting them by ship load to England in order to fertilize the crops which are destined to assist in forming the bone and sinew of the British nation. There were killed in the Russian and Turkish war of 1877, 225,000 men and in 1881 about thirty thousand skeletons of the unfortunates were shipped to England to make fertilizer.

PASTRY.

Apple Butter.—Boil new cider down $\frac{1}{2}$. Pare, cut and core equal quantities of sour and sweet apples. Put the sweet apples in vessel first and add boiling cider sufficient to cook them. After boiling half an hour, stirring often, put in sour apples, adding more boiling cider, with sugar enough to sweeten moderately. Continue boiling and stirring till thoroughly cooked. Pack in crocks and set in cool place for use.

Apple Sauce.—Two barrels of new cider reduced half by boiling. Pare, core and slice up 3 bushels of sweet apples and put them into the boiling cider. Stir the whole mass constantly to prevent scorching, till of the consistency of soft butter. Flavor with allspice to improve taste. Boil in brass kettle and when done, pack in wooden or earthen vessels. Will keep for years.

Apple Pudding.—Butter or suet crust, apples, sugar to taste, a little minced lemon peel, 2 tablespoonfuls of lemon juice. Grease vessel, line with the paste, pare, core and cut the apples into small pieces. Fill the basin and add the sugar, finely minced lemon peel and juice. Cover with the crust, press the edges firmly, cover with a floured cloth. Tie securely

and plunge into boiling water. Allow to boil 2 hours; remove from basin and send to table quickly.

Apple Dessert.—One pound sugar, one pound finely flavored ripe sour apples, one pint rich cream, 2 eggs, one-half cup sugar. Make a rich syrup of the sugar; add the apples nicely pared and cored. Stew till soft, then mix smoothly with the syrup and pour all into a mould. Stir into the cream, or new milk, the eggs well beaten; also the sugar, and let it boil up in a farina kettle; then set aside to cool. When cold, take the apples from the mould and pour this cream custard around it and serve. Flavor to suit.

Apple Charlotte.—Soak $\frac{1}{2}$ box of gelatine 2 hours in two small cups of cold water. Pare and steam 8 medium sized apples; when they are tender press through the colander and add 3 cups of sugar and the juice of a large lemon. Mix the gelatine with the hot apples and stir until they are cold, then put on ice to harden. Serve cold with whipped cream.

Apple Molasses.—Take new sweet cider juice from the press, made from sweet apples; boil it down as thick as West India molasses. Boil in brass or granite kettle and not burn, as that would injure the flavor. It will keep in a cellar, and is said to be as good and for many purposes better, than West India molasses.

Batter Pudding.—One and one-half cupfuls of flour, 1 teaspoonful baking powder, $\frac{1}{2}$ teaspoonful salt, 1 tablespoonful butter, 2 eggs, 1 pint milk. Steam 1 hour and serve with sauce, adding a cupful of raisins, or any other desirable fruit, either fresh or dried, to the above pudding, makes a most delicious dish.

Ginger Pudding.—Nine ozs. flour, 5 ozs. suet, 5 ozs. sugar, 1 large tablespoonful powdered ginger. Chop the suet finely, add to the flour, sugar and ginger; mix well. Butter a mould and put the ingredients in perfectly dry. Cover securely with a cloth and boil 3 hours. To be eaten with sweet sauce.

Fairy Pudding.—Over $\frac{1}{2}$ box gelatine pour 1 cup of cold water and let soak 1 hour. Let 1 pint of rich milk come to a boil and add to it 3 well beaten eggs and $\frac{1}{2}$ cup of sugar; when it thickens, stir in the gelatine and in 2 minutes take from the fire and flavor with almond extract. Line a mould with stale

cake, pour in mixture and set away on ice. Whip 1 pint of cream and spread on top; serve very cold.

Fig Pudding.—One pound flour, 2 ozs. bread crumbs, 2 ozs. finely cut suet, 2 ozs. sugar, 1 egg, $\frac{1}{4}$ lb. figs; cut in slices. Flavor with nutmeg; mix all with milk and boil two hours.

Fruit for preserving should be gathered in dry weather, selecting only the best; no bruised or decaying parts used. Use only the best white sugar. Make syrup in proportion of 2 parts sugar to 1 of water. All unripe fruit should be scalded to render tender or it will not absorb the syrup.

Apple or Peach Preserves.—Peel and slice fruit, place in stone or granite vessel, cover bottom with sugar and continue layer of fruit and sugar alternately; let stand 12 hours, drain off syrup, boil and skim thoroughly; then add fruit and boil slowly four or five hours; fill jars while hot and seal.

To Preserve or Can Meats.—Parboil till free from bone; fill can nearly full and finish filling with rich gravy. Solder on lids, leaving small hole open in top and place in boiling water and continue the cooking. When thoroughly done, close apperture, while hot, with solder.

To Preserve Fruit Without Sugar.—Fill wide-mouth stone or glass bottles with carefully picked fruit; set in a large vessel, under which a cloth of some kind has been placed on bottom of kettle to prevent cracks from heat; then fill with cold water nearly to mouths of bottles. Cork bottles with well fitted corks and boil for half hour, then fill bottles with hot water within an inch of cork and cork tightly. Lay bottles on side and change position twice a week for two months.

Another Method.—After paring and coring, put among them sufficient sugar to make them palatable for present use, about 3 or 4 lbs. to a bushel; let them stand about 10 or 12 hours, or over night, to dissolve the sugar, not using any water; then heat to a boil and continue the boiling with care for 20 to 30 minutes, or sufficiently long to expel the air. Have ready a kettle of hot water, into which dip the can or bottle long enough to heat it; then fill in the fruit while hot, corking it immediately, dipping the end of the cork into the bottle-wax.

Bottling-Wax.—Black rosin, $6\frac{1}{2}$ lbs.; beeswax, $\frac{1}{2}$ lb.; finely powdered ivory black, $1\frac{1}{2}$ lbs. Melt together. May

change color by the substitution of Venetian red, or red lead; Prussian blue may be used to color.

To Preserve Eggs.—To a patent pailful of water, add 1 quart of fresh slacked lime and 1 pint of common salt; mix well. Fill a barrel half full with this fluid and put eggs in it any time. They will keep for several months, almost perfectly.

Baking Powder.—Take by weight 6 parts of bicarbonate of soda to 5 parts of tartaric acid. Be sure of pure ingredients. Buy from a reliable druggist in proportions given. See that they are perfectly dry; roll the lumps out, mix thoroughly together; bottle tightly and keep in a dry place.

Another.—One-half lb. ground rice, $\frac{1}{4}$ lb. carbonate soda, 2 ozs. tartaric acid. Mix thoroughly and smoothly and allow 1 teaspoonful to 1 lb. of flour.

Another Way.—Thoroughly mix 6 ozs. carbonate of soda, 4 ozs. tartaric acid, 1 teaspoonful salt and 1 teaspoonful powdered sugar. The above are more wholesome than many baking powders placed on the market, containing burnt alum, various starches and other cheap commercial substances.

BREAD AND CAKES.

Bread is perhaps the most important of all food articles and the necessity of some knowledge of the nutritious elements and proper ingredients necessary to palatability is evident. The flour used should be of the best quality. Care in kneading and thoroughly working the dough is very necessary. The cooking should be continued about 1 to $1\frac{1}{2}$ hours.

The secret of biscuit-making is precision and dispatch. Laggards and lazy people are not successful cooks. The proper temperature of the oven is between 200 degrees and 250 degrees, Centigrade, equivalent to 424 degrees and 480 degrees Fahr., and may be known by the emission of sparks from a piece of wood rubbed on oven.

The best bread contains about 11-16ths of its weight of added water and common bread much more than 1-4th. The proportion of water, in certain kinds of bread, has greatly increased of late years, owing to the use of fraudulent methods of making the dough with rice jelly or moss jelly, in which Island moss or Irish moss is used, by boiling 7 lbs. of moss in 10

gallons of water and using the resultant jelly in making 70 lbs. of flour into dough, which is then fermented and cooked in the usual way, the bread is claimed to weigh nearly double the flour. It is claimed that one-fourth ounce of carbamate of magnesia added to the flour for a 4 lb. loaf materially improves the quality of bread even when made from the very worst seconds of flour.

Corn Bread.—Three cups of cornmeal, $\frac{1}{2}$ half cup sugar, 1 egg, 2 tablespoons butter, $1\frac{1}{2}$ cups sweet milk, 3 teaspoons baking powder; quick oven.

Excellent Bread.—Knead 7 lbs. flour with 3 lbs. of pared and mashed potatoes, from which the water has been well steamed off previous to mashing; mix together while the potatoes are warm, adding about 1 spoonful salt; then add 1 quart milk-warm water, with 3 large spoonfuls of yeast gradually to the potatoes and flour; knead and work it well into a smooth dough; let stand 4 hours before putting into the oven.

Dyspepsia Bread.—The following method for making bread has proven highly salutary to persons afflicted with dyspepsia, viz: Three quarts unbolted wheat flour; 1 quart soft, warm water; 1 gill of fresh yeast; 1 gill molasses, or not, as may suit taste; 1 teaspoonful common soda. For the benefit of the industrious house wife, it may be well to state that 30 minutes baking will suffice for 1 lb. loaves and cakes, and 15 minutes additional for every pound after the first for larger ones. Thus a 1 lb. loaf requires $\frac{1}{2}$ hour, a 2 lb. loaf $\frac{3}{4}$ hour and a 4 lb. loaf $1\frac{1}{4}$ hours.

French Bread.—Clean rice, $\frac{3}{4}$ lb.; tie it up in a thick linen bag, give it enough room for it to swell; boil from three to four hours till it becomes a perfect paste. Mix with warm water 7 lbs. flour; adding the usual quantities of yeast, salt and water. Allow the dough to work a proper time near the fire, then divide into loaves, dust them in and knead vigorously.

Lady Cake.—Beat up 2 lbs. butter; mix in 3 lbs. sugar, rubbing well together for 5 or 10 minutes; add 2 pints whites of eggs, a third at a time, work all up light, then add 4 lbs. flour and 1 oz. soda, dissolve in 2 pints milk and 2 ozs. cream tartar; intermix all well together, bake in pans about $1\frac{1}{2}$

inches deep, in loaves that will weigh 2 to 3 lbs. when baked; take out of the pans and frost on the under side. Mark in slices $\frac{3}{4}$ of an inch thick.

Fruit Cake.—Five ozs. butter, 2 lbs. flour, $\frac{1}{2}$ lb. sugar, 1 lb. currants, 1 gill yeast, enough milk to make a thick batter, 1 tablespoonful of powdered cinnamon. Mix the flour, leaving out $\frac{1}{4}$ lb., with the butter cut in small pieces, the sugar, cinnamon and fruit; add milk enough to form a thick batter, and lastly stir in the yeast. Mix it over night and set it away to rise; in the morning stir in the remainder of the flour, and let it rise. When light, mould it out very lightly; butter the pan and bake in an oven about as hot as for bread.

Bath Cakes.—Mix well together 1 lb. flour, $\frac{1}{2}$ lbs. butter, 5 eggs, a cupful of yeast; set the whole before the fire to rise; after it rises; add $\frac{1}{4}$ lb. white sugar and 1 ounce of caraway seeds well mixed in and roll the paste into little cakes, bake them on tin pie pans.

Fancy Cake.—Rub together 2 lbs. sugar and 1 lb. butter; add 12 eggs, a few at a time, beat all up well; add 2-3 quart of sour milk, $3\frac{3}{4}$ lbs. flour, 2-3 ozs. soda, 2-3 ozs cream tartar and flour with extract of lemon. Mix up smooth and bake in scalloped pans.

Gen. Lee Cake.—Rub together 4 lbs. sugar and 2 lbs., 8 ozs. of butter, 16 eggs, 2 pints of water and 2 ozs. chloride ammonia, with flour sufficient to make suitable dough to roll; cut out with a scalloped cutter and bake in a warm oven.

Ginger Cake.—Put 12 eggs and 2 pints cream on the fire in a copper or tin dish; stir until warm; then add 2 lbs. butter, 2 lbs. sugar, 10 ozs. ginger; allow it stay on a slow fire and continue stirring till butter is melted; then set off. When cold add 8 lbs. flour. Mix up smooth; roll out thin and cut with a circular cutter; place on paper and bake in a hot oven.

Sherman Cake.—Put 12 eggs and 6 dessert spoonfuls of rose water into a bowl; whisk together and add 2 lbs. fine sugar and 1 oz. of ground cinnamon and flour sufficient to make a nice stiff paste; roll them out; cut into any desired shape and bake on clean white paper in a slow oven.

Yankee Biscuit.—Work up 2 lbs. butter in a basin to a thick cream; add 2 lbs. sugar, 2 lbs. flour, 36 yolks of eggs, 1 oz. caraway seed, a little salt; whisk up the whites of the 36

eggs and add them; get a sheet of strong paper, fold it in reversed plaits like a fan, to form trenches about 1 inch deep; fill a biscuit forceer with part of the batter; force out some finger like biscuits into the trenches about 3 inches long; sitting sugar over them and bake to a light-fawn color in a moderate oven.

Confederate Biscuit.—Work in 3 lbs. sifted flour with a ozs. butter, add 2 ozs. cream tartar; dish the middle and pour in 1 pint milk and 1 pint water, previously adding 1 oz. soda to the milk; mix all up briskly, but don't make too stiff. Flatten out and cut with a biscuit cutter; place them on buttered tins close together and bake in a quick oven.

Southern Baking Powder.—Bicarbonate of soda 4 lbs., cream tartar 8 lbs. These ingredients should be thoroughly dry and well mixed and put in air-tight cans. Use about 3 teaspoonfuls to each quart of flour. Mix up with cold water or milk and put it into the oven at once.

Some Pumpkin Pie.—Stew the pumpkin dry and make it like squash pie, only season rather higher. Use a little ginger or other spices to suit and cream sufficient to give a rich color. Bake in a moderate oven.

Dot Am Good Ole Chicken Pie.—Take two good young chickens and cut in small pieces, season with peper and salt and small strips of salt pork; put in saucepan with water to cover it; boil for half an hour; add flour and butter to thicken the gravy; have ready a large dish, served with paste, put all in the dish covered with a good rich paste. Bake for half an hour.

Washington Pie.—One cup of sugar, third of a cup of butter, half a cup of sweet milk, 1 1-3 cups flour, 1 egg, half a teaspoonful of soda, 1 teaspoonful of cream tartar, lemon flavor. Grease 2 round tin plates and put in the above. Bake until done. Then put it on a dinner plate, spread with nice apple sauce or sauce of any kind; then another layer of cake on top. It is nice without sauce, but sauce improves it.

Cream Substitute.—Take 2 or 3 whole eggs, beat them well up in a basin, then pour boiling hot tea over them; pour gradually to prevent curdling. It is difficult for the taste to distinguish it from rich cream.

Ice Cream.—One quart milk, 2 eggs, $\frac{3}{4}$ lb. sugar, 2 tablespoonfuls cornstarch or arrow root, 1 qt. cream. Scald the milk, yolks of eggs, sugar and cornstarch or arrowroot, until it is of the consistency of custard; then allow to cool. When cool, add the cream whipped, and the whites of the eggs whisked to a stiff froth. Sweeten to taste, flavor and freeze in the usual way.

Peach Ice Cream.—Two quarts ripe peaches, 1 cup sugar, mix well and set away in a covered dish. Take 1 pt. of milk and 1 of cream; let come to a boil; mix together 1 cup sugar, $1\frac{1}{2}$ teaspoonfuls flour and a teaspoonful salt; beat the eggs well; mix all; then add the boiling milk and cream. Replace in kettle and boil gently 20 minutes, stirring often to prevent sticking. When quite cold, stir in the peaches, which must be mashed fine, and freeze.

Ice Cream with Raspberries, Mulberries, Gooseberries or Berries of Like Variety.—Pass 3 lbs. pickled berries through a course sieve, add $1\frac{1}{2}$ qts. good cream, $2\frac{1}{2}$ lbs. sifted sugar; mix well together. If a deep red is desired, it may be imparted by a few drops of cochineal; freeze and mould out.

Best Quality Ice Cream.—Beat well together 9 eggs with $1\frac{1}{2}$ lbs. sugar; boil 3 qts. cream, set it off to gradually cool and cook; then add the sugar and eggs, flavor with vanilla or other flavoring to suit taste and freeze.

The Best Method to Make Ice Cream.—To produce the best results in ice cream making, it is very necessary to proceed on some well devised plan.

The following is about the best, viz: Beat the required quantity of ice very fine in a stout bag or other means and add fine salt in ratio of one part salt to four parts of ice; mix thoroughly with a stick. Pack the salt and ice, after mixing, neatly in the freezer around the cylinder to the top, then put in the cream (which should be as cool as possible) you wish to freeze, and, after covering, proceed to turn the crank back and forth alternately 10 or 12 times each way until the cream is sufficiently thick to beat, which will be known by the opposition to the beater; then turn forward quite briskly for a short time in order to impart an even and good appearance to the cream. Make thorough work of the beating; then remove the beater; fill the pail with ice and salt and set away to harden.

It is a mistake to introduce additional ice or salt, or allow the cream to become stiff while beating, or beat it too much or retard the freezing process by pouring off water from the melted ice. The right time to beat it is when it is dense enough to rise, or about the thickness of light batter. If beaten when rigid the product will not be so satisfactory. As cream expands in freezing, the cylinder should be three-fourths full and no more.

A Freezing Compound.—Common sal-ammoniac, well pulverized, 1 part; saltpetre, 2 parts; mix well together. Then take common soda, well pulverized. To use, take equal quantities of these preparations (which must be kept separate and well covered previous to using) and put them in the freezing pot; add of water a proper quantity and put in the article to be frozen in a proper vessel; cover up and your wants will be supplied. For freezing cream or other substances, this cannot be beat.

CANDIES.

Sugar, or some of its constituent elements, is one of the most potent factors to animal existence. It enters into all the avenues of animal economy in its production of flesh, heat and fermentative processes. The body is so constructed that it replenishes itself through a sense desire called appetites. Sugar, as a strength developer, is one of the most exhilarating and enlivening forces of nervous weakness or physical exhaustion at our command. Any one may satisfy their appetite without any disturbance, if the body is in a state to do so without causing too much acidity. Brown sugar is one of the best remedies we have for weak and badly nourished children. The candy factory has entered largely into our commercial life and as a result of the keen competition between competitors, it causes adulteration very unwholesome. Glucose is used very extensively in manufacture of candy.

The following colors can be prepared and used to suit the desire: Cochineal, 1 oz.; boil 5 minutes in half pint water; then add cream tartar, 1 oz.; pulverized alum, $\frac{1}{2}$ oz.; boil 10 minutes longer; add sugar, 2 ozs., and bottle for use. Blue, put a little warm water on a plate and dissolve indigo sufficient for required color. Yellow, rub with some water a little yellow gamboge on a plate, infuse the heat of a yellow lily flower

with milk-warm water. Green, boil the leaves of spinach about 1 minute in a little water, strain and bottle for use.

Fondant is the name given to boiling syrup removed from the fire just before it hardens and is the basis for all candies.

To Make.—To 1 lb. sugar add $\frac{1}{2}$ pt. cold water, $\frac{1}{4}$ teaspoonful cream tartar and boil rapidly for 10 minutes without stirring. Dip fingers into ice water, drop a little of the syrup into cold water, then roll it between the fingers and if it forms a soft creamy ball that doesn't stick, it is done. If not hard enough boil a little longer, and if too hard add a little water and boil and test again. Set aside to become lukewarm, then stir with a ladle until it is white and dry at the edge. It should then be taken out and kneaded, exactly as one would knead bread dough, until it is creamy and soft. By covering with a damp cloth and keeping in a cold place, it will keep well for several days and several times this amount may be made at one time. In making several pounds, it is better to divide the mass before kneading and each may be flavored differently.

Candied Sugar.—Dissolve 2 parts of double refined sugar in one of water. Great care must be taken that the syrup does not boil over and that the sugar is not burnt. The first degree is called the thread, which is sub-divided into the little and great thread. Dip a finger in the syrup and apply it to the thumb, the tenacity of the syrup will, on separating the finger and thumb, afford a thread which shortly breaks. This is the little thread. If the thread admits of greater extension of finger and thumb, it is called the great thread. By longer boiling you obtain the pearl, which admits of being drawn without breaking by the utmost extension of finger and thumb. This makes candied sugar. By further boiling you obtain the blow, which is known by dipping a skimmer, with holes, in the syrup and blowing through them. If bubbles are seen, you have the blow. The feather implies more numerous bubbles and the sugar will fly off like flakes while the skimmer is being tossed. By boiling longer, you obtain the crack. It will crack when broken, and does not stick to the teeth. Dip a teaspoon into the solution and let it drop to the bottom of a pan of cold water, and if it remains hard, it has attained the degree termed cracked.

By following the above rules any kind of candy can be made or colored.

Fig Candy.—One pound of sugar and one pint water; set over a slow fire. When done add a few drops of vinegar and a lump of butter and pour into pans in which split figs are laid. When cool, may place on paper greased with parafine or spermaceti.

Peppermint, Rose or Horehound Candy.—Take 3 lbs. coarse brown sugar (or other kinds to suit) and add to it three teacupfuls of water and set over a slow fire for half an hour. Put to it a little gum arabic dissolved in hot water. This to clear it, if brown sugar is used. Continue to take off the scum as long as any rises. When perfectly clear, try it by dipping and pouring a small teaspoonful into a saucer. If done it will snap like glass. Flavor with lemon or others as desired.

Ginger Candy.—Dissolve 1 lb. double refined sugar in one-third pint of spring water; set it over a clear fire and let boil to a thin syrup. Have ready a teaspoonful of powdered ginger; mix it smoothly with 2 or 3 spoonfuls of the syrup, then stir it gradually into the whole. Boil the mixture into a flake, watching it carefully that it may not exceed this point; then add the fresh grated rind of a large lemon and stir the sugar constantly and rapidly until it will fall in a mass from the spoon, without sinking or spreading when dropped upon a plate. If boiled for a moment beyond this point it will fall into a powder. Should this happen, add a little water and boil to the proper consistency. Dip the candy from the kettle and drop it in small cakes upon buttered pans, then set it away to cool.

Popped corn dipped in boiling syrup and stuck together forms an excellent candy.

Cream Candy.—To 3 lbs. loaf sugar add $\frac{1}{2}$ pt. water and set it over a slow fire for half an hour; then add a teaspoonful of gum arabic dissolved and a teaspoonful of vinegar. Boil it till it is brittle, then take it off and flavor with vanilla, rose or orange. Rub the hands with sweet butter and pull the candy till it is white; then twist or break it or stretch it out into thin white strips and cut in lengths to suit.

Pastilles or Candy Drops.—Pound and sift double-refined sugar, first through a coarse sieve and then through a fine one. Put the sugar into an earthen vessel and dilute it with the flav-

oring extract. Mix a little water with it. If too liquid, the syrup will be too thin and the drops will run together; while, if too thick, the syrup will be too compact and cannot be poured out easily. When the sugar is mixed in a rather stiff paste, put in a small saucepan with a spout and set it over the fire. As soon as it begins to bubble up the sides of the saucepan, stir it once in the middle. Take it from the fire and drop it in small lumps of the size and shape required, upon sheets of tin, to stand for two hours. Then put them in the stove to finish drying. As soon as they are perfectly hard and brilliant take them from the fire, otherwise they will lose their aroma. Color the syrup just before taking it from the fire.

Cloves, Jasmine and Orange Drops are made by mixing the above paste with these respective extracts:

Cinnamon Drops.—Mix 5 drs. powdered cinnamon and 8 ozs. sugar with mucilage enough to make it into a paste and proceed as above.

Pink Drops.—Flavor with tincture of red pinks and color with carmine lake.

Rose Drops.—Mix the paste with rose water and color with carmine lake. Proceed as above.

Lemon and Orange Drops.—Rasp off the yellow rind of an orange or lemon; mix the raspings with double-refined sugar; add 5 grs. of tartaric acid to every pound of sugar, color with yellow like or saffron and proceed as above. If too much tartaric acid is used, the candies will adhere to the sheets of tin.

Chewing Gum.—Take prepared balsam of tolu 2 ozs.; white sugar, 1 oz.; oatmeal, 3 ozs.; soften gum in water bath and mix in the ingredients; then roll in finely powdered sugar or flour to form sticks.

MEATS.

There is no economy in the purchasing of meat of any kind not fully up to the standard. The best is neither too fat nor too lean, but presents a deep red color with fat and lean mingled in such a way as to present a mottled appearance. The fat should be firm and the color resembling grass food butter. The thrifty, young animal furnishes the most delicious, appetizing and digestible, as well as nutritious diet.

Beef.—The sirloin and rib pieces are the best for roasting. It is very essential to prevent the escape of the juices and if an

oven is used, pour a cup of boiling water over the meat when it is first put in the oven. Cook slowly and thoroughly.

Mutton.—Select by the fineness of the grain, good color and firm white fat. It is not the better for being young. If well-fed, thrifty and fat, is for age; but this is only for wether-mutton; the flesh of the ewe is pale and texture finer. The flesh of the ram is very strongly flavored, deep red and spongy fat.

Lamb.—By observing the neck of the fore-quarter, it will be seen that the veins are bluish and fresh, but if a green or yellowish cast, it is stale. If there is a faint odor under the kidney of the hind-quarter and the knuckle limp, it is stale. If the eyes are sunken, the head is not fresh.

Pork.—Pinch the lean and if it was a young animal it will be easily broken. It is old if the rind is thick and tough and cannot be readily impressed with a finger. A thin rind shows merit in pork or bacon. When fresh, the flesh will be smooth and cool; if flabby, soft and yielding easily to pressure, it is tainted. What is called measly pork is very unwholesome and may be known by the fat being full of kernels and also when first slaughtered, the rind will present a well-formed eruption, which may be known by its appearance. Still-house fed pork is too spongy in character and does not cure well. Dairy-fed pork is the best. A pig three weeks old is nearer perfection for eating purposes, but should be dressed and prepared the same day used.

Veal and Kid.—The flesh should be perfectly white, the fat enveloping the kidney should be white and firm. That kind of meat does not keep long in hot or damp weather.

Roast Beef.—The sirloin is considered the best for roasting. Split the meat, pepper the top and baste it well while roasting with its own dripping and throw on a handful of salt. When the smoke draws to the fire, it is near enough. Keep the fire bright and clear. From 15 to 20 minutes to the pound is the rule for roasting.

Boiled Beef.—The round is the best for boiling purposes. Put the meat in the pot, with water enough to cover it. Let it boil very slowly at first. This is the great secret of making it tender. Take off the scum as it rises. From 2 to 3 hours, according to size, is the rule for boiling.

Beefsteak.—The inside of the sirloin makes the best steak. Cut about three-fourths of an inch thick; have the gridiron hot, put on the meat and set it over a good fire of coals and turn it often. From 8 to 10 minutes is the rule for cooking.

Roast Pork.—Take a ham (may use shoulder, if desired), and prepare by thoroughly cleansing; cut the rind in squares; make a stuffing of grated bread, sage, onion, pepper and salt, moisten with the yolk of an egg. Put this under the skin of the knuckle and sprinkle a little powdered sage into the rind where it was cut; rub the whole surface of the skin over with a feather dipped in sweet oil. Eight pounds will require about three hours to roast. The jowl, loin and spare-rib are roasted in the same manner.

Roast Pig.—Tablespoonful of butter, 3 ozs. of bread crumbs, 18 sage leaves, pepper, salt and salad oil to baste with, tablespoonful of lemon juice one-half pint of gravy. Stuff the pig with finely grated bread crumbs, mince sage, pepper and salt and a teaspoonful of butter and mix thoroughly together. After stuffing the pig sew up the slit neatly, skewer the legs to allow the inside to be roasted; put in oven and soon as it is dry have ready some butter tied in a piece of thin cloth and rub the pig with this often in every part. Then take $\frac{1}{2}$ pint of gravy, 1 teaspoonful of lemon juice and the gravy which flowed from the pig (guarding against scorching or burning) and pour a little over it and the remainder send to table in a bowl. Salad oil may be used instead of butter for basting, as it makes the crackling crisp. It will take about 2 hours for a small pig to roast and should be served, while hot, with apple sauce.

Roast Veal.—Pursue about the course as roasting pork. Roast over brisk fire till it comes to a brown color; then lay it down, baste it well with butter salad oil, and when nearly done, with a little flour.

Roast Mutton.—The loin, haunch and saddle of mutton and lamb must be done the same as beef. All other parts must be roasted with a quick, clear fire; baste it when it is put down and dredge it with a little flour just before taking it up. It will require about one hour over a brisk fire for roasting a piece of six pounds weight.

To roast fowls, the fire must be quick and clear. If smoky, it will spoil both taste and looks. Baste frequently and keep a white paper pinned on breast till nearly done.

Roast Turkey.—A good sized turkey should be roasted $2\frac{1}{2}$ to 3 hours—very slowly at first. The stuffing may be made with crushed crackers or crumbled bread brogen very fine, finely cut raw salt pork, pulverized sage and egg. Work all together and season with a little pepper.

Roast Duck and Geese.—Take clear, clean sage and one onion. Chop fine with pepper and salt and stuff full. The goose should be thoroughly cleansed inside and out and wiped dry with a nice clean cloth. Put in vessel and cook slowly until brown. Duck is dressed in the same way. Wild duck, teal, pigeon and other wild fowls, season with pepper, salt and gravy.

Fried Oysters.—Dry carefully with a clean cloth a dozen large oysters. Put 2 heaping tablespoonfuls of good, firm butter in a bright frying pan and as soon as this comes to a boil, put in the oysters and as soon as they begin to curl up, lift them out with a strainer and serve immediately. Oysters cooked in this way are very delicious, but the butter must be heated till the blue smoke hovers over the pan. To 3 well beaten eggs add $\frac{1}{2}$ pint oyster juice, a tablespoonful of black or cayenne pepper, according to taste. Work into this a gill of sweet oil until the whole becomes a batter. Lay the oysters on a prepared bed of cracker dust, then take them, one at a time, and dip them in the batter mixture, then in the cracker crumbs, alternately, four or five times. Do not pile them on top each other, or they will become too heavy. Fry in a pan of hot butter and serve hot.

Mince Meat.—To economize by preserving meats likely to become tainted is one of the duties of the faithful house-wife. Take the heads and feet of three hogs, clean and cook thoroughly, carefully removing all bones, chop finely and add $\frac{1}{2}$ gal. cooked apples, dried, fresh or canned; 3 lbs. seeded raisins, 2 lbs. clean currants, $\frac{3}{4}$ lb. citron, 4 oranges, 5 lemons, freed from seed and tough bits; finely chop, then add 3 pints or 2 quarts of sweet cider or 1 pint of apple vinegar; 2 tablespoonfuls of pulverized cinnamon, 1 tablepoonful each of mace, allspice, cloves and 1 grated nutmeg. Mix well, adding sugar

and salt to taste; cook slowly 3 or 4 hours in granite or stone vessel. Seal and store in cool place.

To Preserve Meat of All Kinds.—Pyroligneous acid, sometimes called pyroligneous vinegar, is a dark brown color, having a strong smoky odor. A chemist immersed a piece of fresh raw beef in liquid for one minute, dried in the shade, and it proved to be in a good state of preservation two months afterwards. Pork, beef and flesh food of that kind should be salted for a sufficient length of time to become seasoned with it, then taken up, washed and dried. After it is thoroughly dried in the shade, put on a coat of acid with a paint brush, hang in the shade to dry. After it hangs a sufficient time, from three to five days, put on a second coat and follow with a third coat in like manner. Three coats are sufficient for ordinary purpose. This meat preservative is placed on the market and sold as liquid smoke. It will pay for all the trouble it requires to use it. A quart poured into a barrel of pickled meat imparts a fine flavor and aids in a more perfect state of preservation. It is very cheap and an effectual preservative against loss.

To Keep Hams at Any Season of Year.—Take unbleached muslin or other kind of thin, sleazy cloth and make into bags about one-third larger than hams. Get new, dry hay and place in bag to be used, a sufficient quantity, and place in ham and pack hay around it. A draw-string would answer well to close and hang in a dry, shady place. The thin cloth will admit air and cause the hams to absorb the aroma from the hay. This will preserve for months.

To Keep Grapes.—Take a water-tight barrel and thoroughly dried bran, dried in oven or large pan, cover bottom of barrel about one inch thick, place upon this well selected bunches which have been gathered in the afternoon of a dry day, before they are perfectly ripe. Proceed with alternate layers of bran and grapes till the barrel is full. Be careful that the grapes do not touch, and finish with a layer of bran, then close as nearly air-tight as possible. Grapes will keep in this way for several months. To restore to freshness, clip off the end of the vine-end of each bunch and insert into red wine as flowers are put in water. White grapes should be put in white wine.

Dietetic Treatment of the Sick.—How often do we hear the well-known interrogatory: "Doctor, what shall the patient eat?" To answer this question satisfactorily, in many instances, is a very difficult proposition. Food to one seems to be poison to one, and food to the other, and what agrees with one disagrees with another. The best index to the best and most nutritious diet a sick person may need is to be guided by the patient's desire. This has been my method for several years, and where excesses have been avoided, it has given better results than any fixed set of rules. Care should be taken not to overload the stomach. There are cases, however, where there is little use for food and where the thoughtful nurse must look for something daintily appetizing as well as nourishing and at the same time easy of digesting. Never set before the patient a large quantity of food and what is offered should be a very small portion delicately cooked and tastefully served. Do not give the same food often, as variety is charming. It is not beneficial to the patient to keep waiting. Never leave victuals in the presence of the sick. The most nourishing preparations to meet this want are here given:

Egg Broth.—An egg, $\frac{1}{2}$ pint good unflavored veal or mutton broth quite hot, salt and toast. Beat the egg well in a basin and when frothy, add the broth, salt to taste and with toast.

Beef Juice—Take a slice of fresh juicy beef without any fat, broil it just enough to heat it through, score on both sides press out the juice with a lemon squeezer into a hot bowl, and serve warm.

Beef Tea—Take 1 lb. lean beef, beat into a pulp, put in a pint of cold water, place over a slow fire, let it come to a boil, then remove from fire, skim and season with a little salt.

Another way—One pound of fresh beef chopped fine, soak over night in a third of a quart of cold water. Put the meat in two-thirds of a quart of water and simmer two hours, adding a little water occasionally to replenish that caused by evaporation, and when done pour the broth into the liquor in which the meat was soaked, squeezing meat as dry as possible. Put meat on a plate and place in an oven, and when perfectly dry, put in a mortar and crush to a powder and mix with the liquor. Add a little salt, twenty drops of muriatic acid and three grains of pepsin. This should be used only when the tongue is

very red or deep brown color. Never use where there is a white coated tongue.

Beef Tea—(No. 2)—Take 1 lb. lean beef, 1 pt. water, $\frac{1}{2}$ teaspoonful salt; chop meat thoroughly, removing the fat, then put into a stone jar with the salt and water; cover with the lid and tie over a piece of thick brown paper; put into a moderate oven, simmer slowly for 4 hrs. and strain.

Chicken Broth—Take $1\frac{1}{2}$ lbs. chicken, chop and crush bones, add 3 pts. cold water and a teaspoonful of rice. Bring slowly to a boil and let simmer 2 hrs. closely covered. When done, pass through a sieve into a hot bowl, pressing the rice through at same time. Let stand a few moments, skim off the fat and season with salt.

Mutton Broth—Take 1 lb. mutton, finely minced, 1 qt. cold water, bring it slowly to a boil and let simmer for 2 hrs. When done pour through a sieve, skim off fat and season with salt and a little red pepper. A little fresh, well boiled rice may be added.

Oyster Soup—Pour a teacupful of water in a saucepan and add 1 pt. oysters; place on the fire and when it comes to a boil, remove and change and strain liquid into a hot bowl and empty oysters into another vessel. Put the empty pan on the fire and into it a piece of butter the size of a walnut and when it begins to bubble stir in a spoonful of finely powdered cracker, then add the juice of the oysters and half teacupful of cream. Let cook a few minutes, then add the oysters and when thoroughly hot season with salt and serve immediately.

Barley Gruel—Mix in cold water a tablespoonful of barley flour, then add twice as much boiling water as first used and a little salt. Cook for a few minutes and then add 3 tablespoonfuls of milk; let again boil and sweeten with a little sugar.

Rice Gruel—To one tablespoonful of ground rice and 1 pt. of water add a little salt. Rub the rice in the water; or better dissolve rice in a little water, while about a pint of water is getting hot in a saucepan over the fire and boils; stir in the rice and cook twenty minutes. If a richer gruel is desired, use milk.

Graham Flour Gruel—One pint of salted water, and two heaping tablespoonfuls of graham flour. Put the water in a granite or earthen vessel over the fire and rub the flour in

half teacupful cold water and when it boils, stir in the desolved flour and cook 45 minutes. When done strain through a thin cloth, add a tablespoonful of sweet cream and serve warm. This is excellent for children or persons with a delicate stomach.

Cream Toast—Use stale bread; cut slices thin and even; place on a thin platter in an open oven and dry it through, then place in a toaster and turn from one side to the other until it receives a deep yellow and uniform color; then pour over it boiling water and after standing a moment, drain it off; butter and salt it slightly, then pour over it a little fresh cream. Set in a hot oven for a few minutes, then serve it immediately.

Panada Bread—Toast to a light brown several slices of stale baker's bread. Pile them in a bowl with sugar and a little salt sprinkled between them; cover with boiling water, cover tightly and set in a pan of boiling water, letting it simmer gently until the contents of the bowl are like jelly. Season to taste with a little sugar and powdered nutmeg and serve warm.

Sago Jelly—Boil a teacupful of sago in four pints of water until quite thick; when cold add a pint of raspberry juice pressed from fresh fruit, or half the quantity of raspberry syrup. Add enough white sugar to sweeten to taste and boil fast for 5 minutes. Pour into moulds. Use with a little cream, at pleasure.

Blanc Mange—Yolks of three fresh eggs, 1 pt. milk, $\frac{1}{2}$ oz. isinglass, rind of $\frac{1}{2}$ small lemon, 2 ozs, sugar. Dissolve the isinglass in water, strain through muslin, put again on the fire with the rind of the $\frac{1}{2}$ lemon cut very thin, and the sugar; let it simmer gently until well flavored, then take out the lemon peel, and stir the milk with the beaten yolks of the eggs; pour the mixture back into the saucepan and hold it over the fire, keeping it stirred until it begins to thicken; put it into a deep basin and keep it moving with spoon till it is nearly cold, then pour it into the moulds, which have previously been laid in water and set in a cool place till firm.

Milk Punch—One fresh egg and a half pint new milk. Set the milk in a clean saucepan over a moderate fire; while it is heating beat the egg to a froth in a basin or a large cup; when the milk begins to bubble skim off the froth as it foams; pour

it into the beaten egg, quickly stirring the milk in, continuing until egg is well mixed (without curdling) with about half the new boiled milk. Pour the remainder from the saucepan into the mixture in the basin and quickly pour the whole back into the pan, then again into the basin and so on until it is all frothy and well mixed. This cooks the egg sufficiently. Add a little salt, a lump of loaf sugar, a few gratings of nutmeg or ginger, according to taste, and serve hot. For cases of spasmodic pain from flatulency or other causes where brandy is often recommended, this is much safer to use.

FOR PUNY CHILDREN.

Teething—Tie a teacupful of flour closely in a cloth and boil for 1 hr. When cold, grate fine enough to thicken a pint of equal parts of milk and water the consistence of porridge; add a little salt and administer at intervals.

Porridge—Take one spoonful of corn meal and one of flour; wet to a paste with cold water; put the paste into two cupfuls of boiling water and boil 20 minutes; add two cups of milk and a little salt and cook 10 minutes more, stirring often. Serve with sugar and milk, while hot.

For Diarrhoea—Where there is disturbance of digestion with summer complaint, take the caul of mutton or lamb or the inside lining of a chicken gizzard and simmer in a pint of water, dusting in a little flour and salt. This is nutritious and allays the irritation of the bowels. Arrowroot made quite thin with a teaspoonful of sweet cream is nutritious and harmless. Do not make food for infants too rich and remember to feed sparingly.

Barley Water—Select and wash 3 tablespoonfuls of pearl barley; soak $\frac{1}{2}$ hr. in luke warm water, while stirring pour in 2 cupfuls of boiling water salted a very little; simmer 1 hr., stirring often. Strain and add 2 teaspoonfuls of white sugar. When milk disagrees with infants barley water can often be used.

TO QUENCH THIRST IN FEVER.

Flaxseed Lemonade—Pour 1 qt. boiling water into a covered vessel upon 4 tablespoonfuls of flaxseed. Steep it for three hours and then add the juice of 2 lemons and sweeten to the taste. If too thick add cold water.

Apple Water—Take some well flavored apples, 3 or 4 cloves, a little lemon peel, boiling water. Slice the apples into a large jug, peeling and all; add the cloves and lemon peel and pour boiling water over them. Let it stand a day. It will be ready for use in about twelve hours.

Slippery Elm Tea—Break the bark into small pieces, pour boiling water over it and cover closely and let stand until cold. Put sugar and ice in for summer diseases and may add lemon juice.

Currant Water—To 1 qt. of red currants, $\frac{1}{2}$ pt. raspberries, 2 qts. of water, add 1 qt. of syrup. Put the fruit with the water over slow fire to draw the juice for $\frac{1}{2}$ hr.; they must not boil. Strain through a hard sieve and add syrup. Other fruits may be used in the same way.

Camomile Tea—One oz. of dried camomile flowers, $\frac{1}{2}$ oz. dried orange peel, 1 qt. of boiling water. Put the camomile into a jug with the orange peel; pour over it the boiling water and stand in the back of the stove, just close enough to the fire to keep it simmering till the strength of the peel and flowers is drawn out, then strain off for use.

Dandelion Tea—Take 6 or 8 dandelion roots, according to size, 1 pint of boiling water. Pull up the dandelion roots and cut off the leaves; wash the roots well and scrape off a little of the skin; cut them up into small pieces and pour the boiling water on them. Let stand all night, then strain through muslin. It should be quite clear and the color of brown sherry. This decoction should be made in small quantities at a time and used as a light beverage.

Soaps—I, at first thought, did not conceive of the idea to notice this household necessity, since the manufactory has entered the field of industry to such an extent that most people depend on that source for their supply.

Soap, Hard White—Take fresh slacked lime, sal soda and tallow, 2 lbs. of each. Dissolve the soda in a gallon of boiling soft water; mix in the lime, stirring occasionally for a few hours; after which let it settle, pouring off the clear liquor and boiling the tallow therein until it is all dissolved; cool it in a flat box or pan; cut into cakes or bars as desired. It may be perfumed with oil of sassafras, bergamont or otto rose. For ordinary use a hundred pounds of good cheap soap can be made

as follows: Potash 6 lbs., lard 4 lbs., rosin 1-4 lb.; pulverize the rosin; mix all together and set aside for five days, then put the whole into a 10 gal. cask of water and stir twice a day for 10 days, when it is ready for use.

Soap of Many Colors—Take soft water 3 qts., nice white bar soap 3 lbs., sal soda 2 ozs., Chinese vermilion and Chinese blue of each about 7 grs., oil of sassafras $\frac{1}{2}$ oz.; shave the soap into thin slices and add it to the water as it begins to boil. when dissolved set off the fire, take out a cup of soap and stir into it the vermilion; take out another cup of soap and stir in the blue; then pour in the contents of the first cup, stirring the mixture a little with a stick; then add the other cupful in the same way; then pour into moulds or a proper box and when cold it can be cut into bars. It presents a beautiful streaked appearance.

Hard Soap—Sal soda and lard, each 6 lbs., unslacked lime 3 lbs., soft water 4 gals.; dissolve the lime and soda in the water by boiling, stirring, settling and pouring off; then return to the kettle (brass or copper) and add the lard and boil it till it becomes soap; then empty into a dish or moulds and when cold cut into bars and dry it.

Yellow Soap—Tallow and sal soda of each 112 lbs., rosin 56 lbs., stone lime 28 lbs., palm oil 8 ozs., soft water 28 gals. Put soda, lime and water into the kettle and boil, stirring well, then let it settle and pour off the lye. In another kettle melt the tallow, rosin and palm oil, having it hot, this being also boiling hot. Mix all together stirring well and the work is done. For smaller quantities: Tallow and sal soda each 1 lb., rosin 7 ozs., unslacked lime 4 ozs., palm oil 1 oz., soft water 1 qt.

Soft Soap—Mix 10 lbs. potash in 10 gals of soft water over night; in the morning boil it, adding 6 lbs. grease; then put all in a barrel, adding 15 gals. soft water.

White English Soap—Six gallons soft water, 6 lbs. good stone lime, 20 lbs. sal soda, 4 ozs. borax, 15 lbs. tallow, 10 lbs. pulverized rosin and 4 ozs. beeswax. Put the water in a kettle on the fire and when nearly boiling add the lime and soda, when dissolved add the borax. Boil gently and stir until all is dissolved, then add the tallow, rosin and beeswax. Boil all gently until it shows flaky on the stick, then pour into moulds.

Transparent Soap—Slice 6 lbs. yellow bar soap into shavings; put into a brass, tin or copper kettle, with $\frac{1}{2}$ gal. alcohol; heat gradually over a slow fire, stirring till all is dissolved; then add 1 oz. essence of sassafras and stir until all are mixed. Pour into pans about $1\frac{1}{2}$ inches deep and when cold cut into square bars the length or width of the pan as desired. Wood alcohol can be used as well as any other flavor.

Soap Without Lye or Grease—In a clean pot put $\frac{1}{2}$ lb. home-made hard or soft soap and $\frac{1}{2}$ lb. sal soda and 5 pts. of soft water. Boil the mixture 15 minutes and you will have 5 lbs. good soap for about $7\frac{1}{2}$ cents.

Hard Soap—Take 5 lbs. hard soap or 7 lbs. of soft soap, and 4 lbs. sal soda and 2 ozs. borax and 1 oz. aqua ammonia; boil 15 minutes in 22 qts. of water. To harden add $\frac{1}{2}$ lb. rosin.

Cut Grease Soap—Take 5 lbs. castile soap, cut fine; 1 pt. alcohol, 1 pt. soft water, 2 ozs. aqua fortis, $1\frac{1}{2}$ ozs. lampblack, 2 ozs. saltpeter, 3 ozs. potash, 1 oz. camphor and 4 ozs. pulverized cinnamon. Dissolve the soap, potash and saltpeter in boiling water, then add all the other articles and continue to stir until cool, then pour into a box and let it stand 24 hrs. and cut into cakes.

Hard Times Soap—Mix 26 lbs. melted and strained grease with 4 pailfuls of lye, made of 20 lbs. of white potash. Let the whole stand in the sun, stirring frequently. Previously rinsing barrel with weak lye. No fire needed.

Lazy Man's Soap—Take 2 lbs. of sal soda, 2 lbs. yellow bar soap, and 10 qts. of water. Cut the soap in thin slices and boil together for 2 hrs.; strain and ready for use. Put the clothes in soak the night before you wash and to every pail of water in which you boil them, add a pound of soap. No rubbing will be needed, merely rinse them out and they will be perfectly clean and nice.

Washing Fluid—Take 1-4 lb. borax, $\frac{1}{2}$ lb. sal soda and dissolve in 1 gal. of hot water; let it settle and pour off in bottles. One gill of this mixture with a pint of soft soap or $\frac{1}{2}$ bar of soap dissolved in hot water, is enough for a washing.

No. 2.—Put a pound of saltpeter in a gallon jug; fill with water and cork; 2 tablespoonfuls to a pint of soap. Soap, wash and boil as usual.

Bluing for Clothes—Take 1 oz. of soft Prussian blue, pulverize it and put in a bottle with 1 qt. of clear rain water and add $\frac{1}{2}$ oz. powdered oxalic acid. A tablespoonful is sufficient for a large washing.

To Clean Grease Spots—Grain alcohol, full strength, 1 oz., sulphuric ether 1 oz., benzine 8 ozs., essence of lemon 3-4 dr. Wet greasy spot with liquid and rub out with a sponge.

Washing Compound—Borax (pulverized) 8 lbs., chloride of ammonia 8 ozs., English rosin 8 ozs., indigo 1 oz., best lye 1 can or ball. If ball lye is used, less rosin will be required. Can lye is better, if a good quality. All the ingredients must be thoroughly pulverized and mixed in a vessel, adding lye last. The lye must be dissolved in a little water before mixing with the other ingredients. To a tub of water put in one tablespoonful, in which the clothes are to soak over night, then two tablespoonfuls to 16 gals. of water in which the clothes are to boil 30 minutes.

Ball Blue—Take glucose 9 drs., carbonate of soda 4 ozs., common or ordinary ultramarine 2 ozs.; refined or superfine ultramarine 4 ozs.; add sufficient water to make stiff paste and roll out into a thick sheet, then cut and make into balls, drying with gentle heat.

Stick Blue—Take soluble blue 8 lbs., pulverized borax 4 lbs., yellow dextrine 4 lbs., oxalic acid $1\frac{1}{2}$ lbs., gum senegal 2 lbs. The gum must be dissolved in hot water. Sift through a fine sieve the other ingredients, then mix all together to make thick paste, cut into blocks and slowly dry.

Cheap Blue—Soluble blue 4 lbs., table salt 4 lbs., yellow dextrine 4 lbs., borax 4 lbs., gum senegal 2 lbs., oxalic acid $1\frac{1}{2}$ lbs., and sufficient water. Mix as above.

Laundry Blue—Prussian blue 1 oz., oxalic acid 1-4 oz., rain water 1 qt.; mix, dissolve and let settle. A teaspoonful will do for an average washing. This is a good ink, also.

Wash Blue—Take 1 lb. pulverized Prussian blue; work into a paste with hot water and mix with $1\frac{1}{2}$ ozs. ferrocyanide of potassium, and let dry. Pulverize and put away in cans or other container.

To Give Fine Luster in Starch—Dissolve a teaspoonful of alum in a pint of starch. Will hold the color and luster to the fabric.

Gloss Starch.—Take 1 lb. of cold water starch, made by soaking wheat bran, 2 ozs. borax, 2 ozs. spirits of turpentine, 2 ozs. glycerine and 6 pts. of water. Make a smooth paste of starch and a little water; dissolve the borax into the paste and add the 6 pts. of water; stir and add glycerine and turpentine. One or two spoonfuls to a pint of water.

Gloss Liquid Starch.—Take 1 oz. of borax, 1 oz. spermaceti, 1 oz. of gum Arabic, $2\frac{1}{2}$ ozs. of glycerine and $14\frac{1}{2}$ ozs. of water. Boil with half the water the borax and spermaceti; dissolve the gum in the remainder of water and glycerine. Mix and strain while warm. This is used with cold starch, a wine glass ful to a heaping tablespoonful of starch.

INK.

One ounce each of extract of logwood and bi-chromate of potash, which is an orange red color. Take $\frac{1}{2}$ oz. extract of logwood and 10 grs. of bi-chromate of potash and dissolve them in a quart of hot rain water. When cold pour it into glass bottle and leave it uncorked for about two weeks. Exposure to the air is very necessary. The ink, at first, is an intense steel blue, but becomes quite black, and cost you about 3 cents and 15 minutes time.

Jet Black.—Dissolve in $\frac{1}{2}$ pint of soft water 3-8 oz. bi-chromate of potash and add 60 ozs. of extract of logwood dissolved in 1 gallon of soft water. Dissolve 6 ozs. borax and $11\frac{1}{2}$ ozs. shellac in 1 gallon of boiling water; mix all together while warm and 3 ozs. ammonia added.

Green.—Cream tartar 1 oz., verdigris 2 ozs., soft water 8 ozs. Mix and boil to proper color.

Violet Ink.—Dissolve some violet aniline in some water to which a little alcohol has been added: It takes very little aniline to make a large quantity of ink.

Blue Ink.—Take sulphate of indigo, dilute with water till it produces the required color.

Furniture Polish.—No. 1. Cider vinegar, 1 oz.; aqua ammonia, 1 dr.; butter of antimony, $\frac{1}{4}$ oz.; gum camphor, $\frac{1}{2}$ oz.; linseed oil, 4 ozs. Dissolve the gum camphor in the oil with gentle heat, then add the other ingredients slowly and shaking at same time.

No. 2.—White wax, 8 ozs.; rosin, 2 ozs.; balsom of fir, 8 ozs.; melt at a gentle heat. The warm mass, completely

melted, is poured into a stone jar, agitated and 6 ozs. rectified spirits of turpentine added thereto. After 24 hours the mass should appear about like soft butter and is ready for use. Before using the paste, the furniture should be washed with soap and water and thoroughly dried. Use a flannel cloth in polishing.

No. 3.—Oil of turpentine, 1 pint; alkanet root, $\frac{1}{4}$ oz.; digest until sufficiently colored, then add 4 ozs. of scraped beeswax; put the vessel in hot water and stir until the mixture is complete, then put into boxes, or large mouthed bottles. If wanted a pale color, leave out alkanet root.

TO DESTROY BED BUGS.

Corrosive sublimate, 2 drams; spirits of turpentine, 4 ozs. Mix and spread around places infected, bedsteads and mattresses as well as the walls of the room.

No. 2.—Rub with a small painter's brush spirits of naphtha into every part of bedstead, is a certain way of getting rid of bugs. The mattress and binding being examined and the same process attended to, as they generally harbor more in these parts than in a bedstead. Ten cents worth of naphtha is sufficient for one bed.

PICKLES.

Just as I was closing up this chapter my wife came in and said: "Don't quit until you say something about pickles." So here it is.

Sour Pickles.—Gather medium size cucumbers, wash in cold water; soak in salt water over night, put in stone or granite kettle, while soaking in weak salt solution. Take out of salt solution, wash in clear water, replace in vessel and pour on boiling water and let stand till cold. Pack tightly in fruit jars and to each half gallon add 1 tablespoonful salt, 1 teaspoonful of alum and 3 tablespoonfuls of sugar; then heat vinegar near boiling point (don't boil), and fill jar. Set in a cool, dark place. In gathering cucumbers for canning they should be clipped with a sharp knife or shears, close to the vine, leaving stem on the cucumber.

For Sweet Pickles.—Proceed as above for sour pickles, then to $\frac{1}{2}$ gallon of vinegar add 3 pints of sugar; let boil and skim off all foam, for about 30 minutes, adding sweet pickle

spices, pouring syrup over pickles while hot. Seal and set in cool place.

Pickle Beets.—For sour pickles, wash clean, boil and peel, place in jar, heat vinegar, put in salt, alum and sugar as for cucumbers.

Sweet Pickles.—The same process is pursued as for sour, adding syrup the same as for sweet pickled cucumbers.

Mixed Pickles.—Cut fine cauliflowers, white cabbage, tender beans, onions and cucumbers. Soak over night in salt water, squeeze out, place in jars with spice, ginger and pepper; cover at once with strong pickling vinegar. Seal and set away.

Indian Pickle.—Take one hard, sliced, white cabbage head, 2 cauliflowers, pull to pieces, 20 tender beans, 1 piece of horse-radish, sliced fine, 2 dozen small white onions, 1 dozen small cucumbers or gherkins. Cover these with boiling brine. Next day drain the whole in sieve, put into a jar, add of curry powder or turmeric 2 ozs.; garlic, ginger, and mustard seed, of each 1 oz.; capsicum 1 oz. Fill up the vessel with hot pickling vinegar; seal, set away and agitate occasionally for a month.

Vinegar.—Mix 25 gallons of warm rain water with 4 gallons of molasses, 1 gallon yeast, and let it ferment. You will soon have the best of vinegar. Keep adding these articles in proportions as the stock is used.

White Wine Vinegar.—Mash up 20 lbs. raisins, add 10 gallons of water; let stand in warm place one month, and you will have pure, white wine vinegar.

Commercial Vinegar.—Take 5 lbs. of acetic acid, molasses 2 gallons; yeast, 2 quarts; put into a 40 gallon cask or barrel and fill with rain water; stir it up, and let stand from one to three weeks, letting it have all the air possible and you will soon have good vinegar. If desired stronger, add more molasses. Should you at any time have weak vinegar on hand put molasses into it to set it fermenting. This will soon correct it. Set in a warm place.

Varnish.—Varnishing old furniture to appear new is the pride of every house-wife. Neatness and attractiveness is the desire of nearly every housekeeper. To met this requirement a few selections are here made: The surface of pieces to be varnished should be thoroughly cleansed of all grease and dust by washing in a good strong soap suds and drying. Smoky

pieces will require the same treatment. The varnish will not dry unless the furniture is prepared properly.

Oak Varnish.—Take clear pale rosin, $3\frac{1}{2}$ lbs; turpentine, 1 gallon, and dissolve, then add balsam of fir 1 pint. Can color to suit.

Furniture Polish.—Raw linseed oil, $\frac{1}{2}$ gallon; butter of antimony, 1 gill; alcohol shellac varnish, 1 pint; turpentine to make a gallon. Apply with a woolen cloth and rub till dry and glossy.

THE FARMER

AND HIS

ASSOCIATES.

ALFRED H. HODGSON

The Farmer and His Associates

The farmer and his varied relations in the fields of industry is the greatest link in industrial progress. On him civilization depends for succor. On him, who holds the plow, turns the soil, sows and reaps the grain, garner and ship, depends the commerce of the world. Here is the backbone of all animal existence. Yes, the fowls of the air nestle about his field and bugs of every variety and innumerable in quantity visit him. Ants promenade the milk pan, sugar bowl and indulge in other mischief; mosquitos and gnats pay him their respects occasionally, while the mice, rats and other vermin prey upon his grain and pace the barn yard to make inroads on his chickens.

The man on whom our very existence depends! The man! The noblest work dropped from the hand of an All-wise Creator. Does he need sympathy? Hard question. Being a power in industrial achievement, yet misdirected. He appears to be very well clothed with mortgages and seems to be satisfied with his condition. He knows the crack of the whip of poverty, but continues to move without switching. He is the mainstay of society, furnishes his own provender and will stand considerable milking without much kicking. Noble man! Tied to the soil of his nativity, we extend to him our hand in token of friendship and brotherly affection. May he arise, push onward, upward and reach the summit of his chosen occupation. The soil is the mother of all germinating properties and should require and receive more attention in consequence. The fertility will become exhausted without some effort on the part of the tiller. The Chinaman returns as much to the soil as he carries away. It is one of the fundamental principles of that government to see that the soil is kept in a high state of cultivation. The discussion of this important subject requires some notice at my hands. I am glad to see the progress being made in agricultural lines.

Best Fertilizer.—Take a large tub, barrel of sufficient capacity, put into it 20 gallons of water; add very slowly and cautiously 100 pounds of pure sulphuric acid. Be very careful while handling this article (keep children away) not to let it touch the skin or clothing, as it instantly blackens the skin and destroys the clothing wherever it comes in contact. When mixed with water it engenders a very intense heat. Throw into this mixture 200 pounds of bones. The sulphuric acid instantly attacks and enters into a combination with the bones, reducing to a pasty consistency, and completely dissolving them. Keep covered to hold the fumes as much as possible, but turn the bones over occasionally, and when completed dump contents on a platform erected for the purpose, and work into four times the amount of bog earth or road dust to absorb the moisture. Mix and pulverize with a wood shovel, so as to render more uniform for distribution. If whole bones are used, it will take six or eight weeks to dissolve them. The finer they are broken or ground the quicker it will dissolve. This preparation bears the reputation of being the most powerful fertilizer extant. Its power develops its cheapness. For grasses, 300 pounds per acre; for corn, potatoes, beans, turnips, 450 pounds per acre; for wheat, rye, oats and barley, 400 pounds; to harrow with seed or drill, 300 pounds. Sulphuric acid can be used in any amount with a double quantity of water.

Tobacco Fertilizer.—Take 40 pounds of the best Peruvian guano to each 100 pounds of the superphosphate, made by the above process, and you will have one of the most powerful fertilizers for tobacco that can be made. Use as other fertilizers.

To Make in Twenty-Four Hours.—Any farmer having an apparatus for cooking food for cattle can utilize it to a great advantage in the production of fertilizer by throwing the steam into a barrel filled with bone and acid through an exhaust pipe. The heat thus generated quickens into activity the dissolution of the bones in a wonderful manner, and if the process is properly conducted it will not take over twenty hours. It is indispensable that the barrel be tightly covered to retain the steam.

Home-Made Guano.—Save all manure from chicken house and keep from sun and rain. Keep a layer of black loam, pro-

cured from some swag or creek bottom (loam the best) spread on the floor. At intervals rake into a heap, mixing in ashes and pulverizing by beating with back of the spade. It should consist of the following proportions: Dried muck or loam, 4 bushels; fowl manure, 2 bushels; ashes, 1 bushel; plaster, $1\frac{1}{2}$ bushels. Spare no labor while mixing and mix thoroughly. The elbow grease expended will get great returns. A little before planting, moisten the heap with water, or, still better, with urine; cover well with old mats and let it lie till wanted for use. Apply it to beans, corn, or potatoes, at the rate of a handful to a hill, mixing with the soil before dropping the seed. This will be found the best substitute for guano ever invented.

Manure for Almost Nothing.—If you have a dead animal, for instance, the body of a horse, do not suffer it to pollute the air by drawing it away to the woods or any other out of the way place, but remove it a short distance from the premises and put down four or five loads of earth raised or mounded, place the carcass thereon and sprinkle it over with quick lime and cover with dirt sufficient to make 20 wagon loads with what had already been previously added and in twelve months you will have 20 good wagon loads of manure well worth \$20.

To Test the Vitality of Seed.—Place almost any kind of large seeds or grain on a hot pan or griddle. When the vitality is perfect, the grain will pop or crack open with more or less noise. Where the vitality is defective, or lost, it remains immovable in the vessel. The largest and most thrifty looking grain should be selected for planting purposes.

To Revive Old Orchards.—Sulphate of potash, 30 lbs.; sulphate of magnesia, 15 lbs.; salt, 35 lbs.; plaster of Paris, 15 lbs.; chloride of magnesia, 5 lbs. All to be well pulverized and mixed with stable manure and then dug in around the roots at the rate of 10 or 20 lbs. to a tree. This compound is assumed to restore the elements to the soil of which it has been exhausted during many years of fruit bearing and the secret has been sold to hundreds at fancy prices.

To Keep Young Growing Fruit From Cracking.—Pears and other fruit, at times, show a deformity of development, which shows a deficiency in lime and potash. These essential elements of the exhausted soil by the application of wood

ashes at the rate of 400 bushels per acre, which insures the renewal of the proper proportions necessary to supply the requirements, viz: 40 per cent of potash and 30 per cent of lime. This will check cracking of fruit. Applied to the roots of trees and vegetables, 12 quarts of soot mixed with one hogshead of water, is a most powerful stimulant of growth and production. A paint of soot and sweet milk applied to fruit trees will keep rabbits off.

Salt and Its Uses.—Salt appears to be as necessary to vegetable as well as animal life. Applied in combination with other manures at the rate of 200 pounds per acre, it never fails to produce results on all kinds of grain and vegetables.

Bug Exterminator.—For potato bugs, mix (in proportion, if less is required) 1 lb. Paris green with 10 lbs. flour and sift on vines late of an evening or early in the morning, while the dew is on the ground. Striped Bug—Sift charcoal, pulverized, 3 or 4 times in succession, then use a solution of hen house manure in proportion of 1 peck manure to 1½ gallons of water, and sprinkle the plants freely with it after sunset. Caterpillars—Use a solution of one part in 500 of sulphide of potassium, sprinkle on tree by means of a hand syringe, or spray. Curculio—Make a very strong solution of water and gas tar, so that after standing 48 hours it will be powerful and dark colored like creosote. On the appearance of the curculio, drench the tree thoroughly with a hand-forced pump, repeating it every 3 days for 2 weeks, and destroy all fallen fruit.

THE HORSE.

Next to his faithful dog, is the horse the abetter of man. No animal has had to withstand the torture and barbarous treatment to appease the peculiar whims and caprice of man like the horse. Rode and drove in pain, he bears his afflictions without a murmur to obey his master. Kindness to this faithful friend is most generally compensated to full value. A horse trainer gives some valuable advice pertaining to this pertinent question: "In training horses, you must remember that there are certain natural laws that govern him. For instance, it is natural for him to kick when he gets badly frightened; it is natural for him to escape from whatever he thinks will do him harm. His faculties for seeing, hearing and smell-

ing have been given him to examine everything new that he is brought in contact with. And so long as you present him with nothing that offends his eye, nose or ears, you can then handle him at will, notwithstanding he may be frightened at first, so that in a short time he will not be afraid of anything he is brought in contact with. All the whipping and spurring of horses for shying, stumbling, etc., is useless and cruel. If he shys and you whip him for it, it only adds terror and makes the object larger than it would otherwise be. Give him time to examine it without punishing him. He should never be hit with a whip under any circumstances or for anything that he does. As to smelling oil, there is nothing that assists the trainer to tame his horse better. It is better to approach a colt with the scent of honey or cinnamon on your hands than the scent of hogs, for horses naturally fear the scent of hogs, and will attempt to escape from it, while they like the scent of honey, cinnamon or salt. To affect a horse with drugs you must give him some preparation of opium, and while he is under the influence of it you cannot teach him any more than a man when he is intoxicated with liquor. Another thing, you must learn to treat him kindly, for this you require obedience from any subject. It is better to have it rendered from a sense of love than fear. You should be careful not to chafe the lips of your colt or hurt his mouth in any way. If you do he will dislike to have the bridle on. After he is taught to follow you, then put on the harness, putting your lines through the shaft straps along the side and teach him to yield to the reins, turn short to the right and left; teach him to stand still before he is ever hitched up. You then have control over him. If he gets frightened, the lines should be used as a telegraph, to let him know what you want him to do. No horse is naturally vicious, but always obeys his trainer as soon as he comprehends what he would have him do. You must be firm with him at the same time and give him to understand that you are the trainer and that he is the horse. The best bits to be used to hold a horse, to keep his mouth from getting sore, is a straight bar-bit, $4\frac{1}{2}$ inches long between the rings. This operates on both sides of the jaw. The curb or bridoon hurts his under jaw so that he will stop before he will give to the rein.

Take your colt into a tight room or pen and with a long whip commence snapping at the colt's hind leg, taking care not to hit above the hocks, stopping immediately when the colt turns his head towards you. While his head is towards you approach him with the left hand extended toward him, holding your whip in the right, ready to snap him as soon as he turns his head from you.

"In this way you can soon get your hands upon him. As soon as you have done this be careful to caress him for his obedience and snap him for his disobedience. In this way he will soon learn that he is safe in your presence with his head towards you, and in a very short time you cannot keep him away from you. Speak kindly and firmly to him, all the time caressing him, calling by name and saying, "Ho, boy," or "Ho, Dina," or some familiar word that he will soon learn.

"If a colt is awkward and at first you must bear with him, remembering that we, too, were awkward when young, allowing him his own way, until by degrees he will come in. If he is willful, you must then change your course of treatment by confining him in such a way that he is powerless for harm until he submits. If he is disposed to run, use a pole check on him: if to kick, fasten a rope around his under jaw, pass it through the collar and attach it to his hind feet. In this way one kick will cure him, as the force of the blow falls on his jaw. If he should be stubborn, lay him down and confine him until you subdue him, without punishing him with a whip."

Besides the cruel punishment inflicted upon horses by a careless and heartless driver he is subjected to severe punishment in the winter season by having frozen bits forced into his mouth in cold weather, tearing the skin from the tongue and roof of the mouth, producing a heavy inflammation of mouth and throat, causing hide-bound, blindness and many other ailments. Bits, in cold weather, should be wrapped with soft flannel or leather.

The Check Rein.—Flatter yourself in an effort to draw a heavy load pulling from the shoulder, with the head firmly fixed three or four inches backward from an erect position. It is possible that a protest would soon follow against such an unnatural as well as barbarous position. It is both cruel and use in every sense of the word, without any compensating

qualities to recommend it. No horse can render the best service in an uncomfortable harness.

Shoeing.—How many horses have been ruined and their usefulness destroyed by the haphazard way of shoeing. The majority of some smiths, as soon as they pick up a horse's foot, go to work paring the heel, from the fact it is the most convenient part of the foot, and thereby the heel and brace of the foot, causing, in many instances, the animal to become raccoon-footed or contracted heels. The heels of a horse should be well kept up and the toe down. By lowering the heel the entire weight of the horse is thrown upon the back tendons of the legs and thereby producing lameness from overtaxing a very important set of tendons. By keeping up the heel, the weight is thrown upon the walls of the foot, therefore stumbling, clicking with other defects are prevented. Next the shoer commences to pare away the sole, thins it down until he can feel it spring with his thumb. The reason for such methods has evolved out of custom and proceeds further in its deleterious work by cutting the bars or braces and trimming the frogs of the feet. All the cutting, paring and smoothing of the soles, bars or frogs is a decided injury to the horse as well as to the owner. The frog is placed in the foot by nature to give expansion and contraction. By cutting and smoothing the foot loses its contour, the oil, necessary for its protection, leaks out, the hoof becomes hard and cracks and corns develop. Horses that stand on board floors should have their feet wet every day or there should be a vat five inches deep, five feet long and three feet wide, filled with water and clay, in which each horse can stand one hour per week, unless his feet are feverish, and then he should be kept in it an hour each day or until the fever subsides. The first thing that should touch the ground or floor is the frog of the foot and the walls should be pared so as not to prevent it from touching at every step. No man who owns a horse should ever allow a blacksmith to cut the soles, bars or frogs of his horse's feet. Nature has adapted the frogs to all descriptions of roads, climates and weather without being pared. So many horses have been ruined by this process of paring that there are several establishments in this country that manufacture India rubber pads, thinking thereby to supply the wasted frog and the elasticity

of a natural foot. The nervous sensibility of both in the feet and of the horse causes him to flinch and become excitable and as a result of his natural disposition he receives a very severe reprimand in the expressing of a few oaths or an introduction to a bar of iron or stick of wood, which adds terror to it; that ignites both man and beast into a flame of passion. If the horse should be handled in a way to create no excitement he will become perfectly docile and easily managed. The walls of the foot should never be rasped above the nail holes and as little below the clinches as possible. All the rasping and filing tends to thin and weaken the wall by cutting the fibers of the foot. The nails should be counter sunk into the shoe, so that there will be no chance for the clinches to rise. No horse interferes with cork or toe; it is always with the sides of the foot. The habit of turning the inside of the shoe under causes a number of horses to knock their hocks or cork themselves that would not if they were shod straight on the inside. Spread the heels as wide as possible, set the outside a little under; keep the toes full. For clicking horses, raise the heels high and cut the toes short. For speed, place the toe corks a quarter of an inch to the inside of the center of the shoe and keep the heels wide apart. For corns, put on a shoe with a prong for the main rim, so as to cover the entire frog, pare the wall lower than the frog so that his entire weight will be thrown on the frog. Have the inner cork not quite so sharp as the outer one, so that if he steps on the other foot it will not cut it; have the shoes as light as possible consistent with good service, as they are ordinarily made just about one-third too heavy. Plenty of water and an occasional oiling makes horse-shoeing, in a great many instances, unnecessary. Since the horse, because of his adaptation, is very badly abused by what are termed "jockey tricks." These tricks are a source of great pain, at times, as well as amusement, and the financial consideration. To make the appearance of founder, a piece of wire, about the size of a No. 36 thread, is fastened around the fetlock, between the foot and the heel, and hair smoothed down, and left in place about nine hours. To lame a horse, a hair is taken from his tail, put through the eye of a needle, then lift the fore leg and press the skin between the outer and middle tendon or cord and shove the needle through, cut off the

hair on each side and let the foot down and he will be lame soon. To keep a horse from eating, grease the front teeth and the roof of the mouth with common beef tallow. This method, in conjunction with small wire around the fetlock, will consummate a complete founder trick. To cure a horse of the crib or wind sucking, saw between upper front teeth. To put a young countenance on an old horse, make a small incision in the sunken place over the eye, insert the point of a goose quill and blow it up. Close the incision and the work is done. Shut down the heaves by pouring about a quarter of a pound of bird shot down the horse and as long as the shot stays with him he is not likely to heave. Pour some melted butter into the horse's ear and he assumes the symptoms of glanders. In glanders the discharge from the nose will sink in water and in distemper it floats. A true pulling horse will balk if one ounce of the tincture of cantharides and one dram of corrosive sublimate are mixed and applied to his shoulders at night.

To Tame Horses.—Take finely grated horse castor, oils of rhodium and cumin; keep them in well corked and separate bottles; pour a little of the oil of cumin on the left hand and approach the horse on the windy side. He will then move toward you or remain standing. Rub some of the cumin on his nose; give him a little of the castor on anything he likes and get eight or ten drops of rhodium on his tongue. He can be handled as desired. Be kind and attentive to the animal and your control is certain. The recipe is said to have originated in Arabia and has been used by horse trainers who paid as high as \$500 for it.

Balky Horses.—One method to cure a balky horse is to unhitch him and whirl him rapidly around until he is giddy. It requires two men to accomplish this—one at the horse's tail. Keep him in a small circle and don't let him step out. One dose will often cure; two doses are final with the worst horse that ever refused to stir. Hitch while giddy with his head in the direction you wish to go. Another plan is to fill his mouth with dirt or gravel and he will move.

DISEASES OF THE HORSE.

Abdominal Dropsy—This is usually the result of chronic inflammation of the bowels.

Symptoms—Head hung; mouth dry; membranes look pale; pulse hard. If the horse turns about suddenly the act elicits a grunt. Pressure on the abdomen will cause him to groan. A lack of spirits; lies down constantly, if left to himself; is restless, thirsty, no appetite; is weak, abdomen enlarged, yet the horse is quite thin in flesh, hide-bound and constipated. One of the legs and sometimes the sheath are swollen.

Treatment—Empty bowels by giving 4 to 6 drs. of alves; tartrate of potassium 1 dr., ginger and castile soap each 2 drs. oil of anise or peppermint 20 drops; pulverize and make all into one ball with gum solution. For brisk action 8 ozs. of glauher salts could be added to one-half the above. Dissolve all in 1 qt. of gruel and give as a drench. Keep this up till the water is all drained out, by giving a dose every three or four hours.

This will act well: Twenty grains of the extract of belladonna, 10 grs. sulphate of quinine, 35 grs. of the iodide of iron, $\frac{1}{2}$ gr. of strychnia. Mix and give at a dose, night and morning. Mix 5 ozs. of the tincture of iodine with 2 ozs. of croton oil. Apply a little to the abdomen by rubbing down the skin and shifting to a different location when the skin becomes sore. Some cases are incurable.

Bots—The stomach seems to be the natural nursery for the protection and propagation of the stomach bot. When the eggs have remained in the stomach for a year they become a perfect chrysalis (that is the form of the butterfly before it reaches the winged state) and then they release their hold of the stomach and are passed off. It will be provided with wings in a short time and fly about, commencing the propagation of its species, which passes through the same period of incubation. They are of two kinds, stomach and fundament. The stomach bot is the result of turning horses into the pasture in the summer months and are produced from the eggs laid on the fore legs of the horse by the bot fly.

Symptoms—The hair looks dead and unthrifty and loss of flesh after running out to pasture. All horses which run

out to grass are most sure to have bots in their stomach and as there is so much misconception about bots and their destructiveness to horses, we copy the results of a series of experiments with bots three-fourths grown. "When immersed in rum, they live 24 hrs.; a decoction of tobacco, 11 hrs.; strong oil of vitriol, 2 hrs., 18 mins.; essential oil of mint, 2 hrs., 5 mins. When immersed without apparent injury, in spirits of camphor, 10 hrs.; fish oil, 49 hrs.; tincture aloes, 10 hrs.; in brine, 10 hrs.; solution of indigo, 10 hrs. A number of small bots, with one that was full grown, were immersed in a strong solution of corrosive sublimate, one of the most powerful poisons. The small ones died in one hour, but the full-grown one was taken out of the solution 6 hrs. after its immersion, apparently unhurt."

If the foregoing experiments are considered as giving the exact vitality, as expressed in the several methods, it would appear that treatment that would destroy the bot would kill the animal.

Treatment—The general condition should be improved so that the debilitating effects of the bots may not interfere with the health of the horse. About 4 to 6 qts. of grated Irish potatoes fed to a horse will prove effective. This is claimed to be a dead shot for bots. Give the horse, first, 2 qts. sweet milk, mixed with 1 qt. molasses; in 15 mins. afterwards give 2 qts. of very strong sage tea; 30 mins. after the tea give 3 pts. (or enough to operate as physic) of raw linseed oil. The molasses and milk causes the bots to let go their hold, the tea puckers them up and the oil carries them away. After the animal has recovered sufficiently from the treatment already given, follow with a tonic or restorative. This is excellent: Saltpeter, sulphuret of antimony, sulphur and ground ginger, of each 1 lb. Mix all together and administer in bran or like substance, in such quantities as may be required. This is reputed to be as good as the best.

The Fundament Bot—It is like the stomach bot, that is, it is also the result of running out to grass. Instead of the eggs being deposited on the legs they are deposited on the lips of the horse. They are found in the rectum and under the tail.

Treatment—Inject a quart of raw linseed oil or tobacco smoke. A little wood ashes put in the drink daily or placed in the troughs is beneficial.

Colic—Colic is a very common, as well as very dangerous disease. There are two forms: Spasmodic and Flatulent. The former is of spasmodic nature and will, in severe cases run into inflammation of the bowels and cause speedy death if not relieved. The cause is the result of drinking cold water when too hot; costiveness, unwholesome food and an undue quantity.

Symptoms—The horse is suddenly attacked with pain and shows evidence of great distress, shifting his position almost constantly and manifesting a desire to lie down. But in a few minutes these symptoms disappear and the horse is easy for a short time, when they return with increasing severity until the horse cannot be kept upon his feet. A cold sweat generally breaks out over the body. The legs and ears remain at about the natural temperature. He looks around to his flanks, mostly at the right side, as if pointing out the seat of the disease; scrapes the ground with his forefoot and will almost strike his belly with his hind foot. The horse heaves at the flanks; he kicks and rolls and appears greatly excited and sometimes acts as if he wanted to urinate, which he cannot do on account of the urethra being spasmodically contracted. The symptom need not be treated, for as soon as he is relieved, he will pass water freely. Therefore, follow the treatment to relieve the colic as soon as possible. As the disease advances, the horse will frequently throw himself down with force, look anxiously at the sides and sometimes snap himself with his teeth and strike upwards with his hind feet as they do many times in inflammation of the bowels.

Inflammation of the Bowels—Since colic and inflammation are closely related and the treatment somewhat allied, I herewith append a description of diagnostic symptoms:

Symptoms of Colic—Attack suddenly; intervals of rest; motion or rubbing belly gives relief; ears and legs of natural temperature; strength scarcely affected; pulse not much altered in the early stage of the disease.

Symptoms of Inflammation—Symptoms come on gradually; in constant pain; belly quite tender and sore to the touch; ears and legs cold; motion increases pain; strength

rapidly failing; pulse small and much quickened and scarcely to be felt many times.

Treatment—If the cause is constipation, give a quart of raw linseed oil and if necessary add from 4 to 6 drops of croton oil. Bleed freely at the horse's mouth; then take $\frac{1}{2}$ lb. of raw cotton, wrap it around a coal of fire so as to exclude the air; when it begins to smoke, hold it under his nose till he becomes easy. If the cause is over-purging, give an ounce and a half of laudnum in half pint of water. If the cause should be other than costiveness or diarrhoea, give 30 drops of the tincture of aconite root in a little water every two or three hours. Apply blankets rung out of hot water to his belly and renew often. Give an injection of lukewarm water, castile soap and a handful of salt every half hour until the bowels act.

Where the symptoms show an inflammation, the acute pain will be best relieved by giving an ounce of sulphuric ether and 2 ozs. of tincture of opium in a pint of raw linseed oil, and if not relieved in an hour repeat the dose. Gentle motion by walking the animal is advisable, but if he is resting leave alone.

The following can be prepared and kept for use at any time: Aromatic spirits of ammonia 1 pt., sulphuric ether 1 pt., sweet spirits of nitre $1\frac{1}{2}$ pts., pulverized gum opium 4 ozs., gum camphor 4 ozs., assafoetida 4 ozs. Mix all together and shake frequently and let stand 12 or 15 days; then filter or strain through a flannel cloth and it will be ready for use. Give a teaspoonful in water every half hour. In severe cases, may increase the dose. A heaping teaspoonful of common baking soda in a pint of warm sweet milk acts kindly in many cases. If the pain becomes such that it is evident the animal cannot live much longer, tapping may be resorted to with great benefit. While the operation is by no means void of danger, yet a little discretion will suffice to perform it. Measure the animal from the point of the left shoulder to the point of the left hip; then measure six to eight inches from the center of his back and just behind the eleventh rib. Take a keen pointed knife and insert and let the gas escape. Be sure to get low enough to miss the kidney. A trocar and canula might be preferred.

Bronchitis—This disease is an inflammatory condition of the air passages of the lungs. It is a very common disease among horses and is sometimes confounded with inflammation of the lungs (pneumonia or lung fever), distemper and colds.

Symptoms—Begins with a chill, fever, harsh cough, labored breathing, mouth dry and hot, with loss of appetite and in one or two days, a discharge from the nostrils will be observed.

Treatment—Place the horse in a nice comfortable place with even temperature. Give the tincture of aconite root, 10 to 15 drops, and the same number of drops of the tincture of belladonna every 2 to 4 hrs. until 6 or 8 doses have been given, which will likely relieve the fever. Give the horse plenty of water to drink. After the fever has subsided give light nourishing food.

Corns—Corns appear in the angle of the hoof near the heel and are generally caused by the shoe being worn too long, causing the shell of the hoof to grow over the shoe which allows the weight to press upon the sole, the shoe gets moved from its proper position or perhaps was never placed there. Upon cutting away the horn there will be found a red spot; but if very bad the color will be a dark purple and will be deeper seated.

Treatment—Dress down the bruised part until quite thin and take sugar and put on place and with a red hot iron burn until the heat causes the animal to want to remove the foot. The sugar causes the heat to penetrate more thoroughly and the red hot iron will sear more quickly. This should be done at least once a week; in the meantime use the following every day: Pure tar 16 ozs.; fish oil 16 ozs., turpentine 8 ozs., oil origanum 2 ozs., tallow 4 ozs. Melt all together and use locally once or twice a day. It can be used in all kinds of bruises, cuts, or for softening the hoof.

Curb—This is one of the many diseases of the hock joint and consists of an enlargement or gradual bulging out at the posterior part of the hock.

Cause—Curb is generally caused by a strain from galloping on uneven ground, wrenching the limb, prancing and leaping. It is one of the evils which occur among the better breed of horses. Man delights in showing off the animal he is

mounted upon. Pulling the horse up suddenly when under speed, on their haunches, is a frequent cause of curb.

Treatment—Rest; if feverish, bandage and keep constantly wet with cold water in which saltpeter has been dissolved, 4 ozs. to the pint. After the fever has subsided then apply the treatment given for spavin, viz: Oil origanum 6 ozs., gum camphor 2 ozs., mercurial ointment 2 ozs., iodine ointment 1 oz., melt by putting all ingredients in a large mouthed bottle and dissolving in a kettle of hot water. Apply once or twice daily for four or five days.

Debility—This condition accompanies many conditions. For this reason anything which has a tendency to reduce the strength of the horse should be avoided while treating the various diseases, especially the chest. The symptoms are characterized by swellings of legs, breast, belly and sheath; shows weakness by staggering as he walks.

Causes—Excessive bleeding in treating disease, starving and insufficient and improper food given to sick horses when they should have been supported by good and sufficient food during their sickness.

Treatment—Take of medicated food for stock of all kinds and mix with bran or other pulverized or ground substance, from one-half to a teacupful, according to the nature of the complaint. This is prepared by taking linseed oil cake and pulverizing or grinding it into meal and to every 50 lbs. of this, add 10 lbs. of corn meal, 2 lbs. of sulphuret of antimony, 2 lbs. of pulverized ginger, 1 3-4 lbs. of saltpeter, and 2 lbs. sulphur. Mix all together thoroughly and you will have an article of food equal to anything on the market.

Diarrhoea—When this disease is not attended with pain, as in colic, it will generally require no treatment; but if it continues and the horse shows signs of pain, there is reason to believe that there is some irritating poison retained in the bowels which does not pass away.

Treatment—If there is fever, give aconite or veratrum viride in 6 to 10 drop doses, until fever cools, every 1 or 2 hrs. (remembering that drugs like other things, are most wonderfully adulterated); then take 1 dr. each of prepared chalk, catechu and 10 grs. of pulverized opium; mix and give at one dose; can repeat if necessary.

Dysentery, Acute—This disease, in the horse, is very violent, because of the length and size of the intestines of the horse render any disease within them a very serious affair.

Causes—Acute dysentery is caused by taking some acrid substance into the stomach, such as croton oil and aloes as a drastic cathartic; tartar emetic, corrosive sublimate, blue vitriol, arsenic and such poisons should be handled carefully. Food improperly used, at times, is a great source of trouble.

Symptoms—At the onset, the symptoms are very obscure. As in nearly all intestinal troubles, so in this, there is abdominal pain. The pain at first may be unimportant or it might be violent, resembling colic; the thirst excessive and stench offensive.

Treatment—Keep the animal in a clean, pleasant stable and give a quart of raw linseed oil with 1 dr. of laudanum. After about 2 hrs. if there are no signs of relief, repeat the dose, then follow with tincture aconite and ipecac, of each 20 drops to a pint of warm water, every 2 or 3 hrs.

Cleanse bowels with warm water by flushing with all the water they will contain.

Distemper—This form of sore throat is characterized by swelling between the bones of the lower jaw, which frequently terminate in abscess.

Treatment—If a correct diagnosis has been made wet bran with a weak solution of lye and water; feed the horse regularly and give plenty of water. Smoking with tar and feathers, if head seems clogged, will generally give relief.

Epizootic—This disease attacks many animals at the same time and originates in one common cause, but just what this cause may be is a mooted question; yet it is evident that it is from a miasmatic influence which has a tendency to spread rapidly over the country.

Symptoms—The attack is abrupt. There is debility, stupor, eyes half closed, disinclination to move, cracking joints, deficient appetite, mouth hot, constipation, urine high colored and scanty, pulse weak and a little faster than normal; deep, painful cough, trembling at times, hair rough, ears and limbs are alternately hot and cold. Soon there is a discharge from the nose of a white, yellowish or greenish color and the horse

may recover, yet complications may arise which are liable to cause death.

Treatment—The same precautions should prevail here as in other diseases as to the place he is to occupy and, if cold weather, cover with a blanket. Make a liniment of strong vinegar and salt, all it will dissolve, and used warm is very effective; but can be reinforced by an addition of 1 oz. each of green copperas, white vitriol and 2 teaspoonfuls of gun powder, pulverized together and dissolved in 1 qt. of soft water. Either can be used but at different times. Use the last part cold, and brisk rubbing if there is much swelling.

Take 1 lb. each of ginger (pulverized), saltpeter, sulphuret of antimony and mix all together and administer in bran mash in such quantities as may be required, generally 1 or 2 tablespoonfuls 3 times a day.

Farcy—This is a scrofulous disease.

Symptoms—The hair looks rough and unhealthy; one of the legs will generally swell to a very large size, frequently the fore leg—hot and painful—and in a short time will break out in small running sores, discharging a thin, unhealthy fluid and sometimes the discharge is thick. On the side of the neck, body or inside of the leg will be felt a thick substance under the skin, but somewhat elevated and hardened and interrupted at distances with a small sore similar to that on the leg. In some cases soft, puffy swellings will be found about many parts of the body.

Causes—Poorly ventilated stables, which are overcrowded with horses, inoculation from the virus of the glandered or farcied horses and this virus producing a ferment in the blood. Absorption of pus into the blood is liable to produce either farcy or glanders or some other zymotic disease.

Treatment—Understanding the cause, we will readily recognize the treatment. We will have to, to some extent, be guided by conditions. Give a teaspoonful of sulphite of soda (not sulphate) twice a day. This will stop fermentation and purify the blood. It would be well to continue the sulphite of soda 2 or 3 times a week after the horse seems to be well. After discarding the soda, give condition powder described under epizootic.

Sulphate of copper, 2 drs., in bran mash at night until the horse refuses to eat it, when it might become necessary to dissolve in water and drench him with it for 8 or 10 days. The animal should be isolated.

Water Farcy—This disease is the result of weakness in the old and of inflammatory action in the young. From long continued labor, from 12 to 18 hours each day, the horse already debilitated, is by abuse made a fit subject of water farcy. It is the custom of some to feed heavily on Saturday night and not visit the stalls until Monday morning, when they are liable to find the animal, so cruelly treated, with one swollen leg. The horse holds the leg up; too lame and tired to eat, but will be thirsty on account of the agonies which his cruel treatment has brought upon him.

Treatment—Better conditions. Let the work be lighter, the nourishment sufficient and better quality and the stable kept clean and well ventilated. Give gentle exercise. As soon as the limb can bear friction, let it be well rubbed with the hands and repeated often. Bathe with cold water and rub dry. Use liniment named under epizootic and rub well. If swelling persists, then take 1 oz. each of potassium iodide, ginger, gentian, sulphate of iron, all pulverized; 2 ozs. linseed meal; make into one ball and give at one dose, repeatedly for several days. Prepare as needed each day for the iodide of potassium should be kept in a bottle, until it is wanted to use.

Founder—This disease is an inflammation of the sensitive laminae of the foot, of which there are two kinds, acute and chronic; the latter being a continuation of the former. The acute form is invariably cured, if properly treated, but the chronic form is generally considered incurable; it can be relieved very much but are afterwards sore and tender in front.

Causes—Allowing to drink cold water when overheated and tired from overwork; standing in the cold air (or where the wind will strike the horse); and driving through a stream while warm; long and hard drives over dry, sultry roads.

Symptoms—The horse will stand upon his heels, with fore feet and legs stretched out as far as he can get them, so as to throw the weight off as much as possible, and he can scarcely be made to move. The horse has fever and considerable constitutional disturbances, in the acute form of the disease.

Treatment—Give the horse a good bedding of straw and an attractive place to lie down so as to remove the weight from the feet. Give 20 drops of the tincture of aconite every 4 hrs. and a teaspoonful of alum once a day for two or three days, keeping the feet thoroughly bathed in cold water. Rest is indispensable for a cure. See oil for corns.

Chronic Founder will need feet trimmed and the oil used, in the acute form, once a day.

Frost Bite—This is a state of numbness of a part of the body caused by intense cold, which, unless relieved by proper remedies, is liable to be followed by death of the part. Horses are most liable to be troubled with frost bites on the heels and the back part of the legs which swell badly and are sometimes mistaken for scratches.

Treatment—It is very important in the treatment of frost bites that heat should not be applied suddenly, but that very cold water be applied, by which means the frost is extracted slowly. Any frozen part should not be rubbed until the frost has been extracted, then use the following liniment: Oil of spike, aqua ammonia, turpentine, each 2 ozs.; sweet oil and oil of amber, each 1½ oz.; oil of origanum 1 oz. Mix and apply once a day. Same good for almost any purpose.

Glanders—This disease is alike fruitful of evil to man and beast and is generally considered incurable. A horse may have latent glanders for years and work well, the disease being during this time as contagious as in its developed state.

Cause—The cause is somewhat varied in different cases, and may be attributed to filth, starvation or to a debilitating condition, as lung fever, catarrh, or any disease capable of generating pus, which, being absorbed into the circulation forms a ferment within the blood.

Symptoms—The membrane lining the nostrils assume a purple or leaden color, accompanied by a thin, acrid, transparent and odorless discharge. This is the first stage, during which the general health does not suffer and the horse may do his ordinary work. The discharge becomes thicker and will sink in water. The membrane lining the nostrils will be found to be sore, ragged and depressed at the top, with varicose veins leading to them from all sides. The appetite fails and the horse assumes an emaciated and dull appearance. He

will be hide-bound and the legs swell during the day and go down at night. The ulceration is becoming very bad in nose and extending into the throat; the body is also sometimes afflicted with sores. The horse ultimately dies in a wasted condition.

Treatment—Since the disease is considered incurable, occasionally a case is cured in its early stage by giving one-half to 1 oz. of sodium sulphite and 5 grs. of pulverized Spanish fly every morning in bran mash. Give, at same time, every morning and noon, a powder consisting of 3 drs. of pulverized gentian and 2 drs. of sulphate of copper. Give medicine a long time, not only to cure the disease but to improve the general health. Give a good nourishing feed and change often.

Grease Heel—This disease of the heels and legs of horses is characterized by a white, offensive, greasy discharge from the heels of the horse. The skin becomes hot, tender and swollen and sometimes sloughs away, leaving an ugly sore.

Cause—Sudden change of temperature of the earth, whether it be from heat to cold or from dry to wet. This disease generally follows wet streets, stables or lands.

Treatment—Keep the legs dry and clean and cleanse well with castile soap and soft water; then apply, once a day, verdigris $\frac{1}{2}$ oz., rum or proof spirits 1 pt.; mix and shake well before applying; or take lye made from wood ashes and boil whiteoak bark in it till it is quite strong, both in lye and bark-ooze; when it is cold it is ready for use. After cleansing, as above given, apply with a swab fastened on a long stick to keep out of his reach, as the smarting caused by the application might make him let fly without any warning. It is a sure cure, but it brings off the hair, which can be restored after the cure is affected. Make and apply a salve made by stewing elder bark in old bacon grease; then add a little rosin according to the amount of oil when stewed, in proportion of $\frac{1}{2}$ lb. of rosin to a gallon of oil. Apply once a day.

Heaves—This disease is due to rupture and enlargement of the air cells of the lungs, which lessen the horse's usefulness. There is every degree of intensity to be seen in this disease, from the case that is so slight that only an expert can detect it to one where the patient finds it very difficult to breathe, even when not being exercised.

Cause—In cases of heaves, horses are always greedy eaters, and it is an index to the feeding of enormous amounts of hay or coarse feed, which they are quite sure to eat if they can possibly find room for it. Heaves are never found in racing stables where horses are properly fed, consequently it is but reasonable to attribute the cause to overfeeding with hay and coarse feed.

Treatment—Restrict the quantity of hay and increase the amount of grain food, which will give the lungs more room to act; then give 4 ozs. each of balsams of fir and copaiba; mix with calcined magnesia sufficiently to make a thick paste so they can be worked into average sized balls and give one night and morning for a week or two. Give powders as in epizootie. Take 1 teaspoonful once a day. Or 1 oz. essence peppermint or 2 ozs. oil of tar given the same way is reputed to be a very sure cure. Lobelia in teaspoonful doses is also highly recommended, used daily. Bran and linseed meal or cottonseed oil cake or meal, 1 pt. to a gallon of bran, wet before feeding, fed once to three times a day will be effective.

Hints on Food—The cause of many diseases is hatched from feeding all horses in the same proportion, without any regard to age, constitution or the labor which the horse is required to do. The impropriety of such a course is readily seen. Bad hay is about as good as none and more dangerous. Old horses will do better on chaff than hay, as their teeth may be defective.

There is not sufficient nutriment in hay or grass for a horse doing heavy work.

Corn meal which has been damaged is injurious and likely to cause inflammation of the stomach and bowels and skin diseases.

Old horses should be fed ground food.

Corn and oats will give more nutrition for a work horse, yet bran and other cereal products answer well.

Horses should have plenty of water three times a day.

A horse should not be fed nor watered while hot or tired; he needs rest.

Hip Joint Disease—This disease develops mostly in young horses and may be caused by rheumatism or some accident, although it is due oftentimes to a hereditary taint.

Symptoms—There appears a shortening of the leg and is slightly under the body and not doubled up and standing on the toe as is seen in diseases of the hock joint. In nearly all so-called hip and whirl-bone disease the true seat of the disease will be found in the hock joint. In hip joint lameness there is a dragging or swaying motion of the limb outward. An extra degree of heat will be found over this joint.

Treatment—Give rest for a few weeks and begin the application of cold water to the afflicted part and continue for two or three days or till the fever subsides and tenderness subdued, then apply liniment given for chronic founder.

Inflammation of the Stomach—This is an inflammatory condition of the mucous lining of the stomach and may involve the whole system. The cause is most generally from poison.

Symptoms—The pain is so acute that the animal becomes frantic with partial insanity, but the symptoms are not wholly decisive. The following symptoms occur, but not all in the same case, nor do they occur simultaneously: Great thirst, loathing of food, redness of the membranes, frequent eructations with bad odor, discharge of thick saliva; rolling, pawing, panting striking at the belly, drawn up flanks, quick and small pulse, passing mucus in large quantities, straining, looking at the abdomen and loss of strength.

Treatment—Drench with 15 or 20 raw eggs and follow with plenty of slippery elm; place the bark in warm water to create a quick mucus. No danger in giving all the animal will take. Feed lightly, a little gruel from oatmeal, rice or soft bran mash, after about 24 hrs., giving plenty of water in the meantime. If feverish and mouth dry, belladonna and aconite of 10 to 15 drops each, every 1 to 4 hrs., according to fever. Equal parts of colorless hydrastis and liquor bismuth, table-spoonful every 2 hrs. This is excellent in any kind of gastric disease.

Influenza—An epidemic disease occurring in the spring or fall of the year.

Symptoms—A chill followed by fever, cough, discharge of mucus from the nose, loss of appetite, great prostration, swelling of the legs and in some cases of the belly and breast. These symptoms vary some in different cases.

Treatment—Cover the horse with a blanket and place in a clean, warm stable with good ventilation, but not too cold. Give 20 drops of tincture of aconite every 4 hrs. to reduce the fever and allow all the water the horse will drink. Feed lightly. Take pulverized ipecac 45 grs., camphor gum (pulverized) 2 ozs., squills $\frac{1}{2}$ oz.; mix with honey to form a thick mass and make into eight balls. Give one every morning.

Kidneys—The kidneys are as susceptible to diseased action as any organ, but are not so frequently involved.

Symptoms—The physical expression may be varied, but the animal walks with a straddling gait, and when seen it is always indicative of some disorder of the kidneys.

Causes—Calculi, stony or gritty matter formed in the kidneys, which passes off in the urine. It causes some irregularity in urinating.

Treatment—Give 35 drops of muriatic acid in a bucketful of water every third day or twice a week. Should the animal fail to drink all the water at once, it can be given in less quantity and more often. Bloody urine is indicative of hemorrhage and should be treated by placing a warm blanket over the kidneys or any method can be applied in such a way that the part involved can be soothed with heat and followed with a drink of flaxseed tea.

When old horses are troubled with kidney disease they can be helped a great deal by giving soft feed, such as boiled or steamed feed, or newly cut grass, with flaxseed tea and plenty of good cold water to drink at all times.

Inflammation of bladder has almost the same symptoms and requires the same treatment as inflammation of kidneys.

Infammation of the Kidneys—Cause—Hard labor, slipping, poor provender, taking a sudden cold after a hard day's work or drive, or after being under the saddle a long time, and also by an indiscriminate use of nitre or other diuretics.

Symptoms—Short and quick breathing suggestive of pain; more or less fever with quick hard pulse; unwillingness to move the hind legs, which the animal straddles apart when he walks; looking anxiously around to his flanks; urine scanty and high colored and sometimes bloody. The horse refuses to move about, and crouches beneath pressure made over the kidneys.

Treatment—Do not give diuretics to increase the flow of urine, as they will do more harm than good. Use hot fomentations over the kidneys and change the cloths often. In the first stage, give 20 to 45 grs. opium or inject with a hypodermic syring morphine and atropine in proportions 1-4 gr. morphia and 1-100 to 1-150 gr. atropia, in from 5 to 7 grs., according to hemorrhage and the severity of the attack. Give linseed tea, all he will drink, and raw linseed oil for his bowels; no feed for 24 hrs. and then very light and nutritious. If fever develops as shown by increase pulse rate, give aconite in 20 drop doses of the tincture and repeat every 2 or 3 hours till fever cools.

Lampers—A swelling of some of the lower bars of a horses' mouth; so named because formerly removed by a lamp or hot iron.

Treatment—Pinch or cut the bars till they bleed and then rub in a little table salt, alum or some other astringent, which is much better than burning with a red hot iron.

Pneumonia (Lung Fever)—In this disease the substance of the lungs is inflamed instead of the air passages, as in bronchitis.

Symptoms—The horse will often have a discharge from the nostrils following a sudden exposure to cold, after being kept in a warm stable and then the disease is ushered in by a chill, followed by fever, which is increased for a short time; cold legs and ears; quick and wiry pulse; pain in the chest, which is aggravated by coughing, and a quivering of the sides and breast. The horse will not eat and continually stands with his head down and ears lopped and will not lie down nor move about; the nostrils are expanded. If the ear is applied to the side of chest or neck, a peculiar creaking noise is heard.

Cause—Perhaps one of the most frequent causes is a hard, fast drive against a cold wind, after being taken from a warm, tight and poorly ventilated stable, where several horses have remained through the night; or some different alteration and sudden change of heat, cold or moisture in an animal not accustomed to work, or one not in a condition for work.

Treatment—The stable should be a comfortable place; not too cold and yet well ventilated. Clothe the horse according

to the weather, but do not change suddenly from a heavy blanket to a light one nor to a damp one. Keep the legs warm with bandages. Give 25 drops each of the tinctures of aconite and belladonna in a cupful of water every 4 hrs. If pulse is full as may be known by listening and observing the chest, veratrum instead of aconite should be used in 10 to 12 drop doses, and continue till fever abates. Give Epsom salts, a tablespoonful in water, 1 pt., every 2 or 3 hrs., or Glauber salts may be administered in the same way, or raw linseed oil or other mild laxative. Nourish with raw eggs and other nourishing and stimulating articles of food, but no hay or grass should be given for a few days, after the horse is convalescent.

Pink Eye—The name "pink eye"^x has been extensively used in this country during several epidemics, to designate an epidemic distemper. This disease, by no means a new malady, prevailed to an alarming extent during past epidemics; but prevails more or less, in some parts of the country in a milder form almost every spring or fall and is more likely to attack horses in crowded cities than those of the country. At times, it seems to be contagious, especially among young horses. It is a species of influenza.

Symptoms—The horse, at first, appears dull, with a disinclination to move; the knees tremble, the eyes are swollen and look reddish, especially in the inner corners and the lids are also swollen and red; the eyes are quite sensitive to light and are generally stuck up with pus. The membrane lining the nostril is red and appears inflamed, as well as the membranes extending into the throat. There is considerable fever from the beginning and the hind legs swell, first one and then the other and this swelling sometimes extends up to the sheath and along the belly. The tongue is foul, appetite poor, urine scanty, bowels constipated, the saliva or matter runs freely and it is with difficulty that the horse swallows. In some cases the swelling under the jaw suppurates and leaves an abscess. Early in the disease there is usually considerable loss of strength, followed with great weakness.

Cause—The cause seems to be a variable state of the atmosphere, or sudden changes from heat to cold or dry to wet and as this may vary in its extent and character in different seasons, we find that there is some difference in the extent, as

well as the symptoms of different epidemics; that is, the cases which occur this year may only extend over some particular part of the country which will have certain symptoms common to most of those it attacks, in which, perhaps, has not occurred in any epidemic for years. The disease often leaves the horse in a bad condition and bronchitis, nasal gleet, or glanders may result from it. If the horse is not in much distress, coughs strong, does not appear weak, eats well, with a moderate pulse and the discharge appears healthy, and of only moderate quantity, there will usually be but little danger if properly cared for; but if there is great prostration, with inordinate local and constitutional symptoms, the danger is very great.

Treatment—Place the animal in a pleasant and well ventilated stable, but all drafts of cold air should be avoided. Good nice straw should be provided for bedding. In severe weather the horse should be kept warm with blankets. Give a nourishing diet of flaxseed or oatmeal gruel.

The discharge from the nose may be encouraged by pouring one or two quarts of water, boiling hot, on a quart of bran; 10 drops of carbolic acid, a small handful of salt and a little hops all mixed together and held under a funnel-shaped piece of cloth or blanket, which will conduct the steam up to the head. A good liniment might be applied, such as: 2ozs. each of linseed oil, turpentine, kerosene (coal oil) and a half tea-cupful of strong apple vinegar well beaten together with seven eggs and applied two or three times a day.

Pleurisy—This is an inflammation of the membrane covering the lungs and lining the cavity of the chest. It divides the thoracic from the abdominal cavity.

Symptoms—A chill, a fever and an occasional painful and short cough, careful breathing, and a disinclination to turn quickly. A peculiar line will usually be seen extending from the haunch, around the belly to the breast bone. The breath is not so quick and short as it is in the inflammation of the lungs.

Causes—Broken ribs or wounds and other causes similar to lung fever.

Treatment—The treatment should be about the same as for lung fever. Feed well while the horse is convalescing.

Abscess of the Lungs—This is sometimes the termination of lung fever (pneumonia) and is a disease that almost invariably terminates fatally.

Treatment—Since we have in this disease a twin sister to glanders, the treatment must be on the restorative and aseptic line. Give plenty of raw eggs and *Echinacea Angustifolia* or *Baptisia Tinctoria* in 20 to 60 drops every 4 hrs. to destroy pus development. Continue treatment by giving *Iris Versicolor* from 10 to 15 drops 3 or 4 times a day to act as a restorative.

Nasal Gleet—This is a discharge from the nostrils, of a whitish mucopurulent matter.

Cause—Neglecting to treat properly catarrh and colds. The horse may look well and feel well and the general health quite good.

Treatment—The same as for bots. To a tablespoonful of equal parts of *Geranium Maculatum* and White Pond Lily add 1 qt. of boiling water; when about milk warm dissolve 1 teaspoonful of table salt then strain and use as a douch with a syringe.

Poll Evil—This is the formation of pus like an abscess on top and between the ears of the head and has its counterpart in the fistula located on the neck above and a little forward of the shoulders.

Cause—A bruise or disease of the bone or involvement of tissue.

Treatment—Open the swelling as soon as it becomes a little soft, before the pus has had time to burrow down between the bones and thus prevent the spread of the disease. Make a large opening so as to allow all the pus to escape and syringe out with a solution of carbolic acid, fifty drops to a pint of water. Take a pound bar of lead and melt in a ladle or other vessel and pour in sulphur to form a powder. If there is not enough sulphur to change all the lead to a powder, the residue will sink to the bottom. Put this powder into the cavity through the opening from which the pus escapes, once a day. This is reputed to cure fistula in a very short time without pain.

Quitter—A chronic abscess of the hoof, caused by a bruise or confined pus from supuration, corn, etc.

Symptoms—The horse is very lame on account of the inflammation before supuration takes place, but is relieved somewhat after the quittor has burst.

Treatment—This should begin as soon as any lameness is discovered and the inflammation stopped, if possible, before supuration takes place. Mix and apply to the hoof three times a day, equal parts of tar and turpentine 8 ozs., and whale oil 8 ozs. The hoof should be previously washed with soap and warm water.

Rheumatism—In acute rheumatism there is great excitement and fever with severe pain in the legs and joints. This pain is so severe that the horse hardly dares to move from the place he occupies, on account of the extreme pain which it causes. He has no unnatural heat in the feet as in founder.

Cause—Exposure to a draft of cold air, when a horse has been heated, thus suddenly checking perspiration.

Treatment—Place the horse in a good comfortable stable as soon thereafter as possible when it is discovered that he has acute rheumatism and give 25 drops of aconite every 4 hours until 5 or 6 doses are given. Cover with blankets. Mix and divide into eight equal parts 4 ozs. of bicarbonate of soda, 8 ozs. of sulphur, 4 ozs. of pulverized saltpeter and give one part 3 or 4 times a day, according to the severity of the case. Bathe parts affected with the following every 3 hrs.: 1 oz. Spanish fly, 1 oz. yellow rosin and 3 ozs. lard; mix the lard and rosin together and add the flies to which add 1 pt. of the spirits of turpentine. This may cause a blister or considerable soreness about the third day, at which time wash leg with linseed oil. In 6 days wash with soap and water till thoroughly cleansed. May repeat in 4 or 6 days, if necessary.

Chronic Rheumatism—This is a frequent cause of lameness, and it is oftentimes difficult to decide fully as to the cause of the trouble. Treatment is about the same as for acute rheumatism, but must be continued longer.

Ring-Bone—Ring-bone is usually the result of weakness, hereditary predisposition, or a peculiar formation of the pastern joints which make them poorly adapted to hard labor; and therefore a provisional callous (or bony substance) is thrown out as a provision of nature to strengthen parts which are too weak. Only slight injuries to such a joint may result in the

development of ring-bone. The treatment above given will generally suffice. Success is not over flattering.

Saddle Galls are sores produced by the saddle or any part of harness.

Treatment—Remove the cause, adjusting the parts so as to avoid the pressure, and apply the following liniment two or three times a day: 4 ozs. rosin, 4 ozs. beeswax, 8 ozs. fresh lard or butter, 2 ozs. honey. Mix thoroughly and slowly, bring to a boil then add a little less than a pint of turpentine; remove from fire and stir till cool. Excellent for hoofs of horses and is unsurpassed as a liniment for man or beast.

Scratches—An inflammation of the skin of the heel of the first appearance of which is a dry and scurvy state of the skin of the heel, with redness, heat and itching.

Treatment—Wash the affected parts with warm soft water and castile soap and dry; then apply twice a day: 8 ozs. glycerine and 1 dr. carbolic acid mixed together.

Shoulder Lameness—This is common among young horses, when plowing in the furrow, or it may result by a slip sideways by a horse of any age. Horses in cities are especially liable to this difficulty. The muscles of the shoulder and sometimes the shoulder joints are involved.

Symptoms—Heat, tenderness and sometimes swelling of the parts. It is sometimes difficult to ascertain the exact location of the lameness but by making a thorough examination of all the parts and finding no lameness, heat or tenderness in other parts, it will be quite certain that the difficulty is located in the shoulder, especially if it is found hot and tender. The horse steps shorter with the sound leg than with the lame one, which he drags along. In nearly all diseases of the foot the horse stretches the leg out straight forward, but in shoulder lameness it will be carried out more from the body.

Treatment—The horse should have entire rest and the shoulder should have cold water cloths applied two or three days with frequent changes. As soon as the heat has been subdued the cold water cloths may be left off and use liniment for ring-bone.

Shoulder Joint Lameness—This difficulty, being located in the joint, is much more serious than the shoulder lameness just described, and more difficult to affect a cure.

Symptoms—The animal drags the leg, with the toe on the ground and throws the leg out in attempting to move it. He raises the foot with great difficulty.

Treatment—If the animal has been neglected in the early stages of the disease the case will be very obstinate and of long duration. Given rest and a pleasant place to lie will aid other treatment materially. Apply cold applications to reduce heat and follow the treatment given for ailments of the same nature.

Mange—This and other allied skin diseases are reputed to be contagious and is caused by a very small insect burrowing into the skin.

Symptoms—The horse rubs himself against anything he can get at. Small pimples are seen about the head and neck under the mane. The hair falls out, leaving the skin exposed, with red colored points and fissures. The skin becomes dry and naked and the itching is intense.

Treatment—Give the horse a good scrubbing with a coarse brush and wash him well with castile soap and water and dry carefully. As soon as the horse is thoroughly dry apply an ointment made of 4 ozs. of sulphur, 10 ozs. of lard and $\frac{1}{2}$ oz. of carbolic acid, once or twice a day.

Spavin—In nearly all the lameness of the hind leg the seat of the disease will be found in the hock joint, although the trouble is frequently located in the hip, because no swelling can be detected in the hock joint; but in many of the worst cases there is no swelling observed or enlargement for some time, and perhaps never.

Bone Spavin is a growth of irregular bony matter from the bones of the joint and situated on the inside and in front of the joint.

Cause—The causes of spavins are quite numerous, but usually they are sprains, blows, hard work and in fact any cause exciting inflammation of the joint. Hereditary predisposition in horses is a frequent cause.

Symptoms—The symptoms vary in different cases. In some horses the lameness comes on very gradually while in others it comes on more rapidly. It is usually five to eight weeks before any enlargement appears. There is marked lameness when the horse starts out, but he usually gets over it after a short drive and if allowed to stand for awhile will start

lame again. There is sometimes a reflected action, causing a little difference in the appearance over the hip joint and if no enlargement has made its appearance a person not having any experience, is very likely to be deceived in regard to the true location of the difficulty. The horse will stand on either leg, but when he is resting the lame leg, he stands on the toe. If the joint becomes consolidated the horse will become stiff in the leg, but may not have much pain.

Treatment—In uncomplicated cases, there is some hope for a cure, but where there is ankylosis (stiff joint) a cure is impossible. In any bony growths like spavin or ring-bone, it will be exceedingly difficult to determine just when there is sufficient deposit of phosphate of lime so that it is completely ossified, for the reason that in some cases the lime is deposited faster than in others and therefore one case may be completely ossified in a few months, while in another it will be as many years. The cases not completely ossified may reasonably be expected to be cured.

The following liniment is reputed to cure spavin or ring-bone:

No. 1—Balsam of fir and Spanish fly, of each 2 ozs.; euphorbium and aqua ammonia, of each 1 oz.; red precipitate $\frac{1}{2}$ oz., corrosive sublimate 1-4 oz., fresh butter $1\frac{1}{2}$ lbs. Pulverize all and put into the butter; simmer slowly over coals, not scorching or burning, and pour off free of sediment. For ring-bones cut off the hair and rub the ointment well into the lumps once in 48 hrs. For spavins once a day for 3 days. Wash well previous to each application with suds, rubbing over the place with a smooth stick, to squeeze out a thick, yellow matter. This has removed very large ring bones.

No. 2—Bone Spavins—\$300 Recipe—Corrosive sublimate, quicksilver and iodine, of each 1 oz. Rub the quicksilver and iodine together; then add the sublimate, and lastly, $1\frac{1}{2}$ lbs. of lard, mixing thoroughly. Shave off hair the size of bone enlargement; grease all round it, but not where the hair is shaved off, this prevents the action of the medicine, except on the spavin. Then run in as much of the paste as will lie on a copper cent, each morning, for three or four mornings. In from seven to eight days the whole spavin will come out; then wash with suds for an hour or so, to remove

the poisonous effects of the paste; afterwards heal up the sore with any good salve or liniment given for ring-bone.

No. 3—Pulverize cantharides, oils of spike, origanum, amber, cedar, Barbardoes tar, and British oil, of each 2 ozs.; oil of wormwood, 1 oz.; spirits of turpentine, 4 ozs.; common potash, $\frac{1}{2}$ oz.; nitric acid, 6 ozs.; sulphuric acid, 4 ozs.; lard, 3 lbs. Melt the lard and add slowly the acids; stir well and add the other articles, stirring till cold; clip off the hair and apply by rubbing and heating in. In about three days, or when it is done running, wash off with soap suds and apply again. In old cases, two or three applications have cured.

Occult Spavin, Bog Spavin, and Blood Spavin are only modifications of bone spavin, as to location. Treatment the same.

Splint—This is a small, bony enlargement and generally situated on the inside of the fore-leg about three or four inches below the knee joint and frequently occurs in young horses, when they are worked too hard.

The treatment should be the same as for bone spavin.

Strain—By this is meant the sudden shifting of a joint farther than is natural, but not so as to produce dislocation. Every joint is liable to sprain by the horse falling, slipping or being overworked. These cases cause a great deal of trouble, oftentimes producing lameness, pain, swelling, tenderness and an unusual amount of heat in the part.

Treatment—Rest, and if the part is found hot, apply cold water cloths, changing frequently and continuing two or three days. If there is considerable fever, it might be well to give fifteen drops of aconite three times a day for two or three days. Allow rest for two or three weeks.

Sprung Knee—There is some difference of opinion in regard to the cause of this defect. Investigations show a permanent shortening of the ligaments at the hinder part of the knee.

Treatment—The best treatment that can be adopted is to have the place where the horse stands higher under the hind feet, by placing a good quantity of bedding for him to stand on back of the fore feet; then have the horse shod with a high heel or with shoes gradually thicker from toe to

heel. Any of the liniments such as given for pink-eye can be used to advantage.

Staggers—There are two varieties of this disease known under this name by which horses are affected, viz: Stomach staggers and grass or sleepy staggers. The first, which generally kills the horse in twelve to fifteen hours after the attack is generally the result of an overladen stomach and improper food. The horse has, perhaps, partaken greedily of food, after too long a fast, which it was unaccustomed to, such as grass or clover. These undergo decomposition within the stomach and intestines and give rise to such an evolution of gas as either to set up inflammation of the stomach and intestines or to lead to their rupture in which latter case there is, of course, fatality. The symptoms are a quick and feeble pulse, attempts at vomiting, a staggering gait and frequently sits on its haunches like a dog. Sleepy staggers, which is a more chronic manifestation of the disease, is most common during the summer and autumn months and generally occurs among horses fed on tough and indigestible food. There is another form of this disease called "Mad Staggers." It originates, however, in causes wholly dissimilar from those just stated, being the result of phrenitis or inflammation of the brain. The animal is frequently very furious and excited and seems wholly unable to control itself, throwing itself madly about and attempting to run down anybody who comes in its way; it is also frequently unable to keep on its legs and when it falls, plunges and struggles violently.

Treatment—A brisk cathartic; one-half pound of Epsom salts in a pint of warm water, every one or two hours; also the injection every hour of clysters, consisting of salt, soap or tobacco smoke, the abdomen being at the same time diligently rubbed and fomented with water nearly boiling. Give twice a week a mess composed of bran, 1 gal.; sulphur, 1 tablespoonful; saltpeter, 1 teaspoonful; boiling sassafras tea, 1 quart; assafoetida, 1 1-8 oz.; mix, and after it is eaten, allow no cold water for drinking for twelve or fifteen hours. For "Mad Staggers" the treatment mostly recommended is prompt and copious bleeding, combined with active purging and enemas and cold applications to the head. Croton oil is recommended. Make a cross slit on forehead just below the ears

and apply it in the incision; the yellow water will soon be seen as it is drawn from the brain. Smoking with tar, feathers and pepper gives relief.

Stifle-Joint—It occurs occasionally in colts kept on uneven ground, which induces a dislocation of the stifle, or patella, which slips off from the rounded heads of the bones, when the horse steps. It sometimes occurs in horses which are kept on bad food, or those which are constitutionally weak.

Symptoms—The horse stops suddenly and extends one of the hind legs backward. The pastern is fixed and the head raised; there is a great swelling upon the outer side of the pastern or stifle joint, with great pain.

Treatment—Any flurry may restore the bone to its proper place, in colts or horses, but for cases which do not become replaced, get into a shed and fix a rope to the pastern and throw the other end over a beam. Then while one person pulls the leg upward and forward another should stand by the quarters and push the dislocated patella inward with both hands. Feed well and give the horse five or six weeks' rest. Any good liniment may be used.

Sweeny—A wasting away of the muscles of the shoulders and is thought to be caused by some disease of the foot or leg.

Treatment—Treat any disease found in foot or leg as previously directed. Apply to the shoulders soft soap, with a little salt added, four or five times a week; rub in well.

Windgalls—Soft swellings or enlargements just above the fetlock joint, which are caused by over-exertion or sprain. They resemble blood spavin and may be treated with the same way.

Worms—There are several kinds of worms which infest the horse, some of which produce a vast amount of mischief.

Tenia (Tape Worm).—These trouble the young mostly and are usually caused by starving the mare when with foal and by breeding from old animals. The dam and sire should be in perfect health; if a valuable colt is desired. Gentle work is better for the mare than to be idle.

Symptoms—When tape-worm is present, there is checked development, large head, long legs, ravenous appetite, shaggy hair, thin body, fetid breath. The colt picks and bites its own hair, rubs its nose against a wall or strains it violently upward.

Treatment—Give spirits of turpentine. For a colt three months old, one-fourth to one-half ounce; six months, one-half to one ounce; one year, one to one and a half ounces; two years one and a half to two ounces; three years, three to four ounces; also one pound of quassia chips, pour three quarts of boiling water on them; then mix a proportional dose of the quassia infusion with the turpentine and stir in yolk of one or more eggs to cause it to blend together, and 20 grains of camphor gum and give early of a morning. Feed well afterwards and give every morning until the coat is glossy; muriated tincture of iron from 1 dram to 10 drams, according to age, and also Fowler's solution of arsenic, from one-fourth to three drachms. Give condition powders as described elsewhere.

Lumbrici—Long, round worm. They prey upon the weakly whether old or young.

Treatment—Santonin, 48 grains given in a pint of sweet milk on an empty stomach every morning for two or three days and followed with about a half teacupful of salts in a pint of warm water.

Pin Worms—This variety of worms inhabit the rectum and causes great itching at the root of the tail, which causes the horse to rub its hair off against the wall, or fence post.

Treatment—Strong apple-tree bark ooze injected to about one pint will be effective. A dose of salts to follow, would be advisable.

Yellow Waters—This affection is the result of liver disease and has derived its name from the characteristic color of the membranes of the eyes, nose and mouth, which have peculiar yellowness which is caused by the liver being diseased, so that its natural functions are not properly performed and a large amount of bile is thrown back into the blood, instead of being carried off in its natural way and only eliminated partially through the kidneys. It occurs more often in horses highly fed and have nothing to do than in others.

Treatment—Give pulverized ginger, 2 drams; mandrake root, 1 dram; aloes, 4 drams; mix and give at one dose. Feed the horse with soft food and grass to loosen bowels. Repeat the above dose as often as is necessary, which in most cases, perhaps, would be about every other day. A horse in this condition would be more useful to be employed at light work, increasing the service as he becomes more adapted to it

DOSES FOR THE HORSE

Name of Drug—	Action and Use.	Dose.	Antidote.
Aloes -----	Laxative and tonic -----	$\frac{1}{2}$ to 1 oz.	
Alum -----	Astringent -----	2 to 3 drs.	
Anise Seed -----	Aromatic and stomachic -----	$\frac{1}{2}$ to 2 ozs.	Vinegar.
Aqua Ammonia -----	Stimulant and Antacid -----	1 to 4 drs.	
Arsenic -----	Alterative and tonic; used for paralysis, mange, etc. -----		Magnesia and oil.
Asafoetida -----	Antispasmodic, coughs, etc. -----	1 to 5 grs.	
Bicarbonate of Potash -----	Diuretic and antacid; good for rheumatism -----	1 to 3 drs.	Vinegar and raw linseed oil.
Bismuth -----	For Chronic Diarrhoea -----	3 to 5 drs.	
Black Antimony -----	Promotes the secretions -----	$\frac{1}{2}$ to 1 oz.	Infusion oak bark; linseed oil.
Blue Vitrol -----	Astringent and tonic -----	$\frac{1}{4}$ to $\frac{1}{2}$ dr.	
Calomel -----	Cathartic -----	$\frac{1}{2}$ to 1 dr.	Eggs; milk.
Camphor -----	Antispasmodic -----	10 to 40 grs.	Eggs and milk.
Cantharides -----	Diuretic and stimulant -----	$\frac{1}{2}$ to 1 dr.	
Carbolic Acid -----	Externally, disinfectant -----	3 to 6 grs.	
Castor Oil -----	Cathartic -----		Eggs, soap, gruel.
Cayenne -----	Stimulant, carminative -----	$\frac{1}{2}$ to 1 pt.	
Chlorate of Potash -----	Diuretic for bloating -----	5 to 25 grs.	
Copperas -----	Tonic and astringent -----	$\frac{1}{2}$ to 2 drs.	
Croton Oil -----	Powerful purgative -----	$\frac{1}{2}$ to $1\frac{1}{2}$ drs.	
Digitalis Leaf -----	Sedative and Diuretic -----	10 to 15 drop.	Opium.
Epsom Salts -----	Cathartic and febrifuge -----	10 to 20 grs.	Stimulate.
Ether -----	Antispasmodic -----	2 to 8 ozs.	
Fowler's Solution -----	Used for skin diseases (see arsenic) -----	$\frac{1}{2}$ to 2 ozs.	
Gentian Root -----	Tonic -----	1 to 4 drs.	Hydrated Peroxide of Iron.
Ginger -----	Tonic, colic, dyspepsia -----	1 to 2 drs.	
Glauber's Salts -----	Cathartic -----	2 to 5 drs.	
Iodide of Pottassium -----	Alterative, diuretic -----	6 to 12 ozs.	
		$\frac{1}{2}$ to $1\frac{1}{2}$ drs.	Starch, flour; water.

Name of Drug.	Action and Use.	Dose.	Antidote.
Linseed Oil, raw	Cathartic and nutritive	1 to 2 pts.	Eggs and milk. Soda and coppers. Belladonna, coffee and cold water.
Magnesia	For colics as an acid and laxative	¼ to 1 oz.	
Mucial Ointment	For mange, itch, lice, etc.	15 to 25 grs.	
Nux Vomica	Nerve stimulant	¼ to 1 dr.	
Opium	Anodyne, antispasmodic		
Prepared Chalk	Antacid	½ to 1 oz.	Raw Linseed Oil.
Quinine	Tonic; give in convalescence	15 to 50 grs.	
Saltpetre	Diuretic, febrifuge	1 to 3 drs.	
Soda Bicarb.	Similar to Bicarb. potash	3 to 8 drs.	
Soda Sulphite	Antiseptic, alterative	½ to 1 oz.	Tobacco.
Solution of Lime	Antidote, acid poison	4 to 6 ozs.	
S. Chloroform	Anodyne, relieve pain	1 to 2 ozs.	
Strychnia	Tonic, stimulant	½ to 1 gr.	
Sulphur	Alterative, laxative	½ to 2 ozs.	Tanic acid
Spirits of Nitre	Diuretic, diaphoretic	½ to 1½ oz.	
Tanic Acid	Astringent	20 to 40 grs.	
Tartar Emetic	Sedative, alterative	⅛ to ½ dr.	
Tr. Cantharides	Stimulant, tonic	1 to 2 ozs.	Keep moving, give Nux Vomica, stimulate.
Tr. Aconite	Sedative, for fever	15 to 35 drops.	
Tr. Ergot	Parturient	1 to 2 ozs.	
Tr. Iodine	Used externally		See Nux Vomica.
Tr. Iron	Tonic, astringent	½ to 1 oz.	
Tr. Nux Vomica	Tonic, stimulant	2 to 4 drs.	
Tr. Opium	Anodyne, antispasmodic	1 to 2 ozs.	
White Vitrol	Astringent, for cuts, etc.	5 to 15 grs.	Milk, eggs, flour.

The above are given as an average dose for a horse. For colics according to age; one month, 1-24; three months, 1-12; six months, 1-6; one year, 1-3; two years old, ½; three years, 3-4.

TO MEASURE LIQUIDS.

A tablespoonful is equal to a half ounce by measure.

A desertspoonful is equal to 1-4 ounce or two drams.

A tablespoonful is equal to one dram.

A teacup is estimated to contain four fluid ounces or a gill.

A wine glass, about two fluid ounces.

The above named household implements vary in size and capacity, so that it is usually difficult to measure accurately. It would be best to purchase a glass graduate to measure drams and ounces.

Age of Horses, By Teeth—A horse has 40 teeth, 24 double teeth, or grinders, 4 tushes, or single file teeth and 12 front teeth, called gatherers. As a general thing, mares have no tushes. Eight to fourteen days after birth the first middle nippers, or milk teeth, two in number, appear; four to six weeks afterwards the next pair, and finally, after six or eight months, the last. All these milk teeth have a well defined body and neck, and slender fang and on their front surface grooves or furrows, which disappear from the middle nippers at the end of one year. Between 2 and 3 years old, the colt sheds his four middle teeth, 2 above and 2 below. After 3 years old, 2 other teeth are shed, one on each side of those formally shed. He now has 8 colt's teeth and 8 horse's teeth. When 4 years old he cuts 4 new teeth. At 5 years of age the horse sheds his remaining colt's teeth, 4 in number, when his tushes appear. At 6 years of age his tushes are up, appearing white, small and sharp, while a small circle of young growing teeth are observable. The mouth is now complete. At 8 years of age the teeth have filled up, the horse is aged and his mouth is said to be full.

The Eyelid—After a horse is 9 years old a wrinkle comes on the eyelid at the upper corner of the lower lid and every year thereafter he has one well defined wrinkle for each year over 9. If, for instance, a horse has three of these wrinkles, he is 12; if 4, he is 13. Add the number of wrinkles to 9 and you will invariably judge correctly the horse's age.

VALUABLE RECIPES FOR HORSES.

While listing the foregoing under the above heading, yet it is not meant for the horse exclusively. They may be used in any case where such treatment is desired and are so arranged as to meet the requirements for ready reference.

Alterative No. 1—Nitre, sulphur, black sulphuret of antimony, each equal parts. Mix well together and give a tablespoonful every morning.

No. 2—Linseed meal, 1 oz.; aloes, $\frac{1}{2}$ oz.; castile soap, $\frac{1}{2}$ oz. Mix.

No. 3—Ginger, 1 dr.; castile soap, 2 drs.; pulverized aloes, 6 drs.; flaxseed meal, 1 oz. Mix.

Anodyne—Tincture of opium 1 oz., starch gruel 1 quart. Mix.

No. 2—Sweet spirits of nitre, 1 oz.; laudanum, 1 oz.; essence of peppermint, 1-4 oz.; water, 1 pint. Mix.

No. 3—Laudanum, 1 oz.; spirits of camphor, $\frac{1}{2}$ oz.; anise, $\frac{1}{2}$ oz.; sulphuric ether, 1 oz.; water, 1 pint. Mix.

Astringent and Cordial No. 1—Opium, 12 grains; camphor, $\frac{1}{2}$ dram; catechu, 1 dr. Mix.

No. 2—Opium, 10 grs.; camphor, 1 dr.; ginger, 2 drs.; castile soap, 2 drs.; anise, 3 drs., liquorice, 2 drs. Mix.

No. 3—Anise (pulverized), $\frac{1}{2}$ oz.; ginger, 1 dr.; gentian, 1 dram; fenugreek, 2 drs. Mix.

No. 4—Caraway and ginger, each 2 drs.; anise, gentian, fenugreek, each 1 oz. Mix.

No. 5—Camphor, 1 dr.; anise, 3 drs.; laudanum, 1 oz.; pulverized extract of liquorice, 3 drs.; flaxseed meal 1 oz. Mix.

Bruises, Cuts, Etc.—Tincture arnica, 1 oz.; oil of sassafras, $\frac{1}{2}$ oz.; laudanum, 1 oz. Mix. Shake before using. Bandage lightly, and keep wet with the mixture.

Colic—No. 1—Gum myrrh, gum camphor, gum guaiac (pulverized) of each 1 oz.; cayenne, powdered sassafras bark, spirits of turpentine of each 1 oz.; oil of origanum, 1-4 oz.; oil of hemlock, $\frac{1}{2}$ oz.; powdered opium, $\frac{1}{2}$ oz.; pure full strength grain alcohol, 2 quarts. Mix all together. Shake two or three times a day for eight or ten days, then strain through flannel. Dose: From one to three tablespoonfuls, according to the severity of the case. Give in pint of sweet milk. This is re-

puted to never fail to give immediate relief when given for colic in horses. It is one of the best pain relievers for family use and should be kept as a household remedy. The dose for adult would be 5 to 10 drops.

No. 2—Sulphuric ether $1\frac{1}{2}$ ozs.; laudanum, 1 oz.; essence of peppermint, 2 ozs.; water, 16 ozs. Mix and shake well before giving.

No. 3—Laudanum, 1 oz.; spirits of turpentine, $1\frac{1}{2}$ ozs. Mix and give in a half pint of water.

Condition Powders—No. 1—Liquorice, fenugreek, elecampane of each 4 ozs.; red puccoon, blue flag, ginger, cayenne, of each 1 oz. Mix, and give a tablespoonful two or three times a day in bran mash. None better for colds, coughs, distemper, epizootic or heaves. It could be made effective by adding one ounce each of camphor and lobelia.

No. 2—Hard wood ashes, 4 ozs.; anise, 4 ozs.; fenugreek, 4 ozs.; ginger, 6 ozs.; gentian, 2 ozs.; black antimony, 2 ozs. Mix. Dose: Teaspoonful. A good appetizer.

No. 3—Ginger, black antimony, rosin, saltpetre, sulphur, gentian, fenugreek, cream of tartar, of each 2 ozs.; cayenne pepper, 1 oz. Pulverize and mix thoroughly. Dose: A teaspoonful twice a day in soft feed.

Contracted Hoof—No. 1—Take equal parts of soft fat, yellow wax, linseed oil, Venice turpentine and Norway tar. First melt the wax, then add the others. Mix thoroughly and apply at the edge of the hair every day.

No. 2—Saltpetre, benzine, of each 1 oz.; alcohol, 3 ozs.; aqua ammonia, 2 ozs.; balsam of fir, 8 ozs. Mix. Apply to edge of the hair and cover the hoof every day for ten days, then twice a week.

No. 3—Lard 8 ozs.; rosin, 4 ozs.; heat them over a slow fire, then remove and add powdered verdigris 1 oz. Stir briskly to prevent its running over. When partly cool add 2 ozs. of the spirits of turpentine. Apply to the hoof one inch below the hair. Toughen by washing frequently in brine and pour upon the bottoms of the feet and soak a few minutes each time.

Cough—No. 1—Alcohol, 8 ozs.; balsam of fir, 2 ozs., and add all the tar it will dissolve. Shake well before using. Dose: One or two teaspoonfuls two or three times a day.

No. 2—Discard musty hay. Feed laxative food, sprinkle with brine all dry hay, fodder, or other provender. Cut into small pieces, cedar boughs and mix with the grain, or boil a small quantity of flaxseed and mix it with a mash of scalded bran, adding a little sugar, molasses or honey. Give lukewarm. If there should be any appearance of heaves, put a teaspoonful of pulverized ginger once a day in his provender and allow him to drink frequently of lime water.

Cracked Heels—Take 1 1-4 gals. linseed oil; 1 1-4 gals. of spirits turpentine, $\frac{1}{2}$ gal. western petroleum; 4 ozs. liquor potassa; sap green $\frac{1}{2}$ oz. Mix all together and it is ready for use. This has quite a reputation in many places under the name of "Gargling Oil."

Another—Take 8 ozs. of lard, 1 oz. of beeswax, 1 oz. of rosin; 1 oz. of alum, tallow and copperas, of each 1 oz., and carbolic acid 1 dr. Mix and boil over a slow fire; skim and add 2 ozs. of the scrapings of sweet alder.

Cuts, Wounds and Sores—**No. 1**—Carbolic acid, 1 oz.; soft water, 1 quart.

No. 2—Laudanum, 2 ozs.; 1-4 oz. tannin. Mix.

No. 3—Tincture aloes, 1 oz.; tincture myrrh, $\frac{1}{2}$ oz.; tincture of opium, $\frac{1}{2}$ oz., and water 4 ozs. Mix and apply night and morning.

No. 4—Beeswax and lard, of each 4 ozs.; rosin, 2 ozs.; carbolic acid, 1-4 oz. Mix the beeswax, lard and rosin all together. Melt and add the carbolic acid, stirring until cool. Excellent for man or beast.

Diabetes—Alum, 30 grains; sugar of lead, 10 grains; catechu, 1 dr.; tincture of opium, $\frac{1}{2}$ oz.; water, 1 pint. Mix.

Distemper—Wet up bran with rather strong lye. If not too strong, the horse will eat it greedily. If they have the distemper, a free discharge from the nostrils and a consequent cure will be the result if continued a few days; but if only a cold, with swelling of the glands, no change will be discovered. Or 30 drops of carbolic acid and 2 ozs. of hops with 2 gallons of boiling water and having the animal to inhale the steam fifteen or twenty minutes twice or three times a day, then apply a strong mustard paste to the throat and place a warm poultice over the paste. Feed warm mashes and boiled vegetables. Keep the stable comfortably warm and the air pure. Give

once a day the following: Two ounces pulverized Peruvian bark, copperas and gentian, of each 1 oz. Mix and divide into eight powders. One powder a dose.

Diuretics—No. 1—Grind and mix together $\frac{1}{2}$ lb. hops and 3 drs. of gum camphor. Make into three pills. Give one every day, with drench made of a small spoonful of saltpetre and 2 ozs. of water. This will cure as a general thing.

No. 2—Balsam copaiba, 2 ozs.; sweet spirits of nitre, 3 ozs.; spirits of turpentine, 2 ozs.; tincture of camphor and the oil of juniper of each 2 ozs. Mix. Shake well before using. Dose for adult horse: Two tablespoonfuls in a pint of sweet milk, repeat every 4 to 6 hours if necessary. A reliable preparation for kidney difficulties.

No. 3—Fenugreek and saltpetre of each 3 drs.; rosin, 4 drms.; castile soap, 2 drs.; flaxseed meal 1 oz. Mix and form into a ball.

No. 4—Saltpetre and rosin of each, 2 drs.; oil of juniper $\frac{1}{2}$ dr.; camphor gum, $\frac{1}{2}$ dr.; castile soap, 1 oz.; flaxseed meal, 1 oz. Mix and form into one ball.

Eye Water—No. 1—Pure saltpetre and white vitriol of each 1 scruple; pure soft water, 8 ounces. Mix. This should be applied to the inflamed lids three or four times a day, and if the inflammation does not subside in one or two days it may be injected directly into the eye. This is an excellent eye water for man as well as beast. Reduced one-half and dropped directly into the eye, which will cause the eye to smart considerably for about five or ten minutes and then bathing the eye with cold water, repeating three or four times a day, gives the very best satisfaction. It will often be effective to just close the eye and bathe the outside freely.

No. 2—Sugar of lead, 1 dr.; laudanum, 2 drs.; soft water, 1 pint. Mix and wash the eye two or three times a day.

Farcy—Saltpetre, 4 ozs.; elecampane, 2 ozs.; black antimony, 2 ozs.; sulphite of soda, 1 oz. Dose: One teaspoonful once or twice a day.

Farcy Glanders—Iodide of potassium, 1 1-4 drs.; copperas, $\frac{1}{2}$ dr.; ginger, 1 dr.; gentian, 2 drs.; powdered gum arabic and syrup to form a ball.

No. 2—Sodium sulphite, $\frac{1}{2}$ oz.; pulverized Spanish flies, 5 grains. Mix and give at night for several weeks in cut feed.

Follow next morning and noon with gentian, 3 drs.; blue vitriol, 2 drs. Thoroughly pulverized and continue treatment for several weeks. This is the best treatment known at this time for this disease.

Flesh Worms—Equal parts of petroleum, olive oil and carbonate of ammonia. Mix.

Fever—Tincture of aconite, 10 drops; tartar emetic, 1-4 dr.; saltpetre, 1 dr.; ginger, 2 drs.; linseed meal, 1 oz. Mix and form into a ball. Repeat three or four times a day if necessary.

Founder—Three pints of good apple vinegar; $\frac{1}{2}$ dram cayenne pepper and fifteen drops of aconite. Mix and boil down to one quart. When cool give it as a drench. Blanket the horse well. After he has perspired for an hour or more give one quart of raw linseed oil. This treatment will be found good for horses foundered by eating too much grain.

Grease Heel—Chloride of zinc, $1\frac{1}{2}$ drams; water, 10 ozs.; glycerine, 8 ozs. Mix. If there is much discharge, apply a poultice for several hours, followed by application of the above, after cleansing well with soft water and castile soap. The following powders should be given at the same time in the feed, every night, for a week or two: Bicarbonate of soda, 1 oz.; arsenic, 1 dr.; iodide of iron, $\frac{1}{2}$ oz.; fenugreek and ginger of each, 2 ozs.; elecampane, 1 oz. Mix thoroughly and divide into 12 powders.

Healing Mixture—No. 1—Cosmoline, 5 ozs.; carbolic acid, 1 dr. Mix. This is one of the very best mixtures for any sore, especially for such cases as are inclined not to heal.

No. 2—Carbolic acid, 1 oz.; soft water, 2 pints.

No. 3—White vitriol, 1 oz.; soft water, 2 pints.

No. 4—Pulverized camphor, 1 dr.; prepared chalk, 6 drs.; burnt alum, 4 drs. Mix and sprinkle over the sore.

No. 5—Tincture of opium, 1 oz.; tannin, 1 dr. Mix and shake well before using. Excellent for galls of collar, saddle or in fact for any purpose requiring a healing astringent.

Heaves—No. 1—One teaspoonful of lobelia, given in the feed once a day for a week, and then twice or three times a week will stop them for a time.

No. 2—Balsam copaiba, balsam of fir of each, 1 oz.; spirits of turpentine, 2 ozs.; apple vinegar, 16 ozs. Mix and give a teaspoonful once a day.

No. 3—Saltpetre, 1 oz.; indigo, $\frac{1}{2}$ oz.; rain water, 2 quarts.

No. 4—Liquorice, elecampane, Indian turnip, fenugreek skunk cabbage, lobelia, cayenne and ginger, equal parts of each.

Mix and give a teaspoonful once or twice a day. If the horse refuses to eat it in his feed, make into a ball and give.

Horse Liniments—No. 1—Oils of origanum, spike, hemlock, wormwood, aqua ammonia, gum camphor, of each 2 ozs.; olive oil, 4 ozs.; alcohol, 1 quart. Mix. Excellent for man or beast.

No. 2—Oil origanum, oil amber, sweet oil, of each 1 oz., oil spike, aqua ammonia and turpentine, of each 2 ozs. Mix.

No. 3—Linseed oil and turpentine of each, 8 ozs.; oil origanum, 4 ozs. Mix well. This is excellent for sprains and bruises. A good all round liniment.

No. 4—Oil of origanum, 6 ozs.; alcohol, 6 ozs.; spirits of turpentine, 1 oz.; gum camphor, 1 oz. Shake well before using. Equal to the celebrated "Wizzard Oil."

No. 5—Sulphuric ether, 4 ozs.; hartshorn, 4 ozs.; oil of origanum, 4 ozs.; sweet oil, 4 ozs.; alcohol, 4 ozs. Shake well before using. For sprains, apply by rubbing and cover with a tight flannel bandage. For headache, rub a little on the temples and apply a bandage wet with the liniment to the forehead.

No. 6—One-half gallon of best apple vinegar; $\frac{1}{2}$ lb. pulverized saltpetre. Mix and set in a cool place till dissolved. Invaluable for old sprains and bruises.

No. 7—Green copperas, 1 oz.; white vitriol and common salt of each, 2 ozs.; linseed oil, 2 ozs.; molasses, 8 ozs. Boil over a slow fire for fifteen minutes in a pint of urine. When almost cold add 1 oz. of the oil of vitriol and 4 ozs. of the spirits of turpentine. Apply with a feather. A very powerful liniment.

Gravel—Steep $\frac{1}{2}$ lb. of hops in a quart of water and give as hot as the horse can stand.

Hide Bound—To recruit a hide bound horse give the following: Saltpetre, 4 ozs.; crude antimony, 1 oz.; thoroughly pulverized together and add sulphur, 3 ozs. Dose: A tablespoonful in bran mash daily.

Itch—To cure a horse affected with the itch, first reduce his daily allowance of food, putting him on a low diet and then

give him a teaspoonful of a mixture of equal parts of sulphur and antimony and at the end of a week or 10 days the sores will have disappeared and the horse will be covered with a fine coat of new hair.

Mange—Boil 2 ozs. of tobacco in 1 quart of water; strain; add sulphur and soft soap of each 2 ozs.

No. 2—Oil of tar, 1 oz.; lac sulphur, 1½ ozs.; whale oil, 2 ozs. Mix. Rub a little on the skin wherever the disease appears and continue daily for a week and then wash off with castile soap and warm water.

Nasal Gleet—No. 1—Copperas, 2 ozs.; pulverized gentian, 3 ozs.; elecampane, 1 oz.; linseed meal, 3 ozs. Mix and give from one-half to a tablespoonful twice a day.

No. 2—Aloes, 6 ozs.; pulverized nux vomica, 3 drs.; flaxseed meal, 4 ozs.; make into eight powders and give one or two each day.

No. 3—Make a slow fire of old shoes, rags, etc. When fire burns sufficient, smother so as to make a great smoke and steam, then set a barrel without heads over the fire and hold the horse's head down in the barrel and smoke him well. This will soon produce a copious running at the nose and he will be so well pleased that he will voluntarily hold his head in the smoke. Continue this half hour or more daily, meanwhile give him potatoes and warm bran mash and gentle physic, if there be much costiveness which the laxative food will not move. If he has fever, treat him for it.

This is an excellent method to treat all head troubles like distemper, mad staggers, etc.

Ointment for Horses—Beeswax, 2 ozs.; rosin, 3 ozs.; lard, 4 ozs.; carbolic acid, 1 dr.; honey, ½ oz. Melt all together and bring slowly to a boil, then remove from the fire and add slowly spirits of turpentine 8 ozs.; stirring all the time until cool. Use with good success for galls, cracked heels, flesh wounds or bruises.

Poll Evil and Fistula—Copperas and white vitriol of each 1 dr.; blue vitriol and common salt of each 2 drs. Mix and powder fine. Fill a goose quill with the powder and push it to the bottom of the pipe, having a stick in the top of the quill, so that the powder can be pushed out of the quill, leaving it at

the bottom of the pipe. Repeat again in about four days and in two or three days from that time the pipe can be removed very easily.

No. 2—Common potash, 1 lb.; dissolve in $\frac{1}{2}$ pint of water; add $\frac{1}{2}$ oz. belladonna extract and 1 oz. gum arabic dissolved in a little water. Work all into a paste with wheat flour and bottle up tight. Directions: Wash the sores well with castile soap suds, then apply tallow all around them. Next press the above paste to the bottom of all the orifices; repeat every two days till the callous fibrous base around the poll evil or fistula is completely destroyed. Put a piece of oil cloth over the sores and afterwards heal with any simple ointment.

No. 3—Take a small piece of lunar caustic, place in the pipe, after being cleansed with soap suds, then fill the hole with sweet oil.

Quarter Crack—The best way to cure quarter crack is to open the heel on that side between bar and frog, cutting down pretty well (not sufficient to cause bleeding) until the quarter will give freely; then put on a shoe that will expand the heel. It is also necessary in this case that the inner heel should be opened or spread, as the heel is simply too small for the foot; if this is properly done, the point is directly reached. Some recommend in addition to this, burning with a hot iron a crease across at the upper edge of the hoof. If this should be done properly, the hoof will not split any more. The hoof may now be more rapidly grown if desired. Opening the foot and the shoe is the point of success.

Quittor—Corrosive sublimate, $\frac{1}{4}$ oz.; muriatic acid, 20 drops; soft water, 2 ozs. Mix the acid and water, shake well, then add the corrosive sublimate. Inject a little with a glass syringe once or twice, being careful to inject to the bottom. Warm poultice, used for several days, usually act well.

Saddle and Harness Galls—White lead and linseed oil. Mix as for paint, is unrivalled for healing saddle, harness, or collar galls and bruises. Try it, applying with a brush. It soon forms an air-tight coating and soothes the pain, powerfully assisting nature.

No. 2—Laudanum, 2 ozs.; tannin, 2 drs. Mix and apply twice a day.

Scratches and Grease Heel—Balsam of fir, 4 ozs.; lard, 4 ozs. Stir with a gentle heat till thoroughly mixed. Wash the sores well with castile soap and apply.

No. 2—Sugar of lead, 2 ozs.; borax, 1 oz.; sweet oil, 6 ozs. Mix and apply twice daily, after washing with castile soap and drying.

No. 3—Take $\frac{1}{2}$ oz. of pulverized verdigris; rum or proof spirits, 16 ozs. Mix and apply once or twice a day. This acts nicely for grease heel or mud fever.

No. 4—Oxide of zinc, 1 dr.; lard, 1 oz.; pulverized gum benzoin, 10 grains; spirits of camphor, 1 dr. Mix thoroughly and apply twice a week. Do not wash after first application.

Sore Lips—The lips become sore frequently at the angles of the mouth from bruising with a bit. They can be cured by applying the following mixture: Tincture of myrrh, 2 ozs.; tincture of aloes, 1 oz.; tincture of opium, $\frac{1}{2}$ oz. Mix and apply three or four times a day.

Sore Mouth—Borax, 1 oz.; tannin, $\frac{1}{4}$ oz.; glycerine, 8 ozs. Mix and apply two or three times a day.

Spavin and Splint—Oil of origanum, 6 ozs.; gum camphor, 2 ozs.; mercurial ointment, 2 ozs.; iodine ointment, 1 oz. Melt by putting all into a wide-mouthed bottle and setting in a kettle of hot water. Apply it to bone spavin or splints twice daily, and a cure is almost certain.

Sprains and Sweeny—Alcohol and spirits of turpentine of each 8 ozs.; camphor gum, pulverized cantharides and capsicum of each 1 oz.; oil of spike, 3 ozs. Mix and apply, using a hot iron and a cure will follow.

Scours and Pin Worms—White ash bark burnt into ashes and made into rather strong lye; then mix $\frac{1}{2}$ pint of it with 1 pint of warm water and give all two or three times a day. This will carry off the worms, which are the cause, in most instances, of scours and looseness.

No. 2—Tormentil root, pulverized. Dose for a horse or cow, 1 to $1\frac{1}{2}$ oz. It may be stirred into 1 pint of milk, then given from three to six times a day until cured.

Thrush—Blue vitriol and copperas of each, 1 oz.; burnt alum, 2 ozs.; white vitriol, $\frac{1}{4}$ oz. Mix, apply after cleansing. And fill all cavities with cotton to keep out the dirt.

Tonic.—Ginger, 2 drs.; gentian, 1 dr.; Peruvian bark, $\frac{1}{2}$ oz.; fenugreek, $\frac{1}{4}$ oz. Make into a ball and give once or twice a day.

To Kill Lice on Cattle—Take one ounce of carbolic acid, one quart of soft soap, one and one-half gallons of water. Mix and apply.

Unhealthy Ulcers—Nitric acid, 1 oz.; blue vitriol, 3 ozs.; soft water, 15 ozs. Bathe parts once or twice a day.

Water Farcy—No. 1—Fenugreek, copperas, saltpetre, of each, 2 ozs.; ginger, 1 oz.; gentian, 1 oz.; anise, $\frac{1}{2}$ oz. Mix and divide into eight powders. Give one powder two or three times a day.

No. 2—Anise, gentian, blue vitriol, of each 1 oz.; elecampane, saltpetre and flaxseed meal of each 2 ozs. Mix and divide into eight powders. Dose: One or two powders a day. Moderate exercise and daily rubbing of the limbs are useful.

Worms—Fenugreek, linseed meal of each 1 oz.; tartar emetic, $\frac{1}{2}$ dr.; calomel, 1 dr. Mix and give in feed at night and repeat the dose for two or three days and follow with $1\frac{1}{2}$ pints of raw linseed oil on the morning following last dose.

Pulse—The average number of beats per minute are from 35 to 40.

CATTLE.

Weight By Measure—Take the measure of girth close behind the shoulder, then the length from the fore part of the shoulder-blade along the back to the bone at the tail, which is in a vertical line with the buttock both in feet. Multiply the square of the girth expressed in feet, by ten times the length and divide the product by 3; the quotient is the weight, approximately, of the fore quarters, in avoirdupois pound. It is to be observed, however, that in very fat cattle the fore quarters will be about one-twentieth more, while in those in a very lean state they will be one-twentieth less than the weight obtained by the rule.

Age—The horn is considered as an index to the age of the brute, but it is not absolutely correct in every instance. Only an approximate age may be observed by the wrinkles developed after two years. The first ridge or circle makes its appearance at three years old and one circle for each year thereafter. The

correct number of years, so far as this rule holds good, can be obtained by adding two to the number of ridges. The age of a bull should be computed by adding five to the number of circles as they do not appear until about that age. Dishonest persons frequently file the horns smooth for commercial reasons.

The Flow of Milk—The quantity and quality of milk which a cow gives is the greatest consideration of all dairymen. The well-proportioned cow with good milking qualities are the ones mostly sought by purchasers. The cow, like other animals, must have the attention necessary to develop their full milk capacity. The following method will give good results: Give the cow milk-warm water, slightly salted, in which have been stirred 1 quart of bran to 2 gallons of water three times a day. The daily use of this method is reputed to increase the flow of milk 25 per cent. The animal will become so much attached to this diet that she will refuse to drink clear water unless very thirsty, but will drink this almost any time and low for more. The amount necessary for one drink is an ordinary bucketful, morning, noon and night. Avoid feeding the cow slop, if good milk is desired. Sweet potatoes are an excellent food.

Medicated Food—The following is for 1 ton: Take of corn meal 900 lbs.; finely ground locus beans, 600 lbs.; best linseed cake, 300 lbs.; pulverized turmeric and sulphur of each 40 lbs.; saltpetre, 20 lbs.; licorice, 27 lbs.; ginger, 3 lbs.; anise seed, 4 lbs.; coriander and gentian of each, 10 lbs.; cream of tartar, 2 lbs.; carbonate of soda and levigated antimony of each, 6 lbs.; common salt, 30 lbs.; Peruvian bark, 4 lbs.; fenugreek, 22 lbs. Mix thoroughly. Use as directed. This is the equal of any if not the best.

Wheat Straw Hay—Take 3 gallons of unground flaxseed and pour on ten gallons of boiling water. Let stand till cold, then empty the whole into a barrel containing 44 gallons of cold water. Let it remain for forty-eight hours. At the end of that time it will be reduced into a thin jelly, like arrowroot. Spread out one-half ton of straw and sprinkle it over regularly with the whole liquid from the barrel. The stock will eat it up as

clean and keep as fat on it, quantity for quantity, as they would do on any hay.

Feeverish and Swelled Bags—Gum camphor $\frac{1}{2}$ oz.; sweet oil, 2 ozs.; pulverize the gum camphor and dissolve over a slow fire. Apply once or twice a day.

To Churn All the Milk Into Butter—Pulverized alum, 4 ozes.; powdered gum arabic, $\frac{1}{2}$ oz.; pepsin, 50 grains. Place in a well-corked bottle for use as desired. A teaspoonful of this mixture added to one pint of new milk will, upon churning, make one pound of butter. Many persons have paid \$5 for this secret.

Butter Coloring—The proper coloring for butter or cheese, or at least should be, is Spanish annatto; but as soon as coloring became general in the country, a color of an adulterated kind was placed upon the market and for sale in almost every shop. From 1 to 3 grains per pound will generally be sufficient for cheese. If a considerable part of the cream of night's milk be taken for butter, more coloring will be required. The manner of using annatto is to tie up in a linen rag the quantity deemed sufficient and put it into $\frac{1}{2}$ pint of warm water over night. This infusion, for cheese coloring, is put into the tub of milk in the morning with the rennet infusion; dipping the rag into the milk and rubbing it against the palm of the hand as long as any coloring runs out. The yolk of egg is frequently used for butter coloring.

To Keep Milk Sweet and Sweeten Sour Milk—Put into the milk a small quantity of carbonate of magnesia.

Milk Test—A cheap lactometer may be made by getting a glass bulb and stem, both hollow, and loading the bulb with shot until the instrument will float upright in pure milk. Mark on the stem the point to which it sinks—the surface point. Remove it from the milk and float it in pure water, marking the surface point as before, which will be considerably higher on the stem than the other mark. Now take a slip of paper capable of being rolled lengthwise and insert it in the stem of the instrument so that the figures on it will be visible through the glass. Lay off on this in the direction of its length a space equal to the distance between the two surface points, numbering the one 0 and the other 100. Sub-divide this space into 10

or 20 proportional spaces, correspondingly numbered; roll the slip and insert it in the stem until the 0 is at the surface point of the milk, the 100 at the point of the water. Float it in the milk can every morning and the depth to which it sinks will register the percentage of dishonest water, if any, the milk contains.

Milk Preservative—Place the milk in a bottle and place the bottle in a pot of water over a slow fire. Let the bottle remain for half an hour after the water has begun to boil and then cork tightly.

Deodorized Milk—Sometimes in the spring when cows are fed upon rutabagas the milk has such a disagreeable taste and odor as to be unfit for butter-making. This can be obviated by putting a pinch of saltpetre, finely pulverized, into every gallon of cream.

THE HOG.

We have no exact knowledge of the period of creation in which this animal had an existence. It appears that the Jews were required, by Moses, to refrain from eating the flesh of the swine. We next hear of this animal about the time a certain woman was seen by the Savior. It will be seen by such historical sketches that the hog, like the chameleon, is susceptible to change of environment. He can become as vicious as a tiger or as gentle as a lamb. He is omnivorous and will feed upon a carcass or graze on the grass. He stands as an animal of a peculiar phenomenon. He is the embodiment of almost every character and holds a prominent place on the market. A certain writer states that animals correspond to the lives and character of the people of a period of time in which they lived. He gives as a reason for the termination of the lives of pre-historic animals of which geology has shown to have existed, that the evil they represented became extinct. If such philosophical reasoning should be the criterion by which we are to judge, we would infer that the present age is a fair representation of the characteristics of the hog. Since he holds such a prominent place in our domestic and commercial life it is necessary to notice some of his ailments. There are very few diseases among animals that the hog is subject to. He is liable to be afflicted with mange, measles or other diseases of less impor-

tance. The disease that plays the greatest havoc among hogs is cholera.

HOG CHOLERA.

Symptoms—Lassitude, sluggish, moves slowly, head drooped, shaggy and reddish looking hair. No appetite. The symptoms are indicative of either constipated or loose condition of the bowels.

Cause—This disease is generally caused by contagion, locality, or a lack of proper hygienic surroundings; rooting in a soft loam saturated with decayed vegetable matter, inhaling the fumes and gasses which poison the system.

Treatment—Since the cause of any disease must be known as a prerequisite to a rational treatment, it is then necessary to remove and prohibit the cause. Potash, having a destructive influence on the germ, is to be used as the most important remedy at hand. Whether the hogs are to be kept in the pen or to run at large, the feeding place should have from one to several loads of dry, clean sand thrown on the ground on which the hogs are fed, to act as a filter of the noxious gasses. To reinforce this and destroy the development of further contagion, sprinkle heavily with slacked lime. Remove all sick to a separate place and follow the above with hot milk and spirits of camphor. Take a quart bottle (long neck), put in one pint of fresh sweet milk, set in a kettle of water, in which is placed a block of wood, to prevent the bottom from coming in contact with the kettle. The water should be a little above the milk and when heated to near boiling point should be removed, let cool and when milk-warm put in from a half to one teaspoonful of spirits of camphor; drench and repeat every two or four hours. The lime should be in proportion to sand according to strength; old slacked lime or lime once used should be a barrel to a load of sand. Arsenic is a good remedy; given in slop about the $\frac{1}{4}$ of a teaspoonful to each hog, once or twice a day. Plenty of salt and sloping ground are necessary to good, thrifty hogs. Water is a good preventive of mange and other skin disease, and its effects can be greatly augmented by a free use of common wood ashes.

POULTRY.

Poultry raising, like other occupations, require well devised plans and a well selected brood to succeed. The business of a poultry farm includes, as well as other affairs, the raising of almost all kinds of domesticated fowls. The following rules, given by a large poultry raiser, will be found of value :

1. "Clean roosts daily ; 2, feed at regular hours ; 3, make new nests every week and burn up the old ones ; 4, pour kerosene over the roosts once a week in summer and once a month in winter ; whitewash the interior four times a year and scatter air-slacked lime over the floor and dropping-boards each week ; 5, remove all the fowls that show signs of disease to separate quarters and scald out the drinking fountains once a month ; 6, fatten, for market purposes, all hens that have past their third season and hatch the pullets, for fall laying, during the months of March, April and May ; for broilers, from October to March."

Feeding—While it is essential to be careful not to overfeed, the extreme of underfeeding must be avoided. It isn't the gross amount of feed, but the mode in which it is distributed that shows to the best advantage. A variety of diet for fowls is a very important matter to be remembered, both for economy and the best good of the fowls. In winter seasons they should receive the first feed of warm mashed potatoes and scalded meal, seasoned with a little salt and pepper, which helps to keep the fowls in a healthy condition. At noon and night, wheat, oats or other grain may be fed. The chick comes from the shell full, having absorbed the yolk just previous to emerging from the egg, consequently it should not be fed for 24 hours and 36 would cause no inconvenience.

The second day feed as early as possible. The third day is not so urgent ; 8 o'clock is sufficient. Give hard boiled eggs, whites and yolks, mixed and finely powdered ; crumble all the egg shells and place within their reach and give as many times a day as they will eat it up cleanly. A little green food, such as grasses, corn, mustard and cabbage, should be one of the principal features. Cleanliness is an important factor, as there is no success in filth. Milk is excellent after they are two weeks old. Dampness is fatal to the brood, consequently the surroundings of the drinking vessels should be dry, as well as

the floor. All food cooked into a pulp and given warm will be more appetizing than in any other way. Liver given raw is not palatable, but if put in boiling water over the stove for ten minutes and chopped hot and thrown to the birds in pellets it will be greedily devoured. Grain baked in an oven dry and given with small bits of fat meat is very good in the winter season. If the above diet is properly attended to the birds must lay; if not, watch for rats or egg eating hens in the flock, or a need for a padlock on the poultry house door. Young chicks are very tender and must not get chilled. Should they do so, the bowels become loose and shortly die. This bowel trouble is often ascribed to the feed, but when the real cause is known it comes from being in a brooder with the temperature too low. The hen broods at the same temperature that she hatches with. If the brooder is rather warm, the little chicks will spread out near the outer edge and even put their heads out, but if too cold they will all collect in the center of the brooder and pile up and become wet from the steam coming off the other chicks. As this always occurs at night, the operator is often sadly disappointed the next morning to see what was a fine brood of chicks looking like so many drowned rats and likely half of them dead.

Early Laying—Pullets from 12 to 18 months old should be selected, housed in warm quarters early in January and avoid moving them about in runs after they are mated. Supply them with plenty of litter, such as hay, chaff, leaves, fine cut straw, or in fact most anything that is clean and wholesome. Lay in a small load of fine gravel in the fall and place where all the fowls can supply themselves with false teeth.

To Make Hens Lay—Feed each alternate day the following mixture: To three gallons of boiling water add $\frac{1}{4}$ oz. of common salt, a teaspoonful of cayenne pepper and 4 ozs. of lard. Stir the mixture until the pepper has imparted considerable of its strength to the water. Then, while yet boiling, stir in meal made of oats and corn, equal parts, until a soft mash is found. Before feeding, taste to see that there is neither an overdose of salt or pepper. In winter, on the days that the above mixture is omitted, give the hens fresh meat, chopped

fine, and at all times plenty of pure water, grain, gravel and lime.

Floor Covering—When leaves fall, rake and place them under cover. Secure a large pile and use them in the poultry house. They aid in retaining warmth and as absorbents. The hens will work in them and thus create warmth by exercise and keep in a good laying condition. The leaves should be kept at a depth of six inches during winter. Cut straw is an excellent floor covering. It should be spread four inches deep. Millet seed, wheat or other grain scattered thereon will cause the hens to exercise sufficient to keep in a healthy condition. It will pay better if the matter of profit from the returns is considered to use straw in the poultry houses than in the cow stalls. Many cold poultry houses can be rendered comfortable with straw, cut to three inch lengths, on the floor and if the hens are warm and can exercise, the cost will be less and the number of eggs greater.

Cholera—This disease is more to be dreaded than roup, or any other disease that poultry is subject to, as it is of miasmatic origin, epidemic, and very contagious.

Symptoms—The fowl has a dejected, sleepy and drooping appearance and does not plume itself; it is very thirsty, has a slow, stalking gait, and gapes often. The comb and wattles turn pale and sometimes dark. There is diarrhoea, with greenish discharge, or resembling sulphur water, afterwards becoming thin and frothy. Prostration comes on, the crop fills with mucus and wind and the food is not digested; breathing becomes heavy and fast, the eyes close and in a few hours the fowl dies. This destructive disease will play havoc with the flock if left to run its course.

Treatment—Remove all the sick to separate apartments, clean out all filth and burn the trash. Use a strong solution of carbolic acid and water or kerosene oil. Give to each sick chicken 5 grains of powdered nux vomica or about $\frac{1}{4}$ of a teaspoonful once or twice a day. One dose is generally sufficient. A teaspoonful worked in meal or bran sufficient for a dozen fowls, and fed once a day is a sure cure, and if hawks are troublesome, it is a demonstrated fact that but few chickens will be caught.

Roup—This is an inflammation of the mucous membrane lining the air-passage, which often makes its appearance into the cleft palate, the mouth and the eyes. It is more destructive and harder to handle when let run awhile than cholera. Its first symptoms are slightly catarrhal, affecting the appetite and health of the fowl very little, but in the second stage it becomes ulcerous or diphtherial roup, and is very closely related to malignant diphtheria in the human family. It is caused from filth, bad food, cold and wet. The eyes water, the nostrils are closed, the breathing becomes deep and difficult together with cough and suffocation.

Treatment—Pen up the fowls in large, warm and dry quarters, whitewash pens with carbonized lime, keep out all draughts of cold air, feed hot bran, mashed potatoes, and meat and medicate the throat, mouth and nostrils with common salt as follows: To a 2 gallon bucketful of warm water add a tea-cupful of salt, then catching the fowl, examine the throat and nostrils, removing all cheesy matter and pressing all mucous out of the nostrils, then filling a pint cup for each afflicted fowl, hold it by the feet with head down, choke it until the mouth is wide open and then insert the head into the solution, comb down so that the medicated water may enter the cleft in the palate, and go out at each nostril and into the throat. Each should be separately treated, not all from the same water, but one cup will do for all. Kerosene injected into the nostrils is good and so is comphorated sweet oil or the spirits of turpentine. It is said that if this fails, the best remedy is the hatchet. A great deal of this trouble could be avoided by keeping the fowls thoroughly clean.

Crop-Bound—This complaint occurs frequently with fowls in confinement where no range is allowed and in nearly every case the real cause is overfeeding of indigestible food. In most instances, death is sure to follow unless properly treated. The symptoms will manifest themselves in about 24 hours. It can be relieved by making a slit lengthwise and sufficiently long to remove all the contents. After this is done, thoroughly cleanse with warm water, then close with several stitches, care being taken not to sew the skin to the sack of the crop. Close the crop first, using coarse white linen thread; let

knot come on outside of crop, then take a few stitches in skin. Place the fowl in dry, warm quarters, give no water for 24 hours and feed on soft food for two days. It will soon recover. From November until March is the season of the year when some of the hens may become crop-bound. It is caused by the lack of green food which tempts the hens to swallow bulky food of some kind as a substitute, the result being that they resort to the long dried grasses which becomes packed in the crops and causes crop-bound.

Scaly Leg—Wash the feet and legs of the fowl well with castile soap. After drying, apply equal parts of mutton tallow and coal oil and rub well. Two or three applications will generally cure the worst cases.

SHEEP.

This animal holds his own on the fields of industry both as a food and wool product. He is easily kept and will live on very scant feed. The principal disease that affect sheep is called "sheep rot." The following is given as an excellent preparation for this disease: Take 4 ozs. of pure honey, 2 ozs. of pulverized burnt alum and $\frac{1}{2}$ lb. of Armenian bole, with as much train or fish oil as will convert the ingredients into a salve. The honey must first be gradually dissolved, when the Armenian bole must be stirred in, afterwards the train oil and alum are to be added. Being harmless, it can be used at pleasure with good results.

To Produce a Good Fleece—Immediately after the sheep are shorn, soak the roots of the wool that remains all over with oil, or butter, and brimstone, and three or four days afterwards wash them in salty water. The wool of next season will not be much finer, but the quantity will be in greater abundance. It may be depended upon that sheep will not be troubled with the scab or vermin that year. Salt water is a safe and effectual remedy against maggots.

To Mark Sheep Without Injury—Take 30 spoonfuls of linseed oil, add 2 ozs. of litharge, 1 oz. of lamp black; boil all together and mark the sheep therewith.

To Fatten Sheep—Good clover hay is an excellent flesh producer if the hay has been cut in full bloom, so as to retain all its juices before they are turned into woody fiber and of a good green color. Other kinds of hay, if of good quality, will answer the purpose. A sheep of 120 pounds live weight will consume 21 pounds of good hay per week with an increase in flesh of 2 pounds. Allowing that it would ordinarily take 14 pounds to keep it in good stationary condition, an expenditure of 7 pounds of hay extra will produce $1\frac{1}{2}$ pounds of mutton, worth in the spring 10 cents—perhaps more—so that hay is literally realizing to the farmer at the rate of \$30 or more per ton. No other stock, we think, will give a return for the trouble of fattening like this. To fatten sheep more rapidly, the daily addition of a small quantity of oats to their feed will produce good effects. Keep their quarters dry, well-ventilated, and abundantly littered with clean straw, with free access to good water and an occasional taste of salt. During the grazing season the health of the sheep can be promoted by giving tar at the rate of a gill a day for every 20 sheep, and if given pine boughs once or twice a week they will create appetite, prevent disease, and increase their health. The best sheep to keep, both for wool and mutton, is the American Merino.

Medical Department

On the introduction of this chapter I have decided to digress from the established order. This is being written to convey as much knowledge to the laity as is consistent with the intent and purposes of the question at issue. It has been a matter of conjecture in my mind as to the introduction of the proper topic, but on a more mature deliberation it is thought best to give a description of the tongue with its relation to diseased action and drug indication. Let me see your tongue? And how does it look? are questions that are frequently heard by those seeking treatment. The foregoing is here appended to give some knowledge of what the expressions given on the tongue mean and the medicine indicated.

The normal tongue in size and shape must be known before we can tell anything about its changes.

The normal tongue shows a healthy expression in natural redness, moisture and no coat; neither too broad, contracted or pointed. Tongue moist is regarded favorable; dry denotes diminished secretion. An unnatural red tongue is seen in eruptive fevers, gastric and bilious and in many bad cases of chronic dyspepsia. It indicates acids, orange or lemon. Where the tongue is sleek, looks like raw beef, shows too much alkaline salts in the blood and calls for a mineral acid, muriatic. A broad, pallied or blanched tongue shows too much acid in the system and a want of alkaline salts. There are stronger indi-

cations if the coating of the tongue is moist, white and pasty. There are three conditions to be observed: Fullness or swelling, relaxed or want of tonicity, palid or absence of color, not only of the tongue, but all of the mucous structures, a peculiar coating—white—pasty, or yellowish white. The first relates to the sympathetic nerves and shows relaxation and causes a sluggish circulation with impaired function in the digestive tract; mental dullness; in some cases, a dull headache and nausea. Sulphite of soda and small doses of podophilin will meet these indications.

Tongue oval or rounding indicates trouble in kidneys, accompanied with hysteria. Pipsissewa, the remedy.

Tongue with reddened tip and edges. Irritation of stomach and bowels, with too much blood flowing to the part. Small doses of aconite and ipecac.

Tongue thick, large, flabby, pale and indented with the teeth, indicates topidity of stomach. *Nux vomica* ten drops, water four ounces. A teaspoonful every four hours.

Tongue dark red, creased or dry, mucous membranes dry, skin dry, tenderness on pressure over the abdomen in protracted fevers. Turpentine, 5 drops every two to four hours.

Tongue dry, dark red and cracked, indicates threatening ulceration of the bowels with hemorrhage.

Tongue red or violet colored, sleek and glistening. Dilute sulphurous acid. Five to ten drops in water every two hours.

Tongue dirty, coated at the base with foul breath. Sulphuric acid.

Tongue coated brown with sordes on teeth and mouth dry. Hydrochloric acid with glycerine or glycerine and water held in mouth to moisten.

Tongue nearly normal in shape, rather narrow, white tipped papillae over a very red base, moist, steady gastric distress after eating, difficult gastric juice. Dilute hydrochloric acid 5 to 20 drops.

Tongue long and slightly pointed with redden tips and edges. Cocaine, 1 grain; water, 2 ozs.; a tablespoonful every ten or fifteen minutes.

Tongue coated on one side only. Inflammation of one lung, liver or spleen.

Tongue strawberry red, with raised papillae, indicates *scarlet fever*.

Tongue dusky, mucous membranes dark, thin, dry, brownish black, face purple like exposure to cold air, pulse suppressed and feeble, the condition present during exhausting fevers. *Baptisia*, ten drops; water four ounces; from a half to one teaspoonful every hour.

Tongue bluish-colored shows on impeded circulation in bronchitis, pneumonia, valvular diseases of the heart, dropsy, especially of the chest, cyanosis, scurvy, croup, whooping cough, asthma and salivation.

Tongue dark coated, if cracked, is an unfavorable sign in continued fevers. When the fur separates into patches, leaving a raw surface, red and glossy, it is unfavorable, especially in fever.

Tongue red on tip and edges with a dry streak in the middle is seen in typhoid fever and inflammation of the bowels. If red, clean and glossy, it shows a grave form of fever, approaching brain complications and delirium, and if deep red, dark or cracked, it indicates ulceration of the bowels.

Tongue full and pale, heavy yellowish coat, mucous membranes pale, feeble capillary circulation, tendency to headache, disturbance of the stomach, faulty liver action. *Chionanthus*, two to five drops every three hours, with *nox vomica*, if feebleness.

Tongue hot; found in high fevers and in thrush in infants and in inflammation of the stomach in adults.

Tongue constantly dirty in infants or young children; breath foul; picking at the nose; fickle appetite and uncertain temper; stools may be light and pasty; pale or dirty, examine the mouth. Indicates worms. Give one-fourth grain *santonine* with one-fourth drop of *nux vomica* in water (one drop to four teaspoonfuls of water) every four to six hours.

Tongue pale, thick, found in chills and after hemorrhages, dropsy, chlorosis and where there is a deficiency of red blood cells. Tonics, iron and strychnine.

Tongue dark and trembly when protruded. In typhoid conditions where there is tendency to extreme lack of tone,

feeble circulation and threatened necrosis. Oil of saffras 2 to 8 drops every 3 or 4 hours.

Tongue of dirty color, whether whitish, yellowish, or dirty brown. The intestinal tract must be thoroughly cleansed. Epsom salts; if dirty white, sulphite of soda.

Tongue brownish or black, points to death of blood. Give echinacea, baptisia, mineral acids as indicated iron and chlorate of potash.

Tongue dark red, papillae elongated, nausea. Nitric acid, dilute, 2 to 5 drops every two hours.

Tongue lead colored, full, pasty fur; gastro intestinal inactivity. Give leptandrin frequently in small doses with iodide of sodium from 1 to 15 grains for its general influence; three grains of acetate of potassium every three hours, if urine is scanty.

The above description of this very important organ is sufficient to give a fair knowledge of its expressions in the various forms of disease. If properly studied will aid anyone in the treatment.

DOSE OF MEDICINES.

We here give the doses of the principal medicines used in this work. The dose, as given for adults, must be reduced from a twelfth to a twentieth, according to age.

We wish to impress it upon the mind that uniform doses depend upon a drug of uniform strength. Overdosing under excitement, or negligence in administration or overheated anxiety in any case, is liable to terminate seriously. Patience, coolness and a clear head are the prerequisites necessary in a sick chamber. In non-professional hands it is safest to observe the rule of never giving the maximum dose of any medicine.

Aconite, tincture, pure, gts. 1 to 3.

Apis Mellifica, gts. 1 to 5.

Arnica, tinct. gts. $\frac{1}{2}$ to 1.

Apomorphia, emetic, grs. 1-8 to 1-10.

Apocynum, gts. 5 to 15.

Amyl nitrite, inhale, gts. 3 to 5.

Ammonium, carbonate grs. 5 to 10.

Arsenic iodide, grs. 1-30 to 1-50.

- Ammonia, bromide, grs. 10 to 15.
Ammonia, benzoas, grs. 5 to 30.
Ammonia, valerianas, grs. 1 to 2.
Alnus rubra, gts 1 to 20.
Aesculus glabra, gts. 1 to 5.
Aether, gts. 5 to 20.
Acid, sulphuric, dilute, gts. 3 to 8.
Acid, sulphurous, gts. 5 to 10.
Acid, nitric, dilute, gts. 3 to 5.
Acid, lacticum, gts. 10 to 20.
Acid, hydrochloric, dilute, gts. 3 to 4.
Acid, galicum, grs. 1 to 10.
Acid, benzoic, grs. 1 to 15.
Achillea, melifolium, gts. 3 to 20.
Belladonna, tinct., gts. 3 to 5.
Bryonia, gts. 2 to 3.
Baptisia, gts. 5 to 10.
Bismuth, subnitrate, grs. 5 to 20.
Buchu, gts. 15 to 60.
Castus, grandiflorus, gts. 5 to 20.
Camphor, gts. 3 to 5.
Camphora, monobromata, grs. 1 to 5.
Cannabis indica, gts. 2 to 10.
Cantharis, gts. 1-2 to 1-20.
Carbo vegetabilis, gr. $\frac{1}{2}$.
Chamonile, gts. 1 to 2.
Colocynth, gts. $\frac{1}{2}$ to 1.
Capsicum, gts. 1 to 5.
Cerii oxalus, grs. 1 to 5.
Chelone glabra, gts. 1 to 10.
Chionanthus, gts. 2 to 10.
Chimaphila, drs. 1 to 2.
Chloral hydrate, grs. 10 to 15.
Chloroform, gts. 10 to 15.
Cinchonia sulphas, grs. 5 to 10.
Cinnamon oil, gts. 8 to 10.
Colchicum, gts. 1 to 10.
Collinsonia, gts. 1 to 15.
Copabia, balsam, gts. 10 to 15.

- Corydalis formosa, gts. 5 to 10.
Creosote, gts. 1 to 2.
Cubeba, tinct., gts. 1 to 10.
Delphinium staphysagra, gts. 3 to 5.
Digitalis, gts. 1 to 10.
Erigeron, gts. 5 to 10.
Eupatorium purpureum, gts. 10 to 30.
Euphorbia corollata, gts. 1 to 3.
Euphrasia, gts. 1 to 5.
Gelsemium, gts. 2 to 10.
Geranium, gts. 1 to 30.
Gossypium, gts. 1 to 30.
Grindelia, gts. 5 to 30.
Hemamelis, gts. 2 to 10.
Humulus, gts. 1 to 15.
Hydrangea, gts. 5 to 15.
Hydrastis, colorless, gts. 10 to 30.
Hyoseyamus, gts. 1 to 5.
Ignatia, gts. 1 to 5.
Ipecac, gts. 1 to 20.
Iris versicolor, gts. 1 to 15.
Jalapa, gts. 5 to 20.
Juglans, gts. 5 to 10.
Kava-kava, gts. 10 to 30.
Leptandra, gts. 1 to 10.
Lilium, gts. 1 to 5.
Lobelia, gts. 1 to 60.
Michella, gts. 5 to 15.
Morphia. Sulph. gr. 1-4 to 1-12.
Nux vomica, gts. 1 to 5.
Oil, cajaput, gts. 2 to 5.
Oil, croton, gts. $\frac{1}{2}$ to 1.
Opium, gr. 1.
Phytolacca, gts. 1 to 5.
Podophyllum, gts. 1 to 5.
Potassa bitartrate, dr. $\frac{1}{2}$ to 1.
Potassa bromide, grs. 1 to 20.
Potassa. chloras, grs. 1 to 2.
Potassa, nitrate, grs. 5 to 10.

Potassa permanganate, grs. 1 to 2.
Pulsatilla, gts. 5 to 10.
Rhus tox, gts. 1 to 5.
Rumex crispus, gts. 3 to 5.
Sanguinaria, gts. 1 to 5.
Santonine, gr. $\frac{1}{2}$ to 1.
Senecio aurens, gts. 5 to 10.
Sodium Sulphite, grs. 1 to 5.
Sodium nitrate, grs. 5 to 10.
Spiritus aetheris, gts. 5 to 20.
Strychnia, gr. 1-30 to 1-100.
Thuja, gts. 5 to 10.
Uva Ursi, gts. 5 to 15.
Veratrum viride, gts. $\frac{1}{2}$ to 1.
Viburnum opulus, gts. 1 to 30.
Viburnum prunifolium, gts. 1 to 30.

DIETETICS.

This subject has been treated of in another section of this book, but as it is correctly claimed, that bread is the staff of life, it is thought proper to give the question a short review.

Proper diet is essential not only to adults but to the perfect development of the young, thus rendering life vigorous, decay less rapid and death more distant. The equal balance of all the organs of the body was the design of the Creator, when he made man. Extended observation has proved that the healing property of medicines is much retarded and in many instances prevented by improper quantities and kinds of food. Any articles of diet that overstimulates the system greatly lessens the susceptibility of the system to receive the action of the medicine. Reference should be made to the digestive time table given elsewhere in this work and study given to the various properties of food in the preparation and digestion.

Sick people should eat at regular meal time, and if the appetite is not sharp enough to demand it, wait till next time. Stuffing is bad policy and should be avoided.

It must be remembered that no single element or constituent of our food is alone capable of long sustaining the

body. If salt and lime are deficient in the blood nutrition suffers at once. The healthy body contains on an average one-fourth of a pound of common salt. In consequence of the presence of this salt, the coating of the blood vessels is able to conduct the current of electricity, generated by the iron in the blood. And where there is a deficiency of this salt in the blood there is a deficiency of electricity in the body. It is believed that pest and cholera among many of the poor in East India are due to a scarcity of salt with those who can not afford to purchase it on account of the very high duty on it. The pale cheeks of many of the young girls are due to a lack of salt in their diet. We excrete a certain amount of salt daily, hence the necessity of a daily re-supply to preserve health. Salt also aids other minerals in their solution, such as lime. Lime is a mineral tonic of much utility in the system. Six molecules of lime has the power to combine with six molecules of bicarbonate ammonia. Salt and lime influence prolificness—the vitality. Gluten of good flour furnishes the lime, which the salt dissolves out of the gluten.

Potatoes contain a small amount of lime. Nations living on a lava soil, which is destitute of sulphates and who live principally on a fruit diet, are fast fading from the earth with leprosy and like diseases of the integument. The substance of the nerves is an oil containing ammonia combined with phosphoric acid. Sulphuric acid combined with taurin is frequently found in the bile. When water is taken into the full or partially full stomach it does not mingle with the food, as is commonly taught, but passes along quickly between the food and lesser curvatures towards the pylorus, through which it passes into the intestines. The secretions of mucus by the lining membrane is constant and during the night a considerable amount accumulates in the stomach; some of its liquid portion is absorbed and that which remains is thick and tenacious. If food is taken into the stomach when in this condition, it becomes coated with this mucus and the secretion of the gastric juice and its action is delayed. These facts show the value of a goblet of water before breakfast. The water washes out the tenacious mucous and stimulates the gastric glands to action. Lemon juice, with water

and a very little sugar, taken every morning, will keep the stomach in order and prevent dyspepsia. Where there is falling out of the hair, especially when dark, cut off a slice of lemon and rub it on the scalp. It will stop the trouble promptly. If ladies desire a complexion like princes, squeeze a lemon into a quart of milk and bathe the face with the mixture night and morning. Mix equal parts of lemon juice and glycerine and rub the hands thoroughly with the mixture before going to bed. Sleeping with gloves on will add to its efficacy. In the morning, wash the hands thoroughly in warm water and apply lemon juice only, but just a few drops. A dazzling or unnatural whiteness will follow if used too long. Applied to the head in headaches, with slits rubbed on each temple and also to bee stings, or other insects, it will be effective.

THE HEALTHY BODY.

Before we can properly gauge disease, it is necessary to have a standard by which to draw a conclusion. Diseases is a deviation from a healthy standard of structure and function. The following standard of health, by Doctor J. M. Scudder, is given as follows

1. That the general expression of the body would be of vigor and the countenance would indicate that existence was pleasurable; i. e., an absence of painful or unpleasant sensations.

2. The temperature should be maintained at the standard of 98.4.

3. The circulation of blood should be uniform and regular, showing good aeration by its bright redness at those parts where it is frequently distributed to the surface. The pulse ranging from 60 to 70 beats per minute, rarely falling below or above this standard.

4. The tongue should be clean and of a uniform pale, rose-color. The appetite good, the food taken with pleasure; digestion attended with a feeling of comfort; and the bowels moving freely at regular intervals.

5. The soft structure should be full, the different tissues well outlined and giving to the touch that degree of hardness that we describe as tonicity.

6. The skin should give to the touch a sense of pleasant coolness, moisture and elasticity; showing good excretion and the power of removing excess of caloric. The discharge of urine regular, pleasurable, of natural color and specific gravity.

7. The clear eye, the general expression of the body and form being smooth and uniform, expressive of pleasure, at least of absence of suffering, will indicate a healthy condition of the nervous system."

With the above given as a fair standard of health, we are able to arrive at some conclusion as to the nature of the case by observing whether or not there is any deviation, and, if any, how much and what is it? We see if there is any excess, if so, how much above the normal standard, as in fevers; is there any defect in digestion, circulation, elimination; or is there any defect in secretion, excretion, or innervation? The condition of the system, in regard to either excess, defect or perverted as to its relation to other parts of the body, will give a fair idea of the nature of the case and will, if closely studied, afford a reasonable knowledge as to the proper course of treatment to pursue.

Pulse—The temperature is usually in proportion to the pulse rate, one degree corresponding to an increase of ten beats per minute. The pulse is produced by the expulsion of the blood from the heart through the aorta and thence through the various arteries of the body, by each contraction of the left ventricle of the heart and expansion and contractility of the arterial walls. Hence the character of the pulse will be modified by the condition of the heart and also by that of the blood vessels and of the blood itself. In ordinary cases, the pulse may be examined at the wrist. In examining the pulse, the pressure upon the artery must be gentle and lightly depressed with three fingers ranging along the course of the artery. The frequency of the beats may be counted by the movements of the second hand of a watch. Its peculiar characteristics should be observed. The healthy pulse is uniform, equal and moderately full and swells slowly under the pressure of the fingers; it is smaller and quicker in children and ordinarily also in women. In examining the pulse,

notice the fullness, the softness; whether easily compressed, bounding, strong, hard, soft, small and wiry, intermittent or regular in beat. In old age, there is a structural change in the arterial coats, and hence, the pulse become somewhat harder than in the young and vigorous. In health, the average number of pulse beats in a minute at different ages is as follows: At birth 140, during infancy 120 to 130, in childhood 100, in youth 90, in adult age 70 to 72, in old age, 65 to 70, in decrepitude 75 to 80. It is quickened by exertion or excitement; it is more frequent in the morning and just after meals; it is somewhat faster when standing than when sitting and in sitting than lying; but is retarded by sleep, cold, fatigue, hunger and by arterial sedatives, such as digitalis and veratrum. A rapid pulse, especially when it is strong, full and hard, indicates fever and inflammation; if very rapid and small, it indicates debility or depression, as is the case frequently in diseases of the bowels. A jerking pulse, with quick and forcible beat, followed by abrupt cessation for one or two beats, indicates structural lesion of the valves of the heart. The pulse may intermit or stop occasionally, owing to the obstruction to the circulation of the blood in the heart and the lungs or from softening of the brain, or from inflammation of the brain, from apoplexy. Hernia, inflammation or gangrene of the intestines may produce intermittency in the pulse and it may also be produced by prolonged or over-exertion, want of rest or sleep and anxiety. Indigestion with flatulency may produce it in a less marked degree. A weak pulse indicates impoverished blood and debility and a full pulse denotes plethora, or the early stage of acute disease.

The Temperature—Since a normal temperature must circle very closely around 98.4, we find that a deviation above 99.5 degrees or falling below 97.3 are indications of a diseased condition. A normal temperature gives assurance of the absence of anything except local and very trifling disturbances of health; but any acute disease elevates the temperature very rapidly above the normal, while sepsis or poisoning has a tendency to cause it to fall below. By the use of a clinical thermometer (and I mean a good one) we readily diagnose between an inflammatory and non-inflammatory form of dis-

ease and the thermometer helps us to determine the intensity of the inflammation, by the number of the degrees the bodily heat rises above the normal standard. Hysteria often resembles inflammatory disease; the temperature always quite natural, but very different in inflammation. In typhoid fever, the thermometer not only indicates the fever, but also reveals the changes that are about to take place in the patient's condition. In consumption, even when other symptoms are obscure, the thermometer will show that the temperature is above 102.3 degrees, or even higher and the temperature will increase in proportion to the tubercular deposit. In measles, the thermometer is the best means of determining that pneumonia is setting in. In acute rheumatism, if the temperature runs above 104 degrees it indicates grave complications.

Respiration—Healthy inspiration and expiration are performed with ease. Breathing is quickened by exertion and by disease especially fevers. Normal breathing is from 18 to 20 times per minute. Dyspnoea, or difficult breathing, may be the result of the loss of lung substance, foreign deposits in the lungs, formation of false membranes in the air passages, as in croup or diphtheria, in tonsillitis and glossitis; also, in asthma, which is a spasm of the muscles of the air tubes. A collection of fluid in the serous membranes surrounding the heart and lungs causes dyspnoea from compression. Organic diseases of the heart and functional diseases of this organ cause dyspnoea. Disease of the nerves of respiration, or their centers, cause dyspnoea. Fracture of a rib or of several ribs, apoplexy or great exhaustion, an insufficient supply of blood to the nerve centers of the brain, all may cause dyspnoea.

Kidneys, Their Action—It is not the aim of this work to give a thorough anatomical or physiological description of the kidneys, but to impart such knowledge as can be used in a practical way. The functions of the kidneys are two-fold: First, to remove the principal part of nitrogenized waste; and, second, to remove superfluous water, thereby equalizing the pressure at a uniform standard. The quantity of solids will vary therefore with waste of tissue; the water will vary with the amount of fluid assumed, the amount formed in the body, and the amount removed by the skin. Their relation between

the skin and kidneys should be especially noted, for if secretion is free from the skin, the quantity of urine is diminished and if the kidneys are active, the action of the skin is reduced; this does not, however, affect the solids. The average amount of secretion passed by the healthy adult in twenty-four hours, will range from 30 ounces in summer to 40 ounces in the winter; and the average specific gravity will be 1015 in winter and 1025 in summer.

Bowels—Our inquiry in regard to the bowels must be directed to their power to increase or diminish secretion; second, to the condition of the intestinal canal as an apparatus for digestion; and third, to any abnormal constituent or marked change in the character of excretion. Since the liver has been for years associated with bowel conditions, and shot at, so to speak, with blue mass, calomel and many other confounded-and-go-fetch-'em pills, it would seem appropriate to give it a passing notice in connection with the intestinal tract. The liver, which was once supposed to play so important a part in the excretions, is shown to be a gland classified with the spleen or pancreas. There is no drug that will go directly to the spot and prod it into action. Most all that condition called billiousness is only the sluggishness of the stomach and upper bowels. The bile is an antiseptic to the bowels and therefore its functions are to secrete and excrete poisons from the system and assist the intestines in performing duty in the removing of excrementitious matter. Any drug administered, "to act on the liver," does so in active catharsis only and in that instance its action lessens secretion. If we could learn that the liver performs an important place in digestion and in blood making, furnishing its secretion for those purposes and that it is admirably adapted to those purposes and rarely subject of disease and that we have no medicines that influence it directly, to increase secretion, we will have made an important advance in our knowledge and treatment of disease.

An increased action of the bowels, in proportion to its extent and duration, causes debility; for the vital material, either as food or tissue, is proportionately removed. Fluid feces, whilst very frequently in excess as above, deserve

attention more particularly as indicating such lesions of the intestinal tract, as interferes with digestion and blood making; and also with that due degree of distension of the blood vessels, which is necessary to a proper circulation. A deficiency or excess may depend upon the quantity as well as the quality of food, the largest portion of excrement being furnished by the rejected elements of food; or it may depend upon an arrest of secretion, in which case we will have the same constitutional evidence that we would have in similar arrest from the skin and kidneys; or it may depend upon atony of the intestinal canal, which allows the material to accumulate, without the natural effort at removal. Simple constipation gives rise to derangements of digestion and the retention of effete material in the bowels occasions a feeling of malaise and dullness, with headache and fever, insofar as they are retained in the blood or re-absorbed. The color of the discharge is sometimes of importance in determining the character of the disease. The dark-brown or almost black color is observed in typhoid disease and arises from the excretion of the coloring material of the blood; the red globules being broken down rapidly; however, iron, sulphur or Epsom salts may produce a discoloration. The dark green color following the administration of mercury, and generally thought to be bile, was due to the formation of sulphurate of mercury. Greenish discharges are generally caused by an increase of acid in the intestinal canal with irritation and consequently indigestion. It may, in part, be caused by bile, which is thrown off by the excrement in consequence of such irritation. Clay-colored, refers to a lack of secretion; not only to the solitary glands of the intestines, but the associated viscera. It is an atonic condition with impaired innervation and circulation. A cadaverous fœtor may be taken, however, as a septic condition, not only of the intestinal secretions, but also of the fluids and solids of the body. More fat is thrown off than usual in consumptives and sugar is occasionally found in the discharges of persons afflicted with diabetis. When the stools are found to be dark, chocolate-color, or like tar, there is blood contained in them and this arises from the upper intestinal canal, from the effects of such diseases as typhus, typhoid, dysentery and cholera.

Nervous System—Any disease that afflicts the body, calls into action a greater activity of nerve force, and hence mark an important suggestion in our estimates of disease. We may determine the condition of the spinal and brain centers quite accurately by the appearance of the eye, and it is the best guide to the proper remedy.

If the eye is bright, clear and shining, with contracted pupils, there is irritation and an over-flow of blood to the part, active hyper-aemia; the marked character of the symptoms will determine the intensity of the condition. Gelsmium is the remedy indicated.

If the eyes are dull the pupils large, there is atony of the nerve centers, with feeble circulation or congestion. The remedy is belladonna.

Delirium is manifested in two opposite conditions. In the first there is a full, hard pulse, flushed face, clear, shining eyes, pupil contracted, indicating a condition of excitement from increased circulation. In the other there is a soft, feeble pulse, pale face and dull eye—the delirium resulting from debility. The patient generally sleeps with eyes partly open.

Pain—It would seem unnecessary to refer to pain, but it shares its relations with all other symptoms of danger and is the unpleasant feature of sickness. Pain may be local, circumscribed in area, or it may depend upon a double lesion—of the part where it is produced and of the nerve center upon which it is depressed; therefore dependent upon two very opposite conditions. In the one there is excitation of the part, or of the part and the nerve center, with determination of blood—an active condition. In the other, there is an atonic condition of the part, or of the part and the nerve center, with feeble circulation and impaired nutrition—a passive condition. The treatment of the first would not do for the second.

Pain is the index pointing to an unnatural excitation of the nervous system and is expressed in the action of the muscles of expression. The evidence of nervous exhaustion is shown in dullness, stupor and coma.

Antiseptics—The study of vegetable fungi and its relation to the development of diseased conditions arising from swamps and malarial districts, has resulted in the preventive method

of destroying the nidus or the germinating power by the use of disinfecting materials. Not until recent years, has the cause of disease been studied with a view to ascertain the origin and development. Some of the peculiar characteristics of this class of diseases are: That they occur epidemically; that they are more or less contagious and infectious; that each of them is distinct from the others of this group and runs a typical course; and that the particular poison giving rise to each of these diseases develops very rapidly; a single case of this class of diseases, introduced into a locality, may cause the death of thousands. It has been observed that this class of diseases was caused by something that multiplied very rapidly and that inhaled in the clothing, bed clothing, and even to buildings, ships, prisons and camps, and that could be conveyed in the open air for a distance. For many years, scientific men have endeavored to discover this cause of contagion of disease. A fluid could not produce the results; so contagion was finally regarded to be a solid substance in a state of very minute parts. It has proven insoluble in the fluids in which it can live by subsidence; and by filtration, the poison does not pass through a fine filter. These facts, taken with its great power to multiply, all go to prove that the contagion must be some living organism. This contagion, or germ, gave rise to the germ theory of disease; a theory already demonstrated in many morbid manifestations, and likely, if more fully developed, to throw a flood of light upon some obscure cause of the disease and suggest a treatment for many diseases hitherto regarded as almost, if not entirely, incurable. It is an established fact that the organisms formed in a fluid may be reproduced several times in artificial fluids and thoroughly washed with distilled water, the reaction characteristic of the peculiar fermentation from which it was taken, will still occur if the organism be now inoculated upon a suitable fluid.

Antiseptics have been selected on account of their supposed action to destroy the organism. It is a settled fact now, that all the processes known as fermentations and putrefications are due to the action of vegetable organisms. The vegetable poisons that have been found connected with certain diseases are all plants in which the leaf and stem are

alike; and as they are all destitute of coloring matter, they belong to the family of fungi. The pathological, or disease producing fungi are divided into three kinds; bacteria, yeast, and moulds. The bacteria causes putrefaction and several fermentations, and are the organisms that are credited with the power of producing the infectious diseases. They are, for this reason, the most important variety. The presence of water is necessary to the production of all fungi. The moulds require less than yeast and bacteria. Too much water is detrimental to the yeast and bacteria. Each of these organisms live best at a certain temperature. Either extreme, heat or cold, will destroy their development. It is an undeniable fact that much smaller amounts of an antiseptic will prevent the development of these organisms, than will totally destroy them after they are once developed.

There are a number of articles, some of quite recent introduction, that are antiseptic in their action, and they strongly antagonize the development and growth of this cell-life. They prevent the development of putrefactive bacteria. We have in this group vegetable substances and mineral astringents, such as rasins, essential oils, several kinds of tar, chloroform, common salt, boracic and salicylic acid, resorcin, baptisia, eucalyptus, turpentine, chlorine and bromine, iodine, logwood, calendula, peroxide of hydrogen, sulphur and sulphurous acid, arsenic, corrosive sublimate, carbolic acid, quinine, sulphide of calcium and still others not listed here, but the above will suffice for ordinary use. These vary in their antiseptic power, and, though one of them may prove very destructive to a certain poison, this does not show that it will prove so to another form of fungus life. It requires some study to learn the antidote to each parasite and the quantity requisite to destroy it without injury to the human organism. The strength, however, should not be too highly concentrated, for most of these antiseptics are irritating to the parts to which they are applied and some of them are poisons. The spores of bacteria anthracis are injured by a watery solution of thymol or salicylic acid, by alcohol or glycerine, and they are destroyed by chlorine, or bromine water (2 per cent), bichloride of mercury (1 per cent), permanganate of potash (5 per cent), or, in twenty-four hours, by carbolic acid (5 per cent).

They are not destroyed by drying. If a suitable nidus be furnished for the development for organisms, they multiply and very soon set up a characteristic decomposition. A certain depression of vital force in a part, or some alteration of its metabolism, may be sufficient to permit the development of germs, that under conditions less favorable would have perished. Some of these organisms are capable of living in sound, healthy tissues; for instance, the bacteria anthracis and the poisons producing the acute specific diseases. Some individuals, however, are not subject to the acute specific fevers; children are more subject to them than adults. The infectious diseases do not often affect animals; small-pox, however, being an exception as it affects cattle; and measles, also, affect hogs. Some of these poisons have a selective affinity for certain tissues or fluids of the body; some of them multiply in the blood; some in the lymph, some in bone, others in cerebro-spinal meninges. The last produces cerebro-spinal meningitis. It is possible that the majority of the human race present a congenial nidus for the development of some sort of fungi. But all poisons seem to flourish best in the tissues whose vitality is more or less impaired. In fact, some cannot develop, unless it is in diseased tissues. Then, again, some other organisms cannot multiply at all in living tissue. Septic intoxication can be thus prevented and life often saved by a timely course of antiseptic treatment. The conclusion is, then, that organisms found in putrid wounds have entered from without, and it is true in regard to fungi found in diseased lesions within the tissues. Disease producing fungi, after entering the body, may remain about a part where they enter or they may spread to contagious tissue, or they may pass along lymphatic vessels to adjacent glands, or into the blood and be circulated all through the system, and soon set up such chemical changes in the blood that it becomes irritating to certain tissues. These changes in some cases, produce chronic diseases, in other cases acute forms of inflammation, up to suppuration or direct necrosis. In other cases, certain products being absorbed, give rise to fever. Fungi may abstract nourishment from tissues, or plug up vessels of some organ, as the lungs, and thus produce disease. There is yet, nothing like a life history of bacteria. It seems they multiply by

division, as relates to the spore formations. Some are rounded, or truncated ends of rods and then there are variations in size and in modes of growth. The species, however, seem unalterable; but the same form may be found associated with the most opposite chemical changes. Micrococci, which cannot well be distinguished by their forms or size, are found in relation to diphtheria, erysipelas, smallpox, pyaemia and osteomyelitis. They are not the same, but they are similar in form, having different physiological activities.

DISEASES

Acne—Stone-pock is an inflammation of the sebaceous glands, caused by the retention of sebum.

Symptoms—It makes its appearance about puberty in the form of pustules or tubercles. No part of the body is exempt from its development except the palms of the hands and the bottoms of the feet. It consist of elevations about the size of a pin head, or in some instances, the size of a pea, and attended by more or less inflammation. It seems to be more prevalent about the time of puberty. It is found in persons of light complexion, and is believed to be associated with the derangements of the sexual system and with some defect of the digestive tract. Iodide of potassium will cause an eruption very much like acne. The local use of tar may produce the affection; persons who handle tar are liable to an artificial acne.

Treatment—All stimulating and highly seasoned articles of food and drink must be avoided. If there are comedones or blackheads in the skin, they should be pressed out with a watch key or extractor. When there is inflammation, soothing applications should be employed, such a mixture of the iodide of sulphur, 1 part to 40 parts of rose water and apply two or three times a day. *Rumex crispus* (yellow dock) strong tincture may be applied; from 1 to 2 drops of the same may be taken every three or four hours. Sulphide of potassium and the biniodide of mercury are adapted to indurated forms, the parts to be well cleansed and softened with soap suds before applying the drug. The sulphide of potassium and bin-

iodide should be prepared by a pharmacist in proportion of one part to thirty of the emulsion of almonds. In the indurated form, with red, burning, gnawing pimples, surrounded with red areolae and leaving brown spots, *berberis vulgaris* (barberry) in 30 drop doses, three or four times a day. If young and full-blooded person, *belladonna*, given in 2 or 3 drop doses and can be pushed to the point of drying mouth and redening of the skin. If the pustules appear in groups of three or four on the face, *chelidonium majus* may be given 3 or 4 times a day in 3 to 5 drop doses. *Juglans cinerea* is also efficient in small doses, 10 to 15 drops, two or three times a day. A certain Frenchman made a study of all skin blemishes and for many years held his method of treatment secret. The secret has been sold many times for hundreds of dollars and while the treatment has proven a success in the treating of freckles, chloasma and other discolorations of the integument, it should be handled carefully and compounded by a druggist. The formula, as used today by some of the most successful dermatologists, is as follows:

Salicylic acid, 4 grains; Ichthyol, 8 minims, oxide of zinc, 20 grains; Resorcin, 80 grains; lard, 2 scruples; Olive oil, 16 minims. The resorcin, salicylic acid and zinc oxide should be rubbed together into a fine powder, then add and mix the other ingredients. After the above is thoroughly mixed, apply night and morning with a small paint brush, for 4 or 5 days. when the skin becomes dry, cracked in appearance; just as if chapped. The surface is now thoroughly cleaned with juniper tar soap and warm water and the skin wiped dry in order to remove all scurf from the skin. The second application is given as follows. White gelatin, 4 ounces; zinc oxide, 2 drs.; glycerine, 15 min.; boiling water, sufficient. Dissolve the gelatin with sufficient water and stir in the other ingredients while in a water bath. This should be applied as warm as it can be born to all the parts to be treated and cover with surgeon's gauze; cut in small pieces about one and a half or two inches square; over which apply another coat. The gauze should be applied as soon as the surface painted is large enough and only one at a time. In a few days, the little pieces of gauze will work loose from the edges and can be picked off, leaving the new under-skin exposed, taking

the blemish or the disease with the outer cuticle on the plaster removed. One of the gravest mistakes made in the use of the above treatment is letting it remain on too long. The parts could be treated with absorbent cotton and the second application over gauze or cotton is to seal air tight and aid in the contraction. It should be off in three or four days with a clear, healthy-looking surface.

Those who do not choose to use the above or prefer something of a milder form, can have their desire gratified by the use of lactic acid, full strength. This will move from the surface shallow blemishes by applying every one to three hours until the surface shows a hyperemic or sun-burnt condition. There is no danger and it should be applied often enough to keep up a red appearance and until the skin peels off like small pieces of tissue paper.

Alcoholism—While this is not embodied here with a belief that many may avail themselves of its instructions, except to know what is done in those places, principally, where such cases are treated in a scientific manner. It is now conceded that excessive intoxication is a disease and as such the patient deserves the sympathy and kind treatment justly due any unfortunate. The effect of alcohol upon the system is to weaken the will power of the individual. Any person influenced must have all the encouragement possible otherwise all treatment will fail. Since the will power is lost because of a shattered nervous system, it would necessarily point to a nervous stimulant as one drug to be thought of; strychnia and atropia are two drugs mostly used in the beginning of treatment. It is advisable to begin very cautiously, as some people have what is termed an idiosyncrasy regarding the action of certain drugs employed. That is, they cannot take certain drugs without its causing too much effect, to be used. The treatment, to be successful, must be begun by giving one-third or one-half a full dose and increase as the patient can tolerate it. Excretion is necessary and the skin should be kept clean and the pores open by a hot bath every other or third day. Bowels open with iris, podophylum, balmony or fringe-tree. The diet should be light and easily digested. A pharmacist of Baltimore has a copy of a formula, registered as 10041, containing the following:

Strychnine, 85-100 gr.
Atropine Sulph., 40-100 gr.
Acid Boracic, 10 gr.
Hydrastis Canadensis, 10 drops.
Aqua distillata, q. s. ad. 1 oz.

Mix. Sig.—According to directions as given below: Take four two-dram vials, make on each a number, beginning at one and numbering to four. Then drop 100 drops of the above in each bottle. Take vial No. 2 and put 5 1-40 gr. tablet strychnia nitrate. Vial No. 3, add 10 1-40 gr. tablets strychnia nitrate. Vial No. 4, add 20 1-40 gr. tablets of strychnia nitrate. Five drops is a dose from either vial. One dose should be given every four hours; should 7 a. m. be chosen as the beginning, 11 a. m. would follow as a consequence. Begin with hyperdermic injections from Vial No. 1; then one dose from vial No. 3; then one dose from vial No. 2; then one dose of vial No. 1; changing back and forth. If the patient can stand the doses quite heavy, use vial No. 4. Give separately or in combination with any dose from either vial, 1-40 gr. of picrotoxin, by mouth or hyperdermically, enough to make patient sweat the poison out of his system and bring back the natural color. If no hyperdermic is to be used and all treatment administered by the mouth, use vial No. 3, through the whole course of treatment with alcoholic tonic as if the hyperdermic was being used; the patient should get the full dose regularly. The hyperdermic is the best method of administration. In about five or six days, if the medicine is taking proper effect, there will be seen twitching of the muscles, dryness of the mouth, and as soon as this point is reached, treatment should be resumed on vial No. 1. The least medicine given to a patient is always the best, give always the smallest dose that will produce the desired effect. After a maximum dose has been reached, it should be decreased to amount necessary to hold its physiological effect. On the fourth day ask patient which he chooses whiskey or beer. Some may still possess the appetite. At this point they are generally requested to go and get either whiskey or beer, but requested to refrain from drinking until he returns. This sending the patient after it is to keep him thinking that no trick is being played and also

to hold his confidence. This should be done at one of the regular hours for the hyperdermic. The regular dose has been changed to 1-10 gr. of apomorphia and given just as he completes his drinking. This should be repeated once or twice a day, until whiskey or beer is disgusting to him in sight, taste, or smell. The regular treatment should then be kept up for two or three weeks longer, if the case should demand it. The hyperdermic dose should never be increased. If a stronger dose is desired, use the doses arranged and numbered in the four vials. Delirium tremens are best treated by beginning with a dose, by hyperdermic, from vial No. 1, and adding to each injection 1-250 gr. of hydrobromate of hyoseyamine. By using the drug in this way there can be no bad results as in the use of morphine to quiet and produce sleep and taking the chances of adding to the whisky or beer habit the morphine desire. The vials used for dispensing must be kept clean; no drugs or sediment should be allowed as it might ruin a hyperdermic needle; there might also arise trouble from a grain of sediment being injected into the arm, as an abscess is sure to follow. All air must be excluded from the syringe before using. Draw in through the needle, a little alcohol after using on one patient and before using it on another.

A tonic for whiskey patients is given as follows: Formula No. 10,043:

Acid muriatic, C. P. free, 2048 gr.

Powdered phosphate of lime, 768 gr.

Powdered phosphate magnesia, 1024 gr.

Fl. ext. hydrastis canadensis 256 gr.

Powdered quinine muriate, 256 gr.

Crystal strychnine nitrate, 10 1-4 gr.

Fl. ext. pulsatilla, 255 gr.

Simple syrup, q. s. ad. 1 gal.

Mix. Sig.—As directed below:

Teaspoonful every four hours in a little water and taken between hypodermic injections or doses. This is given at 6 a. m., 10 a. m., or every four hours till 10 p. m., provided the patient is up at the first and last hour. After stopping the use of hyperdermics, it is necessary to give the tonic twice a day for a week or so with one tablet of 1-60 grain of strychnine.

nine nitrate added to every teaspoonful contained in the bottle. Before the treatment is begun the patient is examined as to his heart's action, respiration, secretion and excretion; then an objective examination is passed in regard to his past life; the cause of the formation of the habit and the quantity and quality per day. It appears that different persons have different motives for the habit. Some drink because they like the taste and others for the effect. If patient drinks because he likes the taste, he can be made so sick that he will abhor both taste and smell. If he likes the effect, he is to receive a hypodermic injection of apomorphia on the fourth day, after beginning the treatment and enough given to keep him nauseated. Each hypodermic injection should follow the drink of whisky or beer. If patient, who drinks for the love of whiskey or beer, persists in drinking, or if it is difficult to turn him against it, he is given apomorphia as is stated above and is pushed with such regularity that he will wish in a few days that he had never seen any whiskey or beer.

The Keely Cure—This cure has become quite a noted and the same degree of contention has arisen as follows the incorporation of such institutions. The formulae were collected by a physician who established another institute and had his treatment published in pamphlet form and sold them to physicians for \$25 and had many purchasers and likewise, many institutions for the cure of the liquor and drug habit sprang up all over the country. The following are the principal formulae for the liquor treatment, solutions designated by letter:

SOLUTION "S".

Prescription:

Boracic acid, 4 gr.

Strychnine Nitrate, $\frac{1}{2}$ gr.

Aqua des., 1 oz.

Tr. Cudbear, q. s. color.

Sig. Dose, five to ten minims, four times a day.

SOLUTION "A."

Prescription:

Atropine Sulphate, $\frac{1}{2}$ gr.

Boracic Acid, 20 gr.

Aqua des, 1 oz.

Mix. Sig. Dose 5 to 8 minims.

SOLUTION "A P."

Prescription:

Apomorphine, 4 grs.

Boracic acid, 20 grs.

Aqua des. 1 oz.

Mix. Sig.: Dose six to ten minims.

The name of the solution designated by letter, is to show what drug is the most powerful in the formula used, "A" stands for atropine; "S" for strychnine.

THE GOLD FORMULA.

Prescription.

Gold and sodium chloride, 30 gr.

Strychnine nitrate, 4 gr.

Atropine sulphate, 1 gr.

Glycerine 2 ozs.

Fl. ext. cinchona comp. Q. S., 16 ozs.

Mix. Sig.: One teaspoonful in water three times a day.

In addition to the gold formula, the patient receives a hypodermic from the formula thought most needed. For instance, he is a stout, portly fellow, solution "P" is used as follows:

Prescription:

Pilocarpine mur., 8 gr.

Boracic acid, 20 gr.

Aqua des., 1 oz.

Mix. Sig.: Dose five to six minims.

This should be used to sweat out the disease. In some cases, the atropine solution is the formula selected and it is pushed to the physiological effect of the drug.

The apomorphine is used when the patient must be induced to refrain from drink by the "sickenening process." The medicine is generally colored with caramel or some other simple coloring matter. After the desire for liquor has been overcome, the patient is given hyperdermics from the Solution "S" and the following formula given through the remainder of the treatment:

Prescription:

Extract Cinchonia, solid, 40 gr.

Powdered gentian root, 2 ozs.

Ground bitter orange peel, $\frac{1}{2}$ oz.

Powdered capsicum 20 grs.

Glycerine, 3 ozs.

Aqua, 2 quarts

Caramel, q. s. to color.

Mix the first four drugs in the 2 quarts of water and boil 20 minutes; remove and filter; then add the glycerine and caramel.

Sig: Teaspoonful every two hours in water.

Where, from overindulgence, the stomach has become inflamed and resulted in gastritis, the following is used:

Prescription:

Pepsin sacch., 1 dr.

Bismuth, subnitrate, 1 dr.

Powd. Capsicum, 20 gr.

Mix.: Divide into 30 powders. Sig.: One powder every three or four hours.

For toning up the nerves.

Prescription:

Tr. Cinchonia rub., 2 oz.

Fl. ext. kola, 2 ozs.

Fl. ext. scutellaria, 1 oz.

Elix. aromatic, Q. S. add 6 ozs.

Mix. Sig.: One teaspoonful in water four times a day.

An Indiana Institute used about the same treatment with but few exceptions. When a patient entered the Institute, he was given a hypodermic injection of 1-10 grain of chloride of gold and sodium and 1-40 gr. nitrate of strychnine, four times a day. He also received a mixture to be taken by mouth, as follows:

Chloride of gold and sodium, 12 grs.

Muriate of ammonia, 6 grs.

Nitrate of strychnine, 1 gr.

Atropine, 1-4 gr.

Comp. fl. ext. of cinchonia, 8 ozs.

Fl. ext. of cocoa, 1 oz.

Glycerine, 1 oz.

Aqua des., 1 oz.

Mix. Sig.: A teaspoonful every two hours when awake. This is said to be the best, but the doses are so large that it sets the muscles to twitching and an eruption follows soon.

The drug habit is so closely allied to the liquor and is in line of the same treatment that a continuation of the treatment for drugs is here given:

TOBACCO.

Prescription:

Fl. ext. columbo, $\frac{1}{2}$ oz.

Tr. quassia, $\frac{1}{2}$ oz.

Alcohol, $\frac{1}{2}$ oz.

Aqua, q. s. ad. 4 ozs.

Mix. Sig.: Teaspoonful every two to four hours. The hypodermic treatment consists of injections from solution "T" four times a day, and an occasional injection from Solution "P," or if a sickening sensation is required from Solution "P."

Pilocarpine, mur., 8 grs.

Boracic acid, 20 grs.

Aqua des., 1 oz.

Sig.. Dose five to ten minims,

Prescription No. 2:

Formula No. 10041, $\frac{1}{2}$ dr.

Tr. Plantago Major, 3-4 dr.

Tr. Avena satava, 3-4 dr.

Mix. Sig.: Take as directed. Give patient what will remain on cork when shaken and placed to the tongue each time he feels like taking a chew or smoke, especially a dose after each meal. The treatment is about the same as for whiskey. The formula 10,041 is the number by a pharmacist who furnishes the preparation to institutions ready for use, at so much per gallon. Another formula is listed as 10,043 and in writing prescriptions the number of the prescription containing the drugs desired to be used all that is necessary. To illustrate, here is the formula given for cigarette smoking. The treatment is begun by giving a hyperdermic injection of 1-40 grain of picrotoxine, given from vials Nos. 1 to 4, as for whiskey cases until copious perspiration ensues; then the patient is given a hot sponge bath, gradually cooling him off and

rubbing the skin till he is thoroughly dry. Then the following formula:

Prescription:

Formula, No. 10,041, 2 dr.

Tr. Cannabis indica, 5 drops.

Mix. Sig.: Take as follows:

Inject hypodermically 5 to 10 drops from two to four times a day, using good judgment as to the nature of the patient's susceptibility to the effects produced. A tonic is generally given, when the patient has taken sufficient by hypodermic, after the following formulae:

Phillips' phospho-muriate of quinine compound, 5 ozs.

Avena Satava, 1 oz.

Mix. Sig.: Teaspoonful at a dose three or four times a day.

If the patient becomes nervous the following formula is used:

Thein, Merck's, 8 grs.

Acid, boracic, 2 grs.

Aqua des., 1 oz.

Mix. Sig.: Give hyperdermically five to ten drops every four hours.

If the patient persists in his smoking after he has been treated nine days, he is given 1-10 grain of apomorphia as in the whisky cases; always giving it at the time the patient wishes to smoke.

The following formula was placed before the medical profession a few years ago and sold at fancy prices. It is given to antidote the poison of nicotine, viz:

Hyocine hydrobromate, 1-100 gr.

Pilocarpine, 1-100 gr.

Strychnine nitrate, 1-100 gr.

Atropine, 1-600 gr.

A tablet is made of the different properties and administered at regular intervals, beginning about two hours, after the effects of a full cathartic, which had been given 12 or 15 hours before, then every 4 hours.

The following formula is the one mostly given to antidote the poison of morphine, opium, chloral and cocain:

Powd. red cinchona, 1 lb.

Powd. hydrastis canadensis, $\frac{1}{2}$ lb.

Powd. pulsatilla, $\frac{1}{2}$ lb.

Powd. nux vomica, 2 oz.

Powd. Xanthoxylum berries, 2 oz.

Powd. Capsicum, $\frac{1}{2}$ oz.

Powd. Avena Satava, 8 ozs.

Dilute alcohol sufficient, 1 gal.

It should stand 8 or 10 days and strain, however, its use can be commenced immediately. Teaspoonful every four hours.

The treatment of all such cases is very nearly the same in regard to time of dose and drugs given.

Morphine patients are, of all cases, the most deserving of pity. They are so far lost to resistance of the drug, until they will lie or steal; the will-power having been destroyed followed by a form of mania. This is one of the strongest habits to destroy that the medical profession has had to conquer. The patient cannot be trusted. He requires the closest watching at the time the drug is being withdrawn. The bowels are likely to become affected with cramps and cramps may also involve the limbs. To relieve this condition, a 10 per cent solution of white hellebore in four or five drop doses will greatly benefit them. given every half to an hour in a swallow of hot water. The patient is never to know the time the drug is fully withdrawn and whiskey is given to produce sleep and rest.

In no case is the formula to be changed by increasing any one drug, if the physiological action is not reached in a few days. The doses are changed from weak to stronger by changing the vials as given under formula 10041.

Tobacco habit is a most difficult state to conquer and the patient has to exercise his will power to its fullest extent. The following formula is given in curing the tobacco habit:

Atropine sulphate, 1-8 gr.

Tr. Nux vomica, $\frac{1}{2}$ dr.

Tr. humulus, 1 oz.

Tr. quassia, $1\frac{1}{2}$ ozs.

Tr. gentian, $1\frac{1}{2}$ ozs.

Tr. cinchona comp., 2 ozs.

Mix. Sig.: A teaspoonful every two or three hours while awake.

There are proprietary remedies thrown on the market and advertised as a sure cure for the tobacco habit, but the treatment is about the same as is here given.

What constitutes a cure of the alcohol, morphine and other habits, physicians in charge of institutions where, are exclusively treated, such patients greatly differ as to the percentage of cures made. According to statements given out from such institutions, the number of cures range from 50 to 95 per cent of cases treated. If the appetite for such habits is overcome for six months, it is thought that a permanent cure is effective. Patients of such habits should have their minds occupied with work, amusement, travel, or change of scene. There are always periods after a patient has taken treatment when he has a feeling of loneliness or absent mindedness steal over him. Such conditions cannot be termed a craving, but he cannot help realizing the delightful sensations that were present when he was full of his once accustomed poison. It is therefore of greater benefit to give a good tonic preparation after the regular treatment is abandoned and to tell him that if he should ever have a desire for his liquor or drug to take this preparation for a day or two.

The tonics given above will carry him through his trying ordeal.

There are more successes in the treatment of the drug habit than that of alcohol, as in the former its more secretive, while the latter want associates.

A unique method of a sure cure for drunkenness is given as follows:

Confine the patient to his room and keep him drunk by giving him all the whiskey or wine or other favorite drink and all the drinking water should be diluted, 2-3 water to 1-3 whiskey. Tea, coffee or other liquids should always contain one-eighth of spirits; all the food—the bread, meat and vegetables should be prepared with spirits and water. On the fifth day of this treatment, he will have an extreme disgust for spirits, being continuously drunk. The treatment should be kept up until he no longer desires to eat or drink and a cure is certain.

Alopecia—No disease has attracted any more attention, considering its fatality, than those of the scalp. The falling out of the hair has been left to the patent medicine man who has found fertile soil to ply his profession of a sure cure for baldness. Until recent years, the cause of the trouble was not known, yet the disease seemed to spread and attack persons without distinction in rank. Since the discovery of the microbe, it is shown that dandruff has a parasitic origin. It seems to be one of the evils of civilization, as it appears to have no medical history among uncivilized tribes. It has been noticed by observers that seborrhoea often attacks several members of the same family, who used the same hair brush and comb. Through experiments made with mice, it was observed that, when they were placed in contact with hair taken from combs and brushes used by persons afflicted with the disease and dandruff rubbed into the hair of a rabbit, they became bald rapidly. Men who lead public lives and use public toilet utensils, brushes and combs, in hotels, offices and public resorts, are encouragers and promoters of the disease. Among other things which have been attributed to the cause of falling hair and baldness may be mentioned, excluding the top of the head from light, air and sunshine, which is nature's greatest hair grower. Another proof, however, that dandruff and falling hair is of parasitic origin is that the only successful treatment is based upon cleanliness, antiseptic and parasitic medication.

Treatment—The most essential requirements to successfully treat dandruff, falling hair and premature baldness, are cleanliness, antiseptic and stimulants and an untiring patience and a will-power not easily broken, to succeed.

The number of hair restoratives thrown upon the market are legion. The intense itching and a mealy substance gathered in and around the roots of the hair would lead us to lay out some plan by which to proceed. The first thing to notice is the condition of the hair, whether long or short, lively or dead. The one thing needful is a close hair cut. Then follow up with a cleansing shampoo, using the following ingredients: Prescription:

Cologne, 1 dr.

Aqua ammonia, 2 dr.

Aqua pura, 8 ozs.

Mix. Apply about a tablespoonful at a time to the hair, when dry, rubbing briskly. This will produce a full, cleansing foam which is very refreshing and pleasing to the scalp. After this has been repeated several times, the hair should be thoroughly washed and the scalp rubbed with a compound of beechwood tar, forty parts to sixty parts of castile soap. The head should be rinsed with hot water, gradually cooled to wash out all loose and diseased hair. The bathing and treatment should be repeated from two to four times a week. The improvement can be readily seen by the subdued itching and less hair appearing in the water, after the wash. The treatment should be rigidly kept up for at least four months and any time thereafter, upon the approach of the least indication of the disease. A good hair tonic is of great benefit in scalp disease and what is termed hair foods are mixtures of oil of olive with lanoline, resorcin and bichloride of mercury. A good preparation is given as follows:

Prescription:

Alcohol, 2 ozs.

Glycerine, 2 ozs.

F. E. jaborandi, 2 drs.

Tr. cantharides, 2 drs.

Tinct. nux vomica, 2 drs.

Resorcin, 1 dr.

Quinine sulphate, 20 grs.

Bay rum, 6 ozs.

Rose water, q. s., 16 ozs.

Mix and filter. Apply to the roots of the hair with a good stiff tooth brush from two to four times a week.

A great many hair restoratives contain sulphur and lead. The purpose is to give a fine expression to the hair as well as improvement to the scalp. The following is about as good a preparation as can be obtained:

Oil of bergamont, $\frac{1}{2}$ dr.

Oil of citronella, 1 dr.

Alcohol, 4 ozs.

Glycerine, 8 ozs.

Tr. cantharides, 4 drs.

Sulphur precipitated, 1 oz.

Lead acetate, 6 dr.

Water sufficient to make 64 ozs.

Dissolve the oils in the alcohol; add the glycerine and cantharides and mix with the water, then add the sulphur and lead. Preparations containing sulphur and lead, when exposed to the light, form black lead sulphide, therefore they should be kept in dark colored bottles.

Acetic acid 1 part, and glycerin 2 parts, or yellow dock steeped in vinegar, then mix with cantharides, equal parts and applied will give relief. Moderate doses of muriatic acid and phosphorus may be taken before meals.

Scald Head—This disease is one that causes the patient some worry as well as being almost ostracized from his associates. No one who has seen a case of porrigo, or scald-head, need not be told how it looks. The patient should be provided with separate toilet and use no comb or brush other than his own.

Treatment—The following method has been my plan and as it has proven a success, I have used no other:

Cleanse scalp with warm water and castile soap, wipe dry and apply this microbe killer.

Prescription:

Red precipitate, 15 grs.

White precipitate, 15 grs.

Corosive sublimate, 15 grs.

Balsam of fir, $\frac{1}{2}$ oz.

Fresh butter, $\frac{1}{2}$ lb.

Put butter into an earthen vessel, simmer out all water and remove from fire, and when nearly cool, add the other ingredients and stir till cold in order to thoroughly incorporate them. Place in wide-mouth, dark bottle and apply twice a day, giving from 1 to 5 drops in water, three times a day of Fowler's Solution of Arsenic. If the hygienic surroundings are closely guarded no other treatment will be necessary. No water and soap should be used for several days after the ointment has been applied; not oftener than twice a week.

Ague (Intermittent Fever)—This disease is generally known as "fever and ague," chills, the shakes and in some localities, it is known as "swamp fever." This is a periodic fever and is chiefly due to an infectious effluvia from decay-

ing animal or vegetable matter—usually the latter—and commonly known as malaria. It occurs in districts where the surrounding country abounds in low swamps which have a luxuriant vegetable growth. It is more virulent in low than high places and hot climate, more so, than temperate. Contaminated air never rises very high, which makes it quite important to always use the upper rooms of a building for sleeping purposes.

Exposure to malaria develops in different persons a different disease according to the constitutional disposition of the individual. That which will give rise to chills in one person may produce dysentary or remittent fever in another, and yet, in another it may lay latent in the system for some weeks, or even months. It is important to remember that fact, so as to be the better able to come to a correct conclusion in obscure cases, where the ague-fit or chill is not well developed.

There are three stages of this disease known as quotidian. If the chill returns every day at about the same hour, generally in the morning and lasts about ten or twelve hours; the tertian, which comes on every other day, generally about noon and lasts until evening and is the most common in this country. The quartan comes on once in three days, usually in the afternoon. It will be observed that the interval or the time between the commencement of one paroxysm and the beginning of the next, in the first variety is twenty-four hours, in the second, forty-eight, in the third, seventy-two. The first is most common in spring; the second, in the spring and fall; the third, in the fall.

Symptoms—This disease may set in suddenly; or may come on gradually with a feeling of a general illness, which increases until it culminates in a regular ague-fit after a few days.

A chill consists of three stages:

1. **The Cold Stage**—This begins with feelings of chilliness and coldness in the back and extremities, weakness, the skin becomes rough, the nails blue, and at times, there are violent shiverings and chattering of the teeth, headache, backache, quick, small pulse, a feeling of oppression or tightness over the region of the stomach. After these symptoms have lasted

from a half to two to four hours. the cold stage is gradually succeeded by a hot stage.

2. **The Hot Stage**—After the cold stage passes off, comes reaction, and the surface of the body becomes very hot and dry, the face flushed, the pulse full and frequent, the mouth parched, excessive thirst, fullness in the head, great restlessness and sometimes delirium. This stage rarely continues less than three hours or more than ten or twelve hours and then comes

3. **The Sweating Stage**—This stage commences with a gentle moisture, which begins on the forehead and breast, heat of skin and thirst abate and the pulse and the breathing becomes natural, so that in uncomplicated cases, the patient feels well, but weak, until a return of the same symptoms, which will return at about the same hour. Complications are liable in protracted cases.

Treatment—When residing in a malarial district, persons should take great precautions against an attack of ague by choosing an upper room for a bed chamber; avoid exposure, especially at night; have warm clothing, good diet, pure water, and a due amount of repose.

In this as well as other diseases, it is of the first importance, that any derangement of the stomach should be corrected. If the patient is suffering from nausea, with ineffectual efforts to evacuate the stomach, administer an emetic, compound powder of lobelia and capsicum or other remedies that may be at hand. If there is redness of the tip and edges of the tongue, with tenderness on pressure over the stomach, apply a mustard paste and give a tea made of peach tree leaves or bark. Sometimes, dioscorea, 2 to 10 drops, in hot water, will be effectual, given every ten to thirty minutes. Ipecac in one drop doses, often gives relief; an infusion of compound powder of rhubarb and potash, with sometimes the addition of a small portion of morphia. The irritation will sometimes yield to aconite, 10 drops; and ipecac, 15 drops, in two-thirds of a teacupful of water, teaspoonful of the solution every half to every one or two hours. If the fever does not abate sufficient under this treatment to begin with antiperiodics in three or four hours, a change should be made to the special sedatives to

accomplish this purpose, giving them in small doses, frequently repeated, and largely diluted with water:

Prescription:

Tincture of *Veratrum viride*, 10 to 20 gtts.

Tinct. of Aconite root, 5 to 10 gtts.

Water, 4 ozs.

Mix and give a teaspoonful every half to every hour. If the fever has been reduced by the administration of butterfly weed or any other method "to sweat off the fever," the bowels should not be neglected. Empty with salts; a tea of balmony, blue flag, mayapple, black root, fringe tree, or anything, just so it is not too drastic. An injection of water, as hot as can be born, will aid in reducing the fever and clearing the bowels. Saline drinks should in no wise be neglected, if there is any defect in the elimination through the kidneys, give acetate of potash from 10 to 15 grains in a third of a teacupful of water, every three or four hours, or saltpetre, 1 to 5 grains well diluted in water.

Where there is an involvement of the stomach, it should be closely watched and promptly treated. Cold water sipped like hot coffee will nearly always settle the stomach. I have used it in some very stubborn cases and have succeeded admirably. It is not advisable to give medicine where there is constant nausea, as no medicine can possibly be absorbed.

After the fever has been subdued and the bowels healthy and active, which will be seen by the tongue being clean, moist and of natural color. If the tongue is broad, palid, coated with a dirty white coat, which shows a foul stomach and bowels, give sodium sulphite 1 grain and podophyllin one-sixth to one-half grain, every two to four hours, until tongue is clear. Then have a prescription filled after this formula:

Prescription:

F. E. of *nux vomica*, 10 gts.

Compound tincture of lavender, $\frac{1}{2}$ oz.

F. E. of *lobelia*, 20 gts.

Simple syrup, $3\frac{1}{2}$ ozs.

. A teaspoonful every one or two hours.

After the bowels have been cleared, the treatment to check the paroxysm is the next thing to be considered. It is

a fact that treatment necessary for one case will fail in another. Some cases are very easily cured with shuck tea, button willow, cottonwood, dogwood, dogfennel or the following formula may be considered:

Prescription.:

Fowler's Solution, 1 dr.

Compound tincture of iodine, 2 drs.

Mix and give 10 to 15 drops after each meal. Use mostly in cases of a scrofulous tendency.

Prescription:

Nitric acid (full strength).

Muriatic acid (full strength), of each. $\frac{1}{2}$ oz.

Sulphate of iron (copperas), 1 dr.

Mix. Let stand twelve hours and then add Fowler's solution, 1 dr.

Dose, 6 to 10 drops from three to four or six times a day in a little sweetened water; it has been a topical remedy in almost all cases. If the patient should become swollen, after a few days treatment, the remedy has reached its physiological action and should be discontinued. The chills will have been broken and possibly some other line of treatment would be better, should any at all be needed. Ergot, in 10 drop doses, given in a little water, will aid materially in keeping off a chill, administered every two or three hours. Where the chill has already appeared, there is no equal to chloroform, given from 10 to 20 drop doses, according to the severity of the case, in a little water, stirred well, is generally sufficient for present relief.

A good chill tonic, for general use and ready at hand, is made by the following:

Prescription:

Specific Tr. Gentian, 2 drs.

Hydrastis (colorless) 2 drs.

Cascara, 2 drs.

Salicin, 20 grs.

*Comp. Tinct. Myrrh, 1 dr.

Simple Syrup sufficient to make 8 ozs.

Mix and give a teaspoonful every hour, beginning six hours before chill time, repeating every three or four hours,

after the paroxysm passes and continuing three or four times a day thereafter.

*Compound tincture of myrrh is made after this formula:

Alcohol, 1 gal.

Myrrh, 1 lb.

Capsicum, 1 oz.

Let stand twenty days and filter.

Very frequently the tinctures of myrrh and capsicum are substituted. A competent druggist should prepare all prescriptions with which the parties desiring them are not familiar.

It occasionally happens that a druggist becomes rebellious and refuses to fill unless endorsed by some doctor, in such cases, drugs, the sale of which is not prohibited by law, can be purchased of almost any well regulated drug store and prepared by the user.

Ague-Cake—This is an enlargement of the spleen, the effect of protracted ague. The size of the spleen varies very greatly in these cases, sometimes increased to twice its original size, at others enlarged so as to occupy the greater part of the left side of the abdomen.

In these cases there is a feeling of weight, tension and distress, in consequence, the patient is frequently unable to take as much exercise as his health otherwise would permit.

Treatment—If there is a fever the sedatives are used according to indications. Small pulse calls for aconite, a full pulse indicates veratrum viride. Pulse, sharp stroke, frontal pain, tongue showing a peculiar red and prominently, small elevated pimples on the upper surface, indicates rhustox. If dull, stupid and inclined to sleep, belladonna should be given; if irritable and restless, gelsemium.

Uvedalia (Bear's foot) is the remedy for enlarged spleen or ague-cake. Given in 5 to 15 drop doses every two to three hours, and the abdomen, and especially over the spleen, thoroughly rubbed on, using a hot iron to bake in the uvedalia ointment, made as follows:

Polymnia Uvedalia, 1 lb., of the dried root or 4 ozs. of the green root: 1 lb hog's lard; if the dry root is used, add a pint of water.

Mix. Place over a slow fire till all the water is evaporated; strain and press out all the ointment. Water will not be needed in the preparation of the green root.

If there is any one thing certain in medicine, it is that this treatment exerts a direct influence upon the spleen.

Some cases are benefited by quinine given in one-grain doses every one or two hours.

Anemia—This is a deficiency or poverty of the blood and caused by the loss of blood from any cause, or from a deprivation of the proper materials necessary for the formation of healthy blood on account of improper digestion or from other unavoidable causes. A person afflicted with anemia is pale and the lips, tongue and inside of the mouth have a bleached appearance and the skin has a wax or sallowish look. The temperature is generally sub-normal.

Treatment—In looking over the patient we will discover a defect in blood production and a perverted circulation. The first indicates a deficiency of iron, so we will just return to the treatment for chill and prepare the iron tonic as there given, leaving out or giving as desired, the Fowler Solution, and give as there directed.

About a dozen or two of old rusty nails put in a pint of good strong apple vinegar and in a few days after, give from a teaspoonful to tablespoonful before meals in plenty of water.

Sulphate of quinine or tincture of nux vomica, one grain of the former or one to five drops of the latter, may be given every two to three hours. The bowels and kidneys should be kept in working order and hot baths should be given once every day or every other day according to strength of patient. Thorough rubbing is very essential.

Apoplexy—This is a disease caused by a rupture or congestion of some blood vessels of the brain, which produces a sudden arrest of sensation and motion, the person lying as if in a deep sleep. It seldom attacks the young, but occurs in middle life or old age. The persons most likely to be attacked with apoplexy, are those whose ancestors have suffered from it. Those who have habits which predispose them to an attack, such as high living, with protuberant abdomen, large heads, short, thick necks and generally a flushed countenance;

those of a sedentary habit, who are more than forty-five or fifty years of age and those addicted to excessive use of intoxicants.

Symptoms—There are usually some symptoms which precede an attack, which, if properly understood by the patient, should put him on his guard and he should take measures at once to avert the attack. Among the symptoms which are the most important, are giddiness, especially on stooping, a feeling of weight in the head with a sense of fullness temporary deafness and noises in the ears, double vision or transient blindness, headache, loss of memory, a feeling of numbness in the limbs, drowsiness, with indistinctness of articulation.

Treatment—This is a disease in which a physician should be sought and no time should be lost in him taking charge of the case. In the absence of the physician, the first indication is to relieve the head of the accumulated blood to prevent further congestion and to obviate inflammatory action; to accomplish this, raise the head well up and apply cold by means of broken ice in a rubber or silk bag; loosen all the clothing, especially necktie and shirt collar; apply heat to the feet and induce a flow of blood to the lower extremities and give a heaping teaspoonful of Epsom salts and wash out bowels with plenty of warm water and the use of a fountain syringe.

The patient should have plenty of air, as the respiration is now the essential function. In some cases there are premonitory symptoms which should be given preventive treatment. A heavily coated tongue, dirty mouth, and fetid breath, are not uncommon and a pallid, dirty, or ashy color shows the blood needs to be replenished with an alkaline salt, therefore it calls for sulphite of soda from five to thirty grains, well diluted in water, every three or four hours. A little salt added would be beneficial. If not pallid, dissolve 20 grains salicylic acid and 2 drams of acetate of potash in 4 ounces of water; give a teaspoonful every three hours. Congestion, marked by dullness of intellect, inclination to sleep, and an expressionless eye, should be treated with belladonna and ergot; given ergot from five to thirty drops and belladonna from one to five drops every one to three hours. If the belladonna should flush the face and dry the mouth, the dose should be reduced. Where the face is already

flushed and the pulsation of the carotids full, thumping on the sides of the neck, pulse full and hard, we have an obstructed circulation and it must be relieved. Gelsemium, $\frac{1}{2}$ to 1 dr.; veratrum viride, 10 drops; water, 4 ozs. A teaspoonful every one or two hours. Medicine can scarcely be given during the attack, owing to the paralysis of the muscles of deglutition, and when they can be given, it is usually best to wait a few hours and in the meanwhile stimulant applications may be made to the extremities and the patient should be placed on a lounge or hard bed, turned on his side with face well over in order to keep his tongue from dropping back so far as to produce stertorous breathing. Where a dull pain in the head is complained of with ringing in the ears, iodide of ammonia, 2 to 10 grains, well dissolved in water and given every three hours will give relief. The bowels should be kept in a good condition and the system well fortified with tonics and a nutritious diet.

Apthae—This is a disease of childhood and generally makes its appearance at about one year old. It is commonly known as thrush, muguet, sprue, white mouth. It is an inflammation of the mucous membrane of the mouth, characterized by pain, disorders of digestion and of the bowels. The development of the thrush-fungus is promoted by all those conditions designated as unhygienic and debilitated conditions of the system, and by neglect to rinse the mouth after nursing or bottle feeding.

Symptoms—The mucous membrane of the mouth assumes a dark red appearance in isolated patches; on which whitish points appear, which rapidly spread into larger areas. They closely resemble curdled milk, from their soft consistency. These whitish points consist of epithelium and fat, in which are embedded the sporules and filaments of the fungus. The deposits first appear about the angles of the mouth, soon extending to all parts of the cavity, and often involving the entire alimentary tract. The mouth is usually swollen and tender, the breath often fetid. Pain, aggravated by nursing or chewing. The lips are swollen, the saliva is increased; an elevation of temperature, frequent diarrhoea, stools green and sour, causing a redness of the buttock.

Treatment.—While this disease is not considered very fatal it none the less requires attention. Many kinds of treatment have been devised and frequently administered, like other things, in a haphazard way. Cleanliness, next to Godliness, is of the utmost importance and antiseptic treatment instituted. If there is fever, to a half glass of water add three to four drops of aconite and 5 to 6 drops of phytolacca (common tincture) and give a teaspoonful every one or two hours. Mouth may be washed with a solution of boracic acid three times a day; borated soda, 1 dr.; glycerine, 2 drs.; water 6 drs. Mix. Wash mouth 4 or 5 times a day.

A saturated solution of sulphite of soda, or given dry every two or three hours, in 3 to 10 drops will act kindly. Chlorate of potash, used internally and as a wash, in three-grain doses every four hours acts well.

Borax is a good remedy in all cases. Where there is sepsis, the face looking like it had been chilled from cold, producing a purplish color, give baptisia (wild indigo) from 1 to 5 drops, according to age, three or four times a day.

Asthma—When a person afflicted with this disease is seen by anyone not accustomed to it, can readily see that patient breathes with difficulty. This disease is described as a paroxysmal spasmodic contraction of the muscular layer surrounding the bronchial tubes; characterized by spasmodic attacks of great dyspnoea, continuing usually for several hours. It is the result of local disturbances of the nervous system; may be hereditary; pressure on the pneumogastric nerve, cardiac disease; catarrh of the stomach; constipation, uterine or liver, climate, inhalation of various substances, as ipecac, turpentine, irritating dusts; emotional excitement.

Symptoms—The paroxysm begins, in a majority of cases, in the early morning hours or during the afternoon, with a feeling of anguish and constriction in the chest and an intense desire for air. The breathing is accompanied with loud wheezing, the face is flushed, at times even cyanosed and bathed in perspiration, the eyes stare, the eyeballs protrude, the muscles of the neck become prominent as they aid in the effort for air. The dyspnoea soon becomes so severe that the inspiration is but a gasp, the lips are pallid, cyanosis becomes greater and the patient feels as if death were impending.

After a few minutes or hours, the respiration becomes easier; more air enters the lungs, the cyanosis disappears and gradually the paroxysm ceases, the patient feeling exhausted and the chest fatigued. During the paroxysm, there is a short, dry cough, the expectoration consisting of white mucus, at times streaked with blood or a profuse water mucus, instead of single paroxysms, slight remissions may occur at intervals of one, two or three hours, to be followed by other paroxysms lasting from four to six hours, continuing for a week or two, preventing the patient lying down or taking food.

Asthma, in itself, is not considered fatal, but if the paroxysms are frequently repeated there results either an enlargement of the air cells and dilation of the heart, followed with dropsy, or cerebral hemorrhage; thus resulting in a paralytic stroke or almost instant death.

Treatment—Remedies for this distressing disease have found ready sale and they have gained a notable place among advertisers who filch the public on the free treatment or no cure no pay plan. The treatment is pallative and permanent. The pallative is to administer such treatment as will give instant or temporary relief. To relieve the paroxysm, no medicine is so effective as the hypodermic injection of sulph. morphia, gr. one-sixth to one-fourth, combined with sulph. atropia, gr. one-one hundred twentieth. Chloral, gr. 10, repeated every thirty minutes, where there is no heart complication, is often effective; drinking strong, hot, black coffee is often effective; inhalation of chloroform, ether, amyl nitrate and nauseants are sometimes used effectively. Lobelia in one to three drop doses every one to three hours, is the remedy for children; the roots of the milk-weed, 8 ozs. to a pint of alcohol, let stand a day or two, then given in tablespoonful doses has given fine results, taken before meals. A certain mail order establishment has accumulated a nice fortune off a formula which has been published in several medical journals and prescribed by a great many physicians with, as they claim, wonderful results. The formula, as given, is as follows:

Prescription.

Iodide of ammonia, 2 drs.

Fl. ext. grindelia robusta, 4 drs.

Fl. ext. of glycyrrhiza globra, 4 drs.

Tinct. lobelia, 2 drs.

Tinct. belladonna, 2 drs.

Syrup tolu, sufficient for 4 ozs.

Dose—Teaspoonful three times a day; extra doses during a paroxysm.

I have had such fine results with the use of ambrosia (ragweed) that I have had no occasion to use anything else.

Ambrosia, 2 parts to pulsatilla, 1 part, given from six to ten drops, three or four times a day. Fifteen drops of ambrosia has given relief in a few minutes, after it was taken, therefore, making the use of the hypodermic of no avail.

The drugs here used should be of the highest quality. Good grain alcohol, when used as the base for extraction of medicinal properties, is used in proportion of 8 ozs. of the plant (here meant leaves, stems, roots or barks) to one pint; let stand from ten to fourteen days, when it will be ready for use.

Chloral hydrate, $\frac{1}{2}$ oz.; potassium bromide, $\frac{1}{2}$ oz.; pure water, sufficient to make 4 ozs. Mix.

Sig.: Teaspoonful every three hours. May double quantity, if necessary. Apomorphia 1-10 gr. every three or four hours or 12 tablets of 1-10 gr. added to 4 ozs. of water and given in teaspoonful doses every one or two hours has given good results.

BITES OF SERPENTS, POISONOUS STINGS.

Bites of serpents, dogs and insects and stings of the hornet, bee, yellow jacket and the like are generally handled without much trouble in most cases. The history is usually plain and their symptoms very marked; so there is little danger of mistaking the character of injury. The symptoms from the bite of a poisonous serpent are manifest in a short time. The patient is prostrate, pale and listless, cold perspiration; the pulse small, rapid and fluttering, with drowsiness and a disinclination to answer questions. The part bitten usually swells rapidly and becomes bluish discolored. All the symptoms are those of prostration and the poison may be regarded as a depressent and at the same time a blood poison, setting up a process of decomposition. The poison of the sting of the bee, wasp, hornet, and others of like species, is somewhat similar in kind, though in much less degree. Some persons are

more susceptible to the poison than others. The nervous system becomes depressed and as the poison advances in its severity the patient experiences difficult breathing and a general sense of prostration.

Treatment—For stings of insects, moistened tobacco gives relief; an onion cut in slits and applied frequently acts nicely; wash blue has a nice effect on stings of all kinds. Spirits of camphor and epsom salts applied locally answers well; a solution of permanganate of potash, 1 gr. to 1 oz. of water is good.

In snake bites, it is commonly recommended to cord the limb between the bite and the heart, or just above the wound. The wound if recent, should be freely incised so the blood may escape and assist in washing out the poison. The part bathed in a mild solution of carbolic acid and water has a good effect. The patient should be given carbonate of ammonia from 5 to 10 grs. and brandy or whiskey as may be required. If *echinacea angustifolia* is given in 20 to 30 drop doses, or *baptisia tinctorum* in dram doses, the poison will be speedily overcome, if seen in a reasonable time after the occurrence.

Arsenic, Fowler's Solution, 1 to 5 drops every four hours, well diluted with water, has acted nicely, but, if it should cause swelling at any time, it should be discontinued till all puffiness is gone, when it could be resumed and given in less quantity. Sulphite of soda can be given in 10-grain doses every two hours, with any of the local applications here given, will suffice.

Billious Fever—This disease is known in different localities by different names, such as billious remittent, marsh or typho-malarial fever. It differs from intermittent, in that it consists of but one perfect revolution of the disease, the hot stage being greatly prolonged, but showing well marked remissions and changes in the range of the degrees of temperature.

Like common chills and fever it is believed to be caused by what is generally termed marsh malaria, though there is no doubt but that sudden atmospheric vicissitudes and changes of temperature, by arresting secretion, impairing nutrition and lessening the vital power of the individual, may form a cause of the disease. It occurs usually in the fall, however, many cases develop during the summer and even the entire year. It also differs considerably in its character, being mild

in high and temperate regions and severe in low, marshy and warm countries.

Symptoms—The onset usually occupies several days, slowly developing, the patient complaining of feeling bad, sluggish, headache, coated tongue, bowels out of order and feverish.

At first there is nothing but weariness, especially upon slight exertion. The languor increases and is accompanied with listlessness, or indisposition to make any exertion; the appetite becomes changeable from one condition to another; bad taste in mouth, tendency to nausea, with, sometimes, vomiting, dry skin, with frequently pain in back and limbs. The attack is sometimes ushered in by a well marked chill or rigor, closely resembling the cold stage of an intermittent. The chill is frequently very slight, and again, merely a sense of coldness; or slight chilly sensations pass over the body, or the tip of one ear, one finger or some certain portion of the body will experience a change from a natural to a colder state, after which, it is followed by a rise of temperature, which alternate, the chill becoming less and less marked, until finally, febrile action is set up. The cold stage usually lasts but a short time, one or two hours, but is occasionally protracted. When reaction sets in the pain in the back, head and limbs increases, being in some cases extremely severe. The skin becomes hot, showing temperature has greatly increased, the face becoming flushed and turgid, and the eyes suffused. The pulse shows increased fullness and frequency and the respiration hurried and uneven. The tongue is covered with a yellowish-white coat; frequently a disagreeable taste in the mouth and more or less nausea, with oppression in the region of the stomach, and, in many instances, severe and protracted vomiting of billious matter. The secretions are checked, bowels caustive, urine scanty and highly colored, sometimes loaded with bile which gives it a yellow tinge. The nervous system, in many instances, is considerably deranged, the patient being watchful and very restless. These symptoms continue from eight to twelve hours or may be continued for twenty-four, when they gradually abate; the heat of the surface is diminished, with frequently, slight perspiration about the neck and face; the pulse are not so frequent;

the pain in the head and back ceases, and the patient feels comparatively comfortable and sometimes falls into a refreshing sleep. This constitutes what is known as a remission, which occurs once in twenty-four hours; the period appearing usually of a morning, though in some cases there are two remissions the same day; in others a more complete remission occurs every second or third day. In many cases the duration, remission and completion varies greatly in different persons. In some it is long and amounts almost to an intermission; in others it is short, and the fever but slightly abated. Following it, the fever appears with all the first intensity and the hot stage continues to the end of the disease. In some cases, we do not observe much change in the character of the fever except it becomes more intense as it progresses, while in others the remissions are shorter and less noticeable, until finally, the fever is nearly or quite continuous. The irritation of the stomach often continues for two, three or four days; in some cases, it is troublesome throughout the course of the disease. As the disease progresses the patient's strength wanes day by day, the nervous system becoming more exhausted until by the seventh or eighth day we find him in one of two conditions. The fever having lost its original form has become a continued fever with typhoid symptoms.

The patient's strength having become greatly exhausted, we observe a lack of reactive power; there is a tendency to congestion during the remission, at which time the surface becomes cool, sometimes covered with clammy sweat; the pulse small, weak and jerky; the breathing short, quick and difficult; coma sets in; the patient lies upon his back, slips towards the foot of the bed; picks at the bedclothes, and after one or more unsuccessful attempts at reaction, the patient dies. In this short duration, the fever terminating fatally as remittent; this is a rare termination, for if it is not checked in a week or so, it assumes a continuous form, and presents all the symptoms of continued fever. The disease is more intense in very warm and sultry regions.

The temperature in a case of remittent fever ranges $99\frac{1}{2}$ to 108 degrees or very rarely to 110 degrees. The fever of a very high degree is not so dangerous, if remission can be secured in a few minutes after it reaches its highest point,

otherwise, active congestion begins and the patient succumbs before reaction sets in. If the thermometer shows an increase of temperature, in the morning range of 101, 102, 103½ up to 104 or 105, the case is severe and stubborn. Complications may arise and render treatment very difficult. Irritation of the stomach and some adjacent organs are the most frequently involved; nausea and vomiting, soreness in the region of the stomach with a feeling of insufferable oppression. Brain complications are met with in severe cases. The disease is generally viewed with a favorable recovery.

Treatment—The first thing to attract our attention is the condition of the stomach and bowels. If there is constant nausea and a heavily coated tongue, the treatment should be begun by relieving the stomach by giving a dose of compound powder of libelia and capsicum. If the tongue is red at tip and edges, the irritation must be quieted by giving an infusion of peach tree leaves or bark; if colicky pains, dioscorea in hot water, 10 to 15 drops every 20 to 30 minutes acts kindly. Sometimes a mustard plaster placed over the region of the stomach or a strip two or three inches wide and eight or ten inches long applied to the spine, beginning just below the hair and extending full length down the back has relieved, when other things have failed. Sipping cold water like hot coffee has acted well. The next indication is to reduce the fever. Thus we will give aconite 5 to 10 drops and veratrum viride ten to twenty drops and water four ounces. Mix, give a teaspoonful every two hours or every half to every hour if fever is high. Hot water and a fan can be used to a great advantage by placing patient on a cloth of some kind to protect the bed clothing and as one person applies the water another may use a fan making a light current of air. As the patient becomes chilly, the application should cease and cover placed over the patient. The fever will appear again in a few minutes, when the application should be repeated and alternate the treatment until fever cools. Where the fever runs above 105 and as high as 106.7 degrees, the ice pack will be serviceable. The kidneys can be kept in good condition by giving a piece of saltpeter, about the size of a bean, well diluted in water, every three hours; or may use

fifteen grains of acetate of potash, well diluted with water, every four hours.

Aconite or veratrum should be given during the fever which will be about as long as the disease will last. When the fever reaches a periodicity, small doses of quinine, 1 or 2 grains every one or two hours. Belladonna or gelsemium should be added to sedative according to indications; belladonna, if the patient is dull and a tendency to doze, pupils are large or do not contract readily on exposure to light. If those expressions appear at the beginning of the disease, there will be a low muttering delirium or coma by the end of the first week, if patient is not nursed and treated very closely, and as a consequence, we have a class of symptoms known as typhoid. The conditions resulting from bad treatment in simple cases. Gelsemium is indicated where there is flushed face, bright eyes and contracted pupils and heavy pulsation of the carotids. It is given with aconite or veratrum from 10 to 20 drops of gelsemium to 5 or 10 drops of aconite in a cup, half or two-thirds full of water to be administered in teaspoonful doses every one or two hours; if veratrum is given in place of aconite, 10 to 20 drops to same quantity of water. A four-ounce bottle could be used as a measure and the treatment be more certain and a more correct method used in the administration of remedies. Some cases call for acids, especially when indicated by a dark red tongue, we need muriatic, but if it exhibits a purplish hue, nitric acid given in water well diluted, or sufficient to taste, every three or four hours. In some cases we see a pallid tongue, with dirty or ashy coat, indicating sulphite of soda, which should be given from 5 to 10 grain doses every three hours.

Heavy purgatives should be avoided and only stimulative remedies be administered in this as well as other diseases of same character. Podophyllum one-half to a teaspoonful added to 4 ozs. of water and a teaspoonful, given every three or four hours of this solution, will give better results than heroic drugging, as is too commonly practiced. The mild medication is the best for the patient. Odors arising from the body can be eradicated by bathing the patient with warm water and twenty or thirty drops of carbolic acid to the gallon, or for foul breath, it can be administered in proportion to 4 ozs. of

water and 10 or 15 drops of carbolic acid. Mix, give a teaspoonful every three or four hours.

Where there is a great restlessness, an opiate is frequently of the greatest importance. Opium, 1 gr., or the tincture, (laudanum) 5 to 10 drops, every three or four hours or sufficient to produce rest. The skin should be moist, soft and cool.

Sometimes Dover's powder, which is a compound of ipecac and opium, and in some instances acts kindly, given from 5 to 10 grains, every three or four hours. Sleep and rest are essential features in all cases and it is one rule that should be rigidly followed and that is that the patient be unmolested during the hours of sleep. Rest is the greatest health restorer.

Bleeding from the Lungs.—It is very seldom that hemorrhage from the lungs occur, except as the result of tubercular deposit, and though frequently passed as of but little importance; yet it forebodes serious trouble and should call attention to the fact that it is not necessarily the rupture of a blood vessel. It is an increase in or an abnormal fullness of the capillaries of the air cells; active congestion when the result of an accelerated circulation producing arterial tension and bright red blood; passive congestion when caused by an impeded outflow from the capillaries producing venous blood. The causes may arise from increased heart's action; over-exertion, alcoholic excess, mental excitement, inhalation of cold or hot air. The passive condition results from obstruction to the return circulation; dilated or enlarged heart, valvular diseases; low fevers, Bright's disease of the kidneys.

The bleeding from the lungs may be known by the bright, florid look of the blood, being frothy and raised by act of coughing. In some cases, it is swallowed, or simply runs down the throat and coagulates in the stomach and is removed by vomiting; the oppression of the chest, cough, dyspnoea and earlier appearances of the blood will determine its source. Bleeding from the posterior nares is more frequently mistaken for bronchial hemorrhage, but the dark color of the blood, the absence of air in it, the feeling of warmth back of the palate and its being removed by hawking, is sufficient to show that the trouble is not in the lungs.

A favorable termination may be expected, so far as the hemorrhage is concerned, but unfavorable as regards permanent recovery. The greater the hemorrhage the more speedy the danger. The conditions are very unfavorable when complicated with heart disease.

Treatment—The patient should be placed in a quiet, cool place, head and shoulders elevated, and all physical and mental excitement avoided. But few persons should be permitted in the room. If the feet are cool, a hot mustard foot bath is very beneficial and the warmth continued by the use of a jug of hot water. Give half a teaspoonful of table salt and a little grated nutmeg added will check the bleeding, if given every half hour. The difference between an active and passive hemorrhage must be noted and treatment administered accordingly. Where the blood is red and freely passing, we would readily understand to slow down the pump. Our first attention would be called to veratrum 15 drops and 4 ounces of water and give a teaspoonful every fifteen minutes for three doses, then every half hour until the desired influence is obtained. Small doses, of ipecac given on a little sugar every two to four hours, is a good preventive. The oil of erigeron in six to eight drop doses or added to the oil of cinnamon, if not too irritating equal parts given every 20 or 30 minutes on a little sugar is generally sufficient. Alum, in doses from 2 to 5 grains, with gum tragacanth, every half hour, has been given with advantage, epsom salts, one fourth teaspoonful, with a little sulphurous acid added and dissolved in a little water. Gallie acid given in 10 to 15 grain doses every one, two or three hours, according to the urgency of the symptoms. If the bleeding is excessive, the dose should be doubled in order to control the bleeding as speedily as possible. A decoction of arbor vitae has given good results in some cases, drank a few swallows at a time and given sufficient control. If blood is venous hemamalys, 2 to 10 drops repeated according to urgency of the symptoms. Charcoal will arrest the bleeding and as it is harmless, it may be given in any quantity. The kind mostly used is made from burning of the white willow. Most any kind will be sufficient. After the hemorrhage is checked, the patient should be placed on the tincture of copper, 10 drops to 4 ozs. of water and given

in teaspoonful doses every three or four hours. The patient should be kept quiet for some time after the hemorrhage has ceased and treatment adopted to counteract the ill effects of the loss of blood. The administration of tonics, stimulants, iron, fresh air, light exercise, change of scene, a nutritious diet are some of the essential elements necessary to continuous treatment. Elecampane root, as much as can be held between thumb and forefinger, put in a quart of water and simmer down to a pint, strain and replace in same or other clean vessel and add one pint of honey, simmer down to a pint, or pint and a half, remove from fire and when nearly cool, add a piece of alum the size of a small marble. A teaspoonful every two or three hours. This is beyond question one of the best cough remedies, for lung trouble, extant.

Bleeding From the Nose.—This is a condition of childhood and is seldom troublesome except in some cases where it comes on during the progress of some disease. When it occurs in advanced life, it often gives rise to much anxiety.

Treatment—Raise one or both arms above the head and hold them in that position for some time; if that fails, apply a cold pack to back of neck, letting the application extend down the back, if thought best, or cold water or ice may be applied directly over the forehead and nose. The nostrils may be swabbed with muriated tincture of iron 1 oz., water 4 ozs., mixed. Apply as often as necessary or may saturate some absorbent cotton, running a string through it so it can be extracted, and plugging the cavity; alum may answer every purpose used in saturated solution.

If there be a tendency to apoplexy, or if the patient has heart disease, the bleeding may be of benefit, if not too profuse. Ergot is considered beneficial either locally or internally given in ten to twenty drop doses. Plugging the nose with oiled silk, or cording the left arm near shoulder has been considered effective.

Bleeding From the Stomach—In bleeding from the stomach the blood is vomited up instead of being raised by coughing and is usually of a dark color and may be mixed with the food and is not frothy as when it comes from the lungs. In some cases the blood may pass into the intestines. Some cases result from congestion of liver or spleen; ulceration of stom-

ach; cancer of stomach; hemorrhagic malarial fever; menstrual period.

Treatment—Where the vomiting is excessive, a hypodermic injection of morphine, one-fourth or one-sixth grain, combined with atropine, 1-150 gr., or ergot in 10 to 20 drops; muriate tincture of iron 1 to 5 drop doses well diluted, given by mouth, every half to every hour, according to urgency of symptoms. Ice applied over stomach and along the spine Epsom salts or other mild purgative should be given, as soon as the patient is strong enough, to clear the bowels of all offending material.

If the patient should be prostrated, give an injection of beef tea with a spoonful or two of brandy and one grain of pulverized opium or 20 or 30 drops of the tincture.

Turpentine given in 10 to 20 drops and some recommend giving as high as 30, is a topical remedy, if the patient is not affected by it in other ways. No food should be allowed for several days by the stomach; the patient being nourished by rectal alimentation.

A little tincture of guaiac should be given three or four times a day and as soon as the stomach becomes strong enough beef tea or other fluid nutritious diet might be given, continuing the guaiac before each meal.

Bleeding From the Urinary Organs.—Hemorrhage of the kidneys is not a very common occurrence, but may take place as the result of an external injury, especially falls, or blows upon the loins, from inflammation or it may be a symptom of other diseases. It is sometimes brought on as the result of a strain from jumping, lifting or riding horseback.

Treatment—Should the hemorrhage be active, as would be shown by a full flowing pulse, the first thing to do is to slow up the pump or heart; veratrum from 1 to 10 drop doses every half to every hour.

Veratrum sometimes causes neausea or vomiting, but the pulse is generally lowered before this occurs. Gallic acid may be given in doses of 5 grains every hour or two, or, if the hemorrhage is severe, every 15 or 30 minutes.

If there is much nausea, irritation of the stomach, an infusion of peach leaves, or bark, will be found an admirable remedy. Turpentine from 10 to 30 drops is especially recom-

mended by some as being very good. If patient shows inclination toward prostration, stimulant applications should be applied. Cloths wrung out of hot mustard water and applied to the lower extremities; brandy may be given in small quantities, if it seems necessary; carbonate of ammonia should be given in 5 to 10 gr. doses sufficient to keep the pulse as nearly natural as possible.

When considerable irritation exists, small doses of santonin triturated with white sugar, given every one or two hours is beneficial.

Gallie acid 20 grains, aromatic sulphuric acid, 15 drops; tincture of cinnamon, two tablespoonsfuls; water, three tablespoonful; mix and take all at one dose and repeat this every four hours until the bleeding stops.

Boils—This is a condition of the system in which nearly all persons are familiar and needs but little description. It is a common saying that boils are the result of bad blood. The cause of bad blood is a failure on the part of some of the emunstories in the elimination of some morbid material, which the system has been accumulating faster than it could be eliminated. The kidneys are the principal source of the trouble and any treatment that will restore normal activity is the proper method to pursue. Should the condition of patient show signs of defect in the alimentary canal or sluggish liver, their activity should be restored by the use of such remedies as iris, podopyllum or small doses of epsom salts.

Treatment—I have never had any occasion to use more than one line of treatment and, as success was the thing mostly desired, acetate of potassium had never failed.

Given in 15-grain doses, dissolved in about one-third tea-cupful of water every three or four hours, is generally sufficient to destroy the cause that produces the boil. The dose for children should be in proportion to age.

Brain Fever—This disease is the result of an abnormal fullness of the capillaries of the brain; active, when arterial fullness, and is called active congestion; passive congestion, when venous fullness; characterized by headache, vertigo, and of the congestion be very great, convulsions.

Causes—In active congestion, there may be increased heart action, the result of enlargement of left side of the

heart; general plethora; excesses in eating and drinking; alcoholism; sun stroke; prolonged mental labor; diminished amount of arterial blood in other parts of the body, the result of the compression of the abdominal aorta; ligation of a large artery, and the suppression of habitual bleeding piles are examples.

Passive congestion is the result of dilation of the right side of the heart; pressure upon the veins returning the cerebral blood.

Symptoms—An overflow of blood to the head; an over-enlargement of the blood vessels. The onset may be gradual or sudden, the patient's condition being aggravated in a reclining position. Headache, with paroxysmal neuralgic darts, blunting of vision and hearing, buzzing in the ears and sparks before the eyes, contracted pupils, swimming or dizziness, dullness of intellect, inability to concentrate the mind; the face is red; the eyes congested and heavy pulsating carotids. The sleep is disturbed by dreams and jerking of the limbs. If the attack be sudden, a rapid state of unconsciousness with muscular relaxation, will quickly follow. Congestion in children often presents alarming symptoms, such as great restlessness, night terrors, gnashing of the teeth during the sleep, vomiting, contracting of pupils followed by general convulsions. Any or all of these symptoms may continue more or less marked from one or two hours to a day, the child enjoying its usual health, after a sound sleep, except the manifestation of some fatigue.

Mild cases terminate favorably in a few hours to a day or two, but show a strong tendency to recur. Severe cases may terminate in health, but usually foretell cerebral hemorrhage.

Treatment—The patient should be treated according to the development of the fever, and the general treatment for an inflammation, must be followed. Coolness and calm judgment is one of the essential features in the treatment of this disease.

After we collect our thoughts, we will look at the patient to see what peculiar changes, if any, have taken place. If we see a flushed face, bright, glossy eyes, the pupils contracted, increased heat of the head, carotids throbbing, with restlessness and inability to sleep, we would observe a full pulse and nervous excitement.

Thus, our patient, like a steam engine, has begun to quiver under the excessive heat. So we will notice the pulse to ascertain the range of temperature with a view of planning a rational line of treatment. So we will see the necessity of slowing the heart, to check the flow of blood to the brain; to quiet the nervous excitability. We will look at our drug list and we find that veratrum will slow the heart and reduce the pulse, so we will give veratrum, and gelsemium will quiet the nervous excitement, so we will prescribe gelsemium. Cold will contract the small blood vessels, therefore we will apply ice or cold cloth. This may be all the treatment required in most cases, but we will occasionally see a case in which an irritation of the bowels are an evident cause of an increase of the brain lesion. Here an enema of compound powder of jalap and sena would be effective. Sometimes a mild cathartic is admissible, but would better be generally avoided. Then we have a case in which the tongue is coated at the base, the lower part of the face is expressionless, the pulse oppressed, and though the patient is very restless, the mind is dull. An emetic will relieve our trouble. Now we have a case of irritable stomach, in which medicine, drink or food is not tolerated and we must find means to quiet this irritation. Small doses of ipecac and aconite will generally suffice. Drinking fresh spring or well water in sips, like drinking hot tea or coffee, has proven successful and generally all the treatment necessary.

In another case, in the early stage of the disease, the tongue will be broad, pallid, and dirty, showing an ashy expression. Here sulphite of soda in 10 or 15 grain doses every three hours to an adult will clear the tongue by stopping fermentation and the accumulation of foul gasses. In a case of venous fullness, general fullness of tissue, broad, pallid or dirty-yellowish tongue, a little podophyllin added to the sulphite of soda, in proportion of $\frac{1}{2}$ grain of podophyllin to 10 grains of sulphite of soda, is about an average for adult. In some cases of children, in the early stage, we find a small, jerky, sharp stroke of pulse, the skin contracted about the eyes, sudden jumping and throwing hands in sleep and often a sudden shrill cry during sleep, calls for 3 or 4 drops of rhus-tox (poison oak) in half glass of water and a teaspoonful given every three or four hours. Where the face is blanched,

patient sleeps with eyes partly open, mouth dry, and if a small child, will frequently act as if sucking its tongue, 1 to 3 drops to half glass of water of belladonna and given every one to two hours in teaspoonful dose will give relief. The doses should be increased for an adult. We have at times a patient who complains of pain in the right side of the head, and we will notice the right cheek flushed, with a full vibratile pulse, which will be relieved by giving bryonia, 10 drops in a half glass of water, a teaspoonful of the mixture every hour. In malarial regions the disease assumes a periodicity, in which case we would think of small doses of quinine given every three or four hours. Quinine should never be given in any other case. If a hemorrhage is thought to be in evidence, which is shown by the appearance of coma, the patient's tongue giving the expression of thickness like one intoxicated on whisky or other intoxicants, belladonna or ergot should be given in the proportion of 20 drops of belladonna to half glass of water and given in teaspoonful doses every half to every hour until the face flushes or the mouth becomes dry, after which reduce the dose and lengthen time or ergot may be given in 20 drops every two or three hours. If there are convulsive movements, bromide of ammonia is suggested. If the eyelids show oedema, or the feet swell, apocynum should be given. Should typhoid symptoms develop, the proper antiseptic becomes an important remedy. The indication may be for sulphite of soda. Sulphurous acid, muriatic or nitric acid, baptismia, or chlorate of potash. When the acute symptoms pass off we may be able to give rest to the nervous system by the use of cactus, pulsatilla or hyoseyamus administered in from 1 to 5 drop doses every one to three hours. Brandy or other stimulant may be given in small quantities when patient shows symptoms of exhaustion and increased to keep up a favorable influence. During convalescence, the patient should be managed with great care, all causes of excitement being avoided. Food should be carefully selected, such tonics being employed as will produce good digestion and blood-making. Excretion should be free and it is well to watch all functions until their normal condition is freely established.

Break-Bone Fever—This is a disease known by different names in separate sections of the country. Some localities it is

known as dengue (pronounced dangay); in other places it is called nervous or neuralgic, and is the counterpart of what is commonly called la grippe. It is an acute, epidemic, febrile disease, consisting of two paroxysms of fever with an intermission. The first paroxysm is characterized by high fever, distressing pains in the joints and muscles and in some cases a peculiar eruption. The second paroxysm is characterized by a milder fever, an eruption of different character, attended by intense itching and by some recurrence of the joint pains and debility in some cases. No specific cause is given for this disease, but is thought to be a peculiar condition of the atmosphere which has some influence on its development.

Symptoms—Sudden onset; fever 103 to 105 degrees, a severe headache, backache, severe aching and swelling of the joints and stiffness of the muscles, frequently nausea, vomiting, constipation and the appearance of a rash, resembling scarlatina, from which the disease has been mistaken for scarlatinal rheumatism. An intermission follows the first paroxysm in from a few hours to one or two days, when the second onset appears, but not so severe. It is at this time that the characteristic eruption appears and attended with intense itching, which continues for about two days, when desquamation occurs and convalescence is established, but prolonged by the debilitated condition of the patient. It generally terminates favorably in about eight days, but relapses are common. The eruption might lead to a mistaken idea of scarlet fever or measles were it not for the joint and muscular pains and the epidemic form of its development should assist to prevent error.

Treatment—In this, as well as other diseases, we study the cause and the effect of disease development with the relation to drug action. Our attention will be first called to the condition of the patient as to the range of the temperature. The pulse will be used as an index to the line of treatment to be adopted in conjunction with other bodily symptoms. If pulse are small and rapid with alternating hot and chilly sensations, we would prescribe aconite, and the bones ached or muscles felt as if they were squeezed in a vice, cimicifuga would be added in proportion of ten drops of each to half glass of water and given in teaspoonful doses every hour till fever and pain

were reduced. If pulse were full and carotids pulsing heavily, we would think of *varatrum* and *gelsemium*, given in proportions of 20 drops of *gelsemium* to 10 of *varatrum* added to half glass of water and administered in teaspoonful doses every hour. *Belladonna* is indicated in this disease more often than any other drug, and should be thought of in connection with *bryonia*, *rhys tox*, and other indicated remedies. If the tongue should be heavily coated, an emetic of *ipeca* and *lobelia* might be given with a salutary effect. Sulphite of soda 10 or 15 grains with 1-10 to 1-4 grain of *podophyllin* given every 3 or 4 hours to counteract poisonous gases and to clear the alimentary canal. The bowels should be thoroughly emptied and the fever reduced by free diaphoresis. The pains should be relieved by giving 5 grains of quinine and 1 grain of opium, in capsule, every three hours. The itching may be alleviated by carbolized water, carbolic acid 10 or 20 drops to the pint and applied at intervals.

Bronchitis—An inflammation of the membrane lining the bronchial tubes of the larger, middle or third size; characterized by fever, substernal pain, oppression in breathing, and at first scanty, followed by more or less profuse expectoration. It is a disease most frequent in childhood, especially during the period of dentition, when there is a tendency to catarrh of the mucous membrane in general and of the bronchi in particular. Inhalation of irritants, such as dust, smoke and air, too hot or too cold. More common in climates characterized by considerable moisture of the atmosphere combined with a low temperature and especially where there are sudden and marked variations. After a few days the expectoration becomes of a yellow color, and as a result of hyperaemia, rupture of the capillaries of the mucous membrane frequently occurs when the slight expectoration of the first stage is streaked with blood. In scrofulous patients, the bronchial glands participate in the inflammation, they become swollen and filled with secretion, and not unfrequently the glands undergo a hyperplasia and finally the appearance of a cheesy substance, showing a degeneration and breaking down of tissue.

Symptoms—The chief symptoms consists of fever, hurried breathing with a sense of tightness about the chest, the patient feeling chilly, followed by flushes of heat, increased se-

cretion from the nose, dry skin, constipation of the bowels and headache. This affection commences as a common cold, with a hard, dry cough, more or less hoarseness, is soon developed; a sense of dryness and roughness cause frequent attempts to clear the throat, which seems to be rendered much worse by tickling in the fauces. The voice is frequently hoarse; a sense of tightness and constriction of the thorax, with slight pain or soreness in coughing or drawing a long breath. In some cases the fever is quite marked for the first two or three days. About the third day the patient begins to expectorate a thin glairy fluid, which, rising to the glottis, greatly increases the desire to cough. The painful symptoms usually subside when the cough becomes more free. The tongue is foul, pulse frequent, and many times quite weak, with a sense of lassitude and great anxiety. Improvement begins from the fourth to the eighth day, in cases which terminate favorably. While it may be a little difficult to always distinguish this disease from pneumonia (lung fever), if the case is one of severity; but in mild cases the symptoms do not usually occasion much alarm. In weak and poorly nourished children this disease is of frequent occurrence. At first the little patient has a protracted chill, followed by a rise and fall of temperature, with higher range in the afternoon, but becomes less and less marked as the disease advances. Breathing is quick and wheezing, the pulse frequent and full, though soft and easily compressed. The cough is persistent, at first a viscid mucus, becomes, as the disease advances, yellowish, greenish and opaque. Labored breathing is marked, when the disease is fully developed and coming on in paroxysm, it is followed by a long harrassing cough, which frequently terminates in vomiting, the patient gaining some relief for a short time. This disease often continues for days or sometimes weeks, terminating favorably, or the heavy breathing becomes more intense, the symptoms of asphyxia rapidly increase and the patient dies in a state of collapse.

Treatment—Since bronchitis is known by several appellations, such as acute, asthenic, capillary, croupous and chronic, there will be but little change in the treatment. The mucous catarrh, associated with moderate expectoration, would be different from dry catarrh with scanty expectoration, or bron-

chorrhoea, profuse expectoration, or fetid bronchitis, showing gangrene of the lung. It is true that the treatment should conform to meet the indications in all cases, as dry or profuse expectoration, it would be readily observed that the two cases should not be given the same medicine. The first thing we will notice is the patient's condition. If there is fever, alternating from hot to cold flashes, dry skin, restlessness, headache, burning and soreness in the chest, aconite 10 to 15 drops in half glass of water, teaspoonful every hour. If the face looked blanched, sleeplessness, sharp, painful cough, throat dry, purplish color of the mucous membrane of the fauces, lie with eyes partly closed, the more of these expressions we would see the stronger is the indication for belladonna, 10 drops added to the aconite and given until we could see a change. If the fever was high, pulse full and bounding, face flushed, bright, glossy eyes, pupils small, veratrum, 10 drops gelsemium, 10 to 20 drops to half glass of water and given in teaspoonful doses until an abatement of the symptoms. Our treatment must be administered with a view of subduing inflammation and reducing nervous tension. Thus a spirit vapor bath to induce a copious perspiration and the internal use of an infusion of Virginia snake root, smartweed, or butterfly weed given sufficiently to keep the patient in moist sweat. The mucus must be moved from the throat, so we will depend on lobelia and ipecac in small doses frequently repeated, till we obtain results. A syrup of red puccoon root or the tincture made with pure grain alcohol, given short of nausea, is one of the best remedies we have. If there is sharp pain, jarring of the head when coughing, or other parts of the body, bryonia from 1 to 3 drops every one to three hours may be used with good effect. If there is great anguish, suffocation, palpitation of the heart, oppression of the chest with difficult breathing, and spasmodic cough and the spittle thick yellow sputa, digitalis, $\frac{1}{2}$ to 2 drops, alternated with cactus granddiflorus 1 to 2 drops every two or three hours. If the kidneys become involved, acetate of potash 10 to 15 grains in a third of a tea-cupful of water every three hours. If the tongue shows a heavy coat, we look to sulphite of soda 5 to 10 grains every three hours, or if the expression is yellow, or a dirty-yellow,

podophyllum $\frac{1}{2}$ to 1 drop every two or three hours, or an infusion of balmony, black root or fringe tree (known in places as white ash and old man's beard) may be given to clear out the bowels and stimulate glandular activity. Where the throat is dry and there is difficult breathing, steam from water in an open kettle of boiling water with a little lime, sulphur or carbonic acid will be effective, but no gas or steam should be admitted that does not afford some relief. The patient's diet should be safely guarded and stuffing strenuously prohibited.

Bunions—This is an enlargement and thickening over the joint of the big toe, the cause being the same as that of common corns and requires about the same treatment. The pressure must be removed and continuously avoided, if a cure is desired. The common old remedy of mutton tallow, and if sore, a little turpentine added and kept bound to the part is often effective. Extract of cannabis indica 10 grains, salicylic acid 6 grains, flexible collodion 1 ounce. Mix and apply every night with a feather (may use finger) so as to form a thick covering over the bunion or corn for 4 or 6 nights. Bathe foot in hot water for several minutes, after which the hardened scurf may be easily removed with aid of a knife. After its removal the remedy can be reapplied if the part presents a whitish appearance, and the same treatment continued. The following is a remedy for corns or bunions: Pare the part with a sharp knife sufficient to remove all hardened substance, and then mix one-half ounce of chloride of antimony, 12 grains iodide of iron and one-half ounce of tincture of iodine. Apply with a pencil or camel-hair brush once a day. A small piece of potash slacked in the open air and sufficient gum arabic mixed with it to form a paste and then applied is reputed to be a corn or bunion cure instant. Where there is a red, shining, hot swelling joint, violent cutting pains, part burns like fire, aconite may be applied until heat is subdued. Arnica is the remedy where the part is bluish, looking bruised and intense soreness. Chronic enlargement of the joint, with redness of surrounding parts, swelling and itching of toe, unhealthy skin, readily ulcerates, requires the internal administration of graphites. Iodide of potash is considered one of the most effectual remedies for the chronic form of this disease.

Burns—This may be the result of direct or indirect contact with heat, either the close proximity with fire, water, steam or gas. There is considerable difference in different cases as to the extent of the injury from the burns produced by hot fluids and vapors. In some cases, which are only superficial, there will be slight inflammation or redness produced, while in others the burn may be so severe as to cause the death of the part, followed by sloughs. All charred or burnt clothing should be carefully removed away from burnt surface. After dressing has been applied, be in no hurry in changing. If injury is extensive, apply dressing so they can be removed without exposing too great surface at once. Extensive burns, even of slight severity, are always dangerous. If one-half or even one-third the surface is burned, death is almost certain to follow. Burns on the body are more dangerous than those of equal extent on the extremities. There are three periods of danger: First, from shock immediately after injury; second, from fever or sympathetic affections of brain or bowels; third, during period of suppuration, blood poison may supervene.

Treatment—Use first remedy at hand till others can be procured. Thick layers of cotton are best protection to the parts. Dress injury as soon as possible after occurrence. Wash the parts with a solution of creasote in proportion of 1 dram to a point of water; cantharides or *urtica urens* 1 dram to 4 ounces of warm water. Where blisters have not already formed, the local application of grain alcohol is highly extolled. Bicarbonate of soda or common baking soda made into a paste with elabber and applied is one of the most effective remedies extant. Where the milk cannot be had, the soda dusted over the parts and a cloth wet and layed over the burnt surface will subdue the pain almost immediately and the wound readily heal. Carbolic acid applied full strength where the part has blistered has been used successfully, and especially in deep burns, 1 dram of carbolic acid to one pint of olive or linseed oil is excellent. Soon after accident as possible the burnt surface can be oiled with sweet or linseed oil and dusted over with flour from a common pepper box or salt shake until thickly covered is a good application. Where the fire has been sucked down the throat, equal parts of glycerine and water should be given in teaspoonful doses and mouth and throat

gargled with it every few minutes. *Urtica dioica* (*urtica urens*, nettle) in 1 drop to 10 drops every one or two hours is very effective. Where there is chills, followed with fever, hot skin and much thirst, great fear and anxiety of mind, much nervous excitability, aconite 10 drops to half glass of water teaspoonful every hour. Dark, watery offensive diarrhoea, rapid prostration, with sinking of vital force, extreme thirst, drinking often, but little at a time, great anguish, restlessness and fear of death, Fowler's solution of arsenic one to five drops, well diluted with water, every three or four hours. In spasms arising in severe burns, pains, causing great excitement, very impatient, can hardly answer one politely, warm sweat about the face and head, chamomile tea, a small handful in a teacupful of boiling water may be given in teaspoonful doses every one or two hours. Where a septic condition follows sloughing and produces that purplish hue of the face, so often seen in blood poison, baptisia from 5 to 20 drops every two or three hours, and the ulcers bathed with a decoction of marigold, wiped dry and dusted with boric acid three or four times a day. The bowels and kidneys should be closely watched.

Cancer—This disease is one that has caused more experiments and as much humbuggery as any malady that afflicts the human family. Surgeons, as a rule, regard the knife as the only effective means of removing tumors and cancerous growths, and therefore little is said in works on surgery relative to any other method, consequently all other kinds of treatment come under a very useless if not satirical criticism. It may be laid down as a positive result of surgical practice that a cancer destroyed with the knife returns sooner than one removed by the caustic treatment. The separation of the cancerous mass by the caustic method seems to remove more completely all the cancer cells, while excission leaves a few of them to begin anew their destructive action.

There has been three principal methods of treatment devised as follows: First, by local applications; second, by hypodermic injections into the substance of the growth; and, third, by internal treatment. While the two latter methods are not practical for all purposes, yet the system should be rendered as septic as possible by internal treatment during the local ap-

plication. Before discussing the treatment it might be proper to notice in a brief way the different forms of this disease as given by those who follow the treatment of cancers as specialists. There are six varieties given and described with but little difference in character and form. Sarcoma is defined as a malignant growth originating from the first development of cells forming in connective tissue. The cells appear round, spindle-shape, or in large, plate-like forms and may exist either separately or in conjunction in the same tumor. Their development always begins in the connective tissue, is mostly in the skin, periosteum and bone, but infrequently in secreting glandular organs. The sense of feeling differs according as the location is in hard or soft tissue. In some cases the tumor is firm, tense and elastic, but is generally soft and fluctuating. The development occurs most commonly between the ages of twenty and forty, as the result of some external injury or local irritation. It begins in a single nodule and several may begin at the same time with rapid development. Little pain occurs until after ulceration begins. If early treatment is begun and properly administered, the chances of a favorable recovery may be expected. After ulceration begins, the chances are not so favorable and generally terminates fatally in a few months.

Scirrhus—The malignancy of this form of the disease is developed from the squamous epithelium and involves the skin and mucous tissue. It frequently follows injury, but the cause cannot always be determined. It commences a firm, hard, dense nodule under the skin, being at first easily movable. As it increases, the tissues become infiltrated, hard, livid and the blood vessels become enlarged, the neighboring glands become involved, the parts are firmly fixed with a play of sharp lancinating pains. Location is most generally on the breast, uterus or liver. Microscopic examination will generally show small round cells with small pits or depressions, surrounded by fibrous stroma. They seldom develop before the fortieth year and usually terminate badly in from two to four years, unless removed by proper treatment.

Encephaloma—This is known as a soft cancer, rose cancer, fungus hematodes, and the cerebriform cancer. In most com-

monly involves the bones, the eye, the lymphatic glands, mammae, uterus, and liver. It may occur at any age, and is the only form that develops in childhood. It may begin as a single nodule on the nose or face, or they may be in several nodules thickly spread over the breast. But little pain is experienced until ulceration begins, when a dull, heavy pain takes place and annoys the patient for some months, when the heavy strain causes a general breakdown and the case terminates fatally, unless timely treatment has been begun early in development.

Epithelioma—This is the cancer often seen on the lower lip; is found on the tongue, face, cervix and any portion of the body. It occurs, generally, after the fortieth year, and is the result of long irritation, beginning as a crack, tubercle, wart, or incrustation, and extends with the progress of the induration. The development is very slow and many years often elapsing before its termination. It may be known by being located upon the skin, mucous membrane, cracked or wart-like excrescences, with an indurated base, slow growth, development of similar disease in adjacent glands. Free and early removal is followed by permanent cure.

Colloma—This form of cancer is known as gelatiform, because of the clear colloid material. It is the cancer of the stomach, ovary, omentum and the bones of the extremities. It takes the form of the organ involved and growing as a pronounced tumor. Its general history is similar to that of encephaloma, except that it rarely occurs in childhood, grows somewhat more slowly, and does not so readily involve lymphatic glands. It is difficult to distinguish, previous to removal, from other forms of cancer. Usually terminates in death in a short time.

Melanoma—A malignant growth resembling encephaloma, but the discoloration caused by black pigment will afford the opportunity to differentiate between them. It is known as black cancer, and occurs mostly in the eye and skin, and is particularly noticeable on account of the pigment which marks it in varying shades from iron gray to deep black. The cancer is very apt to begin in or underneath a pigmentary mole, and has the same appearance as the encephaloma, except that the

excess of pigment causes a change in color. Unless removed early in its development it terminates fatally in a short time.

Treatment—There are but two recognized methods of treating tumors, viz.: The knife and caustic treatment. As this work is written principally for the laity, the caustic treatment will naturally be given the most prominence. The knife will give the quickest result and leave a less scar, but there is a greater probability of a return of the malady than where the caustic method is used.

Internal treatment is not practiced much by cancer doctors. They depend almost exclusively on local application. It is an axiomatic fact, that the nearer a normal state of health, a greater probability will be to a successful recovery. The general health should in no wise be neglected. Where the patient has the appearance of strong vitality it might be prudent to proceed at once with local treatment. If I were prescribing for a patient of this kind I would look for the source of the trouble with a view of checking all morbid development. The glands, such as the liver and the villi of the intestines. As no two cases would give the same expression, our treatment would necessarily follow as a sequence. To excrete poison we would think of the kidneys and give acetate of potash, uva ursi, pipsissewa, kava kava as indicated, and for the liver and bowels, podophyllum, iris versicolor; to check its contaminating influence in the blood, baptisia tinctoria; as a glandular invigorator, phytolacca, or iodide of potassium; as a tonic, nux vomica, hydrastis. However, the case might demand something different from the above or a change occasionally and in that instance a physician should be consulted.

Local treatment of destroying these growths are numerous. Nitric acid, sulphuric, lactic and pyrogallie acid have each had their zealous defenders, but neither of them has been able to hold any permanent place. Nitrate of silver has been used, but its action is too superficial; caustic potash has a tendency to destroy too much tissue. Chloride of zinc, salicylic acid and arsenic are the three drugs which stand at the head of the list. Every cancer treatment contain at least one of these drugs in some modified form to suit the caprice of the prescriber. Chloride of zinc is about the oldest caustic used

in the local treatment of cancer. It is very painful in its action, but establishes an aseptic slough and thus avoids any hemorrhage or blood poisoning.

How to Apply the Plaster—Take a piece of isinglass plaster and placing it over the nodule, then take a lead pencil or other marker and draw a line around the growth about one-quarter of an inch from the diseased margin. Now cut around the circle, making an opening which when applied will leave the diseased part ready for the application of the plaster; the skin must be abraded with a sharp knife under a local anesthetic, or by an application of salicylic acid, which may be used to a good advantage in softening and removing the superficial layers of the epithelium and prepare the way for other caustics. After the nodule has been sacrificed and all ingredients ready, a paste is made by mixing gum opium, 1 dram; extract of belladonna, 2 drams; arsenious acid, 1 dram; simple cerate, 1½ ounces. Spread a dram on every square inch of a piece of soft leather needed to cover the surface to be destroyed. The opium and belladonna have been added to relieve the pain, but sometimes the pain is so severe that an opiate will be required to give relief. The pain is generally in proportion to the action of the plaster on the diseased tissue. After the plaster is applied, it should be kept in place for two hours; the superficial layer of the cancerous tumor has been deadened, and may be softened by the application of a poultice or any simple unirritating cerate, while sloughing out. The plaster is to be applied every day, unless the eyelids begin to puff or a fullness of the abdomen expresses a warning that must be heeded, which means to stop the plaster and apply the poultice. Most patients will receive the daily application of the plaster without the manifestation of symptoms of constitutional poisoning. In a few days, after the first application, a loosening and a separation will take place between the tumor and the adjoining structure; pus appearing in the crevice, while the healthy tissue surrounding the cancerous slough will be irritated by the arsenic, but not devitalized. The cancerous mass has been killed, the live tumor having become a foreign substance, which is to be removed or taken out. When the dead lump comes out, the irregularities of the adjacent

structure will show the extent of the malignant tissue. The suppurating sore is to be dressed every day with some simple cerate or healing ointment, until the cavity is well. An enlarged lymphatic gland lying near a cancerous tumor may become involved with cancer cells, which will develop a new growth in a few weeks or months, when treatment should be instituted at once. Sometimes secondary growths may attack the liver, lungs, or other deep seated organs beyond the reach of local treatment. Chloride of zinc is a favorite of many cancer specialists, owing to its styptic qualities. The action is so rapid and attended with so much pain that a chloral anodyne should be given at the time the paste is applied. It should be kept on for an hour each day, as a rule. In the development of rodent ulcer, there is but little difference in the appearance of it and lupus and caneroid ulcer, the significance of the term meaning gnawing, eating or destroying. The sore does not usually begin in a tubercle or nodule, but in a scaly spot, which at length may discharge an ichorous fluid and form a crust. The disease is malignant in nature and rarely heals kindly, or submit to mild treatment, and if left to take its own course may do so much mischief as to bring about a fatal issue, although not necessarily a constitutional disease. The underlip, the cheek and in its spreading career shows an inclination to reach the nose, eye and may penetrate to the bone and transform the tissue into granular and liquid debris. After developing, the sensations attending the evolution of the integument are described as being of a creeping, pricking, itching and darting character and not distressingly painful until the latter phases of the disease are reached.

The disease may be safely treated for a while, in the early manifestations, with simple applications, which can be used for the checking of the growth of lupus in the first stage. To an ounce of cold cream (*unguentum aquae rosae*) add one dram of subnitrate of bismuth and ten drops of Fowler's solution of arsenic. Mix. Rub slightly upon the furfuraceous spot three times a day. It can do no harm and will allay the annoying sensations and hold the morbid action under restraint. If an ulcer has formed, an escharotic should be applied long enough to kill all of the morbid growth. A dram

of chloride of zinc mixed with ten grains of pulverized acacia and a few drops of water makes an efficient paste to be employed in the destruction of an epithelial cancer. A dram of pulverized arsenious acid mixed with half ounce of the extract of dandelion or other substance of about the same consistence constitutes an active escharotic to be applied to cancerous structures. If there is a large surface to be treated, only a small quantity of the arsenical compound should be used at any one time, lest enough of the poison should be absorbed to prove detrimental. However, a plaster the size of a silver dime would not part with enough arsenic to do any harm. The plaster should be repeated every day until the diseased structure is converted into a slough. Granulations will then spring up in the sore and the reparative action will fill the chasm with healthy tissue. The healing surface should be dressed every day with a simple ointment. Plasters containing arsenic will frequently cause extensive swelling, especially if applied on a diseased structure on the face, it may cause the eyes to be swollen shut, but it will gradually subside and cause no trouble. When applied on the lips, or other mucous surfaces, the parts must be protected so that the patient will not swallow any of the paste, as it will likely result in arsenical poisoning. If the cancerous tumor is over four inches across, the paste should be applied to one side first and after that has been removed, apply the treatment to the other side. After the diseased part has been killed, a poultice made of milk and bread or other substances may be applied to aid in the sloughing out nodule.

The above treatment contains the most essential method of the cancer specialists, but as each have something different from the other, several formulae gleaned from various sources are here added, any of which may be used and are given to show the similarity in their component parts. There are several other formulae of cancer plasters, but the principal difference is found to be more in the way the different ingredients are mixed rather than in any new discovery. I give them by number for convenience.

No. 1—Take chloride of zinc, pulverized red puccoon root, and flour, equal parts, and work into a paste and apply. First

spread a common sticking plaster, much larger than the cancer, cutting a circular piece from the center of it a little larger than the cancer, applying it, which exposes a narrow rim of healthy skin, then apply the cancer plaster. After it remains in place 24 hours it should be removed, leaving the cancer looking like a burnt shoe sole, and the rim outside the appearance of parboiled, as if burnt by steam. Dress with a poultice made of slippery elm or sassafras leaves until suppuration takes place, then heal with any common salve.

No. 2—Take one part of pulverized red puccoon root, three parts of powdered galangal root and chloride of zinc sufficient to make a paste.

No. 3—Take one dram of each red puccoon root, charcoal and chloride of zinc. Add sufficient water to make a paste.

No. 4—Take one dram each of red puccoon root, arsenious acid and a half dram of chloride of zinc and add flour and water sufficient to make a paste.

No. 5—Take one dram each of red puccoon root (powdered) and chloride of zinc, flour and water sufficient to make paste.

No. 6—Take 3 ounces of vaseline, 3 drams of red sulphide of mercury and 1 dram of arsenious acid. Make into a paste.

No. 7—Take 1 ounce each of powdered Virginia snake root, vegetable charcoal and arsenious acid. Mix. Make into a thick paste with water and apply.

No. 8—Take 1 dram each of crowfoot (*ranunculus bulbosus*), bolbus (*peucedanum off.*) powdered sulphur and arsenious acid. Mix. Make into paste with water.

No. 9—Take mild chloride of mercury, arsenious acid sulphate of morphine of each 1 dram and 6 drams of powdered cinnamon and add sufficient water to make a paste.

No. 10—Take 10 grains of salicylic acid, 2 drams of powdered starch, 2 drams of oxide of zinc and 4 drams of lard. Make a paste.

No. 11—Take 1 ounce each of balsam of fir, white wax and chromic acid. Melt the wax and balsam of fir together and add the acid slowly, stirring while cooling. Remove the cuticle with a fly blister and spread the plaster upon a piece

of muslin and apply. When sufficient depth of tissue has been destroyed, slough out with a poultice.

No. 12—Take 1 ounce each of sulphate of zinc, arsenious acid, sulphur and rochelle salts.

No. 13—To 75 parts each of pure water and rectified spirits of wine add 1 part of arsenious acid. Mix and spread over the cancer with a brush once a day, until the entire cancer sloughs out.

No. 14—To 1 dram each of chloride of gold, zinc, antimony, brominium add sufficient starch and water to make a paste. Apply to small portions of the ulcer, after spreading on a piece of clean linen. The chloride of bromine can be increased two or three times, owing to effect desired. The zinc is used as a styptic. The pain from the application is very great and generally requires an opiate to allay it. The plaster should remain on about 24 hours and a poultice should then be applied. In eight or ten days the diseased portion should become detached, leaving a healthy granulating surface. If any diseased tissue still remains, a little of the caustic paste should be re-applied. One-tenth or one-twelfth of a grain of the chloride of bromine, in pill form, may be given once or twice a day for six months.

No. 15—Where there is a cancerous tumor developing on internal surface and the application of a plaster impossible, the use of the hypodermic needle is used with some reported success. The following compound is given for that purpose: Take 1 part of arsenious acid, 5 parts of cocain hydrochloras and 500 parts of recently boiled water. Mix and inject into the cancerous mass every two or three days.

The foregoing is the principal part and contains all the essential elements in the treatment of cancer.

Carbuncle—This is a species of malignant growth and coalesces into a compound boil, discharging through several openings. It commences as a livid red swelling, attended with a burning, itching, smarting pain, which gradually becomes worse as the disease progresses. After 5 or 6 days softening and suppuration take place, and when it bursts, instead of having a central opening as a boil, it is flat on top with several openings, which discharge a thin acrid fluid. The openings

gradually widen, the various apertures become closely united, giving a rough outline of a piece of honeycomb. The most prominent seat of development is at the juncture of head and neck, but no part of the body is exempt from its ravages.

Treatment—In this, as well as other forms of morbid development, the condition of the patient's general health should be closely observed, and internal remedies administered to meet the indications.

Where there is a sensation, as if boiling water was running beneath the integument, with great restlessness, thirst, worse at night and better from warm applications, Fowler's solution of arsenic from 3 to 7 drops three times a day well diluted with water. Belladonna is the remedy where there is bright redness, throbbing pain, restlessness and inactivity to sleep.

Vegetable charcoal is given from 1 to 5 grains every three hours where the tumor has a dark bluish appearance.

Rhustox—(Poisin oak) is indicated where there is itching, burning around the parts, with gangrenous appearance. Patient feels better moving around. Ten to 20 drops in half glass of water, teaspoonful every two or three hours. Muriatic acid a few drops in a third of a teacupful of water sufficient to make a pleasant drink every three hours is indicated in those cases indicating scurvy.

Hepar sulphur and lachesis are the principal drugs to be used in those cases, showing the symptoms of blood poisoning. A few drops of full strength carbolic acid injected in four or five different places is claimed to be successful in aborting carbuncle in its first appearance.

A poultice of sassafras leaves, or slippery elm bark, is a good local application before suppuration and the use of marigold stems and blossoms afterwards, in the same way, are very useful. When used, a poultice should never become too dry and may be continued for several days. Owing to the thick skin and tough tissue, it may be necessary, as soon as softening begins in spots, to open them and apply the marigold poultice. After suppuration ceases, salicylic acid should be daily sprinkled over the entire surface. The place should be dried before the acid is used, as it readily melts and causes

the sensation of ant stings. Dry dressings of boric acid or other anti-septic treatment should be pursued. Fever or other changes should be met as indications demand.

Catarrh—As there are so many forms of this disease, being the principal factor in all abnormal disturbance of the mucous membrane, it is here referred to with relation to the lining of the nose and its cavities. It is an acute or sub-acute inflammation of the mucous membrane of the nose, the result of cold. It may exist alone, or in connection with diseases of more or less of other respiratory passages. It has its onset in a stuffing or clogging up of the head with a dull, heavy pain and a feeling of dullness and debility and sometimes pain in various parts of the body. In a few days there is a copious secretion from the nose; the secretions are arrested to some extent, there being dryness of the skin, constipation of the bowels and a sluggish action of the kidneys.

There is an epidemic form of this disease that may occur and does occur at certain seasons, known as influenza. It corresponds to a disease among horses known as epizootic, and is in a more aggravated form and may begin its onset with a chill followed by a rise of temperature. There is the characteristic fullness attended with soreness of the breast, sneezing, soreness of the eyeballs, cough that jars the head, causing considerable pain, hoarseness from sore throat, no appetite, vomiting, costiveness, with a white appearance of the tongue, are generally present. The symptoms become mitigated about the fourth or fifth day, secretion being established from the skin and kidneys, but the cough continues unabated at times, being severe and obstinate.

Treatment—This disease, in its simple form, is not dangerous, though is very annoying to the patient. In most instances very mild remedies will be sufficient. The feet bathed in warm mustard water and drinking a copious draught of hot water and wrapping the body in warm blankets will generally create activity of the skin, or any good sweating tea will accomplish good results. A brisk cathartic answers the purpose in some cases and a dram of acetate of potash in a wineglass full of water and five drops of gelsemium added and taken three times a day is very efficient. Gelsemium is one of the

most efficient of all agents. When the patient feels the first sensation of cold, 10 or 15 drops taken and followed with a few hours of sleep is almost a sure cure. This drug, in large doses, will frequently cause double vision, but no other trouble will follow.

In the treatment of the epidemic form, the time will necessarily be prolonged and variable complications must be considered. Where the fever is of sufficient importance to require attention, the proper sedative will furnish the basis of a good treatment. *Veratrum viride* or *aconite* 10 drops to half glass of water and if there is a thin acrid discharge from the nose, 10 drops of *rhus tox.* should be added and a teaspoonful of the solution given every one to three hours according to the severity of the disease. *Bryonia* should be substituted for the *rhus* when the discharge is glairy, tensive pain, flushed right cheek, and the pain extending from forehead to back part of the head. *Baptisia* when the discharge has a tinge of brown and the mucous membrane looks tumid and dusky; *phytolacca* when there is an enlargement of the lymphatic glands, face pallid and nose appears swollen; *sodium sulphite* where there is pallid expression and dirty discharge from the mucous membrane; *belladonna* where there is a marked inclination to sleep or dull pain in the nose or head; *gelsemium* is indicated where the face is flushed, bright eyes, small pupil and heavy pulsing of the carotids; *nux vomica* where there is chill with feverish heat, discharge from the nose during the day and dry at night, dry cough with headache as if skull would burst; *pulsatilla* where the discharge is yellow, green, thick, fetid mucus from the nose, loss of taste and smell craves fresh, cool air and worse in warm room. *Sambucus* (elder) is used where the nose is stopped with thick tenaceous mucus. A tea made from the inner bark of the root is an excellent remedy in diseases of the mucous membrane and the juice of the berries is very refreshing in fevers. Local applications are best made to nose and throat with a solution of salicylic acid or chlorate of potash and spray the parts every one or two hours.

Cholera Infantum—This is a disease of childhood and claims as many victims as any other malady that attacks the infants of a neighborhood. It is an acute catarrhal inflamma-

tion of the mucous membrane of the stomach and bowels, together with an irritation of the sympathetic nervous system, occurring in children during their first dentition, characterized by severe colicky pains, vomiting, purging, febrile reaction and prostration. In a great many cases of summer complaint the stomach and bowels seem to have reversed action. The irritation has checked the absorbing processes of the glands and the watery fluids of the blood are poured out in an effort to relieve the condition. The onset is frequently sudden, the vomiting and purging continues unabated, febrile symptoms arise, abdominal pain with rapid pulse and intense thirst follow as a result. The vomited matter is partly undigested food, mucus and bile. The stools are at first partly fecal, but soon change to a watery fluid of different colors, from green to an ashy, dirty expression, soaking the clothing, leaving a faint greenish or yellowish strain, acting from ten to twenty times a day, emitting a musty, and at times a fetid odor. The fever begins at once, the temperature ranging from 101 degrees to a 105 degrees, with morning remissions. The pulse is rapid and feeble, ranging from a 130 to 160 beats per minute. This condition continues but a few hours before rapid wasting ensues, the body shrinks, the eyes are sunken and partly closed, the mouth partly open, the lips dry, cracked and bleeding. The little patient is at first restless and irritable, but soon passes into a semi comatose condition, the pulse becoming more feeble, the skin presents a clammy coldness, the pupil of the eye fails to respond to the light and the stupor deepens, death soon following, or the condition changes and convalescence being slow and tedious.

We have another disease of childhood, or infancy, resembling summer complaint and is frequently mistaken for it. It involves the lower part of the bowels and is known as entero-colitis. It runs pretty much the same way except the vomiting is not so troublesome. The stools are frequently mixed with yellow particles of feces and undigested food, mucus, streaked with blood, sour odor, abdomen distended and tender, moderate fever and thirst, not so fatal and recovers in from one to two weeks.

The duration of the choleric symptoms are short, under

five days, but relapses are common and improvement retarded.

Treatment—In beginning our treatment, the first thing to attract our attention is the general surroundings. It is almost impossible to succeed unless the environments are inviting, the most scrupulously cleansing fluids, water, milk and all beverages, as well as the clothing, the room airy and void of flies, floors clean and all decaying matter destroyed. It may be necessary for us to proceed at once to relieve the distressed condition of the little patient. If there is constant retching and vomiting and a copious evacuation from the bowels, what can be accomplished with medicine given by mouth? Here is where a good hypodermic syringe plays an important part. Take one-twelfth part of a tablet, containing one-eighth grain of sulphate of morphine, and 1-150 grain of atropine, dissolve in pure warm water and inject into the leg or arm and repeat every thirty minutes, until the conditions are relieved. The pain is of little moment and a change for the better almost certain. We have quieted the action of the bowels with the morphine and checked the draining of the blood of its water fluids with the atropine, besides giving the little patient a few hours rest. A tablet containing one-eighth grain of morphine and 1-150 grain of atropine is the most common form used. The action of the atropine will frequently flush the skin, causing the little patient to show the appearance of fever, but the expression will pass off in a few hours without serious results. *Euphorbia corollata* (large flowering spurge) ten drops to four ounces of water to which may be added ten drops of the tincture of aconite for fever and given in teaspoonful doses every hour, especially if there is hot skin, quick pulse and sleeplessness. Small doses of ipecac and aconite, 5 to 10 drops of each to 4 ounces of water and given in teaspoonful doses every hour is excellent. *Belladonna* may be used instead of the ipecac where the features are pallid or flushed, dryness of mouth and lips, tongue coated white in middle with red edges; stools thin and green mucus or bloody mucus, delirious during and just after sleep—desirous to get out of bed. Sudden starting at noise and during sleep; cries out suddenly during sleep and

sleeps with eyelids partly open. Benzoic acid is a useful remedy in one-grain doses administered every three hours. It is especially indicated where the stool has a dirty or ashy look, tongue coated with white mucus or ulcerated. Borax is indicated in a pale clay-colored expression of the face, ulceration or aphthae in mouth and on the tongue, light yellow, slimy mucus, or greenish watery stools. Camphor is to be given in those conditions where there is a sudden attack with rapid prostration, skin cold, yet the child refuses cover. Chamomile is indicated where there is a thick, yellow or white-coated tongue, vomiting sour substances or slimy food. Iris versicolor (blue flag) in one drop doses every one to three hours, where the stools are green, watery, corroding with colicky pains, white and yellow mucus and turning the skin red. Carbonate of magnesia, from one to two grains three times a day, dissolved in a little water is indicated where the stools are green and slimy like the scum of a frog-pond, sour smelling, scanty and excoriating, colicky pains before and tenesmus or straining during and after stool. Worse in hot weather and during dentition. Podophyllum is very useful, given where the tongue shows a yellowish or brown coat, or where the stool presents a meal-like sediment, dark yellow mucus, smelling like carrion, worse of a morning and after eating and drinking. Five drops in four ounces of water or lemonade syrup and given a teaspoonful every two or three hours. Pulsatilla is given in one drop doses every two hours, where the tongue is coated with a tenacious mucus, no thirst, stools changeable, no two alike, worse at night, rumbling in bowels before acting. Sulphur is well adapted to those cases where the child is drowsy through the day and wakeful at night; worse in early morning, very excoriating, repeated relapses, case lingers, slow improvement, palms of the hands and soles of the feet hot.

The mortality of infants are more numerous among the poorer classes, especially those living in the cities. They lack the necessary facilities to give the best results. The child should be kept free from all undue excitement and given plenty of fresh air. It should be frequently bathed in tepid water, then wrap in a clean sheet and allow to dry without

rubbing. Its clothing should be changed daily. It should be carried into the open air frequently; no matter how sick it may appear, the weather, however, should be pleasant. The diet should be wholesome milk. The mother's milk, if she is healthy, should be preferred. Cow's milk with one part of water, a little salt and sugar of milk added, is the next best. The milk should never be boiled, but kept fresh. If bottle fed, all nipples and nursing bottles should be thoroughly sterilized before using and the milk given warm. Where there is great emaciation and exhaustion, a little beef tea given every three or four hours, discarding all starchy food, will aid in giving strength. Over-feeding should be avoided.

Change of Life.—There is no period in the life of woman that causes any more anxiety and stored with greater anticipations than that in which a peculiar revolution or a change from one condition in life to that of another. This transitory state require several months or may extend over two or three years and most frequently occurs between the ages of 40 and 50. There is no exact time, when the change may take place, as there are as many variations in the lives of most women as colors of the rainbow. While this change is in progress there is more or less disturbance of the general health which call for medical attention. Much benefit will be derived from proper attention to diet, exercise and clothing. Plain, simple food, consisting for the most part of vegetables, fruits, fresh beef and mutton, will be found preferable. All stimulating food and beverages should be avoided. Daily exercises in the open air, by walking or riding will be beneficial. The clothing should be warm and comfortable and adapted to the season.

Frequent baths and friction of the skin will assist greatly in preserving the health. Where there is great debility, defective nutrition and anemia, it is advisable to commence treatment with *aletris farinosa* (star grass) one of the best female tonics. It may be given in doses of 10 to 15 drops three times a day. If there is great pain in back and hips, constipation and piles, *aesculus glabra* (Ohio buckeye) one to ten drops to 4 ounces of water and given in teaspoonful doses, every one to three hours. Where the patient is very irritable,

fullness in forehead and splitting headache, rush of blood to the head with bloated face; constipation of hard, dry stools, like small marbles, *Bryonia* in one drop doses every two hours will give relief. *Pulsatilla* is the remedy where there is anguish of heart, feel drunk, or swimming of head, when rising from a sitting posture or looking up, alternate redness and paleness of face, nose bleed, when menses fail to appear, better in open air or cold room, a mild tearful disposition given in 1 to 5 drops every three hours. *Coculus indicus*, 5 to 10 drops to water, four ounces; given in teaspoonful doses every two hours, where there is nervous weakness and fainting fits, redness of cheeks, and heat in face, menses re-appear after a year, palpitation of heart. *Clematis virginiana* (virgin's bower) 5 to 10 drops every two or three hours in those cases where there are symptoms of spasms and defective action of the kidneys. *Lachesis* is given in 2 to 3 drop doses, where there is a burning pressure in top of the head, frequent uterine hemorrhages and cannot bear the least pressure in the uterine region. *Sepia* (made from the cuttle fish) is given in 1 to 5 drop doses every three hours, where there is sadness and weeping, buzzing and roaring in ears, yellowness of face, especially across nose, like a saddle, fetid urine with clay-colored sediment adhering to chamber, prolapsus uteri and vagina with a burning in the back and jerking in the limbs at night. *Sanguinaria canadensis* (red puccoon) is given in 3 to 5 drops in sweetened water every 3 or 4 hours, where there is a redness of cheeks and burning of ears, periodical sick headache, begins in morning, increases during the day and ceases in the evening, burning in palms of the hands and soles of the feet, hot flashes and whites. Sulphur is the remedy for low spirits, out of humor, fretful inclined to cry, top of head hot, sour eructations from stomach, frequent flashes of heat, weak fainting spells, whites of yellow mucus and puritis vulva.

In leucorrhoea or whites, equal parts of *geranium maculatum* (alum root) and *nymphaea odorata* (white pond lily) the powdered root, a heaping teaspoonful placed in clean vessel and a quart of boiling water is poured on and let stand till milk warm and use at bedtime with a fountain syringe, has acted wonderfully in all cases.

Cholera Morbus—This disease may be described as an acute catarrhal inflammation of the mucous membrane of the stomach and intestines, of sudden onset; characterized by violent abdominal pains, incessant vomiting and purging, cold face, rapid, feeble pulse, spasmodic contraction of the muscles of the abdomen and extremities and prostration. It is a disease of summer and early autumn, climatic changes being an important factor. Irritants of all kinds, unripe fruits and vegetables and fermentation of food. The onset sudden and violent and occurs most frequently after midnight, with chilliness and intense nausea, vomiting and purging, accompanied with distressing burning or tearing abdominal pains or colic. The vomited matter, at first, consists of the ordinary contents of the stomach and the stools of ordinary feces, but soon the discharges by vomit and stool are liquid, whitish or of a green or yellowish tint; if the attack is severe or protracted, the discharges change to a rice-water character. The patient becomes rapidly emaciated and reduced in strength, the body shrinks, the skin cold and covered with a clammy sweat and the pulse feeble. Intense thirst followed by severe cramps in the muscles especially those of the calves, thighs, forearms, fingers and toes.

Treatment—Having a case in which reversed action has developed and the watery elements of the body are being rapidly evacuated, the first thing we think of is to stop the drainage and quiet the system; thus we would think of our hypodermic. As soon as we could get a tablet of morphia one-fourth grain, and atropine, 1-120 grain dissolved in a little water to be injected into the arm; this will generally check the trouble in a few minutes. A syringe used in this way should be kept thoroughly clean, or otherwise a very sore arm might arise from some poison being injected. Ipecac in $\frac{1}{2}$ to 1 drop doses every ten minutes where the vomiting is severe, acts kindly. Iris versicolor in 1 drop doses every 30 minutes is indicated where there is sour evacuations with frequent discharges, profuse and watery. Fowler's solution of arsenic, 10 drops to half cupful of water and given every few minutes, in teaspoonful doses, are indicated where there are cramps of the muscles, skin dry or cold or bluish, great anguish,

fear of death. Chamomile is the remedy given in 5 to 10 drop doses every hour, where there is severe cutting pains in the abdomen, frequent vomiting of sour food, mucus or bitter substances, child is peevish and fretful, must be carried all the time to be quieted. Colocynth, 5 drops to four ounces of water and given in teaspoonful doses every half to one hour, where there is a moderate nausea and vomiting with cramp-like pains around the navel, relieved by drawing up or bending over, cramps in the extremities, a yellow, heavy coat on tongue. Dioscorea (wild yam) one or two teaspoonfuls in a teacupful of boiling water and a teaspoonful of the solution given every ten or twenty minutes, where there is vomiting, purging, stools watery, with painful cramps in the stomach, bowels and extremities, violent twisting colic, occurring in regular paroxysms, with remissions, relieved by walking. Podophyllum, 10 drops to 4 ounces of water and administered in teaspoonful doses every hour is indicated in those cases occurring in hot weather, gagging or empty retching, painless diarrhoea, stools profuse and watery and gushing, with cramps in the feet, calves and thighs, restless sleep, with half closed eyes. Where the extremities are cold, hot bottles or blankets should be applied and a good circulation established. The diet should be mucilaginous drinks, as rice water, barley water, gum arabic water are preferable. A little mutton, chicken or beef broth may be taken at regular intervals; but in no case should solid food be allowed until patient has well-nigh recovered.

Colic—There are seven different forms of this disease, named with reference to location as hepatic or liver, renal or kidney and stomach and intestinal, with some other forms, but the colic referred to here is involving the stomach and intestines. Colic is a spasmodic contraction of the muscular part of the stomach or intestinal tract; characterized by acute paroxysmal pain around the navel and relieved by pressure; caused by indigestible food; constipation, collections of gas or by an abnormal amount of bile discharged into the intestines. The symptoms are hard to mistake and a description of same is not essentially necessary as it seldom proves fatal. In infants and small children, the quick jerk of the arms and

legs and a sudden cry will give a fair index to the trouble. Placing the body across the breast or over the shoulder and lightly patting the back will usually afford relief. Where there is fever indicating some inflammatory process, aconite, 10 drops to 4 ozs. of water and given every one or two hours in teaspoonful doses will act well. Arsenic, Fowler's solution, in 3 to 5 drops in sufficient water will give relief in those cases of a severe cutting, spasmodic or drawing pains, as if the intestines had become twisted or tied in knots, violent burning in stomach, cold sweat, great restlessness, anxiety, fear of death and water evacuation. Belladonna in 1 to 5 drop doses every hour, where the large intestine assumes a pad-shape across the stomach, a sensation, as if the bowels were held with claws, the abdomen contracted around the navel, as if trying to form a ball, pressure gives relief, periodical pains, which come suddenly and quit suddenly. Bryonia in 1 to 3 drop doses every hour is indicated in those cases where there is painful twisting around the navel, with frequent stitches, relieved by bending over, desires quiet, movement increases pain, hard, dry stools. Chamomile is indicated where there is an excess of gas, causing the abdomen to be puffed and heavily distended, continued drawing, splitting pains in abdomen with a sensation as if the bowels were rolled up in a knot, pressing up around navel like a ball, becomes almost furious about the pains, vomits sour food or slimy substances, very impatient, can hardly answer one correctly. Colocynth. 5 drops to 4 ozs. of water and a teaspoonful of the solution every hour is indicated where there is a violent, cutting, constrictive pain, feeling in abdomen like the intestines were being ground between rocks, compelling the patient to bend over for relief. Dioscorea, 10 or 15 drops in hot water is an effective remedy where there is constant twisting pains in the abdomen, relieved by stretching out. Nux vomica in $\frac{1}{2}$ to 1 drop doses will relieve those cases where there is cramp-like pains in stomach with upward pressure as from a stone, flatulent colic from indigestion or the use of improper food.

The relief of pain being the first prerequisite and the study of the cause afterwards, if at all, the use of the hypodermic with from 1-8 to 1-4 grain of morphia is dissolved and

injected, which will afford immediate relief by relaxing the spasmodic contraction of the muscles, thereby favoring the action of a purgative, which is frequently soon given. Most generally a good round dose of calomel followed by the administration of some epsom salts or oil.

Constipation—This disease, if we might call it such, is a functional inactivity of the intestinal canal, either due to atony of the muscular coat, causing lessened peristalsis, or to a deficiency of intestinal and biliary secretion; characterized by a change in the character, frequency and quantity of the stools, or by inaction of the liver sedentary habits, the use of fine flour, improper quantity of food, an inflammatory condition of bowels, brain or the spinal cord or their membranes. The excessive use of patent pills or other harsh purgatives every time they are feeling unwell tends to further weaken the muscular coats of the intestinal tract and calls for a greater increase of dose than in the beginning of their use. Costiveness will never be relieved by the use of purgatives.

Treatment—The only successful method of treatment must be a willingness and a determination on the part of the patient to succeed. Habits must be corrected, diet changed, purgatives discarded. One of the most effective treatments is the internal bath or flushing the large intestine with a copious injection of hot water or water as hot as can be used. Auto-infection is one of the common ailments that go on without much attention given it, until something arises that calls attention to the condition.

Bryonia is the remedy, given from 1 to 3 drop doses, three times a day, where there is inaction of the liver, stools hard, dry and light colored. If the condition be associated with piles, 3 to 5 drops *aesculus hippocastanum* (horse chestnut) twice a day, constipation from the effects of lead require small doses of alum, *podophyllum* in small doses during the day, where there is a prolapsus with a weakness and soreness of the back, it may be alternate with small doses of *cascara sagrada*; aged persons leading sedentary life, one-fourth to one-eighth of a drop of the tincture of aloes at night will aid in overcoming the costiveness. One drop of *nux vomica* in a pint cupful of water drank before breakfast on an empty

stomach, will usually correct the trouble. A three or four days fast is one of the best methods to follow in any case where the glands are clogged and the system needing rest. The body will clear out all offending materials if it is furnished with plenty of pure water and given rest. Drinking in and washing out will correct the mistakes made by bad use of the body. Good habits must be substituted for bad ones. The body should be washed clean inside and outside, if the aches are to be overcome. Regular habits of responding to the calls of nature, should in nowise be neglected. Kneading the abdomen, first over the small intestines, then beginning in groin on right side with tips of fingers, making heavy pressure like the jumping of a toad-frog, following upwards the course of the large intestine, will aid wonderfully in creating activity in the bowels and should be practiced every night, after lying down.

The diet should consist principally of corn bread, bread made of unbolted flour, cracked wheat, oatmeal, fruits and nuts, with a cupful of hot water drank between meals, to dissolve the mucus and wash out the stomach.

Consumption—This disease is defined as having its origin from the deposit of a tubercle on a small diseased mass in the lung structure, which undergoes softening, followed by more or less loss of lung tissue and is characterized by fever, cough, dyspnoea, emaciation and exhaustion. The causes are chiefly hereditary, and closely related to scrofula and is considered contagious under certain conditions, secondary to catarrhal pneumonia, the development of a cheesy-like substance in the lung-tissue proper. The tubercle is a grayish-white, translucent, semi-solid granulation, about the size of a millet seed, most commonly deposited in the walls of the bronchioles, or smaller bronchial tubes, exciting a low form of inflammation, which results in its own death. The masses of tubercles soon undergo softening (cheesy-like substances); the lung tissue changing in structure, as a sequence, also undergoes further softening, which results in a destruction of the lung, more or less, in which there are cavities formed. The destructive process may continue, until small arteries are involved, which results in hemorrhage.

The tubercle is most generally located at the apex of the lung, soon spreading to other parts; it may involve the brain, intestines and liver. It may attack the joints, usually appears on the hip, knee, ankle, elbow or wrist-joint. It is known as white swelling, when it attacks adults, and coxalgia and Genu Album in children. Such conditions belong to the domain of surgery and are not applicable to a work of this kind.

The symptoms correspond closely to the stage of the formation of the tubercle, of the softening and the development of cavities. The development is deceitful in its appearance, causing the patient and friends to believe it to be of minor importance. There is increasing dyspepsia, irritable heart, a light, dry, hacking cough, referred to the stomach or throat, scanty, glary expectoration, gradual loss of weight, impaired muscular strength, palid appearance, more or less bleeding, followed by a sharp pain below the clavicles and frequently a red line marks the gums below the lower teeth. The advance of the disease is announced by increased softening cough, free expectoration, dyspnoea increased on exertion, morning chills, evening fever, night sweats—the so-called hectic fever, diarrhoea, increased emaciation and weakness, the patient, however, continuing very hopeful of recovery.

Treatment—Since a diseased part must depend upon curative elements, it is necessary that the channels through which the recuperative forces pass, must be in good working order and all contaminating influences checked. Our attention should be first given to digestion and assimilation. To meet this requirement, the condition of the patient must receive special attention. Should there be any looseness of the bowels, which shows a fermentative process, the indication for tincture of iodine from 1 to 5 drops in a little sweetened water, after meals, alternated with creosote, 25 drops to 4 ounces of pure water, teaspoonful of the solution three or four times a day. This aids in preventing indigestion and diarrhoea and at the same time acts as an antiseptic preventing decomposition. Where there is diarrhoea, Fowler's solution of arsenic, well diluted with water, from 2 to 6 drops three times a day. Where there is a sluggish action of the liver and other glands

and no rapid inflammatory action, 4 ounces each of wafer ash and wahoo to 8 ounces of the syrup of hypophosphite of lime, given in tablespoonful doses three times a day acts well. The remedy must be continued for some time and just as the condition of the patient requires and able to contain. Aconite is indicated where there is a bright redness of cheeks, particularly of young girls of full habit, short dry cough with tickling in throat, hectic fever, with restlessness and anxious expression of face, spitting blood and keen pleuritic stitches. Belladonna is indicated in spasmodic cough, worse at night and after an exertion; congestion of head with alternate redness and paleness of face, loss of voice, throat painful to pressure, young girls at age of puberty. Bryonia is indicated where the cough at night is so severe that it compels the patient to sit up, stitches in chest when coughing or breathing deep; constipated stools, dry and hard and an irritable mood.

Lycopodium (club moss) 10 drops to 4 ounces of water, teaspoonful every hour or two to three hours, in some cases, is indicated where there is hectic fever, with cough and purulent sputa, fan-like motion of the alae nasi, night sweats, gastric irritation and where the urine leaves a sediment in the vessel, resembling red sand.

Sanguinaria nitrate, 1 grain to 4 ounces of the syrup of lacto phosphate of lime and given in teaspoonful doses every two or three hours is indicated where there is a loose cough, expectoration difficult, tough sputa, rust-colored, offensive, purulent, burning and stitching pain in chest, circumscribed redness of the cheeks, cough worse when lying down, burning worse in the evening and frequent hemorrhage.

The best all-round cough syrup is made by taking the fresh roots of elecampane, as much as can be held between thumb and fore-finger, place in a clean vessel to which add one quart of water, place over a slow fire, cover and let simmer till reduced to one pint, take from fire and add one-fourth teaspoonful of pulverized alum and enough strained honey to make one quart; it can be taken in teaspoonful doses every one to three hours.

With reference to hygienic measures, the patient should keep the body in a state of perfect cleanliness by bathing

every day in tepid water, gradually increasing the temperature until cold; out-door exercise, in all weather except the worst; sleep in the upper room, well ventilated, and the lungs should be frequently inflated, the air being inhaled through the nose gradually and retained till a dizzy sensation arises when it can be exhaled and the lungs thoroughly emptied. This practice should be continued several minutes at a time each day. The bowels should be flushed every other or third day with at least a gallon of hot water.

Convulsions—Convulsions appear under three forms—those of infancy, epileptic and puerperal. Convulsions are more frequently during infancy and childhood than after puberty, though they may be occasionally noticed in all ages. The causes giving rise to them are various. Sometimes they are produced by diseases of the brain and spinal cord, being a nervous reflex arising from some irritation at the periphery or some distant part, transmitted to the spinal cord through the nerves. Thus, we see convulsions in new born infants arising from the application of a greasy cloth to the cord and the pinning on a bandage to hold it in place. In every case occurring from such a cause, almost invariably prove fatal. Very frequently the spasm may occur from irritation of the stomach and bowels from crude or acrid ingesta, during dentition, from worms, and from inflammation of internal organs, or disease of the skin attended with great pain. The most marked symptom is a sudden jerking, involuntary movement of the extremities and quickly grasping movement of the hands. These expressions may be observed as well when the child sleeps as when awake and is sometimes increased by motion. The child sleeps with the eyes partly opened and the eye-balls will be drawn upwards and rolled about and this involuntary movement of the eye may be frequently noticed when awake, or there may be excitement of the nervous system manifested by restlessness, fits of crying in children and sleeplessness; or the reverse, the patient being dull, impassible and somnolent. The attack is always sudden, the patient losing consciousness and being to a great extent, insensible. The convulsion is usually very marked, but in some cases, it is slight or entirely absent, the patient being

rigid and remaining in one position. The respiration is labored, heavy breathing, the face turgid and purple, the features being much distorted. One spasm may terminate the attack, but in many cases, one succeeds another for from one to twenty-four hours. The interval between the spasms is generally marked by nothing more than a relaxation of the entire system and a restoration of deglutition, the patient being in a semi-comatose condition. Children having convulsions once, are usually more liable to them than others and they frequently arise from slight causes, the prepuce or clitoris being at fault.

Epilepsy is a condition of chronic fits, which occur repeatedly, but in many cases without exact typical regularity. The disease is often preceded by severe headache, sick stomachs, trembling, nausea, a desire to evacuate the bowels and the bladder, sometimes chilliness, palpitation of the heart, dyspnea, and soreness over the stomach and abdomen.

The aura—which is a sensation as if cool air was passing over the body, before an attack. The fit generally commences by causing the patient to give a shrill, piercing shriek, and the person violently falls unconscious. The saliva from the mouth, causing foam in the lips, which is often mingled with blood coming from a badly bitten tongue. The spasm lasts for two or three minutes and perhaps longer and then relaxation gradually takes place and the patient arousing with generally a deep sigh, having no knowledge of his past condition. Frequently, however, delirium, agitation, or wild excitement follow the fits. This condition lasts but a short time and the consciousness returns. The following may be characteristic of epilepsy, viz: suddenly falling, shrieks, tonic contraction of the muscles—spasms lasting from one-fourth to one minute. The condition is in proportion to the severity of the attack. In some, it is very light, consisting of merely an epileptic vertigo, the patient does not fall nor have clonic spasms, but is unconscious only for a moment, staggering and trembling, and if it occurs during the night, while the patient is asleep, it passes off unnoticed by him. These fits

occur quite frequently with some and with others only once in a great while.

Puerperal convulsions occur more frequently during the act of parturition, but seldom during the lying-in period. Young women are the most subject to it, and it usually commences during the dilatation of the os uteri, or just at the expulsion of the foetus. Sometimes the os is very tense and unyielding at the onset, at other times it may occur at the commencement of after-pains. The convulsion in this case resembles very much those of epilepsy. If they occur at the termination of the second stage of labor, it is generally hastened, but if at commencement, it retards it. In any case of this disease, the chances for either mother or child are very doubtful; however, many live.

Treatment—This as well as other diseases must have the cause removed before there is a cessation of the trouble. If the infant has a purple hue, hot water bath is advisable. If there is a high fever, lay the little patient on the bed, nude, and apply water as hot as can be used and pass a cloth back and forth, making a light current of air to cause evaporation, will cool the fever more rapidly than any other treatment, and can be repeated every time the temperature begins to rise, for the operation should cease, as soon as the patient becomes chilly. Spasms frequently occur at the change of temperature downward, after it has reached its highest point. Aconite, 10 drops to a gobletful of water; a teaspoonful every half to every hour will reduce the temperature, if caused from irritation or worms, or during dentition. Gelsemium in 1 to 3 drops, every thirty minutes, till 3 or 4 doses are taken and repeated every 1 or 2 hours is indicated where the spasm is from dentition, with sudden outcries. Where the spasm is severe and no medicine can be given, I have checked them with a hypodermic injection of three drops of veratrum viride. If the trouble is from worms, a little santalin, $\frac{1}{2}$ to 1 grain every three hours will correct the disturbance and a flushing out of the bowels with a little turpentine water will aid materially. The upper bowel should be cleared out with oil or salts.

Epilepsy has been one field in which the patent medicine man has flourished and has been successful in finding fertile

soil. If a patient should happen to recover from the use of some certain drug or a combination of drugs, the prescriber will proclaim the same to all the world as a great discovery and, "I CURE FITS" receives some attention. There is no cure for epilepsy unless the cause, that produces the trouble, is removed. Nearly all epileptics are very fond of bacon and a few days previous to an attack, the appetite becomes very ravenous and the system, in consequence, is overloaded and the vital force, in an effort to adjust matters, finds itself locked, so to speak, and as a result, an explosion takes place in the nerve centers to shake things loose. During an attack, the clothing should be loosened, a cork or piece of wood placed in the mouth, to prevent biting of tongue and lips, and guard the person against personal injury. Regular habits should be adapted, all excitement avoided, moderate, out-door exercise, proper clothing, regular habits and mental quiet, with plain diet, simple and easily digested, largely of vegetables, fresh ripe fruit, Graham bread, oat-meal mush. No stimulants, alcohol, tobacco or anything liable to irritate the nervous system should be used, and keeping the body clean inside and out, will aid materially in lessening the trouble. After the patient has had epileptic seizures for months, the body apparently becomes habituated with them.

Treatment—In some cases there is an intense headache, following an attack, which suggests sulphate of nickel from one-eighth to one-fourth grain and can be increased to half-grain every 3 or 4 hours during the day. Where there is a heavy pulsing of the carotids and the attacks frequent, black cohosh, veratrum viride, equal parts, 6 drams, gelsimium, 3 drams, podophyllum, 2 drams, cream of tartar, 1 dram, simple syrup sufficient to make 4 ounces. A teaspoonful every hour.

A pill made of pulverized valerian, 2 grains, one-half grain extract hyoseyamus, 1 grain of ferrocyanide of iron, gradually increasing the size of dose and taking a pill night and morning, has been highly recommended. Bromide of potassium in 15 grain doses two or three times a day and increase the dose if paroxysms continue and remedy well borne. The medicine is to be continued for a year or two and gradually reduced, as the paroxysms fail to recur for several months, to be re-

sumed should they return. For immediate relief, inhalations of 3 to 5 drops of amyl nitrite, a few whiffs of chloroform or a hypodermic injection of one-eighth to one-fourth grain of morphine.

Pueperal, or ureamic convulsions, are closely allied with epilepsy and during an attack give about the same expressions. The pulse will be noticed to gradually rise as the paroxysm advances and the unfortunate patient thrown into a very hideous looking condition. The treatment must be directed towards the slowing of the hearts action and producing relaxation of the muscles. A hypodermic injection of 10 drops of veratrum and three to five drops of lobelia or gelsemium repeated every half to every hour, has accomplished wonderful results. The bowels should be flushed with all the hot water they will contain and repeated every two or three hours. This will wash out the bowels, act on the kidneys and skin as well as aid in relaxation. After the spasms have been subdued the heart showing weakness from its overworked condition, the administration of one-sixtieth or one-thirtieth grain of strychnia every four hours will do good service. The inhalation of chloroform, during an attack will aid in shortening the attack and should not be forgotten. Chloral hydrate, thirty grains used as an enema, will produce a soothing effect and can be repeated, in severe cases, every one or two hours.

Cough—Coughing is an effort of the vital force to expel some foreign substance or as the result of some irritation from the throat or lungs. It may be sympathetic, in nature, and arise from disease of the heart, stomach, liver, or other organs of the abdominal viscera. A hollow or barking cough indicates a lack of expulsive power and too much relaxation in the respiratory organs. It is heard in the last stages of consumption, bronchitis, and sometimes in nervous affections. A sharp or ringing cough indicates disease of the larynx or organs of voice; the hoarse cough is dependent upon some relaxation, with increased secretion, in large air passages and is observed in the first onset of catarrh, croup, chronic laryngitis and other troubles. The cough of asthma is wheezing, in certain condition of the throat, it is belching and paroxysmal in whooping cough.

The cough may be dry, indicating a lack of secretion or moist showing that secretion has taken place.

Treatment—Aconite, 5 to 10 drops to 4 ounces of water is indicated where there is a dry cough, arising from tickling in throat, excited by drinking or smoking; worse at night; stitches in chest, breathing obstructed; the lungs lack expansive power. Arnica is the remedy, where the cough is dry, short and tickling, worse after rising in the morning. It is used where the mucus and clotted blood is expectorated, the chest and abdomen feeling as if bruised.

Arsenic (Fowler's solution) one to three drop doses every three hours is indicated where there is a cough at night, as if breathing the smoke of sulphur; scanty expectoration and sometimes streaked with blood; shortness of breath when going up stairs.

Aurum triphyllum (Indian turnip) 5 to 20 drops to four ounces simple syrup, teaspoonful every hour, is indicated where there is loose cough, especially children and old people, inability to expectorate, or cough up the mucus; a discharge of gleety mucus, or fluid, from nose, which excoriates the parts.

Belladonna is the remedy in spasmodic cough, worse at night; wakes from sleep, constricted sensation in throat, child cries when coughing, the appearance of dust or down causing a constant tickling, with an irresistible desire to cough; face hot and red, with throbbing headache.

Bryonia is indicated in the dry cough preceded by tickling or creeping in the stomach and vomiting food; cough at night in bed, stitches in chest when coughing or breathing deep; sensation, when coughing, as if head and chest would be torn to pieces; dry, hard stools and patient very irritable.

Capsicum is the remedy in red, sore throat, with a burning sensation; throbbing pain in chest; shuddering and chilliness up the back; headache and inclination to vomit during cough.

Chamomile is used where there is a dry, tickling cough, worse at night, even during sleep, especially in children; hoarseness and rattling in throat; one cheek red and the other pale; child very cross and wants to be carried all the time.

Drosera (sundew) is given in 10 to 30 drop doses every one or two hours where the cough is loose, with yellow ex-

pectoration, hoarse, bass voice; spasmodic, nervous, sympathetic cough.

Bichromate of potassium, 1 to 2 grains (trituated with sugar of milk 1 to 10), or 15 to 30 drops to a gobletful of water; teaspoonful every 2 to 4 hours, where there is a rattling in chest, the cough with thick, bluish, stringy, lumpy, tough, tenacious mucus; pain in breast, darting through between the shoulders, during cough.

Sambucus (Elder). This is a common remedy in some sections of the country and as it is harmless, it can be used at pleasure. It has been employed in profuse debilitating sweats; suffocative cough in children, seems as if he would choke; cough worse at or after midnight.

Trifolium pratense (Red Clover) is employed in spasmodic coughs, as whooping cough and measles. Irritable states of the throat or bronchia and lungs. Dose, 1 to 10 drops. A tea made from the stems and blossoms and sweetened may be taken at pleasure.

Rumex Crispus (Yellow dock), 1 to 3 drop doses is especially useful in cough where there is a raw feeling behind the sternum, aggravated by cool air and at night.

Cough, though only a symptom, is often a very prominent one, calling for special treatment. Persons subject to cough will derive much benefit from frequent bathing in cold water and thoroughly rubbing the body. Drinking freely of cold water or Gum Arabic water, in which a few drops of lemon juice has been dissolved, will often have good effect. Good ventilation in the sleeping apartment is very essential and all dust and smoke avoided. The diet should be simple and easily digested.

Whooping Cough is a disease chiefly of childhood, one attack generally removing any further susceptibility; contagious; the result of a little white speck, sometimes as large, or larger, than a millet seed, on and near the middle of the cord under the tongue.

They are sometimes dark and at other times white with a black speck in the center. The little seed-like substance seems to form a slit across the top through which the growth protrudes from the bottom upwards and as it advances, it

becomes larger and frequently develops to the size of a wheat grain or small pea.

To affect a cure, a little full strength carbolic acid and pulverized burnt alum is necessary. The mouth open and tongue elevated, with a very fine feather, dip in the acid and touch the spot, repeat by again dipping in the acid, then touch the alum and then the spot. Continue this every two hours during the day, lengthening time as the case improves. The acid is almost painless and no sore will follow its use.

Cramps—This is a sudden involuntary and painful contraction of a muscle or muscles. It is frequently experienced in the lower extremities; occasionally, it affects the whole body. The attacks frequently occur at night and during sleep.

Treatment—Colocynth, 2 to 5 drops to 4 ounces of water; teaspoonful repeated every few minutes in cramps of the abdomen and calves of the legs.

Camphor is the remedy where the patient cramps all over, both inside and out, with cold sensations.

Hyoseyamus Niger (Henbane) is indicated in cramps, all over, following an overheat; 1 to 5 drops every thirty minutes, till relief or its action flushes the skin.

Nux vomica, 1 to 2 drops every one or two hours where the cramps in the calves descend to the soles of the feet, especially at night.

Veratrum Album (White hellebore), 5 to 10 drops to four ounces of water; teaspoonful doses not oftener than every half or hour, where cramps are mostly in calves, pain in limbs as after excessive fatigue; where the patient is predisposed to cramps at night, will receive great benefit from a dose at night taken for a week.

Friction and a bath in hot mustard water will generally give relief during an attack. Where the cramp involves the stomach, a copious draught of hot water and hot fomentations applied externally will afford speedy relief. Persons subject to cramps should take cold baths and make free use of a flesh brush.

Croup—As is well known there are two forms of this disease, which are termed false and true or catarrhal and

membranous or psuedo-membranous. Each will be considered separately.

Spasmodic or false croup is an inflammation of the mucous membrane of the larynx, or the entrance of the upper airpassages, characterized by paroxysmal coughing, difficulty of breathing and attacks of threatening suffocation. The disease is frequently ushered in with a chill and followed by a rise of temperature. The child sometimes cries with a shrill voice, showing the vocal cords are on high tension, or perhaps it may be the reverse and the voice hoarse, showing a thickening of the cords and a state of congestion.

Treatment—Where there is dry, hot skin and restlessness and the child cries with a frown on the face from pain in the throat; loud breathing during expiration, but not during inspiration; every expiration ending in a hoarse, hacking cough. Aconite 6 to 10 drops to glass of water; teaspoonful every half to every hour till fever and inflammation is reduced.

Belladonna is indicated in great soreness of throat, when touched, child seems as if it would suffocate; head hot, eyes red and face flushed; dry, spasmodic, barking cough, 5 to 10 drops to a glass of water; teaspoonful every one or two hours.

Chamomile is the remedy where there is a catarrhal condition, with much hoarseness, wheezing and rattling of mucus in trachea; dry, short, croupy cough, worse at night, even during sleep, child cross, one cheek red and the other pale. One to five drops.

Hepar sulphur in 1 to 2 grain doses every 20 or 30 minutes, until the breath becomes fully saturated, which can readily be recognized on the breath and as some say, "Smells like rotten eggs." The indications are given as a loose rattling, choking cough; air passages seem clogged with mucus; violent fits of coughing, as if the child would suffocate or vomit; child wants to remain covered and coughs when any part of the body gets cold; lies in a stupor and sweats profusely.

Phosphorus, though an active poison, yet it has a place to fill and acts well, where indicated. To 4 ounces of water add 15 drops to 1 dram and give in teaspoonful doses every half to every hour where there is great hoarseness with sore-

ness of throat and cannot talk on account of great pain; trembling of whole body when coughing; shortness of breath, which otherwise has a natural sound; hoarseness with a tendency to relapse.

Tartar emetic is the remedy in conditions of sore throat, with wheezing, difficult breathing, with every cough, a sound as if a large quantity of loose mucus lay in throat, but none comes up; breathing very difficult, and gives a short hoarse, shrill or whistling sound; head thrown back, great anxiety and prostration, the chest expands with difficulty.

In those cases occurring after midnight child arouses with a hoarse croup cry, aconite 5 to 6 drops and 10 drops of ipecac to a half glass of water; a teaspoonful every half to every hour.

Where the throat has a dark purplish hue, use belladonna instead of ipecac.

The application of cold cloths or ice bags for forty or fifty minutes at a time to reduce the over-congested organs, has been favorably recommended, while other writers just as earnestly approve of the employment of hot packs. In either instance, the idea is to cause decrease of blood to the parts. Hot packs will be very useful, if the heat be gradually increased and continued for some time. Hot foot baths, continued for several minutes, and add hot water from time to time as it can be borne, having the feet and legs rubbed and when taken out, wipe dry and wrap in warm flannel. Give injections of water as hot as can be borne, unless the child is very averse to them. Plenty of fresh air must not be overlooked, and kept moist with steam and at a temperature of 70 degrees Fahrenheit. Slippery-elm or Gum Arabic water should be given during the attack, later, beef tea, broths and milk may be substituted.

True Croup—This disease may be described as an inflammation of the mucous membrane of the larynx or the upper part of the air-passages, attended with the exudate of a tough secretion—the false membrane resembling a dirty, ashy or curdle buttermilk, and spasmodic contraction of the glottis—characterized by febrile reaction, frequent, ringing cough, dyspnoea, with loud inspiratory sound and altered or extinct voice, showing a strong tendency toward death by asphyxia. The

onset may be the same as in false croup, but in the course of an hour or two, a loud, brassy cough develops, which steadily increases, until toward midnight, when it generally reaches its climax or it may slowly develop and continue six or eight days. There is a feeling of heat in the throat, huskiness of the voice, harsh cough, fever and thirst, the hoarseness soon becoming marked, and the cough, having a metallic, croupy sound, changes to a stridulous, husky sound; every few minutes the child takes a stridulous or long, deep inspiration, the voice becoming more and more husky. The cough at first frequent becomes more and more frequent and is finally followed by a spasm of larynx. Great dyspnoea then comes on and the child, in its endeavors to cough up the membrane, which is obstructing its breathing clutches about its throat and tosses about in bed. These symptoms increase in severity as the membrane is formed in the throat, until the voice is weakened and the inspiration through the narrow glottis gives rise to a peculiar crowing sound. The next morning the indications are better, only to react and become worse in the evening and alternating from better to worse till it reaches the climax, on an average, about the third day. The difference between the false and true croup is shown in the way each develops. True croup progresses gradually, the symptoms develop slowly; false croup begins suddenly in a spasmodic way and does not steadily increase. If false or spasmodic croup is unchecked in its onset, it may gradually progress and develop into true croupous laryngitis. If, instead of improvement, the case tends toward a fatal termination, the suffocative attacks become more frequent, expectoration is absent, the voice and cough cease to be audible, although efforts at coughing and speaking are visible, the difficulty of breathing continues, the respirations become more frequent and shallow, but without whistling and stridor; cyanosis deepens, the countenance assumes a different look, the eyes become dull and nearly closed, the symptoms of depression, the pulse becomes rapid and weak, the surface covered with a cold, clammy sweat, the legs and arms cold, stupor and insensibility more marked, the child dying of carbonic acid poisoning or asphyxia.

The duration of true croup about one week, rarely continuing as long as ten days.

Membranous croup is a very dangerous disease, the death rate in some instances running as high as 75 per cent. There is little hope when severe and continued dyspnoea occurs with frequent suffocative attacks, frequently becoming fatal in twenty-four or forty-eight hours.

Treatment—The indications for treatment are to detach the false membrane, to prevent its formation, to check the spasmodic attacks of the airpassages, and to maintain the strength.

To detach and remove the membrane, emetics are of the highest utility, in some instances ipecac and lobelia in small doses frequently repeated until the little patient gradually vomits, being necessary only where the membrane is heavy and breathing laborous.

To prevent its formation, the little patient should be placed in a tent-bed so that it may inhale the fumes from a bucket of water to which a pound of lime and a tablespoonful of the spirits of turpentine should be added. The little tent-bed is thus filled with vapor, which is inhaled by the child. The lime and turpentine will aid in the detachment of the membrane and assist in preventing its development. The fumes should be inhaled ten or fifteen minutes at a time and repeated every four or five hours. The steaming process could be increased in its effects by the administration of small doses of ipecac for a few minutes before the seance, which is a non-depressing emetic.

If the tongue shows a dirty, or gray-ashy color, one-eighth grain of podophyllum and one grain of sulphite of soda should be given every two hours until the bowels become free and the tongue clean. The powders are given to act on the bowels and help to excrete the poisons and should precede the fumigation with one or two doses given every two hours. The bowels should be flushed with hot water, to which five or six drops of carbolie acid is added.

Aconite is the child sedative and is indicated where there is an inflammatory condition, dry, hot skin, great restlessness; on attempting to swallow the child cries as if from pain in

the throat; loud breathing on expiration but not on inspiration; every expiration ending in a hoarse, hacking cough. Dose, five to ten drops to four ounces of water; teaspoonful every hour.

Bichromate of potassium, 15 drops to a dram added to a goblet of water and given in teaspoonful doses every two to four hours, or one to two grains of the trituration, 1 to 10 of sugar of milk. It is the one remedy in true membranous croup. The disease develops slowly, at first slight dyspnoea with hoarse croupy cough; the breathing has the sound of the air passing through a metallic tube; hoarse, dry, barking cough, tonsils and whole throat red and swollen, and covered with the pseudo-membrane; head thrown back; violent wheezing and rattling in trachea, heard at a distance.

A syrup made of two teaspoonfuls of pulverized red puccoon root, $\frac{1}{2}$ pint of best apple vinegar, 8 tablespoonfuls of white sugar; boil all together and strain. Dose one-fourth to one teaspoonful given warm every half to every hour, according to the severity of the case. The body should be bathed in strong soda water, and the throat inflamed or heavily congested with fever, 5 drops of veratrum viride to 20 teaspoonfuls of water and a teaspoonful given every hour for a child one year old. The little patient can be sponged off occasionally, will answer as well. A poke-root poultice, applied where there is swelling, can be made to blister, if a little turpentine is applied. A teaspoonful of Jimson weed seed, bruised or ground, and stewed down in a pint of old bacon grease or lard, strained and the throat oiled with the ointment and a warm cloth bound around is an excellent application in any throat disease. It should not be used too extravagantly, as it might produce temporary paralysis.

Diarrhoea—We may define this condition as a frequent, loose alvin evacuation of the bowels, without tenesmus; due to functional or organic derangement of the small intestines, produced by causes acting either locally or constitutionally. Those acting locally, such as indigestion, indigestible food, impure food and water, irritating matters or secretions poured into the bowels, cause the flux by a direct irritation of the mucous surface. Attacks of diarrhoea due to constitutional

derangement may be secondary to such diseases as tuberculosis, alburminuria, typhoid fever, or the disturbances of the functions of other organs, giving rise to various fluxes. The tongue is usually heavily coated, an unpleasant sensation at the stomach, loss of appetite and frequently a tendency to headache. As the diarrhoea continues the strength materially weakens. Though there is no fever at any time. There is a bilious form which results from hyper-secretion of bile, and may arise from most any common cause. It is rather a common form of the disease in summer and in hot climates and in intemperate persons. There is sometimes tension in the right side and soreness on pressure and considerable griping pain, at times preceding the discharges from the bowels. In many cases, the skin is dry and harsh and the urinary secretions scanty and high colored; the tongue coated, a bitter taste in the mouth and loss of appetite, with a sensation of nausea and disgust. Atony of the intestinal mucous membrane gives rise to diarrhoea by the relaxed vessels allowing their contents to escape. In some cases, the operations are large and watery, or in some cases, water and mucus mixed, unattended with pain or suffering of any kind. There are, at times, involuntary actions, allowing but little time to prepare for them. There is loss of appetite to some extent, the skin cool, pale, soft and relaxed, with perspiration, the urine light colored and of low, specific gravity. Increased mucous secretion gives rise to that form of diarrhoea, termed catarrhal. It occurs more frequently in old persons and children, though it may affect all ages. At first it gives rise to but little disturbance, but as it continues the strength fails, the skin becomes dry and harsh, the appetite much impaired, with great loss of strength and emaciation. There is an imperfect form of digestion most frequently observed among children and rarely in adults. It is evidently caused by imperfect action of the stomach and increased movements of the bowels. The appetite is usually good and sometimes voracious and there is no manifested disease of any other parts of the body. Diarrhoea is very easily known from other bowel troubles from the character of the discharges and symptoms and this should always be done, as the injudicious use of astringents, in trying to check the

bowels, sometimes give rise to serious difficulties. The failure of the food to digest and become assimilated, sets up a form of fermentation that would be futile as well as dangerous to check it.

Treatment—Diarrhoeas are classified under two forms and the nature of those forms should be the guide to a successful treatment and all complaints of this kind will most likely be one or the other. The irritant diarrhoea will cause uneasiness in the bowels, uneasiness in their action, the evacuations fail to give relief, the skin is dry, the tissues are shrunk and pinched and possibly some fever.

Aconite 5 to 10 drops according to fever, and ipecac, 10 to 20 drops, to a half a glass of water; teaspoonful every hour. This is not expected to check the discharges, but to correct the irritation and the bowels will check of themselves. In atonic diarrhoea, the discharges are free and not easily controlled; there are sensations of puffiness and if the hand is placed upon the abdomen, it is felt to be full, the skin is unusually pale and smooth.

Nux vomica, 5 to 10 drops and ipecac, 10 to 20 drops, to 4 ounces of water; teaspoonful every hour.

If the diarrhoea is persistent, tongue coated with a dirty-yellowish coat, podophyllin, one-twentieth of a grain to one grain of sulphite of soda every three hours or it can be given with subnitrate of bismuth instead of the soda.

Where the tongue is elongated with red tip and edges, Liquor Bismuth, one-fourth to one teaspoonful every three hours, more especially if heart-burn or water brash is present. Where the discharges are frequent and the tongue natural in size with coat removed in patches, triturated charcoal in grain doses, alternated with the aconite and ipecac. Where there is a brown coating on the tongue with sordes on teeth and lips, Baptisia from 10 to 20 drops every three hours. If there is marked tenesmus and the discharges excoriate or turns the parts red, Iris versicolor, one drop every hour. Where there are sharp, keen, cutting pains causing patient to bend over, 5 drops of colocynth, water 4 ozs.; teaspoonful every hour. Where there is a sensation of heaviness and fullness, low down, 2 to 10 drops of witchhazel every three hours, alternate

with 5 to 10 drops of collinsonia. If the tongue is pallid and dirty, the poison must be overcome with sodium sulphite 1 grain to 15 every three hours. If the tongue is deep red, muriatic acid in glass of water enough to make a pleasant drink and a little swallowed every two or three hours will be beneficial. Benzoic acid is indicated where the actions are watery and looking ashy, or dirty like soap suds. Dose: 1 to 15 grains every three hours. Pulsatilla in 3 to 5 drop doses every two or three hours is an excellent remedy and is used where the diarrhoea is worse in warm room, craves cool air, despondent, inclined to fear or cry.

Rheum (rhubarb) 1 or 2 drops every hour, where the actions are green, brown or fermented; sour smelling of child; colicky pains before and during stool and tenesmus or straining afterwards; the whole body has a sour smell that cannot be removed by washing; diet passes off undigested.

Magnesium sulphite (epsom salts) a teaspoonful to 20 teaspoonfuls of water; teaspoonful of the solution every 2 hours; to clear out all undigested substances. All food should be discontinued for 24 hours and slippery elm water freely given and continued until the bowels are clean.

Bowel trouble, like all disease, require attention with cool judgment and patience. Strict rules of diet should be observed; light exercise in the open air, suitable clothing, flannel next the skin, tepid sponge baths, with salt water or vinegar, according to acid or alkaline indications, regular habits and mental quietude. During an attack, the patient should be kept quiet and be placed in a horizontal position to rest both mind and body. All discharges should be removed at once. Keep free ventilation and apply warm fomentations to the bowels if they are tender and painful.

The diet should be taken sparingly. Over-eating has proven fatal. Fresh unboiled milk is the best diet that can be given; well boiled rice, oatmeal gruel, mutton or beef broth, thickened with flour or rice, fresh crackers broken into milk or made into gruel, barley water, and in some cases beef tea may be an appropriate diet. Chronic cases should have a more generous diet. Milk is one of the best articles; tender beef,

mutton, chicken, soft boiled eggs and good ripe fruits may be taken.

Diphtheria—This disease is an acute, constitutional, infectious and contagious malady, beginning by an affection of the throat, characterized by a false membrane on a mucous surface or on abraded skin, and can be conveyed from one person to another. The lesion being mostly located in the upper respiratory tract. In grave forms of this disease there is a highly septic condition of the parts. It sometimes spreads to the nose or may follow the mucous membrane into the stomach, or through the larynx, trachea, and bronchi and when it attacks the latter it resembles croup and is sometimes mistaken for it. Age has a great influence on the prevalence of the disease. Infants under 12 months are comparatively exempt from its ravages and in most persons over 14 years of age. Direct infection is from the one affected to the other by breathing the atmosphere immediately surrounding the patient, inhaling the breath, or receiving the mucus or saliva into the mouth or nose during an act of coughing, sneezing or spitting on the part of the patient. Kissing a diphtheria patient should be avoided. The indirect mode of infection is not so easily traced, yet it is an accepted theory that it may be transmitted by dogs, cats, chickens or rabbits, which being exposed to the contagion convey it to persons removed from the direct source of infection. Diphtheria may be endemic, epidemic or sporadic in its manifestations in a community. The mode of manifestation is largely due to the density and numerical strength of the settlement. Where large numbers are congregated in large cities, the contagion, coming like a tidal wave and carrying many away in its course. The sporadic or spontaneous cases often caused by the germs, which suddenly become virulent and give rise to the isolated attacks of the disease. The diphtheric membrane differs from all other forms of inflammation in that the exudation is not only upon, but within the substances of the mucous membrane, thus becoming a part of the tissues. At first there is redness, which may begin in any part of the throat, associated with swelling and an increased secretion of viscid mucus. The redness spreads over the entire mucous surface when the membrane makes its appearance. The exu-

date may form in one or more spots, such as one tonsil, the soft palate or back of the fauces, which, however, speedily extends and coalesces, forming extensive patches or covering the entire surface. The patches are of variable thickness, which is increased by successive layers being formed underneath, as it develops from below upwards by the lower layers. The color may be gray, white or slightly yellow, brown or blackish and generally has the appearance of the yellow of an egg. The different colors are only indicative of the severity of the disease.

The symptoms will follow the law of all contagious diseases, the intensity will be in proportion to the gravity of the attack. The onset may be mild, with rigor, followed by moderate fevers, headache, languor, loss of appetite, stiffness of the neck, tenderness about the angles of the jaw or slight soreness of the throat. In the more severe form the fever will range from 103 degrees to 105 degrees, pain in ear, aching of the limbs, weakness, painful swelling and swelling of the neck. The appetite is poor, tongue coated, sometimes the diphtheritic membrane appearing upon it, the bowels may be either regular or slightly relaxed, the pulse at first full and strong, soon become either frequent or slow, but easily compressed. The local symptoms in a majority of cases are associated with the throat. The patient complains of a frequent and persistent desire to hawk and clear the throat. On inspection the fauces are seen to be red and swollen and covered, more or less, with the diphtheritic membrane, sometimes the tonsils and uvula are greatly swollen and spotted with the exudate. Sometimes fragments of the membrane will be coughed up, giving a fetid odor to the breath. When the membrane spreads to the larynx, voice becomes very hoarse or lost, the cough becomes croupy, the breathing heavier and more labored, the muscles become paralyzed, obstructing swallowing, fluids regurgitate through the nose, death by asphyxia. Duration ranges from two to fourteen days, the average time about nine days. One attack does not prevent another.

Treatment—There is no specific plan of medication and remedies must be selected to protect the patient against the weakening influences and systemic poisoning.

Aconite in the forming stage (see croup) where there is a dry, hot skin and very weak pulse, dark redness of the fauces, burning, pricking sensation in the throat, great fear and anxiety of mind.

Belladonna may be added to the aconite in the forming stage where there is great dryness of the fauces, tonsils bright red and swollen, very restless, feels drowsy and cannot sleep, starts suddenly in bed, congested head, with throbbing of carotids, eyes injected, delirium.

Baptisia is the remedy where the membrane has a tinge of brown, the tissues full, the pulse is frequent, full, but easily oppressed, though sometimes weak, surface presents a dusky discoloration. There is sometimes a brownish, unpleasant discharge from the nose, and a disagreeable crust forms upon the lips and nose. Dose: 10 drops added to 4 ozs. of water with 5 drops of aconite; teaspoonful every hour.

Rhus Tox—(Poison oak) 5 drops; aconite, 5 drops, water 4 ozs.; teaspoonful every hour. Indicated where there is a sharp stroke of pulse, pain in forehead and left orbit, the tongue showing small pimples at tip or over the dorsum; more or less burning in throat and sometimes limited portions of the surface.

Phytolacca (polk root) has its place in the treatment of this disease and is a remedy of great utility where the tissues are full, the throat moist, the external glands enlarged or swollen and the mouth, as well as the throat, is sore. Dose: 10 to 20 drops and 5 drops of aconite to a half goblet of water; teaspoonful every hour.

Sulphite of soda may be given from 3 to 5 grains every 3 hours when the tongue is pallid and dirty and the throat moist and inclined to suppurate. Where the membrane has been partly swallowed, causing disturbances of the stomach, *hydrastis canadensis* in 1 or 2 drop doses three or four times a day will give good results.

Chlorate of potash is indicated in a death-like order of the breath. Given in doses of 2 to 5 grains and use as a gargle.

Where the tongue is red and the membranes dry, dilute muriatic acid, half ounce and simple syrup 2 ounces; teaspoon-

ful given in water as a drink. The baptisia should alternate the acid and each continued every three hours.

As soon as the system begins to respond to the action of the sedatives, so that the tongue is moist, pulse soft and the skin showing evidence of secretion, small doses of quinine would be admissible, given every four hours.

Ten grains each of salicylic acid and borax to 4 ozs. of water is a topical remedy used as a gargle or spray.

Clorine water is one of the best mouth or throat washes extant. It is a microbe killer. Take a four ounce vial and put into it 1 dram of chlorate of potash and pour in 1 dram of full strength muriatic acid; cork the bottle to catch the gas, then after it is dissolved pour in soft or pure water. A teaspoonful in an ounce of water every 4 hours for adult. May gargle at pleasure.

Antitoxin has been placed in the list of medicine as a great benefactor and it has maintained its position well along the line of medical jurisprudence, but, like other treatments, failed in many cases. In mixed or the phlegmonous type, characterized by great inflammatory reaction involving the pseudomembrane, with some other pathogenic organisms and their poisons, it has little or no effect in checking the ravages of this type of infection. The mortality is highest from the second to the sixth year.

The dose of antitoxin varies according to the time the disease has run and its severity, 2,000 to 3,000 units, in ordinary cases, to a child over one year old, 3,000 to 5,000 units in severe laryngeal cases of any age, 1,500 to 2,000 units in an ordinary case to a child under one year old, to be repeated in 12 hours, or less, if symptoms increase for worse, and in 18 to 24 hours if there is no decided change. A third dose may be given if needed in 24 hours. An ordinary hypodermic syringe, sterilized, is suitable for giving the injections. The hip, thigh or breast and abdomen may be points where the injection is to be made. The skin should be thoroughly cleansed with water and a little carbolic acid or alcohol. In a few hours after the injection the membrane becomes blanched, the dirty color less marked and the more spongy and puffed, gradually loosening around the edges, rolls up and detaches itself, leaving an irri-

tated membrane. If it shows signs of returning, repeat the dose. The temperature rapidly returns to normal, except in cases of mixed infection, it drops more slowly, and if it does not fall in a gradual way, the second dose should be given, provided no other cause is discernable. Tracheotomy and intubation are resorted to in some cases, but as they belong to the action of surgery they are not discussed here.

Turpentine, as a local treatment, has been successful in many cases by swabbing out the throat every hour. It has succeeded where other things failed. Dilute alcohol used as a gargle or spray is one of the best. Lime water has its merits, as well as carbolic acid and the tincture of iodine. Burning a mixture of tar and turpentine and letting the patient inhale the fumes is recommended as detaching the membrane and giving the little sufferer relief. Cold water or bits of ice should be given to allay thirst. If the patient has difficult breathing, steam from good vinegar inhaled and a cloth wet with same applied to the neck cold has frequently been of good service. If patient has appetite, it might be that a little beef tea, mutton or chicken broth should be taken liberally. Good fresh milk is an excellent article of diet in this disease. Ice cream or ice water may be taken in moderate quantities at short intervals. The room should be well ventilated and at a temperature of 70 degrees, F. and all clothing should be kept thoroughly cleansed.

Dysentery—This disease has several appellations and is known as colitis, colonitis, ulcerative colitis and bloody flux.

It is an acute inflammation of the mucous membrane of the large intestine, either croupous or catarrhal in character, characterized by fever, tormina, tenesmus and frequent, small, mucus and bloody stools. It develops either in the sporadic, endemic, or epidemic form. The sporadic and endemic form is mostly caused by atmospheric changes, such as hot days and cool nights; also from malarial attacks and rarely from errors in diet. The epidemic form prevails in armies and jails, and tenement houses, propagated by decomposing matter and unfavorable hygienic surroundings, but is not classed as a contagious disease.

The inflammatory process, beginning its attack at the valve of the caecum or at the juncture of the large and small

intestines, spreads rapidly over the entire colon, its greatest intensity being at the turns of the affected bowels. The disease often begins with free, loose stools of a rather diarrhoeal character, but which soon changes to the characteristic flux. At the onset there may be jelly-like evacuations streaked with blood. The jelly matter increases and is followed with much tormina and tenesmus. The mucous discharges frequently assume a dirty, reddish or gray color, like the scrapings of flesh and are seen floating in a thin, bloody serous fluid. The quantity of blood varies from a mere tinge to pure fluid. Where whole shreds or pieces of tough mucus slough off from the bowels and where the discharges assume a brownish or chocolate color and having a death-like odor, it indicates an ichorous ulceration of the bowels. When fecal matter begins to pass, the inflammation gradually subsides, although there may still be tenesmus and tormina, and possibly mucus in the discharges for several days. If proper treatment is carried out the patient will soon be convalescent. Where there are copious hemorrhages, or thin, watery, chocolate-colored, death-like odor of the stools, it forebodes a fatal termination.

Treatment—Where the most active form, beginning when days are hot and nights cool, followed by high fever, dry, hot skin, painful, bloody actions, aconite 10 drops, gelsemium 15 to 20 drops, water 4 ounces; teaspoonful every hour. Ipecac may be used instead of the gelsemium, if the hemorrhage is passive. As the improvement begins, the time should be extended.

Aloes drops 5 to 10, water 4 ounces; teaspoonful every hour is indicated where stools are bloody, jelly-like mucus, a sense of fullness and weight in pelvis and pain round navel, tenesmus and burning gurgling in bowels like water flowing out of a bottle, large hemorrhoids. Arnica is the remedy, drops 10 to 20 every one or two hours where there is blood or mucus caused by mechanical injuries, bitter taste in mouth, eructations, like bad eggs, offensive breath.

Baptisia (wild indigo) 5 to 10 drops, water 4 ounces; teaspoonful every hour, violently, colicky pains in regions of the stomach, tenesmus, flesh of whole body sore, chilliness, sweat, urine and stools are all extremely fetid.

Belladonna 1 to 10 drops, water, 4 ounces; teaspoonful every hour where there is great tenesmus, greenish, slimy, bloody stools, clutching pain in abdomen of spasmodic character relieved by holding breath and bearing down, abdomen, hot and sore to pressure; sudden jumping in sleep, mouth and throat dry with bitter or no thirst.

Colocynth 1 to 5 drops, water 4 ounces; teaspoonful every hour; indicated where there is bloody mucus, like scrapings from the bowels, violent cutting pains, mostly around navel, causing patient to bend over, relief after action, abdomen puffed and painful on pressure, worse after a meal from fruit and vexation.

Dioscorea (wild yam) 1 or 2 teaspoonfuls, hot water half teacupful; teaspoonful every ten or twenty minutes where the stools are like albumen, but lumpy, pain in back, radiating upwards and downwards, like colic. Podophyllum 1 to 5 drops every two or three hours, yellow coated tongue, discharges bloody and green mucus, with little or no pain, child toss head from side to side, gagging, retching, loud rumbling in bowels.

Pulsatilla 1 to 5 drops every one to three hours, blood-streaked mucus, rumbling and cutting colic relieved by stool, chilliness and pain in back, thick, yellow coat on tongue, bitter taste, no thirst, worse in evening and night.

Rhus Tox.— (poison oak) 1 to 10 drops, water, 4 ounces; teaspoonful every three hours, tongue shows pimples on tip, stools reddish mucus or jelly like, colicky pain before and after action, pain runs in streaks, down the limbs.

The patient should be kept quiet in bed, a bed-pan should be used to avoid getting up. All discharges should be disinfected. (See diarrhoea.) Small injections of clear starch water or white of an egg beaten up in the water is beneficial. For the distressing tenesmus, laudanum 3 to 10 drops, according to age and repeated every hour till relief.

Ice or cold water excites the bowels into action and causing considerable pain, necessitating warm drinks, tea, as sassafras and slippery elm water may be drank freely. Sweet, ripe peaches, plums, grapes and blackberries, freed of their seeds and hulls, are the only fruit considered safe, light diet required.

Dysmenorrhoea—This disease is an acute inflammation of the uterine organ or its appendages, characterized by structural changes or flexions of the uterus, congestion of the pelvic organs and head, with fever, which is thought to be produced by a thickening of the peritoneal lining of the ovaries and the consequent difficult perforation of the Graffan follicle, the formation of a false membrane between the mucous coat and the parenchyma of the uterus in consequence, the loosen membrane is thrown off and discharged, a morbid sensibility of the nervous system controlling the uterine organ, occasionally develops, called neuralgic dysmenorrhoea. The menses are attended with extreme pain in the uterus, back, limbs and sometimes with neuralgic pains in various parts, cramps in lower part of abdomen are of frequent occurrence.

Treatment—Where there is a congestive form, alternating with cold and hot flashes, the discharges of a bright red color, aconite 10 drops to water 4 ounces; teaspoonful every hour with pulsatilla 3 drops every two hours. Ammonia carb. 5 to 10 grains where the menses are too early and abundant, preceded by griping colic and loss of appetite, black and clotted discharges, passing off with pains in the abdomen, pale face, sadness and toothache.

Apis mellifica (Tr. honey bee) 3 to 10 drops, water 4 ozs.; teaspoonful every three hours where the discharges are scanty, slimy blood, suppressed menses, with congested or inflamed ovaries and the sensation weight in ovarian region.

Belladonna 10 drops to water 4 ozs.; teaspoonful every hour, the pains precede the flow with congestion of head and confusion of sight, bothered with frightful dreams, becomes delirious, bite and tear things, face flushed and bloated, strong bearing down pains of an expulsive character, heart palpates.

Caulophyllum (blue cohosh) 5 to 15 drops every three hours where there is a spasmodic bearing down pains, with scanty flow, after pains, false pains, uterine pain from cold, rheumatism, threatened miscarriage or premature labor.

Chamailerium luteum (unicorn root) 1 drop every two or three hours, useful where there is atony, displacement, sterility, amenorrhoea, leucorrhoea, and menorrhagia due to a lax

and anemic habit. It increases digestion, promotes assimilation and thereby improves the general health.

Cimicifuga (black cohosh) 5 to 10 drops, water 4 ozs., teaspoonful every hour, indicated in a scanty or profuse flow of clotted blood, muscular pains of a tensive, aching character, especially of rheumatic origin, labor-like pains, cramps, tenderness over the stomach, low-spirited and very sensitive.

Nux vomica 1 to 5 drops every three hours where the menses return too soon, discharges thick and clotted, great pain in back and loins, soreness across pubis as if bruised, frequent desire to urinate, constipation, with frequent urging, hard, difficult stools.

Senecio aureus (life root) 1 to 15 drops every one to three hours, where there is weight and dragging in the pelvis, burning and all stages of irritation with capillary engorgement.

Viburnum opulus (high cranberry) 1 to 15 drops every hour, is indicated in muscular cramps of the abdomen and legs, so annoying in frequency, false pains preceding and cramp after labor, pains of miscarriage and spasmodic dysmenorrhoea.

Warm sitz baths for fifteen or twenty minutes, warm fomentations applied to the lower part of abdomen, hot bottles to the feet, and drinking water as hot as can be swallowed, a pint at a time is of great benefit.

Avoid cold draughts of air.

Good, wholesome diet, fresh air, light exercise and frequent baths will aid cure.

Dyspepsia—This disease, like the chameleon, has many colors or functional disorders of the stomach, which may be primary in their origin and not dependent upon structural change. Imperfect digestion is one of the most frequent ailments we have to consider and requires close observation and discrimination for successful treatment. When the stomach must bear the attack of all indiscretion of over-eating, lack of mastication, gastric and pancreatic juice, defective nervous action, a sluggish action of bowels, dyspepsia may arise from either one or more of these conditions. Dyspepsia is imperfect digestion and from this we have imperfect nutrition and the result that flow from it, derangement to a greater or less extent of all the functions of the body and loss of flesh and

strength. Unpleasant sensation in the regions of the stomach are always present in some degree, but vary according to its conditions from burning, soreness, fullness, weight and tenderness on pressure. Dyspepsia may be from an excess of acid as manifested in water-brash from a coarse diet; flatulent, as in development of gas throughout the abdomen and nervous system, seen in hysterical individuals; irritant, showing the tongue small or contracted, red and pointed, vomiting a prominent symptom, nervous, atonic form, presents all the marked nervous phenomena, seen in active business or professional men, especially those of thin, spare built or nervous temperament, who eat meals rapidly and hurry off to business. Intestinal dyspepsia follows as a sequence in the functions of intestinal derangement, resulting in a more or less decomposition of the chyme, from defects in the pancreatic, bile secretions, or from deficient peristalsis, one or more, singly or combined, characterized by abdominal pain, puffiness, tympanites, some hours after meals and nervous perturbation, anemia and emaciation. Dyspnoea results from pressure, caused by the collection of gases, against the diaphragm. The patient is low spirited, sleepless, disturbing dreams, headache, vertigo, buzzing in the ears, deficient mental application, numbness and tingling in the extremities, false pains through the body in marked cases, attacks of fainting and epileptic attacks. The skin is harsh and dry, the bowels sluggish or constipated, the urine is high colored, of increased density, decidedly acid and on cooling deposits lithates, uric acid and lime.

Treatment—Proper diet is one of the first things to be considered. Such articles of food as are adapted to the peculiar case. If tobacco is indulged by the force of habit the patient should be informed that it is one of the most violent poisons and relaxant in nature. It is a prime factor in the cause of dyspepsia and should be relinquished, thus doing much in the cure of the disease. A glass of fresh sweet milk is most suitable in a majority of cases. Bread and milk can be tolerated by some, while others can use a small quantity of fish, fowl, tender beef, mutton or kid, without injury. Where the tongue is coated yellow, mouth dry, apthae, bitter belching, soreness of stomach, nausea, gaseous eructations, puffiness of

bowels, water-brash, jaundice, congestive headache, obstinate constipation, disgust for food, bryonia, in doses of 1 to 2 drops an hour before meals.

Ammonia chloride grs. 1 to 20, well diluted, every three hours, where there is bitter eructations or taste of food, spitting up food or bitter, sour water, gnawing in stomach as from worms, pain immediately after eating, thick, tenacious mucus and duodenal catarrh. Cheledonium majus (tetter wort) 5 to 10 drops three times a day, indicated where there is a gnawing, aching pain in stomach,

Eczema—This disease is known by many names of different forms as tetter, salt rheum and scall. It is a non-contagious inflammation of the skin, characterized by any or all of the results of inflammation at once or in succession, such as erythema, papules, accompanied by more or less infiltration and itching, terminating in a serous discharge, with the formation of crusts, or desquamation, and may be either acute or chronic.

It is a disease common to all spheres of life, age or sex. It is possible that a predisposition to eczema may be transmitted from parent to child. Contact with poison oak, heat, cold, prolonged contact of hot fomentations, vaccination, the rheumatic and gouty diathesis, deficient urinary secretion, intestinal parasites, gastro-intestinal disorders, dentition and improper food are the principal causes.

There is first hyperaemia or congestion of the blood vessels of the skin and may be limited to small areas of the surface, as ring-worm. The hyperaemia is soon followed by a serious exudation. If the superficial exudation be profuse enough to form small drops, and if the epidermis possesses sufficient resisting power not to give way immediately before it vesicles form, producing the variety known as eczema vesiculosum and if the serum be turbid, yellow and purulent, the vesicles become pustules, eczema pustulosum; if the serous exudation be not sufficient to elevate or break through the cuticle, instead of either vesicles or pustules forming, there occur dry scales, rising from the reddened skin—eczema squamosa. Chronic eczema, the skin is sub-acutely inflamed; is infiltrated, thickened, hardened and extends throughout the entire corium,

even into the sub-cutaneous connective tissue. The papillae are enlarged and may be, at times, distinguished with the naked eye. Eczema is the most common of all cutaneous affections, with symptoms varying with the particular variety of the affections and its location, although the general characteristics of a catarrhal inflammation are present in all. The most constant, annoying and troublesome symptom is the itching, at times burning, which varies from that which is simply annoying to that which is almost unendurable.

Eczema runs its course either as an acute affection, lasting a few weeks, not to return, or to return acutely at wide intervals or as is much more frequently the case, it assumes a chronic state, continuing with more or less variations for months, years or even a life time.

There are many varieties, but if the following characteristic features are observed, a fair understanding may be had: There will be inflammation, swelling and edema, thickening from cell infiltration, redness, a discharge of moisture, followed by crusting, on removal of which a moist surface is presented, and itching and burning. Such diseases as erysipelas, herpes zoster, seborrhoea and psoriasis; but in erysipelas there is fever, rapid spreading of the inflammation with heat, swelling and edema without moisture giving the surface a deep red, shining and tense appearance. Herpes may be known by the neuralgic pains which are associated with and are never associated with eczema; seborrhoea of the scalp resemble it very closely, eczema is usually seated upon a circumscribed patch forming dry scales, while seborrhoea covers the scalp uniformly; both, however, are frequent affections. Psoriasis should never be mistaken for a typical case of eczema, but chronic eczema, with infiltrated, inflammatory scaly patches frequently looks very much like psoriasis.

Treatment—There being no specific for the various forms of eczema, the indications are for the removal of the cause, where it can be ascertained, if possible and attention given to the general health. The diet should be of the most nutritious, but easily digested. Fresh air and moderate exercise are essential elements in the treatment and attention given to excretions and secretions. The skin should be kept in a clean

and healthy condition. Various soaps should be employed with some discretion and no substance should be used that would irritate.

Arsenic (Fowler's solution) 3 to 5 drops three times a day is indicated where there is a dry, scalp eruption, burning and itching at night, eruption on face or extremities, with a corrosive discharge, very restless at night, water disagrees, better in warm room and warm applications.

Baryta carbonas (or iodide of barium) grs. 1-100 three times a day for children. Swollen glands and scrofulous taint, eruption, moist, itching, burning and pricking; chronic sore throat with enlarged tonsils, hair falling off, eyes inflamed, takes cold easily.

Belladonna, gtt. 5 to 10, water 4 ozs., teaspoonful every hour. Its utility is more readily observed where there is diffused redness of the skin, burning, itching, sensitive to touch, sanguine plethoric temperament, eruption during dentition.

Clematis virginica (Virgin's bower) gtt. 5 to 10 every three hours where there is moist eczema, terrible itching, vesicles break and tend to ulcerate; eruption on neck and back of head; the eruption looks inflamed during the increasing and dry on the decreasing of the moon.

Dulcamara (bittersweet) gtt. 10 to 30 every two or three hours where there is an eruption of vesicles, ceasing to itch after scratching, a watery fluid oozes from the vesicles and becomes covered with a crust, scrofulous subjects with enlarged glands; symptoms worse by a cold change in weather.

Rhus tox (poison oak) gts. 1 to 10, water 4 ozs.; teaspoonful every three hours, in raw surfaces, excoriated, thick crust, oozing offensive; incessant itching, burning and tingling of the parts, burning after scratching; parts feel better moving and from warmth in general; worse in damp weather.

Stavesacre gtt. 5 to 20, water 4 ozs.; teaspoonful every three hours, indicated where there is an offensive, humid vesicles, especially on head and ears of children, scalp sore, scratching changes place of itching, skin peels off and hair falls out.

Sulphur, in small quantities, two or three times a day, where there is scaly, unhealthy skin, eruption on head and be-

hind ears, dry, scabby, offensive, with cracks easily bleeding, pleasant itching with soreness after scratching, after suppressed eruptions or drying up of old sores.

Thuja (*arbo vitae*) gtts. 5 to 30, water 4 ozs.; teaspoonful every three hours where there is a dry scalp eruption on the head, temples, eyes, brows, ears and neck, with itching, tingling, biting, skin sensitive to touch, burning after scratching, dryness of skin, sweat only on uncovered parts, bad effects of vaccination.

Viola Tricolor (wild pansy) gtts. 1 to 15 every two or three hours, in eczema, especially on face of infants; the eruption the character of humid tetter, discharging a viscid pus; the scabs are of a brownish yellow color and the eruption itches violently and scratching gives temporary relief.

Local Applications—The intense itching may be relieved by mixing 5 drops of croton oil with one ounce of glycerine and rubbing in the parts 2 or 3 times a day, the *tr. rhus tox.* may take the place of the croton oil, especially when the remedy is being taken. A solution of bicarbonate of soda, half oz. to 4 ozs. of water applied to the parts is also efficient. In chronic cases bathe parts well, once or twice a day, with warm water and mild soap, dry and apply cosmoline. Muriate of ammonia gr. 1 to water 1 oz. especially where the eruption is from poison oak; full strength *arbo vitea* or a decoction from the stems can be used readily. A stimulant should be discarded.

Erysipelas—This disease is an acute defect of the blood with a nervous reflex characterized by an inflammation of the skin in a localized part, generally the face and neck. It may occur at any age, though it is more frequent in adults than children. It occurs most frequently in the spring and autumn and on persons of a fine delicate skin. Frequently the disease is preceded, or in other cases shortly followed, by a well marked chill with a rise of temperature; in some cases light, but in others it becomes intense as in continued fevers. With the commencement of the chill, a circumscribed redness of some portion of the skin arises and becomes slightly swollen in a few hours and hot and painful. The redness is generally deep, but is effaced by finger pressure to immediately return, when pressure is removed. As the disease continues, it gradually

extends to adjacent parts, extending from a small spot on the face to the scalp. After two or three days the skin becomes loosened and distended with a yellowish serum and these rupturing pour out their secretions and sometimes covered with thin incrustations. Redness usually fades and the inflammation commences to disappear by the fifth or sixth day, leaving the skin wrinkled and yellowish and at last the skin desquamates over the entire surface. The disease may develop upon any part of the body and the fever, in most cases, will be in proportion to the severity of the disease, delirium resulting from a heavy attack on face and scalp. The phlegmonodes is a type of the same disease in a more aggravated form. Occasionally the fever is intense, a dark coat develops upon the tongue, the pulse hard, small and frequent, bowels irregular, urine scanty, fetid and high colored, with a low muttering delirium. In three to five days the redness and heat subsides, and the part presents a doughy appearance and more swollen and painful. Gangrenosum is still a more aggravated form of the same disease. It may appear, as the preceding case, with severe constitutional and local symptoms, the swelling is usually very marked and in a short time the surface becomes a dusky red or almost black and the inflammation soon terminates in gangrene. With the appearance of these symptoms the fever frequently assumes a typhoid form, with low muttering delirium, dark brown tongue and diarrhoea, and if the disease is extensive soon terminates fatally.

Treatment—In this disease as in others the condition is met according to developed expressions. Where there is a chill followed by a light fever, with a local inflammation, dry, hot skin, full quick pulse, great redness, tingling and burning in face, vertigo, when sitting up, great fear and anxiety; cannot bear the pain, nor to be touched or uncovered, aconite 10 drops, water 4 ozs.; teaspoonful every hour.

Ammonia carbonate grs. 5 to 10 every three hours where there are brain symptoms in old people, with a tendency to gangrene and soreness of whole body.

Apis 5 to 10 drops, water 4 ozs.; teaspoonful every three hours where there is involment of head and face, swelling of eyelids, burning, stinging pains in affected parts, chilliness,

with heat of face and hands, dryness of throat without thirst and urine scanty and dark colored.

Arsenic (Fowler's solution) gtts. 3 to 5 every three or 4 hours in phlegmonous type, parts show a blackish hue with tendency to gangrene, burning pains, parts burn like fire, rapid prostration of strength, extreme restlessness with great anguish, fear of death, intense thirst, drinking little and often; worse after midnight.

Belladonna gtts. 10, water 4 ozs.; teaspoonful every hour, indicated where the face is especially involved; smooth, red, shining skin, but little swollen, the redness beginning in a small spot, with red streaks running from the center; congestion to head, with delirium; throbbing headache, worse from motion; cannot bear light or noise; worse after noon.

Bryonia gtts. 10 to 15, water 4 ozs.; teaspoonful every hour where the joints are involved, with hot, red swelling; pains sharp, burning and stinging; cannot move part without great suffering; patient desires quiet; cannot sit up from nausea and faintness; lips parched, dry and cracked; splitting headache; irritable, dry and hard stools.

Rhus tox. gtts. 5 to 10, water 4 ozs.; teaspoonful every three hours in vesicular eruptions; burning and redness of surface, which soon swells and becomes covered with watery vesicles, intolerable burning, itching and tingling in parts; eyelids puffed like bladder; swelling and redness of face, with partial or entire closing of eyelids; bruised feeling in limbs and back.

Sulphite of soda grs. 10 to 20 every three hours, where there is a broad pallid tongue, dirty coat; the parts indicating gangrene, having a doughy or swollen look; a solution of salicylic acid and borax or permanganate of potash may be used as a local application.

Muriate tincture of iron 5 to 20 drops every three hours is indicated where there is deep redness of tongue and a deep red color of the eruption; apply locally every four hours.

Veratrum viride 10 to 20 drops, water 4 ozs.; teaspoonful every hour, where the inflammation is active and scarlet red; may be applied locally diluted or, if not too severe, full strength.

Iodine has been a topical remedy in many cases, applied locally.

The diet should be simple and nutritious.

Pilocarpine hydrochlorate, 1-6 of a grain hypodermically or the tincture of pilocarpus gtts. 20 to 40 every two hours, where there is rapid spreading of the disease. Local applications may be beneficial, such as vaseline, oxide of zinc ointment or bismuth, olive oil and glycerine, equal parts. Where the spreading extends to the throat a little nitrate of silver is beneficial, brushed over the affected part.

Eye—The eye is one of the most important organs of the body and, notwithstanding that nature has made every effort to protect it with a bony socket yet it is subject to injury and disease the same as any other part of the system. The disease does not necessarily endanger life, but a favorable termination is as anxiously awaited by both patient and friends as any other, or a more serious malady.

The diseases of the eye, with its peculiar network of anatomical construction of blood vessels, nerves and muscles, have become of such importance that certain physicians have made a specialty of its study and treatment.

Only a brief resume of some of the most common forms of diseases will be discussed and a treatment, if followed, that will be of great benefit in most cases. Inflammation of the eye arises from the same cause that would produce it in any other part of the body, differing only as regards the peculiarity of the structure and functions of the parts. The treatment would then be on the same general principles as an inflammation, or a defect in any other part of the body. As in other diseases when we properly understand the cause and nature of the affection, there should be no hesitancy as to the appropriate treatment.

On looking at the eye the first thing that we must recollect is that there are two principal parts, namely, the covering or lid and the eye ball. The eye ball is divided into its different appendages, the outward covering is known as the conjunctiva and then there are the lachrymal glands, the muscles moving the eye, the nerve and blood supply and an adipose tissue that forms its bed. The inside of the eye ball has three

principal substances which are called the aqueous humor, a watery fluid, the vitreous, a jelly-like substance and when the eye ball is on high tension from congestion sometimes bursts and runs out, leaving the parts in a shrunkened or collapsed condition, and the crystalline lens and its capsule.

Each one of those parts are subject to disease, but occur so rarely that it is not considered worth while to notice them in this place.

The eyelids are subject to inflammation as the result of the spreading of erysipelas. They are swollen, livid and painful and it may extend and involve the orbit. It may terminate in resolution or dissolving, or it may continue to suppuration, with a heavy, throbbing pain when pus forms. If the inflammation is caused by erysipelas the application of equal parts of the muriate tincture of iron and glycerine, every two hours and keeping a cloth wet with same spread over it will be excellent, but if, from other causes, a poultice made from equal parts of yellow puccoon and slippery elm or a decoction made from the roots of dogwood with a little of the tincture of aconite added and applied will give good results. Small boils, called styes, frequently involve the eyelid and are very painful. If they continue to occur the use of lime water internally and an application of a solution of salicylic acid and borax is very effective. Trichiasis is the name of inverted eyelashes and commonly known as "wild hairs" and is often a source of painful irritation and inflammation, a portion of them being turned inwards, coming in contact with the eye. A great mistake is often made by constant extraction of the hair. It may sometimes occur when the removal of the offender is necessary, but the application of a little fresh butter to the irritated lids and rubbing the hair upwards with a little warm beeswax will be more beneficial, by training the eyelashes to a more natural position.

The inflammation of the lids occur more frequently in children than adults and is generally associated with a weakened constitution. It may be caused by coal smoke, impure air and filth, but is more frequently the result of a catarrhal or scrofulous or low form of chronic inflammation of the conjunctiva. The inflammation involves the lid and in many

cases so affects the roots of the eyelashes as to cause them to fall out, producing the condition called "blear eyed." The eyes are sore and tumid and the patient complains of a sensation of roughness, as if sand was in the eye, thus the eyes present a weak appearance caused by the patient using the lids as little as possible in winking, keeping them partially closed. The lids are generally stuck together in the morning and frequently with considerable pain. This is essentially a chronic disease and very difficult to cure.

The constitutional treatment is the first thing to be considered and our attention must be given to that line of medication and aid in rebuilding or restoring the body to normal functions. The kidneys will first be considered as an excretory channel through which a part of the morbid material of the blood may be thrown off and the recuperative qualities strengthened.

Acetate of potash given in doses of 5 to 10 grains, well diluted with water every three or four hours is excellent for the kidneys.

Corydalis (turkey corn), rumex crispus (yellow dock), scrophularia (figwort), either of which is a good alterative and can be given in 5 to 15 drops every three or four hours. The iodide of ammonia, grs. 2 to 10, well diluted, three times a day. Where there is a lack of iron as shown by a pale or sallow color, the iron recommended for chills (ague) will answer every purpose. The eyes will be benefitted by frequently bathing them during the day with a decoction of the root of swamp dogwood and yellow puccoon, not too strong, or a weak solution of salicylic acid and borax. Glycerine and rose water equal parts acts well in some cases; apply, after the eyes have been cleansed with a weak solution of salt water, once or twice a day. A mild collyrium of sulphate of zinc or borax, or one or two drams of nitrous ether and vinegar, equal parts, to 8 ozs. of water may be used as a cleansing element followed with the glycerine and rose water. In severe cases the hair or eyelash may be taken out, the crusts removed and the ulcers lightly touched with nitrate of silver. A soft sponge should be used in applying the decoctions. An irritating plaster or blister

to the back of the neck, behind or in front of the ear has given good results.

Conjunctivitis, or the old red sore eyes, is an inflammation in the covering of the eye and lining of the lids, characterized by fever, pain and swelling; may be temporary from irritation of foreign substances as sand or dirt in the eye, or even exposure, but very soon disappears with rest. The disease described here may arise from cold, sudden changes of temperature, extension of inflammation from the mucous membrane of the nose or with inoculation with the secretion of a diseased eye. From such source, whole families are frequently attacked with the disease from the indiscriminate use of towels or other utensils. The inflammation may continue until the blood vessels become extravasated and the conjunctiva is remarkably injected and swollen to where it passes into the cornea, or pupil, so much so occasionally as to involve this part of the eye. The disease is periodic, the patient being worse of an evening, at times attended with headache, the pain ceasing a short time after going to bed, the patient may rest well, but reappears in the morning on attempting to use the eyes. The disease may terminate in a week or ten days and then get well without further change, but in some cases it is more persistent. In some instances ulcers form as the result of a blister and in some cases the cornea is obscured and hazy from the inflammation and in that variety the disease has a tendency to ulcerate.

There are different names for the same disease representing the cause and its more aggravated forms and treatment should be considered and given according to indications. To know how to administer relief and restore the eye to its original or normal condition is of more importance to the patient than a physiological or anatomical description of the various forms and conditions of the diseases.

Ophthalmia has reference to inflammation of the eye and the treatment will be considered accordingly.

In purulent ophthalmia, high inflammation, dry, hot skin and full quick pulse; intense redness and swelling attended with acute pain; great aversion to light, flushed cheeks, fear

and restlessness; aconite gtts. 10, water 4 ozs.; teaspoonful every hour.

Apis gtts. 5 to 10, water 4 ozs.; teaspoonful every three hours, where there is burning and stinging; baggy swelling under the eyes. the inflamed eye dark red, water profuse and hot, lids everted and dark red.

Apocynum gtts. 5 to 30, water 4 ozs.; teaspoonful every two hours, indicated where there is a fullness of the conjunctiva, marked infiltration and swelling of the eyelids.

Belladonna gtts. 10, water 4 ozs.; teaspoonful every hour; throbbing headache, increased by motion; double vision; pains come and go quickly; sharp pains in orbits extending to brain; redness and dry; disease acute, cannot bear light and noise.

Carbonate of lime, grs. 5 to 20 every three hours; glandular swelling of the neck, an eruption on head; avoids light; specks and ulcers around the pupil; candle or lamp light causes stinging pains; redness and swelling of eyelids with blurring of eyes at night; serofulous inflammation.

Chamomile gtts. 10 to 15, water 4 ozs.; teaspoonful every hour, ophthalmia of infants, caused by cold damp air, and worse by every change of weather, eyes agglutinate in morning with purulent mucus and very irritable.

Euphrasia (eyebright) gtts. 1 to 5 in a wineglassful of water every two hours, flickering of light, coryza and headache; copious secretion of mucus and tears; specks and ulcers on the eyeball, with redness and aching pain.

Lycopodium (club moss) gtts. 1 to 10, water 4 ozs.; teaspoonful every hour, burning and smarting in eyes, like sand; red sediment in urine; easily to take cold; constipated; feels full in throat; of a serofulous form.

Pulsatilla gtts. 1 to 5 every three hours, cries easily; worse of an evening; itching and burning, with a desire to rub them; redness and swelling of the lids and conjunctiva; better after gonorrhoeal discharge; of a catarrhal or rheumatic character.

Rhus tox. gtts. 1 to 10, water 4 ozs.; teaspoonful every three hours, its utility is shown in rheumatic or gouty subjects, conjunctiva red, with a purulent discharge, lids agglutinated in the morning; lids inflamed and swollen; erysipelatos, with

scattered watery vesicles; worse at rest or before a storm or after midnight.

A whitish coat on tongue, 5 to 15 grains of bicarbonate of soda every three hours and if the coat is ashy or dirty the sulphite should be substituted; baptesia is indicated where the eye looks purple and the face having the appearance of being in cold wind. An emetic should be given, when there is a full stomach; where there are dark full veins podophyllin gr. 1-6 to 1-20 every two or three hours.

Veratrum viride, gtts. 5 to 15, water 4 ozs.; teaspoonful every hour, where there is a high fever and mouth dry.

Macrotis (black cohosh) gtts. 10 to 20, water 4 ozs.; teaspoonful every 1 to 2 hours, where there is a tense, heavy aching pain in eyeball, at times headache. If there are neuralgic pains, gtts. 5 to 10 of gelsemium will do good service given every one or two hours.

A tonic, blood and nerve stimulant, in debility; quinine, sulphate; carbonate of iron, gentian, equal parts, grs. 180 divided into 30 pills and take one after each meal.

Arsenic gtts. 1 to 2 every three hours in water where there are ulcers of the eyeball.

Local treatment, from the mildest to the harshest, has been used at various times.

A cleansing fluid for all cases can be had by using equal parts of salicylic acid and borax. Adrenalin chloride is the remedy to clear up congestion; 1 or 2 drops in the eye will change the expression in less than three minutes. Hydrastia, sulphate (yellow puccoon) gr. 1 to an oz. of pure water or sufficient to color the water to that of an orange, a drop or two in the eye will soon relieve the congestion of any ordinary case of conjunctivitis, can be used at pleasure.

Where there is inflammation of the lids a salve made of white wax, 1 dr., sweet oil 2 drms., sulphate of zinc grs. 30; apply to the lids night and morning.

White eye water: Acetate of zinc grs. 4, morphine grs. 5, pure water 1 oz. Drop in eye in morning.

Golden eye water: Sixty grains of yellow puccoon steeped in warm water 24 hours and fluid reduced to a gill, when filtered, then add sugar of lead grs. 45, sulphate of zinc grs. 90.

sulphate of morphine grs. 15. One of the best for all purposes and can be used in the eye as often as may be desired.

Smoky eye water: Iodine grs. 25, arsenious acid grs. 30, sulphate of copper, sulphate of iron, pulverized alum, of each 3 oz. Place in a clean earthen vessel and pour in one quart of boiling rain, or soft water, stirring with a stick until dissolved, when cool add tanic acid till colored black. One or two drops in eye night and morning. A specialist is said to have paid five hundred dollars for this prescription and he accumulated considerable property in a few years.

I have succeeded in curing eyes with this when every thing else had failed. It will cure all forms of granulations and restore sight to the blind if the life of the eyeball has not been destroyed. The pain is severe, necessitating an anodyne, morphine or chloral. Some patients, however, would not require it. The fluid may be filtered. The tanic acid being left out of a part at times was to make the impression that two kinds of eyewater was being used. A freeze will destroy it.

The same specialist used the following as a wash for the eyes: Castile soap $\frac{1}{2}$ lb., sulphate of zinc 1 dr; a spoonful of table salt, loaf sugar 1-4 lb., one beef gall. Dissolve in an earthen vessel till thoroughly mixed. Use in washing eyes with warm or cool water every morning.

Patients with inflamed eyes should avoid light and keep free from emotional excitement. Light diet, baths and keeping bowels and kidneys in a normal condition will aid in the cure; plenty of fresh air and light exercise will be beneficial.

In ulcerations of eye a little cotton and bandage applied will give good results.

Gastritis—This disease is an acute and violent inflammation of the mucous, sub-mucous and muscular coats of the stomach, with a loss of tissue, characterized by great pain, constant vomiting of blood-streaked or bloody mucus, caused by corrosive poisons, mineral acids, arsenic, corrosive sublimate, copper and carbolic acid. After swallowing any irritant there generally follows a sickening nausea with rapid and persistent vomiting; the contents of the stomach acted upon by the poison, afterwards shreds of the mucous membrane blood clots, great anxiety and depression, a weak rapid pulse, slow and shallow

breathing, cold skin, with sick-sweat, intense burning in stomach, at times exhaustive purgings; the features are more or less contracted or sunken. Where an irritant poison is the cause there is generally a mask or eschar left upon the lips; sulphuric acid, a blackish color; nitric acid, yellowish; carbolic acid, white and corrugated; corrosive sublimate, a whitish glaze; caustic potash, spreading and softening of the tissues. Cold or wet may cause this inflammation; extreme cold or hot food or drink may produce it; alcohol, ice cream, ice water, or may occur as the result or as a sequence from inflammation of an adjacent part. A chronic state is often the result of a badly treated case of the acute.

Treatment—Where there is a dry, hot skin, thirst, pain in stomach, with burning, nausea and vomiting of blood, vomit bitter, with anguish and fear of death, restless, and short breath; aconite 20 drops to water 4 ozs.; teaspoonful every hour.

Arnica gtt. 1 to 2; may alternate the aconite where there is vomiting of blood after mechanical injury; sore bruised feeling all through the body; bed feels hard; taste of putrid eggs, when belching; rapid prostration of strength.

Belladonna 1 to 2 drops every hour, (lessen dose and extend time if the skin flushes or mouth dry from effects) great heat and tenderness of the whole body, especially the abdomen; the skin imparts the sensation of heat to the hand; burning cutting pains in stomach; pains in head with throbbing, cutting character, coming on suddenly and ceasing suddenly; congestion with a desire to escape from bed; frightful, jumping in sleep; intolerance to light and noise.

Bryonia gtt. 1 every hour, where tongue is brown and dry; stitching and darting pains with burning in stomach; vomits immediately after eating or drinking; nausea and fainting from sitting up; lips parched and dry; great thirst for large draughts of water; desires to remain quiet.

Ipecac gtt. 1 every half to every hour, where there is great nausea and vomiting; loose bowels with grass-green mucous stools and colicky pain; after eating sour fruit or grapes, berries or salads.

Iris versicolor gtt. 1 every hour where there is great burn-

ing distress in stomach; sharp cutting pains of short duration and changing often.

Nux vomica gtt. 1 every hour, where there is burning pain, abdomen tender to touch; tongue broad and baggy, leaving impressions of teeth on sides; contractive spasmodic pains in stomach; vomit sour-smelling mucus; difficult stools, with frequent urging.

Pulsatilla, gtt. 1 to 5 every two hours, where there is suffocation and fainting spells, must have fresh, cool air; watery diarrhoea, especially at night; bitter taste and constant spitting of frothy mucus; easily to cry, fearful.

The treatment of the chronic form, where there is sore spots or ulcers will be benefitted with sub-nitrate of bismuth, grs. 5 every two hours, or liquor bismuth and *hydrastis* gtt. 30 every three hours; arsenic gtt. 1 to 2 every three hours where there is an anxious expression of countenance; heat or burning in stomach with sharp, cutting pains; urgent thirst of cold water, drink often, but little at a time; great restlessness and fear of death. *Hydrastis canadensis* (yellow puccoon) gtt. 2 to 3, every three hours, if the stomach is inflamed.

Carbo-veg. (charcoal) triturated, 3 to 5 grains every two hours where there is gas and puffiness, with a sense of soreness.

Podophyllum gtt. 10 to water 4 ozs.; teaspoonful every two hours where there is a tendency to sour belches; tongue coated a yellow brownish color.

During an acute attack the patient should be provided with an abundance of fresh air, kept from light and quiet as possible. Hot poultices should be applied, with a little turpentine over the stomach and frequently change. The bowels should be thoroughly cleansed by the injection of lukewarm water to which a little carbolic acid is added, to prevent sepsis, or a little capsicum to stimulate or a little salt or vinegar as nourishment. Milk may be used the same way as nourishment, which is very essential at times, especially in the active state where a total abstinence from all food is necessary. Water must be taken in sips like drinking hot tea or coffee or small pieces of broken ice may be taken to quench thirst. A half teacupful of hot water taken frequently is a good pain reliever. When

improvement sets in a little fresh sweet milk or thin gruel may be taken. A little later, as improvement advances, beef tea or chicken broth is permissible, but no solid food should be allowed, until all traces of inflammation have subsided. Return to ordinary diet very cautiously.

Headache—This is a disease left to chance or to the imaginary knowledge of the patent medicine man, or something that cured some one else, and everything is tried by the sufferer and the recommendations generally come thick and fast by those who neither know the cause or the medicinal action of the remedy, as well as some of the medical fraternity. The causes that produce this nerve racking condition are from various disturbances of organic functions. The disturbed function may arise from a too rapid flow of blood to the head during fever; from cold, from exhaustion, from defects of stomach, liver, bowels or kidneys; from a disease of the cranial bones, rheumatism, malaria or sympathetic. It is a very difficult matter to always be able to locate the cause, but the treatment will be more or less guess work without a knowledge of its origin.

As certain causes will give their peculiar expressions we may be able to arrive at a fair knowledge of its origin and render the relief sought. Every symptom, character of pain, condition of patient as to habits, state of health, locality, predisposing cause, age and family history are all elements leading up to the cause and should be studied with a view of selecting the most effective remedy.

Aconite gtts. 5 to 10, water 4 ozs.; teaspoonful every hour, where there is fever, sweat suddenly dries and alternates, with cold and hot flashes; pulse frequent, corded or knotty, showing obstruction to a free circulation in the capillaries; violent stupifying headache, with great fullness, and heaviness in forehead; feels as if the brain would press through the eyes; vertigo when rising from a sitting posture; bitter, bilious vomiting; gets desperate and pain severe. Arsenic gtts. 1 to 2 every three hours in periodical headache; head heavy, mostly in front; violent vomiting after eating or drinking; great thirst.

Belladonna gtts. 1 to 10, water 4 ozs.; teaspoonful every hour, where there is swelling and duskiess of surface; dilated pupils; drowsy, sleepy state; dryness of the throat; head feels

as if it would burst, congestion to head with throbbing carotids; pain violent, especially in forehead, better with eyes closed; piercing ache on right side; cannot bear light or noise; worse in evening.

Bryonia gtts. 5 to 10, water 4 ozs.; teaspoonful every hour; headache of a tensive character, tissues full, hot and dusky; pain burning, stitching or tearing, worse by motion; sour, bitter vomiting; lips parched, dry or cracked; scalp of head sore; hard, dry stools, constipated.

Chionanthus (white ash) gtts. 10 to 60 three times a day, constipated, bilious; habitual sick headache; brain feels as if bruised; eyeballs sore and painful; pain severe and chiefly over the eyes; very sick stomach; vomiting green ropy bile; bitter eructations.

Gelsemium gtts. 10 to 30, water 4 ozs.; teaspoonful every half to every hour or two, until there is an experience of relief, then the time should be lengthened as the medicine takes effect or the eyelids droop or double vision occur, the drug should be discontinued, but is not considered a poison.

Its greatest utility is manifested where there is a severe pain in forehead and top, dim vision, roaring in ears; head feels large; dim vision precedes headache; wild feeling and uterine pains.

Pulsatilla gtts. 10 to 30, water 4 ozs.; teaspoonful every two hours; headache the result of eating rich, greasy food; tearing, drawing, stitching pains, worse toward evening; bad taste in mouth in the morning; feels chilly; frets and cries.

Sanguinaria (red puccoon) gtts. 1 to 15, water or simple syrup 4 ozs.; teaspoonful every hour; must keep quiet in dark room; sick headache, vomiting bile; begins in the morning and increases during the day; pains in back of head and runs upwards; pains more severe over right eye.

Sulphur grs. 1 to 5 (trituated), every two or three hours is one of the best remedies, if taken in doses sufficiently small to be absorbed, where there is a depressed nervous system indicated in headaches of a throbbing, splitting character; head feels like it was pressed between heavy weights; heat on top of head; early morning diarrhoea; weak fainty spell.

Veratrum album (white hellebore) gtts. 5 to 10, water 4

ozs.; teaspoonful every one or two hours. The conditions indicating this drug are in nervous headaches with violent pains that almost deprives patient of reason; weak, cold sweat on forehead; top of head cold; headache at menstrual period; great thirst for cold drinks.

Sulphate of nickel gr. one-eighth to one or two twice or three times a day for periodical headaches, has gained quite a reputation in the last few years and seems to have been administered without further indications than in those cases where they become better and worse, or return at certain periods.

Local applications in headaches are very useful and serious results scarcely ever happen from their use. Irritating plasters at back of neck or on temples sometimes exerts a good influence in some cases. A piece of brown paper folded two or three times and a few spoonsful of baking soda spread over it and some apple vinegar poured on and applied while effervescing, frequently gives relief.

Take two drs. aconite, 4 drs. of chloroform, equal parts of camphor and tincture of arnica $2\frac{1}{2}$ drs., and glycerine sufficient to make 6 ozs.; wet a piece of flannel and apply with a bandage to hold in place. Where the eyeballs are affected without any perceptible change a fly blister, the size of a quarter, applied on each cheek and over the eyebrows will give relief.

In all cases of headaches, particular attention should be given to diet and daily habits. Tea, coffee and alcoholic liquors should be avoided. The diet should consist of vegetables, milk, rice, light puddings, ripe fruits, bread made of unbolted flour, and drink plenty of water.

Jaundice—This disease expression or symptom is the result of some defect of the liver or a catarrhal inflammatory condition of the duodenum or mucous membrane of the bile ducts, characterized by a disturbance of the bowels, colicky pains, constipation, mouth dry, has bad taste, tongue coated and sometimes nausea, with headache; a yellow tinge appears in the eyes, extending to all parts of the body. It generally terminates in from three to five days, without complications.

Treatment—If there is fever, with a sharp pain in region of the liver, scanty dark urine, great fear and anxiety of mind,

with nervous excitability, clay colored stools, aconite gtts. 10, water 4 ozs.; teaspoonful every hour.

Bryonia gtts. 5 to 10, water 4 ozs.; teaspoonful every hour, where there are stitching pains in region of liver on pressure; pain in right shoulder and arm, also in limbs, worse by motion; yellow coated tongue; bitter vomiting; lips parched, dry and cracked; constipated.

Chionanthus (fringe tree) gtts. 2 to 10 every one to three hours where there is a swelling of the liver, inactivity, fullness and pain, often intense, in the region of the liver, extending to the umbilicus and accompanied with prostration and sometimes nausea.

Nux vomica gtts. 10 to 20, water 4 ozs.; teaspoonful every two or four hours, where there is torpidity of the bowels, and especially when obstructed by gall-stones; constrictive pain in region of liver, swelling and hardness; nausea and bilious vomiting; very irritable and desires quiet, cannot sleep in the after part of the night; persons of sedentary habits, or intemperate.

Podophyllum gtts. 10, water 4 ozs.; teaspoonful every two hours, indicated by a fullness and pasty coat of the tongue, liver engorgement with a tendency to hemorrhoids; pain and sensation of weight in the right side, sluggish, venous circulation, shown by a fullness of superficial veins, urine scanty, dull depressive headache, with soreness of the eyeballs, especially on waking in the morning, or in obstruction of gall-ducts by gall-stones.

Pulsatilla gtts. 2 to 5 every three hours, where there is a yellowish coat on tongue, with a bitter taste in mouth, chilliness, with vertigo on rising from a sitting posture; green, slimy diarrhoea, especially at night; no thirst; all symptoms worse toward evening. In gall-stone colic 10 or 15 drops of dioscorea in a third or half teacupful of hot water every half to an hour frequently gives relief. A tea made from the roots of a wild yellow rooted mulberry and drank occasionally is reputed to be almost a certain cure for jaundice. The diet, if any appetite, should consist of oat meal, rice, tapioca, simple toasts, vegetables, ripe and cooked fruit and plenty of water.

All meats, greasy food and stimulating drinks should be avoided.

Measles—An acute epidemic and contagious disease; characterized by catarrhal symptoms, sneezing, chill, fever and crimson eruption, making its appearance, at the outset, principally in throat and on the forehead.

There are other and a milder form known as roseola, German, French or false measles, which bears a close resemblance to the regular measles and has very nearly the same symptoms, with characteristic sore throat, a mild fever, suffused eyes, and it makes its appearance on the first to fourth day after the beginning of the fever. It is a self-limited disease and seldom, if ever, becomes serious.

The regular measles assume a more violent character and, if badly treated, become of a more serious nature. A susceptible person cannot remain in a room or come in contact with the disease, without taking it. It is frequently carried in the clothing, however, a few hours in the air will often act as an antiseptic and destroy the power of infection, but may be in bed clothes and even rooms where a patient has long remained. The contagion ceases about the time of desquamation.

Measles, like other contagious diseases, go through certain stages, such as a period of incubation, or hatching, taking place from the time of contact until the eruption, lasting from nine to fourteen days, preceded by fever, the eruption and decline. The onset may be mistaken for a cold, or acute catarrh, as there are watery eyes, free discharge from the nose, a hoarse, harsh cough and sometimes vomiting and diarrhoea. These symptoms may increase till the fourth day, when the eruption makes its appearance. The eruption appears in the form of red spots, which soon multiply and unite and become blotches, especially on the face, which is generally more or less swollen and puffy. An abundant eruption is more favorable than a scanty one. The disease generally terminates in three or four days after the eruption, and in its decline becoming browner as it fades away, the epiderm being thrown off in the form of a bran-like scurf. Diarrhoea may follow its decline, and should never be interfered with, as it is eliminative of the peculiar poison, that, if it remain in the system, might produce other evil results. Should

the bowels become too active and other conditions favorable, an astringent may be effective. There is another form of measles that develops in an army known as black measles, hemorrhagic rubeola, or camp measles, and may become prevalent in jails or other prisons, in which occur dangerous chest symptoms and black spots from deteriorated blood and severe prostration, with a fatal termination in a majority of the cases.

Measles is sometimes mistaken for scarlet fever, but may be differentiated by absence of catarrh, an earlier appearance of a different character of eruption with high fever and rapid pulse. The treatment is about the same in either case and a favorable termination, under proper treatment and without complications, may be expected.

Treatment—The average temperature is about 103 degrees, and if the bodily temperature rises much above this and remains long at a time, the disease may be considered one of severity. At the beginning, when there is dry, hot skin, a full, quick pulse, great thirst, eyes red, watery and sensitive to light, catarrhal irritation, with dry, hacking, hoarse, croupy, cough, headache and vertigo, aconite gtt. 5 to 10, water 4 ozs.; teaspoonful every hour. If there is an involvement of lungs, veratrum viride, gtt. 10, water 4 ozs.; teaspoonful every one or two hours may alternate the aconite.

Apis gtt. 1 to 10, water 4 ozs.; teaspoonful every three hours where there is an eruption with puffiness or swelling of the skin, cough and soreness in breast, as if bruised, suffocative breathing and desires fresh air, scanty high colored urine and and possibly morning diarrhoea.

Arsenic gtt. 1 to 3 every four hours where there are severe cases with typhoid symptoms, burning and great dryness and itching of skin, the eruption disappears too suddenly, face bloated, with dry, parched lips, great anguish and fear of death, constant craving of cold water, drinking often, but little, worse about midnight.

Belladonna gtt. 5 to 10, water 4 ozs.; teaspoonful every hour where there is a scarlet red appearance of the throat and tongue with difficult swallowing, red and hot face with throbbing headache, backache, dry, spasmodic cough, drowsy and moaning during sleep, starting and jumping, eyes red and suffused, complicated with scarlet fever.

Bryonia gtt^s, 5 to 10, water 4 ozs.; teaspoonful every hour where there is imperfect eruption, congestion of chest, with shooting, stitching pains, increased by deep breathing, dry, painful cough, with roughness and dryness of throat, very thirsty.

Camphor, a few drops at pleasure, where the vitality is depressed, face pale and skin cold, assuming a bluish color, a slow eruption, cannot bear cover.

Pulsatilla gtt^s. 1 to 5 every three hours where catarrhal symptoms appear, eyes red, watery and sensitive to light, thick yellow discharge from nose, mouth dry and no thirst, the eruption tardy, cough loose with thick, yellow expectoration, worse in warm room. The temperature should be kept uniform. Beware of either extreme. Extreme heat worse than cold, but neither should be tolerated. The room should be well ventilated, and darkness, if eyes are sensitive. Hot baths are beneficial to aid in the tardy eruption and hot foot baths to relieve oppression of chest. Gum arabic or slippery elm tea may be sipped frequently for troublesome cough and pure, fresh water drank at pleasure. The diet should be plain, consisting of milk, light puddings, rice, plain toast and as the patient improves, beef tea, broths, vegetables and fruits can be relished.

Meningitis—This disease is an acute inflammation of the membranes of the brain and characterized by headache, chill, fever, delirium and followed by symptoms of general collapse. The fever may be paroxysmal and run high in the evening and low of a morning. In many cases, however, the fever may continue high. There may be periods of consciousness alternating with wild delirium. There may be paralysis and spasms. The causes may arise from mental overwork, prolonged wakefulness, acute alcoholism, over heat, diseases of the internal ear, erysipelas, diseases of serous membranes and continued eruptive fevers. Occurs more frequently in children and young adults. The onset is sudden.

Cerebro-spinal fever is a mere extension of the same disease and involves the spinal cord and likely an eruption of small pimples on certain places of the body. As the disease advances there may be jerking of the limbs, rolling of the eyeballs, twitching of the muscles of the face and possibly convulsions, espec-

ially in children. A cure unfavorable. May run from one day to two weeks.

If recovery follows there may result a defective sight, hearing, imbecility of the mind or paralysis.

Treatment—The treatment is not materially different from other forms of inflammation, and a close observer will readily see certain expressions that calls for certain remedies, for it is a disease that requires close attention and no meddling.

In the onset, where there is high fever, congestion of blood to head, with a red face and a pulsating of carotids, small contracted pupils, aconite gtts. 10, gelsemium gtts. 10 to 15, water 4 ozs.; teaspoonful every hour.

Apis gtts. 10, water 4 ozs.; teaspoonful every 4 hours where there is suppression or spread of erysipilas, squinting of eyes, grinding teeth and boring of head in pillow, conjunctiva injected, full of dark vessels, red spots on skin like bee stings, with stinging, burning pains.

Belladonna gtts. 5 to 20, water 4 ozs.; teaspoonful every hour where the head feels like it was being pressed together, delirious, wild, insane, furious when quiet, lies with eyes partly open, face blanched, pupils, dilated.

Bryonia gtts. 10 to 20, water 4 ozs.; teaspoonful every hour, where there is sharp, shooting pains in head, desires quiet, dry, hard stools, irritable.

Hyoseyamus gtts. 1 to 5 every one to three hours where there is drowsiness and loss of conscience, white coated tongue, frothing at the mouth, staring with distorted eyes with double vision, muttering and picking at the bed clothes, involuntary actions of bowels and kidneys.

Opium grs. 1 to 5 (tincture of opium gtts. 5 to 25) every hour till rest where there is lethargy with stertorous breathing, eyes half open, delirious talking with eyes wide open, face purplish and swollen, acute hearing, fearfulness and uneasy, stools round, hard and black, violent, mental emotions.

Rhus tox. gtts. 1 to 5, water 4 ozs.; teaspoonful every hour where there is burning or itching, an aching pain, numbness, stiffness, can't rest, feels better moving about, paralytic tendency, wakes suddenly, shrill cry, resembling the beginning of a spasm, sharp stroke of pulse, prominent papillae on tongue.

Stramonium gtts. 1 to 10, water 4 ozs.; teaspoonful every

hour, delirious laughing, awakes with a shrinking look, as if afraid of first object seen; very talkative, sings, whistles, repeats poetry, grinding teeth with a shudder, lips sore, cracked and sordes on teeth, glistening eyes and staring look.

Sodium sulphite grs. 10 to 30 every three or four hours in those cases where there is a dirty, pallid coat of the tongue, showing a condition of sepsis or the formation bacteria, fungi, or the decomposition of putrid products, due to fermentation.

Veratrum viride gtt. 5 to 15, water 4 ozs.; teaspoonful every hour where there is a red streak along the center of the tongue, fever, great fullness in head with throbbing of the carotids, slow pulse, very sensitive to noise, dilated pupils, with dimness of vision, inflammation following sunstroke.

In these cases all persons should not be allowed in room except the regular attendants, no noise, and well ventilated room. Keep extremities warm with hot bottles, apply heat or cold to head, whichever is the most soothing. Wash out bowels with syringe and water as warm as can be use readily. Epsom salts a half to one teaspoonful in a third of a teacupful of water every three hours till free evacuations.

The diet should be light and nutritious, but no forcing of food, be governed by the appetite. At first only a thin gruel, toast water, acid, diluted drinks and pure fresh water. Later corn starch, rice, milk, broths or beef tea.

Pneumonia—This disease is known as croupous, catarrhal serous pneumonia, each of which is only a modified form of the other, characterized by an acute inflammatory condition of the part involved, preceded by cold or chill, a rise of temperature, obstructed breathing, cough. Catarrhal pneumonia is acute bronchitis, an inflammation extending into the finest bronchial tubes and is called capillary bronchitis, mostly found in children, associated with whooping cough, influenza or croup. Serous pneumonia is a secondary disease and is the result of bronchitis, heart disease, measles, typhus or scarlet fever. Croupous pneumonia is the most common form and is the disease mostly referred to when this particular malady is considered. A chill or rigor, as the result of cold or exposure, is followed by febrile reaction, the pulse becoming frequent and hard, skin dry and hot, appetite impaired, white coated tongue, bowels constipated and urine scanty. Respiration becomes shorter, fre-

quent, anxious and difficult and attended with unusual expansion and elevation of the chest. There is a frequent short cough, and increased warmth and moisture of the expired air. On the third or fourth day the patient is unable to take a deep inspiration, respiration being performed principally by the diaphragm and abdominal muscles. On account of the weight of the congested lung, the patient prefers to lie upon the affected side or where both lungs are involved, upon the back. There is a constant feeling of uneasiness rather than pain in the chest, with some degree of anxiety, a sense of tightness, weight and fullness and of internal heat. In some cases there is constant restlessness, with frequent attempts to elevate the head and shoulders. The disease begins to change in character, the cough, which has generally increased up to this time, is attended with expectoration of a white glary mucus, which changes about the fifth or sixth day, the sputa becoming of a yellowish, reddish or more frequently rusty tinge, called the stage of red hepatization, with brick dust sputa, resembling the dust of red brick mixed with the mucus. The sputa is very tenacious and when discharged into a vessel it runs together, forming a single mass, so tenacious that the vessel may be inverted without detaching it. By this time the breathing becomes heavier and shorter. If the disease involves a considerable portion of the lungs, the oppression becomes urgent, and the sense and weight is extreme. The disease begins to decline about the fifth or sixth day in favorable cases, the cough becoming looser and less distressing, the expectoration changes in character both as to quantity and quality. The sputa resembles that of bronchitis, the pain, labored breathing and suffocation are gradually relieved, the febrile symptoms disappear and the patient is convalescent about the seventh to the ninth day of the disease. But in a more aggravated form, the hepatization continues with an increase of the labored breathing, where a large portion of the lung is involved, the patient requires an elevation of the head and shoulders to call into action the external inspiratory muscles. The inspirations become shorter and more distressing, sometimes as rapid as 40 to 60 per minute. The cough is more distressing and annoying, the viscosity and color of the sputa changes to correspond to the intensity of the disease. The fever continues unabated, pulse ranges from 120 to

140 beats per minute, the skin hot, dry and rough, the tongue is coated with a brownish, offensive mucus which becomes darker as the disease progresses and sordes forming on the teeth. The patient becomes delirious at first, but partially and only a part of the day, but as the disease continues its ravages there is a low muttering delirium or coma. These symptoms may continue for one or two weeks, sometimes coming on rapidly, at others more slowly, the disease terminating fatally in some cases, by the twelfth day in others from three to four weeks, or the patient recovers, having worn the disease out.

Treatment—In the treatment of pneumonia the symptoms will be remarkably uniform for four or five days, there being one-half to one degree difference in the morning and evening temperature range, the temperature being usually 104 degrees and very rarely 105 degrees. There is a very rapid decline of the temperature, in favorable cases, from the fifth day, until it reaches the plane of health, 98 degrees, on the ninth day.

In this, as well as other diseases, the treatment should be selected with reference to complications and pathological indications.

Aconite gtts. 5 to 10, water 4 ozs.; teaspoonful every hour, especially in children and feeble persons; high fever, pulse full and bounding, violent thirst and shortness of breath, piercing and stitching pains in the chest with difficult breathing, fear of death and predicts the day he will die. Arsenic gtts. 1 to 2 every three hours where there is an advanced stage; worse after midnight; great anxiety, restlessness, tossing from one position to another; rapid prostration, a cold, clammy sweat, great thirst, drinking little and often, burning pain and heat in chest, coldness of extremities.

Belladonna gtts. 5 to 10, water 4 ozs.; teaspoonful every hour, in congestion of the brain, with flushed face and throbbing carotids, wild delirium, with wild look and tries to run away, strike, bite or quarrel, expectoration, bloody, scanty and difficult, great thirst, with dry, cracked tongue and lips, starting and jumping during sleep and moaning, difficult breathing, with pain in lower and middle portion of chest.

Bryonia gtts. 5 to 10, water 4 ozs.; teaspoonful every hour; fever light, cough with sputa of a tenacious mucus of a reddish or rusty color, brick dust, a stage of red hepatization, obstructed

breathing and acute stitching pain in side of chest, pleuritic in character, desires quiet, cannot take a full breath, lungs feel as if they would not expand, constipated, stools dry and hard.

Carbo veg. (charcoal, triturated), grs. 1 to 5 every two to three hours in advanced stages when there is great prostration of vital force; pale face and cold extremities, with weak pulse, craves cold air and wants to be fanned; cough by spells with brownish expectoration.

Ipecac gtts. 1 to 10, water 4 ozs.; teaspoonful every hour in pneumonia of infants, breathing rapid and difficult, face pale, surface blue, rattling of mucus in chest, chest feels full of phlegm, but cannot cough it up; much nausea and vomiting.

Bichromate of potassium gtts. 5 to 30 to glassful of water; teaspoonful every two to four hours in infantile pneumonia, complicated with whooping cough, breathing labored, wheezing, rattling, with choking cough, preventing child from sleeping or drinking. In cases of both adult and infants the secretions are tough, tenacious, stringy, or ropy, with ulceration of throat and nose, sometimes bloody, or rusty mucus.

Lycopodium gtts. 1 to 10, water 4 ozs.; teaspoonful every one or two hours where typhoid symptoms develop; circumscribed redness of the cheeks, copious expectoration mixed with pus, fan-like motion of nostrils, cannot be alone, red sand-like sediment in urine.

Opium (tincture, laudanum) gtts. 2 to 5 for infants, 10 to 20 for adults every hour till rest where the inflammation is distinguished by symptoms of congestion of the brain, deep snoring, breathing, with wide open mouth, sputa frothy and containing blood and mucus; stupefying sleep.

Phosphorus gtts. 15 to 30, water 4 ozs.; teaspoonful every one to three hours (an energetic poison and only used in extreme cases), stitching pains aggravated by coughing, breathing or lying on left side, tightness across chest, dry cough and rusty colored sputa, greater portion of lung involved, with great suffocation, hepatization of right lung, sensation of emptiness and weakness in the abdomen, very sleepy, states of great depression.

Rhus tox. gtts. 1 to 10, water 4 ozs.; teaspoonful every two or three hours. The disease begins to indicate typhoid; patient at times delirious, severe cough as if chest would burst, sputa

color of brick dust or bloody, pains are aggravated by rest, hence the patient continually moves about to get relief; very restless at night, especially the latter part, sharp stroke of the pulse, bright flush of left cheek, pain in forehead and orbits and the peculiar appearance of the papillae at tip of the tongue. If a child, there will be an occasional sharp cry during sleep and in the advanced stage of the disease the features present a pinched or drawn appearance, especially the contraction of the tissues about the eyes and around the base of the brain.

Macrotys gtt. 10 to 30, water 4 ozs.; teaspoonful every two hours, there is pain in right side of chest, must lie quietly on back and press with hand, pains from region of heart, all over chest and down left arm, palpitation of heart, face livid, hands cold and clammy, numbness of left arm, soreness of the respiratory organs as if bruised.

Sanguinaria gtt. 1 to 15, water 4 ozs.; teaspoonful every hour in advanced stages, great difficulty of breathing, lies on back with head elevated, burning and stitching pains in chest, cough with tough, rusty colored sputa, circumscribed redness of cheeks especially in the evening, an irritative cough and a sense of rawness and constriction in throat, cough generally harassing and when secretion is established it is very profuse.

Sulphur grs. 1 to 5 (trituated 1 to 10 or 30) every three hours. Its utility is shown in protracted cases where it seems to assume the course of consumption, much phlegm in chest, frequent faint and weak spells, and flashes of heart, cough on deep inspiration, with cutting pain in left breast, suffocated, desires the open air, constant heat on top of head.

Tartar emetic gr. 1, water 8 ozs.; teaspoonful every 15 to 30 minutes, avoiding emesis and lengthening time as it begins to take effect, useful where there is short, difficult breathing, cough loose and heavy, but cannot raise the phlegm, difficult breathing with fits of suffocation, sense of paralysis of the lungs, the inside of chest feels like it was lined with velvet, nausea and strains to vomit, bilious pneumonia.

Veratrum viride gtt. 5 to 20, water 4 ozs.; teaspoonful every hour in first stage when congestion and inflammation has first developed, high fever with strong, quick pulse, nausea and vomiting a glary mucus, sinking faint feeling in pit of stomach, a constant burning distress in the region of the heart, in-

termittent pulse, a red streak down the tongue. This disease may be complicated with some other disease, like pleurisy or typhoid fever. Pleurisy will require the treatment most generally outlined above, except pleuritic effusion, which comes within the domain of surgery.

The room should be well ventilated and an even temperature of 70 degrees and the atmosphere kept moist with steam and in some instances may use lime or vinegar, should it relieve the breathing of the patient. Hot fermentations or a linseed meal poultice will frequently give relief to the pain. There is nothing equal to dry heat in lung highly congested. Cloths should be ironed with a hot iron and applied dry over the chest and the ironing done lightly and continuously without ever removing the cloth for several hours. To let the chest become cool after heat is once applied is very bad treatment and had better be omitted, and should never be used except in the first stage. During the inflammatory stage the diet should be light, but where there is no appetite all food should be withheld. If the tongue is clean, the appetite will be sufficient to receive most any nourishing food that may be given. Only mucilaginous drinks, as gum arabic or slippery elm water or some acidulous drinks, as lemon juice, will be sufficient. It will be noticed that purgatives have had no notice in this disease, for the reason that all harsh treatment should be avoided.

Rheumatism—There are four forms of this disease, though they appear to blend into one another, and sometimes rapidly change from one to the other and are classified as rheumatic fever, acute inflammatory rheumatism, sub-acute rheumatism and chronic rheumatism. The causes of rheumatism are cold from sudden changes of temperature, arrest of secretion, imperfect digestion, and mental worry and fatigue. The predisposing cause is an inherited tendency. The blood contains an excess of lactic acid and the points bear the brunt of the attack. The synovial membrane is reddened, the synovial fluid becomes thinner, the swelling about the affected part depends mostly on the inflammation of the connective tissue around the joint. The pain is due to the stretching of the tissues by the dilated capillaries and the inflammatory swelling. The onset is generally sudden, frequently at night, possibly with a chill, followed with an elevated range of temperature from 102 degrees to 108 de-

grees in rare cases, pulse seldom exceeding 95 per minute. There is pain and stiffness of the joints, loss of appetite, great thirst, profuse acid sweats, scanty, high colored, acid urine and constipation.

The duration of the disease is variable, continuing from a few days to several weeks. The disease is generally considered favorable as to fatality, except in some complications.

Treatment—This disease is one that requires patience and regularity in treatment and the selection of the remedy with reference to the pathological condition and drug action.

Aconite gtts. 10, water 4 ozs.; teaspoonful every hour where there is fever and great agitation of the heart, parts red, swollen and sensitive to touch or motion, restless and anxiety of mind, keen pain in region of kidneys and retention of urine.

Ammonium phosphate grs. 10 to 20, well diluted, three times per day, where the finger joints and hand are involved; no appetite and some emaciation, irritable, nervous and sleeplessness, evening fever and the right side mostly affected.

Arnica gtts. 10 to 20, water 4 ozs.; teaspoonful every one or two hours, acute superficial inflammation, the affected part swollen, red and hard, bruised or sprained feeling, lame, sensation as if the afflicted part was lying against some hard substance, very cautious about being touched.

Arsenic gtts. 1 to 2, well diluted, every three or four hours, where there is burning, tearing pain and pale swelling, pain relieved by heat, profuse sweat, which relieves pain, but leaves patient weak, cold and hot flashes alternate, moves limb for ease, thirsty, but drinks little at a time.

Apis gtts. 1 to 10, water 4 ozs.; teaspoonful every three hours where there is suppressed urine, burns and stings when voided; puffy swelling and burning and stinging of the part.

Apocynum can. (Indian hemp) gtts. 5 to 30, water 4 ozs.; teaspoonful every hour, absence of fever; pulse soft and weak, puffiness of the tissue, either of the part affected, or feet, hands or eyelids; useful in sciatica.

Belladonna gtts. 10, water 4 ozs.; teaspoonful every hour where there is redness and shining, swelling of the joints, pressing, cutting, tearing pains in the bones, darting pains from joint along the limb, fever, with dry, hot skin, thirst and throbbing headache, pains come and go suddenly, pulsating of the

carotids, drowsy, sleeping and easily excited, worse of an evening, parts sore and painful to touch.

Bryonia gtts. 10 to 20, water 4 ozs.; teaspoonful every one or two hours, pain resembles an inflammation of serous membranes, stitching, tearing pains, worse from motion, headache from forehead to back of head, sore scalp, dry, hot skin, or else perspiration of an acid character, bitter taste, dry mouth and great thirst, flushed right cheek, hard, wiry pulse, hard, dry stools, scanty, high colored urine.

Caulophyllum (blue cohosh) gtts. 5 to 15 every two hours where the disease involves the fingers and wrists with much swelling, shifts from extremities to back and nape of neck, muscles rigid, oppression of chest, high fever and nervous excitement.

Chamonile gtts. 10 to 15, water 4 ozs.; teaspoonful every hour where there is a drawing, tearing pain with a sensation of numbness or lameness of the parts, continuous pain, worse at night, tossing from one position to another, becomes furious, irritability of temper, very cross and snappish, hot sweating about head, one cheek red and the other pale.

Cheledonium majus gtts. 5 to 20, water 4 ozs.; teaspoonful every hour, constant pain under the lower, inner angle of the right shoulder blade, rheumatic swelling with stone-like hardness of the affected parts.

Cimicifuga (black cohosh) gtts. 5 to 10, water 4 ozs.; teaspoonful every hour where there is articular rheumatism of the lower extremities, heat and swelling of the parts, pains cause patient to cry out, fever, muscular pains, skin hot, but moist, tensive, cramp-like pain, parts feel as if they were in clamps.

Colchicum gtts. 1 to 10 every one or two hours, acute gouty and inflammatory condition, pains, burning, tearing, jerking and frequently shifting, freeze and burns at same time while near a hot stove, strong fluttering beat of heart, sour-smelling sweats, urine dark and scanty, deposits a white sediment in vessel.

Eupatorium (boneset) gtts. 5 to 20, water 4 ozs.; teaspoonful every hour; deep-seated soreness of back and limbs, aching apparently in the bones, sweats during fever, nausea with full pulse, hot, sweaty skin, cough, jerks with severe pain.

Nux vomica gtts. 5 to 20, water 4 ozs.; teaspoonful every one or two hours where the pain is especially in back, loins, chest or joints with pale tense swelling, tense jerking or pulling pains, aggravated by contact or motion, numbness or lameness in affected parts with twitching of the muscles, sensitive to cold, warm and chilly at the same time, pain relieved by sweating; habitually constipated.

Phytolacca (poke root) gtts. 10 to 30, water 4 ozs.; teaspoonful every one to three hours; adapted especially to chronic cases, involving the glands, sore mouth or throat, the urine whitish and transparent, joints swollen and red, pains in middle of long bones or attachments of muscles, pains shooting from one part to another, worse in damp weather and at night.

Pulsatilla gtts. 10 to 30, water 4 ozs.; teaspoonful every two hours where there is not much swelling of the affected parts, pains shift rapidly from one part to another, parts feel heavy, chilly and warm at same time, desires cold air, worse in warm room, cries and apprehends trouble, bad taste in mouth.

Rhododendron (mountain laurel) gtts. 1 to 15, water 4 ozs.; teaspoonful every hour where there is a drawing, tearing pains in joints and limbs, violent pleuritic stitches, pains worse at rest and during rough, stormy weather, redness and swelling of single joints, as knee and elbow.

Rhus tox. gtts. 1 to 10, water 4 ozs.; teaspoonful every two to three hours; pain better after exercise, tearing, drawing, burning, as if sprained with sensation of lameness and creeping in the parts; better from continual motion and external warmth; frontal headache, small, sharp stroke of pulse, prominence of the papillae of tongue with sometimes a forked or boot-jack coat.

Veratrum viride gtts. 5 to 10, water 4 ozs.; teaspoonful every hour; high fever, sometimes a red streak down the tongue, the left shoulder, hip and knee especially involved, bones ache.

The excretory functions should be noticed and if the tongue shows a dirty, ashy coat, sodium sulphite grs. 5 to 10 every three hours till removed. If a yellow or brown coat, *podophyllum* gtts. 10, water 4 ozs.; teaspoonful every two hours till tongue is clear.

The kidneys may require attention and grs. 15 to 30 of citrate of potash, well diluted, every three hours will do good service.

Acetate of potash may be used instead. Quinine and opium one grain each every one or two hours where there is peroidicity will act kindly.

There is another form of rheumatism of the joints where they squeak, on motion, like new leather, painful cracking of the spine just below the head and down between the shoulders; the wrist and other joints feel like they were unjointed, hands alternate cold and hot; one foot cold and the other hot, indicates *coculus indicus* gtts. 2 to 10, water 4 ozs.; a teaspoonful every one or two hours.

Muriate of ammonia grs. 160 and aromatic elixer sufficient to make one ounce and taken in teaspoonful doses from three to six times a day has been used successfully, and an advertising firm became wealthy from its sales. It may be prepared in any quantity in the given proportions.

Persons subject to rheumatism should wear flannel next the skin; should avoid over exertion and mental worry; drink plenty of pure water and never overload the stomach. Rest during an attack. Hot fomentations applied to the painful parts will often afford relief. Cotton batting can be used in enveloping the parts. The room should be kept light and well ventilated. Diet should be light and nutritious, body kept clean, bowels regular and kidneys active.

Smallpox—The disease is acute, epidemic and contagious, characterized by chill, a rise of temperature, pains principally in the back, lasting from three to four days, followed by the appearance of an eruption, giving the sensation to the fingers of small shot under the skin. There are two forms recognized as discrete and confluent; the first is mild, known as varioloid, the points of eruption being distinct and separate, the second severe, the eruption being profuse, and so closely situated as to run into each other. Its duration is divided into three stages: incubation, maturation and decline. Incubation, or hatching period comprises the time from exposure to the cause to the development of the chill, and may be from seven to sixteen days, average time about twelve days. The disease generally about the sixth or seventh day after exposure causes the patient to

feel the sensation of weariness, languor and irregular appetite and exertion. The symptoms increase until the day preceding the chill, when the patient cannot follow his daily occupation. The soreness of the muscles, pain in back and head, nausea, and chilly sensations pass over the body, which is generally followed by flashes of heat, the fever in a short time rising to 103 to 104 degrees, the pulse full, strong and rapid, ranging from 100 to 130; the face red, eyes suffused, intense headache, and sleeplessness. About the third day the characteristic eruption makes its appearance, first on the forehead, lips, possibly in mouth and throat, consisting of coarse red spots, with the appearance of the eruption, all the marked symptoms of the fever abate and the patient feeling a sense of relief. The red spots change to papules on or about the fifth day, and the sixth day transformed into cysts, or cells, with a little depression in the center, and on the eighth day the vesicles are changed to pustules and on the ninth day the pustules are entirely formed and full of pus and each surrounded with a red band, the face becoming swollen and the features distorted; on the eleventh day pus begins to ooze from the pustules, drying, forms the scab or crust, which drop off from the seventeenth to the twenty-first, leaving a red, glistening depression or pit, soon changing into a white cicatrix. At the stage of pus formation, about the eighth day, a second chill and fever develop, followed by the characteristic odor of the disease, goat scent, all the original symptoms returning, being the most critical period of the disease. In mild cases, convalescence is established in three or four days.

Treatment—Aconite gtts. 10 to 20, water 4 ozs.; teaspoonful every hour at the beginning, during fever, especially if there be congestion to the head or lungs, headache, nose bleeding, eyes injected, fullness in chest, with increased action of the heart, pain in back and limbs.

Ammonium carb. grs. 5 to 10 every three hours where there is hemorrhage from nose, gums or bowels, putrid sore throat and a tendency to gangrenous ulcers.

Apis gtts. 1 to 10, water 4 ozes.; teaspoonful every two or three hours where the redness assumes the form of erysipelas, with stinging, burning pains, sensation in abdomen as if there were a tight band trying to break.

Arsenic gtts. 1 to 2 every three or four hours where the eruption is dark and the skin turns blue or livid, strength fails rapidly, small, frequent pulse and restlessness, thirsty, drinking little and often, very irritable and excited.

Belladonna gtts. 5 to 20, water 4 ozs.; teaspoonful every hour where there is congestion of the head and throbbing or stitching pain in the head, high fever and sore throat, excited and jumping in sleep, severe pain in back.

Camphor gtts. 5 every half to one hour where the pustules suddenly dry up and the swelling disappears; great prostration and the sinking of vital force, skin very cold, but cannot bear cover.

Cimicifuga gtts. 10 to 15, water 4 ozs.; teaspoonful every hour where the flesh feels sore and bruised, nausea, reduces the danger of pitting.

Hydrastis gtts. 1 to 5 every one to two hours where there is great swelling and itching of skin, with a very sore throat, itching in small of the back, legs feel weak and ache.

Opium (laudanum) gtts. 5 to 20 every three or four hours where the brain becomes depressed, unconscious, with stertorous breathing, dilated pupils.

Rhus tox. gtts. 1 to 10, water 4 ozs.; teaspoonful every two to three hours where there are typhoid symptoms, tongue dry and cracked with red tip and prominence of the papillae, sordes on lips and teeth, mind wandering, very restless, worse after midnight.

Sulphite of soda grs. 10 to 20 every three or four hours where the tongue shows a pallid, dirty and moist expression; the patient should wash out the mouth and gargle the throat and rinse it with a bath.

Tartar emetic, gr. 1 to 8 ozs. of water; teaspoonful every half to one hour, avoiding emesis or sick stomach and lengthening the time as its effect appears. It changes bad cases into a milder form, reduces fever, and the pustules run their course without leaving scarcely a mark behind, especially indicated where there is much irritation of the respiratory organs.

Baptisia is the remedy in the development of sepsis as shown by a deep red, dusky or livid color of the mucous mem-

brane and skin and indicate a severe case. Gtts. 10 to 20, water 4 ozs.; teaspoonful every hour.

Cleanliness is one of the most essential things in this disease. The body should be bathed in warm water every day and clothing changed and aired, or better, boiled in a little lime water and rinsed.

The bowels should be opened with small doses of epsom salts.

When the pustule reaches the wheying and thumping stage, generally from the third to the fifth day, a small slit with a keen knife at the base or next the skin will give relief without pitting.

A bath tub of water as hot as can be borne by the patient is very soothing. The room should be kept well ventilated and dark with a temperature as near 60 degrees as possible. Diet light; rice, oatmeal, toast and eggs, with mucilaginous drinks. To disinfect, burn sulphur in room and thoroughly air out.

The clothing can be buried in the ground a few days, which will destroy the contagion. Vaccination is the application of vaccine virus to arm or other portions of the body, by using some sharp instrument to scrape, until the true skin is reached and blood begins to ooze; when the lymph is brushed over the abraded surface; or, instead make three or four horizontal and transverse cuts sufficient to causing the oozing of blood; should the blood run out the virus will not take. The scab from the arm of a healthy person and worked up with a little water to the thickness of cream is considered good virus. If the vaccination "takes," or the virus sets, the papule will appear about the third day, and will go through its variations till about the twenty-first day, when the scab falls off.

Typhoid Fever—This disease is an acute febrile affection, supposed to be due to a special poison, characterized by a dull headache, stupor, abdominal tenderness, early diarrhoea, a peculiar eruption on the abdomen, rapid prostration and slow convalescence, a lesion of Peyer's glands. It is regarded as contagious to a small degree and continues about twenty-eight days, but, like other diseases, depends greatly on the nature of the case.

The cause of its development is anything that will depress vital force and no person, unless of feeble vitality, or laboring under some cause that produces depression at the time of exposure, can have an original case of typhoid fever. It is true, however, that if the cause acts heavily upon the system and the person is susceptible to its influence, typhoid will rapidly develop. Animal matter in a state of decomposition is the exciting cause of this disease and generates in the system, and if it continues sufficiently long the blood becomes engaged in the process of decomposition, and thus there will be seen a more or less rapid breaking down of the tissues, and the excretory organs being in such condition that it cannot be freely removed, morbid material of the body remaining in the blood. Wherever filth is undergoing decomposition, the poison of typhoid fever may be produced, provided the air is in a condition to aid the result. There is a certain state of putridness in matter, either vegetable or animal, in which the zymotic poison is generated, and its gaseous emanations are borne to us upon the gentle breeze, or in the drinking water, and having within itself an affinity for certain parts of the system produce the disease. It is a disease peculiar to young adults between 18 and 25 years; rare after 40 years. It is more prevalent in hot, dry seasons. The range of temperature is characteristic of this type of fever and the severity of the disease depends greatly upon its restraint. Its average is from 102 degrees to 104 degrees, with a difference of one-half to one degree between morning and evening and a rise to a 106 degrees to 107 degrees, shows a serious condition. The onset is gradual, with a feeling of general malaise, tired, headache, disordered digestion, disturbed sleep, nose bleeding, depression and muscular weakness, sometimes chill or chilly, the patient being unable to designate the day of the first symptom.

The pulse increases according to rise of temperature, sometimes frequent, full and open, or soft and weak, in some cases soft and easily compressed, or, if of a nervous character, quick and sharp. The tongue is generally coated with a dirty mucus, and is broad, soft, flabby and moist, coat more often in center, but with reddened tip and edges, very thirsty. The tongue, in some cases, is heavily loaded, especially at the base,

with bad taste in mouth and the feeling of oppression in the regions of the stomach, indicating morbid accumulations. The urine is slightly diminished in quantity and of a turbid and frothy character, but does not deposit a sediment; the bowels may or may not be natural as to frequency, but very susceptible to the action of medicine; the discharges being thin, pale and frothy. The skin varies greatly as to the temperature, sometimes it is very hot and pungent, but frequently only slightly increased with a tendency to coldness of the extremities. There is generally a dull countenance, pallid and shrunken features, face transiently flushed, the eyes heavy and devoid of lustre, the head heavy and giddy. Some patients exhibit great uneasiness and restlessness, frequently changing positions, but at other times is sluggish, careless and unimpressible. The respirations are but little changed the first two or three days, but sometimes frequent and suspicious. From the fifth to the sixth day the head has become more affected and the mind confused; the patient thinks slowly and speaks, after trying to collect his thoughts; that dreamy delirium having appeared, known as typhomania. It may, however, develop later in the advancement of the disease. The respirations have changed to a shorter and quicker and a more labored condition. In some cases the symptoms of the affection begin as early as the second or third day, or at farthest by the end of the first week. The bowels are irregular, the patient begins to complain of soreness and tenderness of the bowels and pressure upon the abdomen, especially in the right side, produces pain. The bowels may be quite loose by the tenth or twelfth day, with increased tenderness on pressure, and flatulent distension of the abdomen. The coating of the tongue has been undergoing a change, may be brown and fissured, or the coating having disappeared, the tongue is dry, red and glossy; sordes begin to appear on the teeth and lips. About this time, though sometimes earlier, the rose-colored eruption makes its appearance upon the neck, breast or abdomen. This eruption manifests itself in small rose-colored spots about the size of the head of a pin, the color disappearing under pressure of the finger, but returns when pressure is removed. The patient, by this time, has become so weak that

assistance is required to change positions. Conditions may continue to grow worse, till the twenty-first day, the activity of the bowels becoming greater, the discharges being dark, fetid and very offensive, and the abdomen very much distended; the coating upon the tongue has changed to almost black, and the teeth and lips covered with a dark offensive sordes. Frequently the heat of the surface sinks and the extremities are kept warm with difficulty and there appears a fetid perspiration. The patient tries to slip towards the foot of the bed. The vitality of the patient becomes so exhausted that there is no longer power to circulate the blood and the patient dies. Where the temperature remains 104 degrees, morning and evening, or the morning temperature exceeds the evening, either is an unfavorable sign. The pulse range is 10 beats to each degree of fever on an average. A temperature range of 103 degrees to 105 degrees will give the frequency of the pulse, according to age, from 110, 115 to 130 and 140 beats per minute.

The above description is an effort to describe an unfavorable typical case as a guide in comparison with a more favorable condition. Any change for the better in any case will show an increase of vitality and a more lively expression.

Treatment—There are three objects in the treatment of typhoid fever to be considered: First, to remove any unpleasant symptoms and make the patient as pleasant as possible; second, to shorten the duration of the disease, and, third, to control any morbid accumulations that might lead to fatal results. To cure the disease is left out of this calculation, for the reason that it is the tendency of 97 per cent of the cases to recover; therefore to cure the disease will be successful in only a small percentage of cases. Treatment to cut short its duration will be successful in a large percentage in arresting its progress from the seventh to the fourteenth day. It will fail where the bowels become early and heavily involved and in those cases where there are other complications. If the efforts put forth to check its advancement fail, persistence in the use of means for this purpose will prove injurious by becoming a depressent. A control of the morbid process and holding in check its accumulations, and especially complica-

tions and sustain the patient's strength, is the course to pursue until the disease has run its usual course of three or four weeks.

If there be morbid accumulations in the stomach as shown by a heavily coated tongue and a sense of nausea, a loss of appetite, dull headache, restless from sick stomach, the first thing is to empty the contents and then keep it clean thereafter. Lobelia, 5 to 10 drops, every ten minutes will be effective. Mucilaginous drinks, slippery elm or gum arabic should be given often and plentiful throughout the disease. The body must be kept clean inside and outside, and these two things should be kept constantly in mind. Now the study of the remedy applicable to the expressed conditions of the patient, as shown by the looks and described by himself, are obvious.

Aconite gtts. 10, water 4 ozs.; teaspoonful every hour where there is fever following chill, great heat, dry, burning skin, very thirsty, full, bounding pulse, easily excited, nervous excitability, vertigo and headache as if everything would press through the forehead; used mostly in first stages only.

Baptisia gtts. 3 to 5 every two to three hours where there is sepsis, especially in the early stages, dark, red face, with a besotted look, dull, stupefying headache, with confused mind, head feels like it was torn apart, and patient tosses about trying to collect the pieces, tongue coated brown, dry, especially in the center, sordes on teeth, breath offensive and exhaustive diarrhoea, fetid sweat, urine and actions from bowels odor heavy.

Bryonia gtts. 10 to 20, water 4 ozs.; teaspoonful every hour where there is a red face, burning and swollen, lips dry, brownish and cracked, tongue coated with a thick, white or yellowish fur, changing later to brown and dry, oppressive, stupefying headache, pain as if head would split in two, constant delirium, with strange fancies, imagines he is away from home and wants to return, wants to sleep, with sudden starting and strange dreams, or sleeplessness and restless tossing, dryness of the mouth, drinks large quantities of water at a time, soreness in the stomach, constipated, hard, dry stools

Belladonna gtts. 10, water 4 ozs.; teaspoonful every hour where there is a flushed face and red, sparkling eyes with dilated pupils, throbbing headache, with a heavy pulsating of the carotids, disturbed by noise, delirium with a wild look, tries to bite, strike and quarrel, jumping during sleep, cannot sleep, tongue red and cracked, mouth dry or red on the edges and white in the center, abdomen tender and sore.

Rhus tox. gtts. 5 to 10, water 4 ozs.; teaspoonful every one to three hours where there is great nervousness, trembling and tongue protrudes with a jerk, red and smooth or red at tip and coated in a triangular or boot-jack shape, papilla prominent, delirium and obstructed hearing, severe pains in limbs and worse at rest and after midnight.

Arnica gtts. 10 to 20, water 4 ozs.; teaspoonful every hour where there is a brown streak in the middle of tongue; thoughts confused, forgets the words, sore, bruised feeling all through the body. If conscious, complains of hard bed.

Lycoperium, gtts. 1 to 10, water 4 ozs.; teaspoonful every hour where there is a relaxation of under jaw, mouth open, tongue dry, cracked or coated with tough mucus, circumscribed redness of cheeks; uses wrong words in talking, fan-like motion of nose, bowels swollen, with rumbling, especially in left side, a constant sensation of fullness of the stomach, extending up the throat; does not want to be left alone, a red sand-like sediment in urine, awakes cross and irritable.

Charcoal (trituated 1 to 10, wood) grs. 5 to 10 three or four times a day where there is torpor of the vital functions; mostly in last stages of abdominal and putrid typhus; face pale and sunken and cold, eyes sunken and without lustre and insensible to light, tongue dry, dark and tremulous or sometimes moist and sticky; diarrhoea, brownish, grayish or bloody, death-like odor and act involuntary, prostration, wants more air and to be fanned all the time, extremities covered with cold sweat.

Opium (tincture), gtts. 5 to 20 every three or four hours where there is extreme drowsiness and coma, with stertorous breathing, delirious, talks with eyes wide open, pulse full and labored, or slow and feeble, involvement of the brain, involuntary stools and retention of urine.

Gelsemium, gtts. 10 to 20, water 4 ozs.; teaspoonful every one or two hours where there are bright eyes and contracted pupils, in the early stages; nervous symptoms predominate, great fullness in head, chilliness and heat of face, head feels too large, tongue coated thick, white or yellowish brown, nervous chills, with chattering of teeth and fever without thirst.

Hemamelis, gtts. 2 to 10 every half to every hour where there is engorgement, inflammation and hemorrhage of the venous system, hemorrhage profuse from the bowels, blood black, partly coagulated, and offensive, with a bruised, sore feeling in abdomen and hips.

Hyoseyamus, gtts. 1 to 5 every hour where there is increased arterial tension and the frequency of the pulse, with a quickening of the intestinal movements and breathing, twitching and jerking of limbs, eyes red and sparkling, staring, rolling about in their orbits, great restlessness and jumping out of bed, muttering, with picking at bed clothes, loss of speech and consciousness, furious, delirium, while awake, lips look like scorched leather, tongue either red or brown and cracked.

Stramonium (jimson weed), gtts. 1 to 10, water 4 ozs.; teaspoonful every hour where there is a loss of consciousness, with involuntary motions of limbs, continuous and earnest talking, constant and repeated jerking head up from the pillow, tongue yellowish-brown and dry in the center, lips sore and cracked, with sordes on the teeth, blackish diarrhoea, and smells like carrion, loss of sight, hearing and speech, urine copiously and involuntary discharged.

Pulsatilla, gtts. 10 to 20, water 4 ozs.; teaspoonful every two hours, febrile heat, mingled with chilliness; used in early stages where there are gastric disturbances; tongue thickly coated and bad taste in mouth in morning; taste of putrid meat in the mouth with an inclination to vomit; symptoms very changeable, feeling well one hour and miserable the next.

Muriatic acid, diluted, gtts. 5 to 10 in water every three or four hours, and never to be given just before nourishment is taken, where there is a deep red tongue, or coated brown, with dry mouth and sordes on teeth; advanced stages of typhoid; patient stupid, unconscious and extreme prostration,

constant sliding down in bed, low, muttering delirium, groaning in sleep, and picking at bed clothes, tongue dry and cannot be protruded, lower jaw depressed, boring head into pillow, rolls up whites of eyes, involuntary action of bowels and kidneys.

Nitric acid, highly diluted, gtts. 2 to 10, in water, every three hours where the tongue is a dark red or violet hue, dry and covered with a glazed fibrinous coating; virulent poison seems present, mostly in advanced stages of the disease, bowels inclined to looseness, with green, slimy, acrid stools, with severe pain; hemorrhage from bowels, and abdomen very sensitive, irregular pulse, fainting strength, very offensive urine.

Sodium sulphite, grs. 5 to 15 every three hours in sepsis, indicated where there is a dirty, ashy coat of the tongue and if the tongue shows a snow, or cream white, bicarbonate of soda should be substituted and used in the drinking water sufficient to taste.

Veratrum viride, gtts. 5 to 15, water 4 ozs.; teaspoonful every one-half to two hours where there is a red streak down the tongue and where the fever is high, with a hot, dry skin, pulse full and bounding, showing increase power of heart, with obstruction in the capillary circulation or where the blood flows freely and full in the first stages of febrile action. It is not advisable to continue any one sedative too long, as it may become a depressent rather than a sedative.

Chlorine water finds its place in this disease and will be effective where there is any indication of sepsis.

Chlorate of potash, dr. 1, muriatic acid, full strength, dr. 1. Put the potash in a clean 4 ounce bottle, pour in the acid and cork the bottle. When the potash has become dissolved and the fumes rise, fill the bottle, add soft or rain water sufficient to fill the bottle. An adult dose will be a teaspoonful in an ounce of water three or four times a day. An excellent mouth wash.

Hemorrhage may occur about the third or fourth week, and if the pulse is full and bounding, showing a labored heart's action or smooth, showing a free flow, veratrum should be given often enough to slow down the heart and fifteen or twenty drops of ergot given one-half to every hour to close

the leaky blood vessels. The bowels should be washed out, in about two or three hours, with warm water with ten drops of carbolic acid to the quart and the bowels are clear, inject three or four ounces of water containing 3 or 4 drops each of nitric and phosphoric acid and let remain as long as possible. Gallic acid grs. 1 to 10, highly diluted, and repeated every one-half to every hour, is very effective in checking hemorrhage. Baths, to keep the skin clean, is a very essential thing to relieve the kidneys and to assist the blood in eliminating impurities. Wrapping the patient in a wet sheet is an excellent thing to produce sweating in high fever. The application of hot water and a light current of air produced with a fan will reduce the fever in thirty minutes. When the patient complains of chilliness he should be covered and the process repeated, as the temperature begins to rise again and continue this method three or four times or until the symptoms are abated. The water should be as hot as can be used, for it is the rapid evaporation that cools the fever.

The patient should be kept in a well ventilated room and away from noise. Disinfect all discharges and soiled clothing immediately. Use a hair mattress, and if possible have two, so that the bedding can be frequently changed and aired. Guard against bed sores by bathing back and hips, on all red spots, with grain alcohol. Diet is of the greatest importance. It should consist of fresh sweet milk given in moderate quantities every three hours. Good fresh buttermilk is excellent and may be had almost any time. Thin gruel made of corn starch, oatmeal or rice may be allowed for a change. Beef tea, mutton or chicken broth may be taken later. No solid food should be allowed. Take the slime off slippery elm bark and drink the water also, will assist in dissolving the accumulated mucus of stomach and bowels. Give freely. Don't forget that the water must be pure. Use a syringe and plenty of water to unload the bowels and avoid purgatives, if the liability to hemorrhages is to be escaped. Sleep is one of nature's methods to restore strength to an exhausted body. No patient should be disturbed in sleep. Imagine one tired from labor and have to be disturbed every few minutes during the night. Don't be uneasy about the patient sleeping to death,

for if he is that low he will die. It is a good plan to remember to give a little turpentine two or three times a day where the secretions are checked, indicated by a dry mouth and red tongue.

A clear head, a kind disposition and patience are admirable qualities in a sick room.

SHORT SAYINGS ON IMPORTANT SUBJECTS.

Abortion Threatened—Elixir of opium, gtts. 20 every hour till pain is relieved, then follow with black haw 60 drops every three hours, or viburnum opulus. Where pains are threatening may repeat every hour. Ergot, gtts. 5 every hour has been used with success in some cases.

Abscess—Sulphide of calcium (trituated 1-10) gr. 1-10 every three hours.

Acid Stomach—A little acidulate water before meals; either muriatic or sulphuric acid. One drop of carbolic acid with a little glycerine water taken after meals will relieve eructations. A drop or two of nux vomica in half to a cupful of water an hour before meals will assist wonderfully.

After-Pains—Elixir of opium gtts. 20, virburnum opulus, teaspoonful in warm water every hour will give good results.

Agalactia—Jaborandi gtts. 1 to 20 every one or two hours is reputed to increase the action of the glands and augment the milk flow. To check flow, make a paste of the iodide of potassium, vaseline, or lard and apply to the breast.

Alopecia—Where the scalp is dirty, wash the head with soft water and soap. If a black color of the hair is desired, apply the following while wet; if a brown is preferable, use when dry:

Take 4 drams of pyro-gallie acid and one ounce of alcohol and mix; then take 30 grains of sodium sulphite and three ounces of soft water and mix, then pour the two together and it is ready for use. Apply with a brush.

Amenorrhoea—A retarded appearance of the menses may follow as the result of several causes. The hot sitz bath will

often give relief. Should there be febrile symptoms, aconite gtts. 10 to water 4 ozs.; teaspoonful every hour. If there is puffiness about the eyes, hands or feet, apis, gtts 10 to water 4 ozs.; teaspoonful every three hours; senecio aureus (life root), gtts. 10 to 20 every three hours is effective. If accompanied with rheumatic pains of a keen, cutting character, bryonia, gtts. 10 to 15, water 4 ozs.; teaspoonful every hour. Pulsatilla, gtts. 2 to 5 every three hours where the patient is gloomy.

A systematic builder: Helonias, half ounce; caulophyllum, half ounce; hyoseyamus, two drams; simple syrup, 4 ozs.; teaspoonful every three hours.

Apthae—Thrush—Wash mouth with borax water, grs. 10 to 1 oz.; permanganate of potash, grs. 5 to water 1 oz.; chlorate of potash, grs. 10, water 4 ozs.* May be used every one or two hours or as often as deemed necessary.

Asthma—Ambrosia, 2 ozs.; pulsatilla, 2 drs.; 6 to 15 drops three times a day.

Bed-Sores—Bathe all red spots with good alcohol or whisky and dust sores with oxide of zinc.

Bilousness—Podophyllum, gtts. 10 to 20; simple syrup, 4 ozs.; teaspoonful every two or three hours. The effect should appear about the second or third day from the time of taking the first dose.

Bladder—Where there is burning or stinging, with a frequent desire, apis, gtts. 10, water 4 ozs.; teaspoonful every three hours. Benzoate of lithium or benzoate of ammonium, 5 to 6 grains in half glass of water three or four times a day. Where there is a white looking mucus pulsatilla, gtts. 2 to 5 every three hours. Where there is a red sand-like sediment, lycopodium, gtts. 5 to 20; water, 4 ozs.; teaspoonful every three hours.

Boils—The local application of belladonna is often efficacious. Acetate of potash, grs. 10 to 15, well diluted, every three or four hours will render good service.

Breast—Abscesses Of—Apply a poke root poultice. Use acetate of potash as given for boils.

Bright's Disease—Aconite should be given if there is fever. Tincture of cantharides, gtts. 2 to 5 every three or four hours may act kindly. Digitallis, gtts. 10 to 20, water 4 ozs.;

teaspoonful every three hours where there is puffiness. Turpentine, one drop every two hours, will be an excellent remedy in dropsical effusion. The bowels should be kept free with compound powder of jalap and senna. Gallic acid, grs. 1 to 10 every two or three hours, where there is albuminuria, or pulsatilla, gtt. 2 to 5 every three hours, and if a chronic form, helonias dioica, gtt. 10 to 15, water 4 ozs.; teaspoonful every three hours.

Bronchitis—For fever, aconite gtt. 10, water 4 ozs.; teaspoonful every hour. Bryonia, gtt. 1 every two hours. Sharp, keen pain, tongue white, bowels constipated. If cough is spasmodic and worse at night, one drop of ipecac every hour. If sputa is scanty and tough, the syrup of sanguinary, three to ten drops every one or two hours. In the chronic form, sulphide of calcium, one grain, triturated (1 to 10) every four hours.

Bruises—The application of arnica is the best remedy. Where there is an abraded surface, marigold and arnica equal parts is the best.

Burns—Tincture of urtica urens, one part to four of water, cloths wet and applied. St. John's root stewed in sweet oil or lard makes an excellent application in burns or bruises.

Catarrh—Chill followed by fever, aconite, gtt. 10, water 4 ozs.; teaspoonful every hour. Belladonna may be added to the aconite in same amount, if throat is dusky red and tonsils swollen.

Chicken Pox—During febrile action, aconite in the usual dose and tea of the butterfly weed will be useful given in alteration every one or two hours.

Chilblains—Frostbite—The application of arnica, benzoin and glycerine, equal parts. Applied, after soaking parts in soapsuds, is a good remedy, or equal parts of sulphurous acid and water.

Colds or Catarrh—Acute Influenza—If the onset begins with a chill, a few drops of camphor on sugar is very efficient given every half hour. Aconite, common tincture, one-half to one drop every two hours. Where the eyes water or tears flow easily, or a watery fluid runs from the nose, followed by sneez-

ing, euphrasia, gtts. 1 to 5 every two or three hours. For a profuse flow of mucus, spray the nose or throat with equal parts of water and *anemopsis californica* every one to three hours. Pulverized galangal root snuffed into the nostrils will check sneezing immediately.

Colic, Spasmodic—Renal—Spasmodic, disoscorea, ten to twenty drops in hot water every half hour. Infantile colic, one drop of lobelia in warm water every few minutes. Gallstone colic, inhale chloroform until relaxed and continue treatment by the use of sweet oil from one tablespoonful to six during the day, and *chiananthus*, gtts. 2 to 10 every two or three hours.

Colicky pains in appendicitis, where the right leg is drawn up to relieve the muscles of the right side, *colocynth*, gtts. 1 to 10, water 4 ozs.; teaspoonful every hour and the bowels washed out with plenty of hot water will cure nine cases out of ten.

Conjunctivitis—Tincture of belladonna three drops, sulphate of zinc grs. 2, rose water 1 oz. Drop a few drops in the eyes twice a day. If there is profuse flow of tears, euphrasia, gtts. 10, rose water one ounce, and keep a cloth wet with same constantly applied. Colorless *hydrastis* reduced to one-sixth with water may be applied every half to every hour. Where there is a great flow of pus, tincture of myrrh reduced with water one-fourth and a drop or two used in the eye two or three times a day. Should always be used fresh, as a mixture with water causes a milky look and the gum falls out of solution.

Constipation—Regulation of habits, cold baths, one drop of *nux vomica* in a glass of cold water on rising of a morning, and flushing the bowels with hot water will regulate the condition in four or six weeks.

Croup—False—Aconite, gtts. 5; *ipecac*, gtts. 10; water, 4 ozs.; teaspoonful every half to every hour.

Croup—True—Lobelia or *ipecac* from 5 to 10 drops every ten or twenty minutes until vomiting, and if child is large enough swab out throat with turpentine.

Cystitis, Acute, Chronic—Acute cystitis, or inflammation of the bladder. Aconite, gtts. 10; belladonna, gtts. 10 to 10; water, 4 ozs.; teaspoonful every one or two hours. If there is

a very acrid state of the urine, with very great pain, benzoate of lithium, grs. 5, well diluted, every three or four hours till relieved. Chlorate of potash, grs. 2 to 3 every three hours. Tincture of cannabis indica, gtts. 5 or 6 every one to three hours as a pain reliever.

In chronic cystitis, benzoic acid or benzoate of lithium, five grains every three hours. Button snake root (*liatris spicata*), gtts. 10 to 15, or *uva ursi*, gtts. 5 to 10 every hour, in warm water, will afford relief.

Diarrhoea—*Anamopsis californica*, a teaspoonful to a half teacupful of water and a teaspoonful of the solution every hour.

Dyphtheria—Equal parts of gelsemium and jaboranadi given from 10 to 20 drops every hour until complete relaxation may be given every 20 or 30 minutes if desired. Give till relaxation, if not relieved before. Turpentine is an excellent remedy. The throat should be well supplied inside and out. It may be mixed with an equal amount of glycerine. Chlorate of potash may be used as a mouth wash or chlorine water, described elsewhere.

Dropsy—*Apocynum cannabinum*, gtts. 5 to 15 every two hours until it acts on bowels, kidneys or vomits. Less doses continued for several days is better in moderate cases.

Dysentery—*Aconite*, gtts. 5 to 10, *ipeac* gtts. 10 to 20, water 4 ozs.; teaspoonful every half to every hour. Tenesmus requires 10 to 20 drops of gelsemium every three or four hours unless it acts too heavily on the eyelids.

Dysmenorrhoea—Discharges profuse, black and clotted; *pulsatilla*, gtts. 2 to 5 every two or three hours. *Viburnum opulus*, gtts. 3 in hot water every fifteen to thirty minutes until relieved of cramp-like pains. *Caulophyllum*, *senecio aureus* and *helonias dioica* equal parts three ounces and taken in teaspoonful doses before meals and continued for several weeks and attention given to other parts of the system, if needed, will restore the normal functions in a short time.

Dyspepsia—Rare or raw beef diet, with the following compound after each meal: Charcoal, resorein, sulphite of soda, of each 2 grains; pepsin, 1 grain; capsicum, 1-4 grain; *nux vomica*

1-6 grain. This is one powder and will cure ninety per cent of all uncomplicated cases.

Enteritis—An inflammation of the upper bowels and in which heavy drugging claims many victims. Ten to fifteen drops of the deodorized tincture of opium every three or four hours to quiet the inflamed bowel. Aconite, gtts. 10, water 4 ozs.; teaspoonful every hour, and turpentine stupe applied to abdomen. Olive oil a tablespoonful, to which 6 drops of turpentine is added, may be given every three or four hours. Keep lower bowels clean with injections of hot water, meant to be as warm as can be borne.

Oil with a little turpentine may be poured on a flannel cloth spread over the abdomen or poured directly on the skin and over this spread the flannel and gradually heat with a hot iron until the oil has penetrated, and repeat every one or two hours, is one excellent way to give oil.

Enuresis—Too free action of the kidneys has troubled many grown people as well as children. Belladonna, gtts. 5 to 20, water 4 ozs.; teaspoonful every two or three hours.

An advertisement of "bed wetting" uses the following for children. *Rhus aromatica*, grs. 5; *santonin*, gr. 1-4; *atropine*, gr. 1-120. One powder at bed time. One of the most successful ways is a good, quiet lecture in a low voice after it has gone to bed and asleep and in fact any habit can be effectively overcome in this way if there is perseverance and determination to succeed. It takes quite a while in the first effort to make any impression. A few trials will begin to show results by the third night. A blinking of the eyelids will first be noticed, and shows that an impression is being made. The voice must be in a low tone, because to make the most lasting impressions it must be made during sleep. Talk to the child and ask if it loves mamma. Stay with that until the child nods its head; the next question, Johnnie, you love papa? or any other name will do, but the question should be asked in a low tone and a little slow and continue until the child nods to the question. Then if there is some habit to overcome tell Johnnie that he is a good boy or better ask if he is a good boy, and continue until answered. It may be that he will look with a stare and speak. Be careful about waking him, because the impressions

that are to be made are given in sleep to take effect while awake. After a child is once brought under such influence, any instructions can be given with almost assurance that it will be effective.

Gastralgia—*Dioscorea*, gtts. 20 to 30 in warm water every fifteen minutes will give relief. Chloroform, gtts 10 to 20 in a little water frequently relieves the trouble.

Gastritis—The acute form will be benefited by aconite, gtts. 10, water 4 ozs.; teaspoonful every hour. Mucilaginous drinks and only very light diet. If the inflammation has been caused by poisons, nothing more than a little fresh sweet milk should be allowed. Subnitrate of bismuth, grs. 5 every two or three hours, or liquor bismuth and colorless hydrastis, gtts. 10 to 20 every one or two hours, will act nicely in either acute or chronic cases. A chronic condition may be benefited by the use of *pulsatilla*, gtts. 2 to 5 every three hours. Equal parts of powdered hydrastis and subnitrate of bismuth in doses of 3 to 6 grains every three hours.

Goiter—Paint with iodine once or twice a day and take potassium iodide, grs. 2 to 15, well diluted with water, two or three times a day.

Gonorrhoea—First stage, *gelsemium*, gtts 5 to 10, aconite, gtt. 1, 3 or 4 times a day. *Cannabis stava*, gtts. 5 every four hours where the discharge is thin. Permanganate of potash, grs 5 to 1 oz. of distilled water and used as an injection night and morning.

Spirits of nitre dule. 4 ozs.; oil of sandalwood and balsam copaiba, of each 1 oz.; tincture of cubebs, 2 ozs. Mix. Dose. A teaspoonful three times a day.

Hemorrhage—In most all hemorrhages, except in ulcerations, there is increased action of the heart with an obstruction in the circulation of the capillaries. If the blood current can be freed from this obstruction, the circulation will become equalized and the hemorrhage ceases.

If the blood is dark, it indicates passive hemorrhage from the veins and witchhazel, gtts. 5 to 6 every hour will act well in checking it. Where there is bleeding from stomach or bowels, tannic or gallic acid in five grain doses every hour will generally give good results. Uterine hemorrhage may be successful-

ly checked with equal parts of the oils of erigeron and cinnamon in doses of 6 to 10 drops every hour on sugar. Ergot, gtts. 10 to 20 every half to one hour will do well in many cases.

Hemorrhoids—Piles—Equal parts of flour of sulphur and tartaric acid and sugar. Dose: Teaspoonful each day before breakfast. Where there is a constricted condition, collinsonia, gtts. 10 to 15 two or three times a day. Where there is much pain, aesculus glabra, gtts. 1 to 10, water 4 ozs.; teaspoonful every three or four hours. An ointment made by stewing jimson leaves in lard is an excellent local application. Where there is much bleeding, persulphate of iron or tannic acid, grs. 10, water 1 oz., will check it. Pulverized borax, one part to five of vaseline, as an ointment, will have a salutary effect in itching piles. A hot sitz bath is a good palliative in blind piles highly inflamed.

Hernia—Relax with chloroform or apply a tobacco poultice over the hernia. Taking patient by the feet, with legs over the shoulders and jolting him up and down, will cause the bowel to return to its place if it is not too badly strangulated.

Hiccough—Nux vomica, gtt. 1 every hour, or black cohosh, gtts. 5 to 10, water 4 ozs.; teaspoonful every hour is generally sufficient. A piece of ice to lobe of ear is a success in many cases.

Hysteria—Where there is the sensation of a ball in the throat, ignatia amara, gtts. 1 to 10, water 4 ozs.; teaspoonful every hour. Where there is an inclination to weep, pulsatilla, gtts. 1 to 3 every two or three hours.

Insomnia—Sleeplessness—Jamaica dogwood (*piscidia erythrina*), gtts. 10 to 15 will generally be effective. May repeat dose in three hours.

Naevus—Mother's Mark—Apply thuja once or twice a day.

Sore Nipples—During the last weeks of pregnancy the nipples should be bathed frequently, say once or twice a day, with a weak solution of alum or borax water. Where they are excoriated, a weak solution of arnica, 20 drops to the ounce of water. Where ulcers form and are inclined to bleed a lotion of marigold will be effective. Equal parts of the tincture of benzoin and glycerine is valuable in the cure of fissures. The

parts should always be washed with warm water before allowing the child to nurse, and a rubber shield should be used to protect the parts until they are entirely healed.

Sore Throat—Aconite, gtt. 10, belladonna, gts. 10, water 4 ozs.; teaspoonful every one or two hours. If tonsils are involved and glands swollen, substitute phytolacca in place of the belladonna, and administer every three hours.

Otitis—Warm water injected into the ear, or hot fomentations will generally give relief. For the earache, plantago major is about all that will be needed, one drop in ear and a small piece of cotton inserted will generally be sufficient. May dilute with a little water if necessary.

Where the ear runs, bichromate of potassium (trituated 1 to 10), gr. 1 every four hours. A weak solution may be used locally according to the intensity of the action. Rhus tox., gtt. 1, every two or three hours, and colorless hydrastis, one part to four of warm water and ear syringed out once or twice a day, will act well in some cases, or the ear may be injected with warm water containing 5 or 6 grains of boric acid to the ounce.

Phlegmasia Alba Dolens—Milk Leg—Aconite, gtt. 10; Pulsatilla, gtt. 10 to 20; water, 4 ozs.; teaspoonful every hour for four or six hours, then change to every two or three hours. After second day, hamamelis, gtt. 5 to 10 every two to three hours. The leg should be steamed with good apple vinegar two or three times a day.

Prickly Heat—Locally, sponge with soda water, sugar of lead or sulphate of copper, grs 2 to 10, water 1 oz., or may dust the parts with oxide of zinc.

Psoriasis—Arsenic, one drop three or four times a day. Lappa major (burdock), teaspoonful three times a day. The treatment must be continued for some time to be effective.

Scabies—Itch—Borax mixed with olive oil and applied is an effective remedy. Balsam of Peru one dram applied and well rubbed in, after first taking a warm bath, kills the acarus generally at one application.

Varicocoele—Hammelis, gtt. 5 every two hours.

Warts—Thuja, gtt. 1 three times a day, and apply locally three or four times during the day. To touch them with nitric

acid and soak them in warm water in a few days will generally destroy the growth.

READY REFERENCE RECIPES.

Liniments—Rhumatic fluid: Oils of hemlock and cedar, of each $\frac{1}{2}$ oz.; oils of origanum and sassafras, each 1 oz.; spirits of turpentine and gum camphor, each $\frac{1}{2}$ oz.; put all into a quart bottle and fill with good alcohol. Apply to parts with brisk friction. May be used internally for colic. Dose for man, half a teaspoonful; for a horse $\frac{1}{2}$ to 1 oz. in a little warm water every fifteen minutes till relieved.

Hot Liniment—Tincture of capsicum, 16 ozs.; oils of cedar, hemlock, sassafras and origanum, of each 2 ozs.; pulverized carbonate of ammonia, 1 oz. Mix. Locally: Apply to the gums and nerve of tooth; and to face, in neuralgic pains, by wetting a piece of brown paper and applying to the affected part. Cotton should be used in applying to tooth or gums. Too long use will blister.

Pain Killer—Capsicum and ether, of each $\frac{1}{4}$ oz.; turpentine, spirits of ammonia, of each $\frac{1}{2}$ oz.; oils of sassafras, hemlock and cajaput, of each $\frac{1}{2}$ oz.; oil origanum, 1 oz.; oil of cloves, 1-4 oz.; gum camphor, 1-2 oz.; alcohol, 8 ozs. Mix. May use locally. For internal use. Dose, 20 to 30 drops.

Sunshine—Oils of sassafras and origanum, of each 1 oz.; balsam of fir, 1 oz.; spirits of turpentine, 3 ozs.; put in half gallon best acohol and let stand 12 hours, with occasional agitation; then to another half gallon of alcohol add one ounce each of tinctures catecue, guiac, capsicum and camphor, 2 ozs. After 12 hours pour the two parts together and then add sulph. ether 1 oz.; aqua ammonia, 2 ozs.; chloroform, 4 ozs. Shake well and its ready for use. Dose, 15 to 20 drops, repeated every thirty minutes until relief. Apply locally.

Inflamed Joints—Oils of cloves and turpentine, of each 1 oz.; laudanum, $1\frac{1}{2}$ ozs.; salicylic acid, 3 drs.; alcohol, 12 ozs. Mix. Apply to affected part every two hours.

Quick Cure—To alcohol $\frac{1}{2}$ gal., best, add 1 oz. each of oils hemlock, sassafras, spirits of turpentine, tincture of capsicum, catechu, guaie and laudanum; tincture of myrrh, 4 ozs.; oil of origanum, 2 ozs.; oil of wintergreen, $\frac{1}{2}$ oz.; gum camphor, 2

ozs.; chloroform, $1\frac{1}{2}$ ozs. Dose, 10 to 20 drops, repeated every half hour till relief. May use locally. None better.

Stiff Joints—Neatsfoot oil, 1 pt.; strong spirits of camphor, 1 pt.; spirits of turpentine, $\frac{1}{2}$ pt. Shake well before using.

A Corker—Equal parts of stronger aqua ammonia, tincture of iodine and flexible collodion. Considerable gas arises from its mixing, and it might blow out the cork. Will be ready for use in 12 to 24 hours. Use as other preparations of the kind, but should be kept away from fire.

Antiseptic No. 1—Raw linseed oil three parts and turpentine one part. If the turpentine is too great in quantity or either ingredient is of an inferior article, a white sediment will settle in the bottom.

Antiseptic No. 2—Turpentine three or four parts, cooked linseed oil one part.

Articles of this kind are sold on the market at fabulous prices. Just enough cooked linseed oil to color the turpentine is sufficient, and can be used for as many purposes as any preparation of the kind extant.

Penetrating—Equal parts of strong apple vinegar and turpentine, of each 8 ozs.; the white of one or two eggs.

Bed Bug Poison—Corrosive sublimate, 2 drs.; turpentine, 4 ozs. Apply wherever the bugs are located.

Ointments—Beeswax and fresh butter, of each 4 ozs.; white or Venice turpentine, $\frac{1}{2}$ lb.; olive oil, $2\frac{1}{2}$ lbs.; melt all together over a slow fire, and when nearly to the boiling point stir in slowly red lead 1 lb. When brown, remove from the fire and when milk or lukewarm add, ready mixed, strained honey, 12 ozs., and pulverized gum camphor, $\frac{1}{2}$ lb. For burns, cuts, bruises and any kind of sore, none better.

For Piles—Acetate of lead, pulverized camphor gum and powdered opium, of each 1 dr.; pulverized nut gall, 2 drs.; oxide of zinc, 1 oz.; simple cerate sufficient to make 2 ozs. Apply locally at night.

For Ringworm—Pyrogallie acid, grs. 15; white vaseline, 1 oz. Apply locally once or twice a day. Collodion may be used instead of the vaseline ounce for ounce.

For Eczema—Glycerine, 12 ozs.; kaolin, 1 lb.; boracic acid, 1 oz.; thymol, and menthol, of each, grs. 10; eucalyptus, gtts. 20. Mix. For local use generally.

For the Eye—Pulverized burnt alum, 1 dr.; powdered opium, gr. 20; spermaceti cerate, 3 drs. Apply on inflamed eyelids, or purulent ophthalmia, twice or three times a day.

Ulcerated Sore Leg—Balsam of fir, 1 oz.; sulphate of iron, 1 oz. A teaspoonful of each calomel and soda. Apply to ulcer by spreading on a thin piece of cloth sufficient to cover the sore. Its action is very painful, but its purpose is to kill all abnormal growth, and after that is done, which will occur after the second application, then use the ointment, first given above, and if continued treatment is followed faithfully, a cure is almost certain.

Catarrh—Benzoated lard, 2 drs.; yellow wax, 1 dr. Melt the wax and add the lard. When nearly cool, add menthol, grs. 3; oil of wintergreen, gtts. 60. This should be thoroughly mixed and kept in a colored bottle. Apply once or twice a day.

For Worms—Lard, 8 parts; aloes and the oil of tansy, of each one part; dried beef's gall, 2 parts. The aloes and beef gall should be reduced to a fine powder and mixed. Apply as any other ointment, once or twice a day.

Bust Developer—Extract saw palmetto, cocoa butter, lanolin, of each 2 ozs.; oil of cajuput, 1 oz.; oil of sassafras, $\frac{1}{2}$ oz. Should be applied and well and thoroughly worked and manipulated with hands and fingers once a day or twice a week. Deep breathing and thorough massage will produce excellent results in a few months.

Dentifrices—Tooth Wash—Carbonate of lime, 59 parts; soap, castile, 44 parts; oil of wintergreen, sufficient to flavor.

Tooth Powder—Oris root, pulverized, $\frac{1}{2}$ oz.; prepared chalk, finely powdered, $\frac{1}{2}$ oz.; Dutch pink, grs. 2 to 5. Mix thoroughly together and keep in an air-tight box.

To Make Black Teeth Look White—Pure muriatic acid, 1 oz.; honey, 2 ozs. Mix thoroughly. Apply rapidly with a good tooth brush and wash out the mouth with water.

Best tooth cleaner extant.

For Toothache—Carbolic acid, menthol, cocain, of each grs. 5. Mix and apply to cavity of tooth with a little cotton. Excellent for earache. Dissolve a little in warm water and drop in the ear.

Hair Lotion—One part of gum camphor to two parts of borax, pulverized, to one part of boiling rain water. May use as often as desired.

To Prevent the Hair From Falling Out—Neatsfoot oil and turpentine, of each 1 oz.; cantharides, active solution, gtt. 30; oil of wintergreen, gtt. 20. Mix. Apply twice or three times a week.

Poultices—The curative action depends principally upon the liquids with which they are moistened and the heat retained by the mass. With this object they should never be heavy or very bulky, and frequently repeated. The addition of a little lard, olive oil or glycerine to a poultice tends greatly to promote its emollient action and retard its hardening. Any poultice or the application of heat in any form should be regular and continuous as long as used.

Anodyne—To relieve pain in the bowels, where the ordinary heat fails, a poultice of poppy heads, 1 oz.; water, 24 ozs. Boil, strain and add to the fluids wheat bran or corn meal to make a poultice.

Antiseptic—Pulverized Peruvian bark, 1 oz.; barley flour, 6 ozs.; water, 1 qt. Boil and when cool enough add pulverized camphor gum, 1 dr.

Tupentine—Olive oil and linseed meal, of each, 1 oz.; turpentine, 2 ozs.; oatmeal, 4 ozs.; boiling water sufficient. A good poultice for almost any purpose.

A slippery elm poultice can be used in like manner and where there is considerable soreness, a little arnica can be added.

Pokeroot—A poultice of this kind is excellent in glandular troubles of throat or breast.

Nostrums—Since the market has been flooded with nostrums of various kinds it is thought expedient to give a short description with the ingredients entering into their composition. Nostrum venders have many ways of getting their favorite product introduced to the general public. A very unique way is by samples sent broadcast through the mails or through

some advertising medium, such as newspapers or by circular letters and the agent, with premiums attached. The amount of money expended in advertising so-called patent medicines will reach into the millions every year, and the methods of advertisers have created quite a rivalry, and we very frequently see one concern attack another through printers ink. It is amusing to see a patent medicine vender with his tin horn show or his "coon wid de banjo," arrive in town, stretch his tent and call a crowd to see him display some wonderful discovery that has restored to health Captain Grasshopper or Colonel Longreen or the old lady Longtongue, after one or all had gone the rounds of the medical profession, without being benefited. Not unlikely the aforesaid bulk of wisdom will trot, with great speed, up and down the Broadway of human anatomy; pace around the circle of physiology and gyrate through the meanderings of medical jurisprudence in such a magnificent manner as to attract the most wonderful attention. Doubtless there will be some present to hear a display of professional oratorical gas who had not paid his doctor bill for many months. The vender expects cash and does not run a credit business, but the doctor of a local practice is expected, by some, to thrive and do good service on gas and hot-air. A great many firms are in earnest about their business and the users of their so-called scientific product are very cautiously warned to refuse all substitutes.

By way of comparison, as to the cost of some of the proprietary remedies, the following for cough is selected: Tincture white pine, 8 ozs., 14 cents; chloroform, $1\frac{1}{2}$ oz., 2 cents; ipecac, 2 ozs., 38 cents; sugar, 56 ozs., 25 cents; carbonate of magnesia, 2 ozs., 3 cents; tincture of gelsemium, 1 oz., 2 cents; water, 28 ozs.; total cost, 84 cents. This makes five pints, and bottles cost 50 cents, making a total cost of \$1.44. The bottles are made to hold $21\frac{1}{4}$ ozs. and cost about 46 cents a dozen and sold at about \$1.90 per dozen bottles. Most all \$1.00 bottles cost at the rate of \$1.50 per eight bottles. This is rated as the cost to the manufacturer. The retail druggist is generally required to pay about \$7.50 per dozen bottles.

A liniment for all purposes and sold at the same prices as to cost to the manufacturer is made with soap liniment, 5 pts.; aqua ammonia, 2 pts.; tincture of opium, 1 pt.

A nerve sedative is prepared for rest and to quiet restlessness as follows: Bromide of potassium, 1 oz.; chloral hydrate, 1 oz.; cannabis indica and hyoseyamus, of each, gtt. 4; aromatic enough to color. Generally prescribed in teaspoonful doses every three or four hours.

A celebrated kidney cure is prepared as follows: Holland gin, best, 8 ozs.; acetate of potash, 4 ozs.; fl. ext. of stone root and praeira brava, of each 4 ozs.; fl. ext. of buchu, 8 ozs.; simple elixir, sufficient to make one gallon. May be taken in teaspoonful doses three or four times a day.

A blood purifier: Alcohol, 2 pts.; fl. ext. of yellow dock, stillingia and sassaparilla, of each 8 ozs.; fl. ext. of podophyllum, dr. 1; simple elixir, 2 pts.; iodide of potassium, 1 oz. Mix. Dose: Teaspoonful three times a day.

Headache tablets are prepared with but little variation as to proportion and the similarity of the drugs used, but few will be given to show this: Acetanalid, grs. $2\frac{1}{2}$; bicarbonate of soda, grs. $1\frac{1}{2}$; carbonate of ammonia, gr. 1. For one dose.

Acetanalid, 2 parts; bromide of ammonia and salicylic acid, of each one part. Dose. grs. 5 to 15.

Acetanalid, 75 parts; bicarbonate of sodium, $17\frac{1}{2}$ parts; tartaric acid, $7\frac{1}{2}$ parts. Dose: grs. 5 to 15.

It will be seen that the base of all such tablees is acetanalid, with a modification, by the manufacturer, to agree with his peculiar notion.

The following proprietary medicines have been given by chemical analysis and will approximate the original secret formula. This is given for the benefit of those using same and the formulae have been gleaned from medical journals, newspapers and books. The name of the preparation is given and disclaim any knowledge of any infringement.

Actina—Menthol crystals, 1 dr.; alcohol, $\frac{1}{2}$ dr.; sulphuric ether, 1 dr.; oil of mustard, 2 drs.; sponge sufficient to make 1 oz.

Allen's Lung Balm—Tincture sanguinaria and lobelia, of each 8 ozs.; tincture of opium, 4 ozs.; tincture of capsicum, $1\frac{1}{2}$ ozs.; essence of sassafras and anise, of each 1 oz.; New Orleans molasses, $\frac{1}{2}$ gal. Bring the molasses slowly to a boil and add cautiously the other ingredients.

Arabian Balsam—Oleum gossypium, 15 ozs.; oleum origani, 1 oz.; oleum terebinth, 4 drs. Mix.

Aseptin—Borax, 2 parts; alum, 1 part. Mix.

Athlophoros—Acetate of potash, 1 dr.; salicylate of soda grs. 490; sugar, 4 ozs.; caramel, gtts. 3.; water, 14 ozs.

Atkinson's Infant Preservative—Carbonate of magnesia, 6 drs.; white sugar, $2\frac{1}{2}$ ozs.; oil of anise, gtts. 30; compound spirits of ammonia, $2\frac{1}{2}$ drs.; rectified spirits, $2\frac{1}{2}$ drs.; tincture of opium and syrup of saffron, of each 1 oz.; caraway water sufficient to make one pint.

Ayer's Cherry Pectoral—Wine of antimony and wine of ipecac, of each 3 drs.; tincture of blood root, 2 drs.; acetate of morphia, gr. 3; syrup of wild cherry, 3 ozs.

Ayer's Sarsaparilla—Fl. ext. of sarsaparilla and stillingia, of each 3 ozs.; fl. ext. of yellow dock and may apple, of each 2 ozs.; sugar, 1 oz.; iodide of potassium, grs. 90; iodide of iron, grs. 10. Mix.

Bareel's Indian Liniment—Tincture of capsicum, 1 dr.; oil of organum, sassafras, pennyroyal and hemlock, of each $\frac{1}{2}$ oz.; alcohol, 1 qt.

Baker's Bone and Nerve Liniment—Camphor, gr. 70; oil of tar, $\frac{1}{2}$ dr.; oil of thyme, 1 dr.; oil of turpentine, 2 drs.; lubricating sufficient to make 2 ozs.

Bateman's Pectoral Drops—Tincture of opium, $1\frac{1}{2}$ ozs.; tincture of opium benzonated, 20 ozs.; tincture of Canada castor, 5 ozs.; ground cochineal, 1 oz. Mix. Adult dose: 20 to 30 drops morning and evening. Not to be given to children under 10 years old.

Brown's Male Fern Vermifuge—Fl. exl. of male fern, 3 ozs.; oil of wintergreen, gtt. 1; simple syrup, 5 ozs.

Bromo-chloralum—Alum, coarse powder, 1 lb.; boiling water, 2 pts.; aqua ammonia and muriatic acid sufficient; bromine, $\frac{1}{2}$ oz.; water enough to make $\frac{1}{2}$ gal.

Barns' Frost Balsam—Copaiba and turpentine, of each $\frac{1}{2}$ ounce.

Brown's Bronchial Troches—Powdered extract of licorice, 1 lb.; powdered cubebs, $1\frac{1}{2}$ lbs.; powdered gum arabic, 1-4 lb.; sugar, $1\frac{1}{2}$ lbs.; extract of conium, 1 oz. Mix.

Brown's Iron Bitters—Iron, 1 gr.; calisaya bark, 2 grs.;

phosphorous, 1-200 gr.; cocoa, 1 gr.; viburnum prunifolium, 1 gr.

Rhodie's Asthama Liniment—Oil of stillingia, 4 drs; oil of cajaput, 2 drs.; oil of lobelia, 1 dr.; alcohol, 1 oz. Mix. Bathe chest and throat three times a day.

Bucklen's Arnica Salve—Extract of arnica, 1 oz.; rosin cerate, 8 ozs.; vaseline, 2 ozs.; seedless raisins, 8 ozs.; fine cut tobacco, $\frac{1}{2}$ oz.; water sufficient. Boil raisins and tobacco in one pint of water until the strength is extracted; press out the liquid and simmer to 4 ozs. Soften the extract of arnica with a little hot water and mix the liquid with it; add this to the rosin cerate and vaseline previously warmed and mix thoroughly.

Bull's Blood Syrup—Iodide of potash, 12 drs.; red iodide of mercury, 2 grs.; tincture of poke root, 3 drs.; compound syrup of stillingia, 6 ozs.; simple syrup to make one pint.

California Liniment—Tincture of myrrh and capsicum, of each, 1 oz.; sweet spirits nitre and sulphuric ether, of each 1 oz.; chloroform, $\frac{1}{2}$ oz.; tincture of arnica, 1 oz.; oil of spearmint and wintergreen, of each 2 drs.; oil of lobelia, 1 dr.; aqua ammonia, $\frac{1}{2}$ oz.; alcohol, 1 qt.

Carter's Little Liver Pills—Podophyllin, $1\frac{1}{2}$ grs.; aloes, $3\frac{1}{2}$ grs.; mucilage of acacia sufficient. Mix; divide into 12 pills and sugarcoat.

Castoria—Senna, 4 drs.; manna and rochelle salts, of each 1 oz.; bruised fennel, $1\frac{1}{2}$ drs.; boiling water and sugar, of each 8 ozs. Pour the water on the ingredients, cover and let remain until cool; strain and add the sugar and shake till dissolved and then add a few drops of the oil of wintergreen to flavor.

Cazeaux's Nipple Ointment—White wax, $4\frac{1}{2}$ ozs.; oil of sweet almonds and clarified honey, of each $\frac{1}{2}$ oz.; balsam Peru, $2\frac{1}{2}$ drs. Mix.

Chamberlain's Relief—Tincture of capsicum about 1 oz.; spirits of camphor, about 3-4 oz.; tincture of guaiac, 1-4 oz.; colored tincture to make 2 ozs.

Centaur Liniment—"For Man"—Oil pennyroyal, $\frac{1}{2}$ oz.; oil thyme, oil turpentine, of each 1-4 oz.; soap, 130 grs.; caustic soda, 10 grs.; water to make 1 pt. Mix.

"For Beast"—Oil spearmint, 1 dr.; oil mustard, 15 min.; oil turpentine, 1-4 oz.; oil amber (crude); black oil, of each $\frac{1}{2}$

oz.; soap, 130 grs.; caustic soda, 10 grs.; water to make one pt. Mix. (New idea.)

Chamberlain's Colic, Cholera and Diarrhoea Remedy—Tincture capsicum, 20 drs.; tincture camphor, 16 drs.; tincture guaicum, 12 drs. Mix. (Medical World.)

Child's Cough Mixture—Syrup squills, 2 drs.; wine ipecac and tincture camphor compound, of each 1 dr.; simple syrup, 4 drs.; water, 3 ozs. Mix.

Cleay's Asthma Powder—Pulverized stramonium and belladonna, of each 30 parts; pulverized saltpetre, 5 parts; pulverized opium, 2 parts. Mix. A little to be burned and fumes inhaled. (Chemist and Druggist.)

Coe's Dyspepsia Cure—Powdered rhubarb, 2 drs.; fluid ext. of gentian, 3 drs.; peppermint water $7\frac{1}{2}$ ozs.; bicarbonate of soda, 6 drs. Mix. Dose: A teaspoonful half hour before meals. (The Drug Mill.)

Combe's Asperient—Sulphate of Magnes, 35 parts; roasted coffee, 40 parts; boiling water, 500 parts. Mix. Boil two minutes and sweeten to taste with white sugar. Dose: Wineglass full in the morning.

Cook's Electro-Magnetic Liniment—Alcohol, 1 gal.; oil amber and gum camphor, of each 8 ozs.; castile soap (fine), 2 ozs.; beef's gall, 4 ozs.; aqua ammonia, 12 ozs. Mix.

Cobb's Pills—Extract of hoyoseyamus and extract of conium, of each $\frac{1}{2}$ dr.; extract of colocynth, 11 gr.; extract of nux vomica, 4 grs. Mix. Divide into 30 pills.

Cram's Fluid Lightning—Oils of mustard, cajeput, cloves and sassafras, of each 2 drs.; ether, 1 oz.; tincture of opium, $1\frac{1}{2}$ ozs.; alcohol, 20 ozs. Mix and filter.

Cuticura Ointment—Its base is petroleum jelly, colored green, perfumed with oil of bergamont and containing two per cent of carbolic acid. (Northwestern Lancet.)

Cuticura Resolvent—Aloes socotrine and powdered rhubarb, of each 1 dr.; iodide of potassium, 36 grs.; whiskey, 1 pt. Macerate over night and filter. (St. Louis Druggist.)

Dellenbaugh's Cough Cure—Pierate of ammonia, 2 grs.; chloride of ammonia and extract of licorice, of each 1 dr.; water 3 ozs.

Derby's Liniment—Linseed oil, 1 gal.; aqua ammonia, 4 ozs.; tincture capsicum, oil origanum, of each 1 oz. Mix.

Deshler's Salve—Rosin and suet, of each 12 ozs.; yellow wax, 12 ozs.; turpentine, 6 ozs.; linseed oil, 7 ozs.

Dow's White Liquid Physic—Sodium sulphate, 8 ozs.; dissolve in water, 24 ozs.; then add nitro-muriatic acid, 2 ozs.; pulverized alum, 68 grs. Mix. Dose: A tablespoonful in water. It is a cooling purgative.

Eclectic Stillingia Liniment for Croup—Stillingia,, 8 drs.; oil cajeput, 4 drs.; oil lobelia, 2 drs.; alcohol, 16 ozs. Mix. Apply locally and is sometimes given in one drop doses.

Egyptian Eye Salve—White rosin, 6 drs; burgundy pitch, beeswax, mutton tallow, Venice turpentine, balsam of fir, of each, 30 grs. Mix. Spread on thin leather or cloth and apply to affected part.

Fellow's Hypophosphites—Glucose, 1 lb.; simple syrup, 1 pt.; hypophosphite calcium, 128 grs.; hypophosphite potassium and sulphate iron, of each 48 grs.; sulphate magnesia, 32 grs.; sulphate quinine, 14 grs.; sulphate strychnine, 2 grs.; water sufficient, 2 pts. (Therapeutic Gazette.)

Freeman's Vermifuge Oil—Oil of worm seed and pink root, of each $\frac{1}{2}$ oz.; oil of turpentine, 2 drs.; castor oil, $1\frac{1}{2}$ ozs.; hydrastin, 10 grs.; syrup of peppermint, $\frac{1}{2}$ oz. Dose for child 10 years old, a teaspoonful three times a day, one hour after each meal. If it purges too freely, give less often.

Gadberry's Mixture—Liquor tersulphate iron, 3 drs.; liquor arseniate potash, 90 min.; saltpetre and sulph. quinine, of each 2 drs.; water to make 2 ozs. (Bulletin of Pharmacy.)

Gargling Oil—Crude petroleum, 13 ozs.; aqua ammonia, 6 ozs.; soft soap and benzine, of each 16 ozs.; crude oil amber, 2 ozs.; tincture iodine, 1 oz.; water, 5 pts.

Mix the petroleum and soap, add the ammonia, oil of amber and tincture of iodine and mix thoroughly. Then add the benzine and finally the water.

Golden Eye Water—Sulphate of hydrastia, 2 grs.; water, 1 oz.

White Oil Liniment—Carbonate ammonia, 19 parts; camphor, 20 parts; oil turpentine, 21 parts; oil origanum, 20 parts; castile soap, 19 parts; water make by weight, 300 parts.

Good Samaritan Liniment—Oils of sassafras and hemlock, spirits turpentine, tincture of capsicum, tincture of opium, of each 1 oz.; tincture of myrrh and the oil of wintergreen, of each

4 ozs.; oil of origanum and gum camphor, of each 2 ozs.; chloroform, $1\frac{1}{2}$ ozs.; alcohol, 2 quarts.

Hall's Catarrh Cure—Gentian root, 1 1-4 ozs.; bitter orange peel, 5 drs.; cardamon seeds, 100 grs.; potassium iodide, 1 oz.; dilute alcohol sufficient. Macerate the crude drugs in 12 ozs. of the alcohol for 48 hours, then percolate by adding enough alcohol to make 16 ozs., and then add the iodide of potassium. (New Idea.)

Hamlin Wizard Oil—Alcohol, 1 pt.; gum camphor, 1 oz.; oil of sassafras, tincture of myrrh, tincture of capsicum and chloroform, of each $\frac{1}{2}$ oz. (Douglas in Medical World.)

Hanson's Magic Corn Cure—Simple cerate, 1 oz.; salicylic acid, 1 dr. Mix thoroughly. (Indiana Pharmacist.)

Hostetter's Bitters—Sugar, calamus root, orange peel, Peruvain bark, gentian root, columbo root, of each 2 lbs.; rhubarb, 8 ozs.; cinnamon, 4 ozs.; cloves, 2 ozs.; alcohol, 4 gal. Mix. (The Medical Bulletin.)

King's New Discovery—Sulph. morphia, 8 grs.; fl. ext. ipecac, $\frac{1}{2}$ dr.; chloroform, 60 min.; tincture white pine, 2 ozs.; water, 7 ozs.; carbonate of magnesia, 1-4 oz.; sugar, 14 ozs. Rub the magnesia with one ounce of the sugar in a mortar, and triturate with the tincture of white pine and the ipecac; gradually add the water and triturate with the mixture in the mortar. Filter and dissolve the morphia in the filtrate. Mix the chloroform with the rest of the sugar in a bottle, then add all together. Keep in a tight vessel. (New Idea.)

Mexican Mustang Liniment—Oils of turpentine, thyme, amber (crude), of each $\frac{1}{2}$ dr.; black oil, 1 dr.; coal oil, 3 drs.; water, 3 ozs. or 2 drs.; soap, 35 grs.; caustic potash, 3 grs. Mix. (New Idea.)

Oil of Joy—Oils of sassafras, cedar and tincture of guaic, of each 1 oz.; gum camphor, $\frac{1}{2}$ oz.; tincture of capsicum, 2 ozs.; alcohol and aqua ammonia, of each 4 ozs.; chloroform, 3 ozs.

Oil of Gladness—Oils of marjoram, peppermint, horsemint and the tincture of opium and red sanders, of each 1 dr.; ether, 2 drs.; tincture capsicum, 4 drs.; alcohol sufficient to make 8 ozs. Mix. (Druggist Circular.)

Phenol Sodique—Carbolic acid, 188 grs.; caustic soda, 31 grs.; distilled water, 4 ozs.

Pierce's Favorite Prescription—Savin and cinchona, of each 150 grs.; agaric and cinnamon, of each 75 grs.; water sufficient to make a decoction of 8 ozs. To this add: Acacia, 150 grs.; sugar, 75 grs.; tincture of digitalis and opium, of each $\frac{1}{2}$ dr.; oil of anise, 8 min. Dissolve the gum and sugar in the strained decoction, then add alcohol, 2 ozs., in which the oil has previously been dissolved. (Hager.)

Pierce's Golden Medical Discoevry—Fl. ext. cinchona, 16 ozs.; fl. ext. of columbo, 4 ozs.; fl. ext. of guaiacum, 8 ozs.; fl. ext. of licorice, 4 ozs.; tr. opium, 1 oz.; podophyllin (resinoid), 120 grs.; glycerine, 6 pts.; alcohol, sufficient. Dissolve the podophyllin in the alcohol and add the rest of the ingredients. Mix. Dose: A teaspoonful. (The Drug Mill.)

Piso's Cure for Consumption—Tincture tolu, $\frac{1}{2}$ oz.; fl. ext. of lobelia and cannabis indica, of each 2 drs.; chloroform, 1 dr.; sulph. morphia and tartar emetic, of each 4 grs.; ess. mentha viridis, 10 min.; water, 8 ozs.; sugar, 14 ozs. Mix the fluid extracts, tincture tolu, chloroform, essence of spearmint and shake with the sugar in the bottle. Dissolve with the morphine and tartar emetic in hot water, then add the water to the sugar in the bottle. Dose: One teaspoonful. (New Idea.)

Price's Pile Ointment—English calomel, 1 oz.; powdered opium, $\frac{1}{2}$ oz.; pure carbonate of lead, 1 lb.; oxide of zinc, 1 lb.; olive oil, 2 lbs.; fresh lard (without salt), 2 lbs. Mix thoroughly in wedgewood mortar. This has been sold very extensively at \$1 for two ounces.

Sage's Catarrh Remedy—Powdered hydrastis canadensis, 1 oz.; powdered borax, 10 grs.; salt, 10 grs.; ferro-cyanuret of iron sufficient to color. This has been sold for \$5.00. (Dr. Hewitt in Medical World.)

St. Jacob's Oil—Gum camphor, chloral hydrate, chloroform, sulph. ether, of each, 1 oz.; tincture of opium, oil origanum; oil sassafras, of each $\frac{1}{2}$ oz.; alcohol, $\frac{1}{2}$ gal. Mix. (Medical World.)

Simmon's Liver Regulator—Hepatica, leptandra, serpentaria, of each 1 oz.; senna, $1\frac{1}{2}$ ozs. Mix. Put the ingredients into $2\frac{1}{2}$ pints of boiling water. Let stand 19 hours, then strain. Add $\frac{1}{2}$ pint of good whisky. (New Remedies.)

Syrup of Figs—Senna leaves, 14 ozs.; coriander seed, 6 ozs.; figs, 24 ozs.; tamarind, 18 ozs.; cassia pulp, 18 ozs.; prunes,

ext. licorice, $1\frac{1}{2}$ ozs.; essence peppermint, $1\frac{1}{2}$ ozs.; syr. simp. 1 gallon.

The formula omits directions; but probably a water extract should be made of the drugs, so as to measure about 4 pints, and in this dissolve 8 pounds of sugar to make syrup. (Druggist Circular.)

Syrup of Stillingia Compound—Fl. ext. stillingia, fl. ext. corydalis, of each 1 oz.; fl. ext. blue flag, fl. ext. elder flowers, fl. ext. prince's pine, of each $\frac{1}{2}$ oz.; fl. ext. prickly ash berries, fl. ext. coriander, of each 1-4 oz.; sugar, 14 ozs.; water sufficient. Mix the fluid extracts and add water to make $6\frac{1}{2}$ fluid ounces. In this dissolve the sugar, using as little heat as possible, and add water to make one pint.

Thompson's Eye Water—Zinc, sulphate, 20 grs.; copper, sulphate, 5 grs.; tincture saffron, 2 drs.; tincture camphor, 1 dr.; rose water, 8 ozs.; dist. water, 8 ozs. Mix and filter. (New Remedies.)

Tip-Top—Calomel, 60 grs.; tincture iodine, 1 oz.; oil sassafras, 1 dr.; kerosine oil, 3 ozs. Shake well before using. This preparation is "tip-top" in some skin diseases and does not belie its name. With a few drops of carbolic acid added, it arrests or stops a spider bite, or any other poisonous insect from assuming the erysipelatous or gangrenous form that we frequently see in the course of the practice of medicine. (Dr. Sturdivant in Medical Summary.)

Williams' Pink Pills for Pale People—Sulphate of iron, 240 grs.; carbonate of potassium, 140 grs.; sugar, 48 grs.; tragacanth, 16 grs.; strychnine, 1 1-4 grs.; arsenic $1\frac{1}{2}$ grs.; glycerine, 10 min.; water, sufficient. To make mass mix and divide into 90 pills and coat with pink sugar.

Wilson's Lightning Liniment—Oils of cedar, sassafras, the tincture of opium, guaiac, and capsicum, of each 3 ozs.; aqua ammonia, spirits of camphor and turpentine, of each 4 ozs.; chloroform, 3 ozs.; alcohol, 1 gallon. (Druggist Circular.)

Winslow's Soothing Syrup—Morphia sulph. $\frac{1}{2}$ oz.; sodii carbon., 1 gr.; simp. syrup, $1\frac{1}{2}$ ozs.; aqua, $\frac{1}{2}$ oz.; spirits fœniculi, 1 dr. Mix. (New Idea.)

Walcott's Pain Paint—Oil peppermint, 1 or 2 drs.; dried mint leaves, finely pulverized, 1 or 2 drs.

Moisten the leaves with the oil, enclose in lead wrappers (to prevent evaporation), leave enclosed a few days, then dissolve in 4 ounces of alcohol; add 12 ounces of water; shake and filter. (Dr. Crull in Medical World.)

Witchhazel Ointment—Tincture of hemamelis, 12 drs.; lanoleum, 6 drs.; petrolatum, 16 ozs. Mix. Lanoleum is here used in place of the copyrighted term lanolin. (Medical Standard.)

Yellow Family Drops—Opium, 2 ozs.; sapo venet, 1 lb.; croci opt, 2½ ozs.; sp. rosmarini, 2 lbs. Mix. Digest for a week and add oils rosmarini, origani and camphor, of each 2 ozs. Mix well. For spirits rosmarini, take rosmarini, 3 ozs.; alcohol, sufficient to make 2 lbs. This has been used for over a century by the people of Pennsylvania to break up colds and is an effective remedy. (Prof. Waugh in Medical World.)

Many compounds, such as Lydia Pinkham's Compound, McLean's Strengthening Cordial, Peruna, Paine's Celery Compound, Seven Barks and Warner's Safe Cure have been omitted, owing to the method of their production and the similarity of those already given.

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