

## THE SAFETY MARGIN AND TOBACCO.

"For thy sake tobacco I would do anything but die", said Charles Lamb in his famous farewell to tobacco. He had gotten to the point where life must be sacrificed or tobacco given up.

A good many people in these days have reached a similar situation. They have gotten where they must do one thing or the other, they must die or stop using tobacco. That condition comes to every tobacco user sooner or later. There can be no doubt at all that every man who smokes, whether he is what is called a heavy smoker or a light smoker, those are entirely relative terms; what might be a light smoke for one man would be a heavy smoke for another, constantly is shortening his life. He is doing something which is a damage to him.

All animals, all living things are injured by tobacco.

The smoke of tobacco is a poison to plants. The green-house keeper who makes use of tobacco to destroy the green flies on his roses has to exercise the greatest caution or he will cause serious injury to the plants.

The tobacco plant furnishes food for no creature in the world except a worm. This worm is provided with special means by which the nicotine and poisons are disposed of so that it appears to do it no harm but <sup>man</sup> is constituted with higher functions than to serve the purpose of a tobacco worm, so it would seem a perfectly proper thing to leave the tobacco plant to be eaten by the worm which can eat it with impunity.

Everyone admits that tobacco is bad for boys. Tobacco is no worse for boys than it is for girls or men or women. It is just the same value for each one because it is a poison and an almost universal poison. One reason why it is bad for boys is because it stunts growth and development. When a boy habitually smokes, he is dwarfed, his growth is stopped. It has been proven again and again by statistical comparisons, that there is a marked difference in the growth of smokers and non smokers. The weight of non-smokers has been found to be 24 per cent greater than the weight of the smoker.

In height non-smokers outstripped the smokers by 27 per cent and in chest growth which is a very important means of measuring one's vital capacity the chest growth increased in the non-smokers 42 per cent more than in the smokers. The lung capacity of the non-smokers increased 75 per cent more than the lung capacity of the smokers. These figures were obtained with young men of about 18 to 21 years of age who were just finishing their development into manhood, and the smokers were dwarfed. Why were they dwarfed? Because nicotine and the other poisons that are found in tobacco are such deadly poisons that they paralyze all the vital functions in a greater or lesser degree. All the life processes and more or less damaged by them. The kidneys, the liver, the digestion, the heart action, the blood making function and every other function of the body is damaged by them.

if this is true

But you ask "Why don't we see this effect in man? Because men have already got their growth. They have already attained their maximum weight. This peculiar effect of nicotine cannot be manifested in men because men have already attained their full height and their full weight and have attained their full chest capacity and so there is no opportunity for the poisonous effects of tobacco to be shown in arrest of development. It comes in a more subtle way to adults, all grown people have something which corresponds to this increase in size, to this growth, which is known as the margin of safety. The boy is growing, he is adding to his weight, he is adding to his height and adding to his growth, he is continually expanding and developing from day to day and by and by he reaches his full growth but he does not stop with that full development but continues to develop for some time after he has obtained his full stature. Everybody knows that a boy of 21 although he may be as tall and large and weigh as much, has not the strength and has not the endurance of the man of 28, and why? Because this man of 28 after he has stopped growing in height, after his bones have reached their full length, still went on developing, his muscles grew larger and stronger and

firmer, his heart grew larger, the brain kept on growing, in fact the brain keeps growing until about 40 years of age and the lungs are all the time developing and expanding and all the vital powers are increasing continually until finally they reach the maximum and that maximum is so great that it is far beyond the the momentary needs of the body. For instance in lung capacity, lung capacity is about three hundred cubic inches, when one breathes in an ordinary breath if he make a great effort, he can take in 100 cubic inches more and when he breathes out an ordinary breath he can then by an effort compress the lungs so that he can breathe out 100 cubic inches more, yet after he has breathed out all he can, there is still left in the lungs, 100 cubic inches of air that he cannot get out, thus it is seen we have three hundred cubic inches of air in addition to the 24 or 25 cubic inches of air that in general we breathe out and in. About two thirds of a pint is the amount of this tidal air. We take in at each breath two thirds of a pint of air and breathe out about two thirds of a pint of air but we have in addition to that about 300 cubic inches more of air space in the lungs, at least 8 times as much as we ordinarily use. That means we have an enormous margin of safety. Why is that? That we may in occasions sometimes run to catch a train or hurry to get out of the way of cars, so that we can run up stairs or make violent exertions when necessary. Because when we use our muscles to their fullest capacity, we have to take into our lungs 7 or 8 times as much air in order to carry away the poisons in the body as we do when we are lying still. Our muscles are capable of increasing their activity at least 10 times or one thousand per cent, but we have to have seven times as much air when we do that, we do not have to have ten times as much air because the utilization of the air is more efficient when we take a great deal of it during violent exercise. We have also a margin of safety in heart capacity. The heart is able to do 5 times as much work as we ordinarily require of it. The

liver is able to do many times the amount of work that is ordinarily required of it and the kidneys are able to do 15 or 20 times the amount of work ordinarily required of them, the skin is able to do in one hour, as in a case of a man working hard in a harvest field on a very hot summer day, as much work as it ordinarily does in a state of rest in the whole 24 hours. Thus it is seen that there is a great margin of safety in the skin. It can do 20 times as much work as is ordinarily required of it. So it is with almost every function of the body. There is enormously greater capacity for work than we are utilizing. An experiment was made with a dog sometime ago. A tube was put into its stomach, then a stream of water was passed into the dog's stomach and out again until a barrel full of water had been thus used. It was then found that the amount of pepsin in that water was sufficient to digest a dog 20 times as big as the dog that made the pepsin. The dog had produced pepsin enough to digest 20 times his own weight of flesh. This shows what an enormous margin of safety nature provides. Now the adult smoker is not stunted in his growth, because he has already gotten his growth but he is damaged by the destruction, the using up of his margin of safety/ For instance, he has a heart capacity 5 times as great as he uses. He smokes and smokes two or three or four or five or ten years, then if he is tested by an effort to run in a race or by the necessity for making a special effort of some kind he finds suddenly that he is short of breath. What is the meaning of that? The meaning of it is simply that he has lost half of his margin of safety. His heart now is able to do only two and a half times the ordinary work required of it and instead of five times the ordinary work.

The same thing is true of the kidneys. By means of a venal efficiency it is possible to tell just how much work a man's kidneys are able to do in comparison with the amount of work they ought to do. Under this test the smoker is always found to have his capacity diminished, very often to 50

per cent of what it ought to be. A man who had stopped smoking some years before, and who thought himself to be in perfect health was given the test and it was found his kidney capacity was only 50 per cent, he had lost half his margin of safety, in fact more than half, because a man can<sup>not</sup> get along with only one third of his original kidney capacity. He can live with two thirds of one kidney, that would be one third of his original kidney capacity, but when a man gets down to thirty three and one-third per cent, that is the minimum and the margin of safety, the other 67 per cent is lost. This man had gotten down to 50, he had used up all but 17 per cent of his safety margin. That meant that man would be an easy prey for Bright's disease. In the Phipps Institute in Philadelphia, where hundreds of postmortem examinations are made of persons who die of tuberculosis every year, the records of this institution for the last 15 years<sup>have</sup> shown continuously and increasing with each year that tobacco users are more than twice as liable to have tubercular consumption as persons who do not use tobacco. Here is a very plain indication that the lungs are damaged by the use of nicotine. Growing boys who do not smoke increase their lung capacity in a year's time 78 per cent more than smokers do and consequently we may say that the smokers use up their safety margin 75 per cent faster than the non-smokers do and that is the reason why they get tuberculosis early. So we might go with every organ of the body and show how the safety margin is consumed by the use of tobacco, at the same time the smoker does not know tobacco is hurting him until he has been irreparably damaged. A man who smokes says "well I suppose tobacco does hurt some but it doesn't hurt me. You know what is one man's food is another man's poison and so we are all different. Tobacco doesn't hurt me, why, if tobacco hurt me, if I were sure it would hurt me, of course I have sense enough to know that I ought to stop and I would stop." But he does not stop using tobacco until he finds his heart margin is all gone, until he is short of breath so as he cannot run to catch a train, or cannot hurry

a little in going up stairs, to his office, then he begins to think something is the matter, and goes to the doctor, who tells him "You have cardiovascular renal disease." That is a good long word. But it is very significant. It means that the heart, blood-vessels and kidneys are diseased. There isn't very much left of that man, all the medical skill in the world cannot save his life, because his machine is used up, it is damaged and it cannot be repaired. All that can be done is to help him to keep out a crippled existence. Now what a terrible sacrifice that man has made, just to temporarily pickle himself with tobacco. He has thrown away his safety margin, a thing more precious than gold because it cannot be reproduced.

Another very important fact that everybody has recently been demonstrated is that nicotine stimulates the activity of the suprarenal glands. These are glands located just above the kidney. They are very important glands. It has recently been discovered that nicotine stimulates the action of these glands and causes them to secrete a substance which constricts or contracts the blood vessels. This substance which is known as adrenalin raises the blood pressure. If a little drop of it is put upon the skin the skin becomes perfectly bloodless. In case of a hemorrhage it is sometimes an extremely valuable remedy as it causes the blood vessels to shrivel up so that the blood cannot flow but that is not a good thing to have occur on the inside of a healthy body. Nicotine increases the formation of adrenalin so that it causes a contraction of the arteries, that makes high blood pressure and by and by hardening of the arteries, a condition known as arteriosclerosis and angina pectoris a very common disease in smokers. Few people die of overwork. The hardest job thousands of men have is the elimination of the nicotine they are taking in. Many a man expends more vital energy in getting rid of the effects of tobacco, getting rid of the poison he inhales from his cigar than he does in his business.

## MEMORANDA ABOUT TEA AND COFFEE.

### TEA KILLED HIM.

He was a brilliant lawyer. He was one of Daniel Webster's most formidable antagonists before the Massachusetts bar away back in the forties. He was a regular tea drunkard. He always kept a bottle of strong tea by his side. His skin was fairly tanned. It had the tawny color of smoked leather. There was a wild, frantic, almost maniacal look in his eyes as he glared at the jury. His whole body trembled with excitement. Perspiration dropped from his hair. At times he was terribly dejected and melancholy. Naturally his constitution was as tough as steel, but his stomach collapsed from tea poisoning. Then his nerves and brain gave way, and he died prematurely from tea drunkenness. He went to a drunkard's grave as truly as though he had died of chronic alcoholism.

Every year thousands of respected men and women go down to drunkards' graves from chronic tea poisoning.

### WORSE THAN BEER.

Dudley A. Sargent, professor of physical culture at Harvard University, says, "I am convinced that coffee works more injury to mankind than beer."

### COFFEE FROM GUANO.

It may be of interest to coffee drinkers to know that the caffeine and thein, the active principle of coffee and tea, the essential property of the cups which cheer, is identical with one of the chief constituents of guano.

The eminent Prof. Prescott, for many years dean of the College of Pharmacy at the University of Michigan asserts that "It is perfectly practical to bring guano material to the laboratory and send away the same atomic elements transformed into snow-white, silky crystals of thein." Prof. Prescott predicts that the time may come when great companies will "engage successfully in the chemical manufacture of thein from guano." In other words, thein and caffeine

are poisons practically identical with the poison excreted by the kidneys of birds, and are found in great quantities in the fecal deposits which have been accumulating for ages through the visitation of birds to certain islands of the southern ocean.

According to Dr. H. W. Wiley, secretary of agriculture, the United States imports annually five hundred million pounds of coffee, more than a six pounds for every man, woman, and child in the country.

COFFEE RETARDS DIGESTION.

Dr. Robert F. Williams, A. M., M. D., professor of the practice of medicine in the University Medical College of Virginia, says that coffee "materially retards stomach digestion." He says further, "The practice of drinking coffee for night work should be vehemently condemned, as its continued use will produce languor, restlessness, insomnia, irritability, dread of ill, dyspepsia, heartburn, etc." Dr. Williams also asserts that the ordinary daily use of coffee may "Lead to the same evil condition."

COFFEE POISONING.

Coffee contains two percent of caffein, a deadly poison in large doses. Tea and cocoa contain each two to four percent. The same poison, by the name of guanin, is found in great quantities in guano or bird manure.

Here are some of the poisonous effects as described by Dr. John V. Shoemaker, M. D., dean of the Medico-Chirurgical College of Philadelphia, and professor of materia medica, as described in his great work on "Materia Medica and Therapeutics." "Caffein paralyzes the absorbing power of the convoluted tubules (of the kidney). Small doses cause some irritation of the digestive tract, venous congestion, and hemorrhoids." "From a dose of twelve grains (six cups of ordinary coffee) Dr. Pratt experienced restlessness, sleeplessness,



mental depression, and tremor."

"Zenetz, an eminent German physician, calls attention to the dangers of caffeine, asserting that three grains two or three times a day (two ordinary cups) causes a rise of blood pressure (leading to apoplexy), constriction of the chest, dyspnoea, restlessness. Zenetz has seen death result from five grains (three cups of coffee two or three times a day). The cause of death was tetanic contraction of the heart."

"Caffeine accumulates in the body like digitalis and some other powerful drugs. Some time is required to eliminate the poison after its use is stopped."

#### COFFEE AND KIDNEY DISEASE.

Dr. Shoemaker of Philadelphia and other eminent authorities call attention to the danger of using coffee in various diseases of the kidney and in arteriosclerosis. These maladies are becoming very common. They are one of the results of the long continued use of coffee, and when found present indicate that coffee must be discarded entirely and for ever. The use of coffee by such persons is simply adding fuel to a consuming flame.

#### COFFEE AND IDIOSYNCRACY.

*See p 6*  
Zenetz, an eminent German physician, has called attention to the fact that many people have an idiosyncrasy against coffee and can not take it even in small quantities without great danger. He reports three cases of death from caffeine taken in moderate doses. A young man died suddenly after taking caffeine equivalent to two cups of coffee three times a day for three days.

#### TEA AND COFFEE POISONOUS.

It has been discovered that the poisons of tea and coffee, although chemically alike, are not exactly alike in their effects. Dr. Mays of Phila-

delphia asserts that the poison of tea is similar to cocain. When injected under the skin, it produces anesthesia, or loss of sensation. Both these poisons produce most damaging effects upon the body. Brain and nerves are particularly affected. Nervousness, trembling, irritability, depression are common effects from the habitual use of these drugs. The effects are generally attributed to other causes, such as overwork, indigestion, etc., the real cause being overlooked. A cup of strong coffee contains two full grains of caffeine; a cup of tea, one to two grains. Besides the caffeine, there are tannic acid, volatile oils, and other poisons which produce effects similar to those of caffeine.

Dr. Pratt in experimenting upon caffeine was dangerously poisoned by twelve grains, the amount found in six cups of strong coffee, or half as much tea. According to the United States Dispensatory, caffeine acts as a powerful poison upon the muscles.

#### THE VIEWS OF AN EMINENT FRENCH CHEMIST ON COFFEE.

Gautier, the great French authority, says that coffee produces nervous excitement, insomnia, hallucinations, pain in the heart, distressed breathing, weakness of the muscles, disorders of the circulation. He says, "One may become a caffeic (coffee drunkard) just as one may become an alcoholic or morphia maniac.

#### WHO CAN NOT DRINK COFFEE.

Coffee is a poison to everybody but, as with other poisons, moderate doses may be used for a long time by healthy persons. Persons whose livers and kidneys are sound can destroy and eliminate the poison in moderate quantities for a long time before the poisonous effects make their appearance. The poisons of coffee, like those of digitalis and some other powerful drugs, are cumulative. the poison accumulates in the body, and finally the effects appear suddenly like

an avalanche. Those who have crippled livers and kidneys, on this account suffer immediately from the use of coffee. All such persons, according to Gautier, should be forbidden the use of coffee. He enumerates especially rheumatics, persons who have sediment in the urine, persons who suffer from gastralgia, dyspeptics, subjects of Bright's disease. According to Gautier, the use of coffee may give rise to gravel. The reason for this is apparent when it is remembered that caffeine is chemically identical with uric acid.

#### THE POISONS OF COFFEE.

In addition to caffeine, coffee contains volatile poisons to which its aroma is due. Baginsky has discovered that coffee contains xanthin and hypoxanthin, two poisons which are found in the urine of horses, as well as to some extent in human urine.

Kossel has discovered still another poison in coffee, theophyllin, a powerful poison which, according to Gautier, "fatigues the stomach and causes sickness."

Knowledge of these facts and of the baneful effects which must necessarily follow the daily absorption of these poisons into the body must lead intelligent people everywhere to abandon the use of these popular but most pernicious drugs.

#### POISON IN THE CUP.

According to Dr. Robert Hutchinson, M. D., M. R. C. P., physician to the London Hospital, the great English author upon foods, the average cup of coffee contains nearly two grains of caffeine,--a poison which is capable of producing deadly effects in slightly larger doses.

According to Lehman, seven and one-half grains of caffeine found in four cups of coffee, when given at once to a healthy young man, made him ill for

several days. He suffered from palpitation of the heart, intermittent pulse, pain in the head, confusion of mind, delirium, and ringing in the ears.

#### COFFEE AND IDIOSYNCRACY.

Zonetz, an eminent German physician, has called attention to the fact that many people have an idiosyncrasy against coffee and can not take it even in small quantities without great danger. He reports three cases of death from caffeine taken in moderate doses. A young man died suddenly after taking caffeine equivalent to two cups of coffee three times a day for three days.

Freidenwald, professor of diseases of the stomach, in the College of Physicians, and Surgeons, Baltimore, asserts that coffee "in some persons produces nervousness, excitability, and insomnia."

It doubtless does more or less harm to all persons, but persons who are especially susceptible notice the effects immediately, while less susceptible persons suffer later from the cumulative effects. The same authority asserts that "tea retards digestion" and hence "is not a suitable beverage for persons suffering from gastric disturbances." He enumerates among the injurious effects of tea, gastric disorders, cardiac distress, a variety of nervous symptoms such as excitability, sleeplessness and muscular incoordination (unsteady gait).

One-eighth grain of caffeine will kill a frog. Five grains will kill a rabbit. Seven and one-half grains will kill a cat.

A pound of tea contains enough poison to kill seventy rabbits or fifty cats.

#### A POISONED PROFESSOR.

Prof. Buchheim while a student with the eminent Prof. Lehman more than fifty years ago was made the subject of an experiment with caffeine, then a newly discovered substance. The results afforded the most convincing proof that

caffein is essentially identical with creatin, a poison excreted by the kidneys and found in the urine. In these experiments it was found that ten grains of caffein (five ordinary cups of coffee)"will produce the most violent excitement of the vascular and nervous systems--palpitation of the heart, extraordinary frequency, irregularity, and often intermission of the pulse, oppression of the chest, pains in the head, confusion of the senses, ringing in the ears, scintillations before the eyes, sleeplessness, and delirium."

The daily use of such a powerful drug is in the highest degree detrimental to health, slowly but surely undermining the constitution, producing in the end arteriosclerosis or hardening of the arteries, failure of the heart, cirrhosis of the liver, Bright's disease of the kidneys, abdominal dropsy, general dropsy, nervous prostration, failure of memory, doubtless in some cases insanity and even death.

#### THE ILL EFFECTS OF COFFEE.

Dr. W. Gilman Thompson, professor of medicine in Cornell University Medical College of New York City, says, "Coffee should not be given to children as a daily beverage. The feeble bodies of children are very sensitive to poisons." Dr. Thompson asserts also that coffee "should be avoided by dyspeptics." Dr. Thompson asserts that the use of coffee to produce wakefulness at night "soon results in forming a coffee or tea habit in which the individual becomes a slave to the beverage" and when deprived of it, "suffers from languor, prostration and restlessness and craving." Two or three cups three times a day produce "muscular tremors, nervousness, anxiety, apprehension, palpitation of the heart, vertigo, heartburn, ~~disax~~ dyspepsia, constipation, insomnia and emaciation."

Dr. Thompson well suggests that coffee users may discover the ill effects which have been produced by suddenly stopping the drug. The degree of

craving experienced is an evidence of the damage which has been done and the influence which the drug has obtained over the system.

#### COFFEE A POISON TO CHILDREN.

Dr. W. Gilman Thompson, physician to the Presbyterian and Bellevue Hospitals, New York City, asserts that coffee is a poison and should never be given to children, in whom "coffee gives rise to insomnia, night terrors, nervousness, and tremor." Dr. Thompson also asserts that acute coffee poisoning gives rise to "excitability with a tendency to delirium and tachycardia" (rapid beating of the heart).

#### TWENTY FIVE THOUSAND TONS OF POISON.

The world produces annually in the form of coffee twenty five thousand tons of caffeine, a deadly poison. The United States consumes one-third of this, or more than eight thousand tons. The effects are to be seen in increasing nervousness, nervous exhaustion, and various other ailments which are daily multiplying with confusing rapidity.

#### FRAUDULENT CLAIMS.

The manufactures of various cereal substitutes for coffee while in some respects doing a good work through aiding to combat the pernicious habit of coffee using, bring themselves and coffee substitutes in general into disrepute by the ridiculous claims which are made for the food value of their products. It is obvious that whatever food value may be possessed by the dry substance of a cereal coffee substitute, the actual food value is only that which is possessed by the infusion as presented for use at the table. Dr. Langworthy, of the U. S. Department of Agriculture, some time ago made a study of the actual food value of the leading coffee substitutes on the market, and as a result of his investiga-

tion published the following in Bulletin 122 of the U. S. Department of Agriculture:

"The average cereal coffee infusion had the following percentage composition: Water, 98.2; protein, 0.2; and carbohydrates, 1.4, while the fuel value was 30 calories per pound. Skim milk, which is ordinarily considered a rather 'thin' beverage, contains 3.5 per cent protein, 0.3 per cent fat, 5.15 per cent carbohydrates, and 0.8 per cent ash, or almost twenty times as much food material as the average of the beverages made from cereal coffee. If made according to directions, one would have to drink four and one-half gallons of an infusion of one of them which made an especial claim to high nutritive value in order to get as much food as is contained in a quart of skim milk."

#### TEA AND COFFEE DRUNKENNESS.

Some years ago there was in London a club of newspaper reporters who every Saturday night used to get together and have "a spree on tea." After drinking a number of cups of tea, some of the members of the club were usually to be found under the table as thoroughly intoxicated as though they had swallowed a quantity of alcoholic drinks.

As a matter of fact there is more intoxication in a cup of strong tea or coffee than in an equal quantity of lager beer.

"Edward Smith, an eminent physiologist of England, once made an experiment for the purpose of testing the effects of coffee. He made a decoction of four ounces, and he and his assistant drank it. In a short time they became dead drunk and lay insensible upon the floor of their laboratory for three hours."

"During an English expedition to Ashantee, one of the officers lost one of his finest horses. He was greatly distressed about it. They had carried their tea and their shelled corn for the horses in bags. At one encampment they had nearly emptied a bag of tea, and filled it with corn. The officer's horse

happened to get the last of the corn in this bag, so that he ate the tea with his corn. He was seized with a wild delirium, and went plunging headlong, and finally threw himself over a precipice. That was the effect of the tea on a horse."

"The Medical Press recently called attention to the fact that coffee may produce effects similar to those induced by alcohol, among which are palpitation, a feeble pulse, trembling, twitching of the limbs, and other indications of profound poisoning. This fact is one to which coffee drinkers should give attention. The use of tea and coffee is only a respectable sort of tippling, the effects of which may be as injurious as those following the use of alcoholic drugs.

Dr. Norman Bridge of Chicago asserts that coffee drinking is a frequent cause of disease, and reports the history of seven cases in which many obscure and distressing symptoms were present. All of these patients recovered when coffee was discarded.

Dr. Leszynsky of New York asserts that the "ill effects following the use of coffee are by no means uncommon." "The ~~same~~ popular idea that coffee can replace food or increase the power for work without corresponding tissue waste is entirely erroneous."

According to Dr. Wm. N. Leszynsky of New York City, the transitory sensation of wellbeing which is experienced by many susceptible persons after taking a cup of coffee "is soon followed by a feeling of apprehension, general tremulousness, and indigestion."

Dr. Leszynsky asserts that the habitual use of coffee in such persons "invariably leads to persistent functional disorder of the nervous system, as well as to disturbance of digestion.

The distinguished Dr. Leszynsky of New York asserts that many or all neurotic individuals seem to be more or less susceptible to the influence of coffee. The same authority asserts that he has seen a number of persons in whom coffee produces paroxysmal sneezing and coryza.



#### NERVOUS EXHAUSTION DUE TO COFFEE.

The eminent Dr. Leszynsky, of New York City, asserts that coffee "Insidiously if not rapidly leads to various degrees of exhaustion of the cerebro-spinal centers."

#### INJURIOUS EFFECTS OF COFFEE UPON CHILDREN.

Dr. Leszynsky, an eminent New York physician, asserts that the poison of coffee is particularly bad for children, over-stimulating the brain, and producing various functional disturbances. He says, "I have often seen night terrors, insomnia, tremulousness disappear after the withdrawal of coffee." He attributes to the use of coffee arrest of physical development, and tells of a boy six years of age who suffered from acute coffee poisoning the symptoms of which were "active delirium, widely dilated pupils, tremor in the facial muscles and the extremities, and severe tachycardia, the pulse-rate being 200 beats a minute." The child also had hallucinations. These symptoms were produced by eating half an ounce of coffee beans." The boy was ill for a week.

#### CASES OF ACUTE COFFEE POISONING.

Cases of acute coffee poisoning have been reported by Rough, Curschman, Müller, and Leszynsky. Rough reports a case of coffee poisoning in a salesman thirty years of age as a result of taking ten to twelve cupfuls of coffee daily for three weeks. At the end of this time, he was suffering from a condition resembling delirium tremens.

Another case of delirium occurred in a boy of six years from eating a half ounce of coffee beans.

Two servant girls were arrested in Boston for disorderly conduct who were found to be delirious from chewing tea.

The attending physician of a large factory in New York noted a number of

cases of convulsions and acute mental disturbance among the young women operatives. Investigation showed the disorders to be due to the habit of chewing tea which was prevalent among them.

#### COFFEE HABIT.

Dr. Leszynsky, of New York City, asserts that the coffee habit is distinctly a drug habit, as is the alcohol and the opium habit. He mentions having seen many "victims of the coffee habit among commercial travelers, brokers, merchants, actors, writers," and newspaper reporters.

The symptoms of coffee poisoning, according to Dr. Leszynsky "correspond very closely to the symptoms of chronic alcoholism for which it is so often mistaken. In acute coffee poisoning, the symptoms are great excitability, delirium, and hallucinations. In chronic coffee poisoning, the effects are opposite,--depression, exhaustion, neurasthenia.

#### THE SYMPTOMS OF COFFEE POISONING.

The eminent Dr. Leszynsky, of New York City, enumerates among the symptoms of chronic coffee poisoning the following, in reading which let the coffee taking reader note carefully and see if he does not discover some of the symptoms which are very familiar by personal experience:--"General headache and nervousness, apprehension in regard to some unknown impending trouble; mental depression and irritability; insomnia or restless sleep; bad dreams, sudden starting in sleep and awaking in profuse perspiration; occasional or frequent vertigo; general tremulousness and diminished muscular power; precordial oppression; cardiac palpitation; loss of appetite; frequent eructation of gas, and constipation."

#### COFFEE POISONING.

The British Medical Journal describes a large number of nervous, mus-

cular, and circulatory disturbances which are the result of coffee drinking, among which are the following: "a feeling of general weakness, depression of spirits, and aversion for labor even in industrial subjects, with headache and insomnia. A strong dose of coffee causes the disappearance of these symptoms. The muscular symptoms consist of distinct muscular weakness, and trembling of the hands, even in rest. The circulatory symptoms are marked by small, rapid, irregular pulse, and feeble impulse of the heart. Palpitations and heaviness in the precordial region are frequent. The hands and feet feel very cold, and the complexion becomes sallow. Dyspeptic symptoms, chiefly of the nervous type, are very common. Acne rosacea (pimples) is seen in a large number of cases.

#### HOW TEA AND COFFEE DAMAGE DIGESTION.

An eminent German physiologist in experiments with tea and coffee found that when tea was added to a mixture capable of digesting ninety-two per cent. of albumin, the quantity was reduced to sixty-six per cent.; with the addition of coffee, to sixty-one per cent.; from which it appears that the use of tea and coffee must diminish the digestive work of the stomach at least one third. The habitual use of drugs which thus impair the digestive vigor must finally lead to hypopepsia and a variety of digestive disorders.

#### TEA DRINKENESS.

Dr. Morton, of New York, asserts that "there are tea sets in every great charitable institution, particularly those for the maintenance of the aged. As a rule their symptoms are mental irritability, muscular tremors, and sleeplessness."

### COFFEE A MORE DEADLY POISON THAN WINE.

The poisonous properties of a single cup of strong coffee are much more potent than those of an equal quantity of ordinary wine. This fact was clearly stated several years ago by Prof Savarin, of Paris, according to whom "coffee is a much stronger drink than people usually believe. A strong man can live long, and drink two bottles of wine a day. The same man could not stand the same quantity of coffee for a great while; he would become imbecile or die of consumption."

### THE COFFEE HEART.

"Medical examiners for life-insurance societies have added the term "coffee-heart" to their regular classification of the functional derangements of that organ. Its effect is in shortening the long beat of the heart. Coffee toppers, they say, are plentiful, and are as much tied to their cups as the whiskey toper. The effect of the coffee upon the heart is more lasting, and consequently worse, than that of liquor."

### COFFEE INDIGESTION.

Pawlow, of St. Petersburg, has devised a means by which a dog's stomach can be divided into two parts, one of which the dog uses for digestion, the other wholly separate from it, being placed at the disposal of the physiologist by means of an opening through which it communicates with the exterior. With such a dog, a German investigator, Rka Pincusschn has experimented with reference to the effects of tea and coffee. He found that coffee excited the stomach somewhat, increasing the flow of gastric juice, but only for a short time. In a subsequent experiment with cereal substitutes for coffee, he found the same effects were produced. Tea had the opposite effect. Cocoa also decreased the flow of gastric secretion. From these experiments it is apparent

that all the good effects which have been attributed to coffee may be secured by the cereal substitute without any of the ill effects of coffee.

#### TEA AND COFFEE IN INSOMNIA.

Insomnia is becoming one of the most common and distressing of nervous ailments. Thousands of persons have discovered themselves that the taking of tea or coffee at night will drive sleep from their eyelids. This is one of the poisonous effects of caffeine which is found in both tea and coffee. Other poisons also present act in a similar way. The exciting effects of coffee upon the brain are so great that it has been used as an antidote for opium, and in over-doses will often arouse and may even bring back to consciousness a patient who is lying in the deadly stupor of opium poisoning.

#### COFFEE INTOXICATION.

The Medical Times contains the following statement from Miss Ward, who writes from Brazil: "The whole country is perpetually in a state of semi-intoxication from coffee--men, women, and children alike; and to babies in arms it is fed from a spoon. It is brought to your bedside the instant you awake in the morning, and just before you are expected to drop asleep at night, at meals and between meals. The effect is plainly apparent in trembling hands, twitching eyelids, mummy-hued skin, and a chronic state of excitability worse than that produced by whiskey."

#### EPILEPSY PRODUCED BY COFFEE.

Dr. O. Marburg, a German physician, calls attention to a case of epilepsy in a woman aged forty-four years, who had used coffee freely, eating the roasted coffee beans to the extent of an ounce a day, for thirty or forty years. He believes the epilepsy to be due to the use of the coffee, a conclusion which seems very reasonable. Coffee and tea are without doubt responsible for a con-

siderable number of nervous disorders which are rarely attributed to the right cause, but are perhaps regarded as idiopathic, or due to remote influences which have been in fact little responsible for the development.

#### FACTS ABOUT TEA AND COFFEE.

Wolfe has shown that three grains of caffeine, an amount which might easily be furnished by an ordinary cup of tea or coffee, greatly impairs the quality of the gastric juice, lessening its total acidity.

Robert showed that both tea and coffee interfere with the action of the saliva upon the starch of the food, and may even wholly destroy its effect.

Dr. Wood proved that the daily use of a decoction prepared from one ounce of tea leaves produces decidedly poisonous symptoms.

A German physiologist found the digestion to be reduced one third by the use of tea. The tannic acid of tea not only interferes with the digestion of starch, but also prevents the proper digestion of albumin.

The assumed ability of coffee to replace food or to increase the power for work without corresponding tissue destruction is, according to Dr. Edward T. Reichert, entirely deceptive, and the conditions produced by it are comparable to those observed at times in the insane, in hysteria, or in fright, when the individual may be capable of performing prodigious feats of strength and endurance, but nevertheless at the direct expense of his tissues.

#### COFFEE BLINDNESS.

Dr. Snaithen says: "It is well known that the Moors are inveterate coffee drinkers, especially the merchants, who sit in their bazaars and drink coffee continually during the day. It has been noticed that almost invariably when these coffee-drinkers reach the age of forty or forty-five, their eye-sight begins to fail, and by the time they get to be fifty years old, they become blind.

One is forcibly impressed by the number of blind men that are seen about the streets of the city of Fez, the capital of Morocco. It is invariably attributed to the excessive use of coffee."

#### THE COFFEE EATING HABIT.

"The coffee eater becomes weak and emaciated, the complexion muddy and sallow, the appetite poor, digestion is ruined, and the nerves are unstrung. Coffee gives a few minutes of exhilaration, followed by great weakness."

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A NEW AND SUCCESSFUL METHOD OF TREATMENT FOR THE OPIUM  
HABIT AND OTHER FORMS OF DRUG ADDICTION.

The increase of drug addiction in this country, and probably in all civilized countries in various forms, notwithstanding the earnest efforts of numerous temperance organizations, the terrible penalties inflicted by nature upon the victims of this form of vice, and the frequent and earnest warnings uttered by many of the medical profession, is ample justification for the existence of this association, and it is a fact which calls for most earnest consideration.

That the increase, relative as well as numerical, of neurotic individuals, as shown by the fact that the number of insane and imbeciles per thousand or million at the present time is nearly three times as great as fifty years ago, is both the cause and the consequence of the increased prevalence of drug addiction, probably no one will deny: but it is not my purpose in this paper to enter upon a consideration of the causes of drug addiction, nor methods of prevention, and I only briefly refer to this phase of the subject in order to call attention to the following principle, which I regard as being of fundamental importance in dealing with this class of cases.

The majority of persons who acquire the vice of drug addiction are peculiarly constituted individuals, who may be divided into several classes, as

(1) Those who live upon the sense plain, regarding the body as a harp of pleasure to be played upon so long as its strings can be made to vibrate by force of will or the aid of artificial excitements, and who, when the natural resources of the body are exhausted, seek artificial and unearned felicity through the aid of various nerve tickling, pain- and trouble-annihilating, felicity-producing drugs.

(2) Those hypersensitive, neurotic, delicately organized individuals,



a rapidly increasing class, who are the natural result of the artificial brain and nerve destroying and race-deteriorating conditions of our ~~modern~~ modern life. These persons, lacking physical capacity for enduring the pains, hardships, and tribulations of life from which they suffer untold and indescribable agonies, seek relief in some nepenthe which promises them ease from the present stress of suffering, overlooking all considerations respecting what the future may have in store for them.

Therapeutic methods which do not recognize this principle, and which do not take into consideration the predisposing influence of constitutional tendencies which may be either hereditary or acquired, are likely to prove mere temporizing measures, which deliver the victim of the drug addiction, from the ditch of habit only to give him an opportunity to fall back into the same pit. All who have had experience in the treatment of this class of patients know that the history of nearly every case comprises an account of numerous unsuccessful attempts to escape from the thralldom of the drug or drugs to which the individual has become enslaved. The patient generally enumerates a half dozen or more certain cures which he has tried, institutions of various kinds which he has visited, and at which cures are guaranteed, and not infrequently it appears that the patient's time for a half dozen years or more has been chiefly occupied in going from one to another of such institutions, seeking help, but finding none except a mere temporary surcease of bondage, or, what is perhaps still more common, deliverance from the jaws of one drug demon only to fall into the merciless clutches of another.

Without stopping to enumerate the numerous pathological changes, either general or specific, which result from the various soul- and body-destroying drugs, it is necessary to present a brief summary of the more important of the general morbid conditions encountered, in order to make clear the rationale of the methods of treatment to which I wish to call attention. As I have observed in these cases, the following conditions

are practically common to all the ordinary forms of drug addiction which present themselves for treatment, especially, and in the most pronounced and typical form, in victims of the opium habit:--

1. An unbalanced condition of the vasomotor functions. This loss of vasomotor control is without doubt the cause of the persistent insomnia, the watery diarrhea, and numerous other symptoms which follow the withdrawal of the whole or even a considerable part of the daily dose of opium in a case in which the drug has been largely used.

2. An extremely irritable condition of the sympathetic nervous system, shown by marked hyperesthesia of the lumbar ganglia of the abdominal sympathetic and the solar plexus, with a large group of associated symptoms, such as anorexia, nausea, vomiting, griping, purging, palpitation of the heart, sense of weight and constriction in the chest, shortness of breath, sensation of smothering, sinking feeling, sensation of impending death, extreme nervousness, with indescribable sensations, extraordinary restlessness, paresthesias of all sorts, shivering, general tremor, perspiration, etc.

Opium apparently excites the involuntary muscular fibers in the body while temporarily paralyzing the sensory nerves or fibers. Cocaine dilates the pupil, but at the same time causes contraction of the small blood vessels through its influence upon their constricting fibers. A moderate dose of alcohol causes flushing of the surface, but a man far under the influence of alcohol has a pale skin. Under the prolonged influence of these constricting drugs, the sympathetic nervous system develops a certain compensation, just as do the nerve centers which control the heart and the heart muscle itself, in cases of obstructive valvular disease of the heart. In the withdrawal of the drug, the compensation is no longer required, hence the unbalanced condition manifested by the symptoms mentioned and numerous others which at once appear.

3. Cardiac weakness. This is due to the influence of lethal drugs

upon the vasomotor and sympathetic nervous systems above referred to. The symptoms of heart weakness are palpitation of the heart, a weak, irregular, fluttering pulse, extreme pallor, faintness, and smothering sensation.

4. Reappearance of chronic pains and other distressing symptoms, for the relief of which the drug was perhaps at first administered.

5. Extreme unrest and anxiety, grief, indecision, childishness, utter inability to engage in mental diversion or occupation of any sort. In many cases a condition closely akin to acute mania.

6. Complete or nearly complete loss of fortitude, no courage to endure suffering or annoyance, peevishness, unreliability, generally a determination to obtain the drug by any possible means, without regard to consequences.

7. In cases in which the drug has long been used, and in large quantities, a condition of general malnutrition.

The above is a very faint picture of the condition of a person who has long been addicted to an enslaving drug, as opium, after the drug has been removed, but it will perhaps suffice for my purpose, which is merely to bring forward the general conditions which must be considered in the application of treatment.

Treatment. In the title to my paper, I have spoken of the treatment to be presented as new. I do not wish to be understood as having a new panacea to offer, nor some unique or newly discovered drug or method, to exploit. The measures which I shall describe are none of them new as therapeutic procedures. The general plan of management I have not seen fully described as a whole. Though I am sure many of the measures employed have been used by others, I have been led to think that the method as a whole is the result of my personal experience during the last twenty years in the treatment of this class of cases at the Battle Creek Sanitarium. I have undertaken to write this description of it by the ear-

most request of numerous physicians who have sent patients to the Sanitarium for treatment, or who themselves have been patients. The general plan of management divides itself naturally into three periods, as follows:

First period, that during which the drug is being withdrawn, lasting one or two days.

Second period, that immediately following the complete withdrawal of the drug, lasting from one week to ten days.

Third period, beginning with the recovery from the acute symptoms resulting from withdrawal of the drug or drugs, and lasting from three to six months, or until the individual is fully reinstated in physical, mental, and moral health.

I will now undertake to describe briefly my mode of managing these cases in each of these periods.

#### Treatment during the Withdrawal<sup>a</sup> of the Drug.

In the beginning of my experience with this class of cases, I sought to alleviate the sufferings of the patient by very gradual withdrawal of the drug, but I soon discovered that by this method the patient's sufferings were not really mitigated to any considerable degree, while not infrequently his patience was exhausted by the length of the struggle, and I am thoroughly satisfied that it is in every way better for the patient to make a short, sharp fight and have the battle over than to endure the long drawn out agony of the gradual reduction of the drug during several weeks.

My usual plan is to divide the dose the first day, and the second day give none at all. In very many cases, only one dose is administered after the patient begins treatment. If the size of the dose is not very large, say not more than four or five grains daily, it is not infrequently withdrawn at once, none at all being administered after the course of

treatment has begun. Sometimes a placebo in the form of a normal saline solution is administered, although as a rule I find it much better to let the patient know exactly his condition, the amount of the drug he has taken, and when he has discontinued it, so that he may be encouraged to enter more heartily into the battle for the mastery of the habit.

Attendance. I invariably put the patient to bed, with the understanding that he shall remain in bed for at least one week and perhaps two weeks, and during this time he is not allowed to dress, though he may be often taken out for a half hour in a wheel chair. After treatment is begun, the patient is kept in a special apartment by himself, no one in contact with him except his nurse or nurses and his attending physician. This apartment is fitted up with all the appliances necessary for the special treatment required, having bath tub, spray and douche apparatus, electrical appliances of various sorts, for the administration of galvanism, faradizism, sinusoidal current, etc. Facilities for the electric light bath, with the administration of the d'Arsonval current, together with other hydrotherapeutic and other rational measures, are close at hand. The patient is taken to this apartment in his night clothing, and is kept under the close observation of an attendant every moment, so that he shall have no opportunity whatever to get access to drugs of any kind. Great care is taken in the selection and training of nurses for the care of this class of patients. They must be persons of dignity of character and bearing, good judgment, resolution, ability to command the respect of the patient, trustworthy, and exceptionally skillful, not only in the ordinary care of the sick, but in the employment of hydrotherapeutic measures of all sorts, electricity, massage, manual Swedish movements, etc. The nurse must be of cheerful disposition, full of tact and resources, able to interest and divert his patient's mind during the weary hours of his conflict. He must be untiring in energy, unflagging in interest, and faithful in the minutest details in the carrying out of

instructions. The success of these cases depends very largely indeed upon the tact and efficiency of the nurse or nurses-- for at least two nurses are required in every case, one for the day and the other for the night, and sometimes an assistant nurse is needed during the first twenty four or forty eight hours.

The physician must possess, in addition to all the knowledge and qualifications of the nurse, a sufficient amount of experience with these cases to understand the significance of every symptom, and so be able to meet promptly each indication by rational means. He must be thoroughly possessed of the idea that it is the patient, not his habit, which is to be cured. He must have a ready command of all the resources of physiological medicine, he must have that confidence born of successful experience which will enable him to say to his patient with absolute assurance that however threatening and distressing any symptom may be, relief will certainly come, and that without long delay, if he will but exercise sufficient patience. He must be able to command the fullest confidence and respect of his patient, and this will not be gained by yielding to his importunities, but rather by demonstrating to him that there is a better way than that which he proposes. When the patient discovers that the physician is really master of the situation, and puts himself absolutely in his hands ready to co-operate to the utmost of his ability, the battle is more than half won.

Drugs. I have no hesitancy in saying that any ~~firm~~ system of treatment of the opium or alcohol habit, or any other form of drug addiction which depends for its success upon the administration of a substitute drug, is, and must be, a failure. The patient either becomes the victim of the new drug, or returns to the old one. That there may be now and then an exception to this rule does not weaken its validity more than does the fact that patients sometimes escape from the thralldom of a poison habit without any treatment whatever, through the aid of an inter-

current illness of some sort or some favorable combination of circumstances. I do not say that no drug of any sort should be used, for I quite frequently find it advantageous to make use of medicinal agents of various sorts for the palliation of some pressing symptom. For example, for relieving the severe diarrhoea, I find it advantageous to employ sub-carbonate of bismuth in large doses, and the fluid extract of coto bark. I begin the use of these remedies as soon as the first symptom of diarrhoea appears, and they may be employed with advantage even before the appearance of diarrheal symptoms in cases in which the history of the case shows that severe symptoms of this sort may be expected. In very exceptional cases, I sometimes administer a few small doses of atropia. Strychnia I never find occasion to use, and I find no advantage whatever in the use of bromide of potash, chloral, hyoscyamus, and the numerous other drugs which have been so largely used in these cases. For years I made use of these drugs and others, but I found that they mitigated the patient's symptoms <sup>very</sup> ~~an~~ little, while they deranged his digestion to a great degree, and thus only postponed the moment when the vital forces of the patient could begin to rally to the restoration of normal conditions.

Diet. During the period of withdrawal of the drug, I find it advantageous to give the patient a fluid diet. The diet may consist of kumyss, buttermilk, malted nuts, or fruit juices, such as unfermented grape juice, raspberry juice, blackberry juice, etc. These I allow the patient to take freely. They help to sustain his energies, by increasing the volume of the blood, and preventing to a large degree the sensation of "goneness," smothering, and similar other heart failures. Taken hot, it is extremely palatable, and is the most supporting of all food substances with which I am familiar. I give the patient as much food as he will take once in four hours. If nausea and vomiting prevent taking of food by the stomach, I administer an enema consisting of two ounces of malted nuts, dissolved in six ounces of water, and mixed with two

beaten eggs, with the addition of half a dram of salt. This enema is administered with a rectal tube, and is retained as long as possible. It should be repeated every four hours, the bowels being washed out every other time half an hour before the nutritive enema is given. Meats and all other solid foods are carefully excluded from the dietary, also beef tea, which, like beefsteak and other meats, certainly excites the nerves and increases the craving for the drug.

Symptomatic Treatment. It is my custom to administer the last dose of morphia at night. The patient generally manages to get through the night very comfortably, but a few hours after the time for the morning dose has past, various nervous disturbances begin to make their appearance, and by the following night the battle is really begun. As soon as marked nervousness appears, and without waiting for the patient to become greatly agitated, he is placed in a full bath at a temperature of  $92^{\circ}$  to  $93^{\circ}$ , or sometimes a slightly higher temperature, as  $95^{\circ}$ , is employed, but often a slightly lower temperature, as  $90^{\circ}$ , is found preferable. A bath at this temperature is known in hydrotherapy as a neutral bath. Its temperature is practically that of the skin, consequently neither thermic nor secretory reaction is produced. The body is surrounded by a neutral medium, and thus the disturbing influences of environment of the patient, whether it be a high or low temperature of air, changes of temperature, contact of objects, friction of clothing, or whatever it may be, is shut off.

Under the calmative influence of the neutral bath, the irritability of the nerve centers is radically lessened, and the patient becomes quiet. The bath may be continued for an indefinite length of time, as it neither communicates heat to the body nor absorbs heat to a very considerable degree, and sets up no energy-dissipating reflexes. The patient is generally kept in the bath from three fourths of an hour to an hour and a half, at the end of which time he is removed, enveloped in a



Turkish sheet, and gently rubbed until dry. Not infrequently he falls asleep in the bath. After the bath, the patient generally finds himself very comfortable for an hour or two, then it may be repeated. If necessary, the patient may be kept in the bath almost continuously. Not infrequently it is advantageous, for a change, to apply some different form of sedative bath. One of the very best is the wet sheet pack. The sheet should be wrung out of water at about 75° F., and should be made as dry as possible, so as not to produce too great nor too prolonged reaction. The patient is enveloped with this sheet in the usual way, only it is often advantageous to leave the arms outside of the wet sheet. Care must also be taken not to allow the patient to get chilled, as the reactive capacity of a person in this state is very much reduced. The patient generally falls asleep in the wet sheet pack. He should be allowed to remain in the pack as long as he is comfortable, or as long as he sleeps. The covers should be carefully regulated, so as to prevent profuse perspiration. After the pack, apply a tepid sponge bath.

Great care should be taken to avoid very hot treatment, or prolonged sweating, as these weaken the heart. The electric light bath for two or three minutes, but not long enough to produce perspiration, often affords great relief to the patient, and is an excellent preparation for a neutral bath or the wet sheet pack.

It is advantageous to administer a faradic current while the patient is in the full bath. This is best done by means of a special faradic apparatus, arranged for the administration of electrohydric, or so-called electrothermal bath. A high tension and rapidly interrupted current should be used. I find the rapidly alternated sinusoidal electric current preferable to the faradic in these cases, and also find exceedingly useful the galvanic-hydric bath, which is perhaps the most sedative of all electric applications in cases of this sort. Great care must of course be employed in the application of the galvanic current.

Restlessness, fidgets, and a general uneasiness are relieved in a marvelous manner by the baths given, as described, but great care must be taken to regulate the temperature of the bath exactly, and to bring it within the range of the temperature mentioned. A higher temperature depressed the heart and a lower temperature exhausts the nervous energy and increases the irritability of the already over-excited centers.

Massage, properly employed, has a wonderfully soothing effect in these cases. The manipulations must be applied with great gentleness, however, and by a skilled masseur or masseuse. For the trunk and limbs centrifugal friction should be applied. The stroke being wholly in the direction from the heart toward the periphery, a sedative effect will be produced. Massage of the head and back applied in the manner which I have elsewhere described\* is also wonderfully efficacious in relieving the patient's sufferings. It is important that something should be done for the patient every moment when he is not at rest. The maintenance of a constant watchfulness on the part of the nurse, anticipating every want of the patient, and meeting as far as possible all his whims and fancies, so as to allay mental irritation and to keep his mind continually occupied and diverted, is of great importance.

Cardiac Weakness. I am satisfied that far less importance and significance attaches to this symptom than is generally given to it. The heart certainly derives no strength from morphia or any other drug, and the withdrawal of a toxic agent cannot, in my opinion, entail fatal results through the failure of the heart function. No matter how pressing the symptoms may seem to be, nature will come to the rescue in time to save the patient's life. Nevertheless the inconvenience which the patient suffers from this symptom is not infrequently very great, and on

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\*The Art of Massage, by J. H. Kellogg, M. D., published by the Modern Medicine Pub. Co., Battle, Creek, Mich.

this account it is worthy of careful attention. Of the several hundred cases of morphia addiction which have been under my care, not one has died from heart failure or any possible connection with the heart. In fact, I have been obliged to record but one death of a patient under treatment for the morphia habit, and this occurred several days after the patient was entirely relieved of the drug and of a craving for it, and was due to causes which could not be directly connected with the habit or the treatment administered for his cure. The quantity of morphia used in some cases has been extraordinary, in two or three instances more than one hundred grains of morphia being administered hypodermically each twenty four hours. In one case a patient took by the mouth a full ounce of morphia each day, a half ounce at a dose. In this case I could not believe the patient's statement until verified by the assistant under whose charge the patient was placed, and who saw the dose taken.

The neutral full bath, wet sheet pack, and other measures already suggested, are highly effective means of relieving cardiac disturbances. A still more effective measure, which acts more directly upon the heart, is the application of hot and cold sponging to the spine, from the base of the skull to the lower dorsal region. This application may be made in such a manner as to serve as a most powerful cardiac stimulant, or so as to stimulate only in moderate degree. Two sponges are required, and a vessel of very hot water, and in another vessel a quantity of ice water or pieces of ice the size of the fist. The spine is first sponged with hot water for half a minute. The heat should be as great as can be borne, but care should be taken not to injure the skin. The other sponge is then applied for fifteen or twenty seconds, being wrung just dry enough out of the ice water so it will not drip. For a more vigorous application, a flannel cloth wrung out of very hot water may be applied to the spine, extending from the base of the skull down between the shoulder blades, and being kept in contact with the skin for one or

minutes; then a smooth piece of ice the size of the fist may be rubbed over the same surface, being moved rapidly up and down the whole length of the surface under treatment for five to ten seconds. These applications should be continued in rapid alternation for ten or fifteen minutes, or until the pulse is improved to a satisfactory degree.

Palpitation of the heart is relieved by centrifugal friction, or downward stroking of the trunk and limbs.

The neutral bath has a remarkably quieting and toning effect upon the heart, as does also the wet sheet pack.

In cases of extreme cardiac weakness, a hot bath, preferably the electric light bath, may be applied for one or two minutes, followed by a dash of cold water, preferably a shower or spray, lasting one second. Or the alternating hot and cold shower may be employed. This is the most powerful of all cardiac stimulants, and the effect is lasting to a remarkable degree. It may be repeated as often as necessary.

Free water drinking, begun before the drug is withdrawn, and continued during the treatment, is advantageous as a means of maintaining the volume of the blood, which in itself is of the greatest service in sustaining the heart's action.

The value of the hydrotherapeutic measures mentioned in toning the vasomotor and sympathetic systems, and in <sup>re-</sup>storing a normal balance, can not be overestimated. The skin is the most important sense organ in the body, and one of the most complicated, which is easily seen when one recalls its numerous sensory functions in relation to general sensations and the senses of touch, vision, and temperature. It is richly supplied with constrictor and dilator vasomotor nerves and afferent as well as efferent sympathetic nerves. Through these two systems of nerves the most important organic reflexes are set up by applications to the surface, which affect in the most profound manner the functions of the nerve centers, the organs of circulation, and all the processes of nutrition.

Vomiting and Diarrhea. Under this system of treatment, vomiting and diarrhea are seldom very troublesome symptoms. Not infrequently patients who have abandoned the attempt to dispense with the use of morphia under other systems of treatment in consequence of the persistent and intractable character of these symptoms, have expressed great surprise that they have suffered so little inconvenience in this direction. Nevertheless they sometimes do occur, though I have never found either of these symptoms, or both combined, so stubborn as to make it necessary to abandon or even suspend the treatment or to administer a dose of morphia for their relief, at least not since the plan of treatment outlined has been fully developed.

When vomiting appears, the following measures are used: the patient is kept as quiet as possible in bed, a hot bag is placed at the spine, or in place of it hot and cold applications are made to the central portion of the back. An ice bag is placed over the stomach, and the patient is made to swallow small bits of ice, or if, as is sometimes the case, the taking of substances into the stomach increases the nausea and vomiting, the ice is simply held in the mouth. An ice bag is sometimes placed about the throat and wrists. In some cases an ice bag at the back of the neck is found of service. The patient lies still and keeps his eyes closed. The nausea almost always lasts but a few hours, and is sometimes very quickly relieved. Subcarbonate of bismuth in twenty or thirty grain doses every hour, is sometimes of value.

For the diarrhea it is seldom necessary to administer any specific remedy outside of those which have already been named, which, by restoring the vasomotor equilibrium, prevent the outpouring of serum into the lower alimentary canal and excessive peristalsis. The hot enema is often a measure of real service. A quart of hot water, hot as can be borne, is administered after every movement. The fluid extract of coto

bark, two to four drop doses, with subcarbonate of bismuth in thirty grain doses, is administered every two hours when the patient is awake during the first twenty four hours, when diarrhea exists, and if there is reason to expect this symptom to be troublesome, the use of these remedies is begun as soon as the drug is withdrawn.

In some cases a strong galvanic current, applied by means of large sponges presenting a surface of at least one half square foot each, one over the solar plexus and lumbar ganglia, the other over the spine opposite, is the most effective means of relieving sympathetic irritation which gives rise to disturbance of the alimentary canal, manifested by vomiting and diarrhea. The negative pole should be applied at the back, the positive in front.

Faradism and the sinusoidal current are also of great value in allaying gastric and intestinal irritability. These should be applied in the same way as galvanism. The applications may be made for twenty to thirty minutes, or even longer.

The galvanic current applied, one electro (the negative) over the cervical sympathetic, the other over the solar plexus and lumbar ganglia of the sympathetic, is also an effective means of controlling nervousness arising from irritability of the sympathetic. The negative pole should be applied at the neck, the positive over the abdominal ganglia.

The sinusoidal electrical current, especially the high tension or rapidly alternating current, is of very great value in these cases. It may be applied to the spine and abdomen by means of large electros, or through sponges held in the hands, or by the application of one electro to the front, while the other is brushed over the surface. Great relief often follows the application of the current to the patient through the hand of the nurse.

Pain. This symptom, often exceedingly troublesome, is, after all, less difficult to control than might be inferred from the patient's

account of his sufferings, past and present. The pain actually suffered is generally not nearly so great as the patient represents it to be, as his desire for the drug leads him to exaggerate every subjective symptom to an enormous extent. Galvanism, the high tension sinusoidal current, the d'Arsonval high tension current, hot fomentations, mustard fomentations, turpentine stupes, the cotton poultice, menthol linament, massage, and the ice bag, are measures which should be successively tried and repeated. Some one of them or some combination of two or more will afford relief. For headache, hot application to the back of the head, combined with applications of cloths wrung out of ice water to the whole face, is a most effective measure. A compress consisting of six or eight thicknesses of soft cheese cloth is best for the purpose. By the combination of the measure above suggested, the patient almost invariably gains the victory and begins to feel that he is free, before the morning of the second day, so that the actual battle against the drug really does not last more than about twelve hours, and is often less than this. The patient generally obtains several naps before morning, and by ten o'clock the next day after the withdrawal of the drug, he is able to sleep under the influence of the treatment administered. The diarrhea and vomiting have ceased, the nausea has disappeared, and if on account of vomiting the patient has not been able previously to take much food, he very soon gets an appetite. The time has now arrived for the beginning of the

#### Treatment of the Second Period.

For the first day of this period, no vigorous treatment should be applied. The patient should be allowed to rest as much as possible, such palliative measures being resorted to as may be indicated by any threatened return of nervousness or other unpleasant symptoms, the measures of treatment being essentially the same as those already out-

lined. At bed time a prolonged neutral bath should be administered, temperature 92° F. to 95° F. The length of this bath should be forty five minutes to an hour and a half, or until the patient feels inclined to sleep. He should then be quickly and carefully dried, and put at once to bed. He will very likely sleep four or five hours, after which his uneasiness may return. A hot and cold application may be made to the spine, gentle centrifugal friction may be applied, or if the patient is inclined to be nervous, another neutral bath may be applied, either with or without electricity. In the absence of these facilities, a wet sheet pack, either complete or involving only a portion of the body, as the trunk or the lower half of the body, including the hips and legs, may be administered. Sometimes a moist abdominal bandage alone is sufficient to secure good sleep. This application, under the name of umschlag, or Neptune's girdle, is very widely used in Germany, especially among neurologists, as a remedy for insomnia, and after employing it for more than twenty years, I am bound to say that I know of no more serviceable agent for this purpose, aside from the neutral bath. The readiness with which this measure can be applied, renders it exceedingly practical and advantageous when other means are not accessible.

During the first week after withdrawal of the drug, insomnia is the most annoying symptom with which the patient has to contend. He is nervous, petulant, irritable, and imagines he will never sleep. He should be instructed that two or three hours of natural sleep without the employment of any drug whatever is of greater value to him than ten hours of sleep under the influence of any hypnotic drug. A drug which so profoundly affects the system as to compel sleep, at the same time to an equally profound extent disturbs and interferes with those subtle processes by which the body is repaired and recuperated. Under the influence of a sleep-producing drug, "nature's sweet restorer" fails to restore the wasted energies.



The important thing for the victim of the drug habit who has been rescued from the drug itself is to be recuperated as quickly as possible, and brought as fully and as quickly as possible into a normal state. This can only be effectively accomplished by physiological measures, which favorably influence, and do not discourage nutrition and the natural reparative processes of the body.

The second day of the period of convalescence we may begin more active tonic and recuperative measures. The patient should be given, on awakening in the morning, a cool sponge bath, followed by a light massage. The moist abdominal bandage which is worn over night should be replaced by a dry flannel bandage. He should still adhere to a fruit diet, but beaten eggs may be added to the kumyss, and he may take stewed fruit or baked apples with granose or zwiebach softened with hot fruit juice of some sort. His principal meals should be taken at 8 A. M. and 3 P. M. At 12 o'clock and 7 a couple of glasses of kumyss or kumyzoon may be administered, or if these are not obtainable, fresh buttermilk. If the patient eats freely of malted nuts at the two principal meals, he will probably scarcely feel the necessity for the minor meals at 12 and 7 o'clock, and if he eats nothing at night, he will be likely to sleep better and will feel much more refreshed on awakening in the morning than if he eats late. Nothing should be taken after three P. M. except kumyss, buttermilk, fruit juice, or stewed or fresh fruit. About 10:30 A. M. the patient should have a fomentation to the spine, followed by a cold shower for three seconds. The temperature of this shower bath should not be above 70°, and the effect is better if given at 60° or even as low as 50°. When the last mentioned temperature is used, the bath should continue for not more than one second, and should be immediately preceded by a hot bath. After drying the patient, he should be rubbed with oil, preferably cacao butter or lanolin. He should then be taken out of doors in a wheel chair and allowed to doze if he desires to do so,

in some quiet, shady corner, and should be encouraged to take a nap of an hour or so before dinner, but should not be dressed. In the afternoon the patient may have hot and cold sponging of the spine, or an application of static electricity, preferably the static charge or the electric breeze. At bedtime the neutral bath should be administered as usual, and the moist abdominal bandage should be applied. From day to day during the week of convalescence this treatment may be increased in vigor. Joint movements may be added to the manipulation of massage proper. As the bowels and stomach become less sensitive, abdominal massage may be applied, after each meal, to encourage digestion. The electric light bath or hot full bath for three to five minutes, followed by a cold shower bath for two to five seconds may be employed after the third or fourth day. If the patient has occasional nervous attacks, the prolonged neutral bath or wet sheet pack may be resorted to with excellent effect, but care should be taken not to continue the bath long enough to produce perspiration.

### Third Period.

By the end of the week, if the patient does well, the appetite will be nearly normal and the sleep reasonably good. The patient should be content, however, with a simple diet of fruits, nuts, and grains, and five or six hours' good sleep at night. The physician should not on any account become discouraged and administer sleep-producing drugs, for these lead directly back in the direction of the drug habit from which the patient seeks to be delivered.

The thing which now remains to be accomplished for the patient is to build him up, to make him a strong, self-controlled, well-poised man or woman. For this a more or less prolonged course of physical, mental, and moral training is required in most cases. Before beginning the

course of treatment, the patient should be instructed that when the immediate effects of the withdrawal of the drug have been overcome by treatment, he is by no means out of danger, but must then begin a course of thorough health training by means of treatment and regimen, whereby he may be thoroughly fortified against a downfall which is otherwise almost sure to come. He needs to be born again, physically speaking, and perhaps mentally and morally speaking also. His will is weak, his inhibitory power is small, he has so long yielded to sin, the clamorings of appetite are too strong for him to resist. He has no fortitude to endure patiently grief or trouble. He has been accustomed to flee to his nerve-obtunding drug as a refuge from every pain and trouble, disappointment and sorrow. His nutrition is greatly impaired, every function is disturbed, his mental and moral tone is as low as his physical, and he needs thorough-going reconstruction. This can be accomplished only by the stimulation of the normal tissue changes under the influence of those physiological aids by which the nutritive processes may be modified and directed in normal channels.

The diet must be so regulated as to provide suitable material for the construction of sound tissues, and such as to furnish the largest possible amount of blood and tissue building elements in a form most easy of digestion.

All this can be best accomplished by the employment of such physiological measures as hydrotherapy, massage, electricity, gymnastics, manual Swedish movements, medical dietetics, and a helpful environment, but both the treatment and regimen must be carefully graduated and systematized in administration. The patient's daily program must be <sup>so</sup> ~~xx~~ complete as to include, control, and occupy every hour, and comprise all his habits of life. This may be best accomplished in a well-equipped and scientifically conducted institution especially prepared for the training of chronic invalids, where the effects of treatment may be carefully

watched by an experienced physician, and modified from day to day as the patient's symptoms may indicate to be necessary.

It is important that the patient should be separated from his ~~friends~~ friends and associates, and from his accustomed environment until a thorough-going change has been accomplished in him, physically and mentally and morally. It is especially important to thoroughly cure any physical ailments which may have been the incidental cause of the contraction of the habit in the first place, such as a chronic neuralgia, a dysmenorrhoea, or an insomnia. The patient must be trained to endure hardship, he must be made to feel and appreciate keenly that it is a terrible humiliation and debasement for a human being to become a slave to a thing, and be made willing to suffer much rather than accept relief at the hands of such a fascinating and seductive tempter as an enslaving drug.

It is astonishing what a change may be effected in a weakly man or woman who is not yet too far advanced in years, by a few months of thorough-going, rational health culture. There is no difficulty in keeping <sup>up</sup> the patient's interest, and even enthusiasm, when his training is based upon accurate data obtained by a thorough examination, and conducted on scientific lines. The examination should be such as to make it possible to make a graphic and mathematical expression of the patient's physical condition. The dynamometer will show the strength of every important group of muscles. The data thus obtained, placed upon a properly constructed chart, will show the relation of the individual to the average man or woman of the same height, and will show at a glance any special weaknesses or deficiencies which require particular attention. Examination of the blood will show the proportion of hemoglobin and the number of corpuscles, red and white, per cubic millimeter. The examination of the stomach, if this organ is seriously involved, making such an examination necessary, shows not only the size and position of the organ,

but the exact amount and kind of work which it does and the indications for diet and treatment. The examination of the excretions, repeated from time to time, serves as a means of regulating the regimen and treatment. The examination is not complete without a careful physiological examination by the aid of the chronometer and other means for the exact study of the nervous forces and functions.

I am glad to say that when I have been able to keep a patient under treatment long enough to carry out the full program of treatment which I have outlined, I have never yet had the humiliation of seeing him relapse. The great difficulty is to keep the patient long enough under training. These patients are quite too often decidedly self-confident and exuberantly hopeful. When they find themselves delivered from the irresistible longing for the accustomed drug, they almost invariably feel that the whole work is accomplished, and that they have nothing more to fear. Nevertheless I am confident that the subsequent treatment is necessary to reinstate the individual and fortify him, mind and body, or he is very prone to relapse.

I append a few illustrative cases to show the practical application of the method of treatment outlined, duplicates of which might be presented by the score.

Case 1. Mr. ---

*Age, 51.*

Had used ten to twelve grains of morphia a day for nearly six years. Had several times been able to discontinue it for a short time, but quickly returned to it again. Had finally become completely enslaved. The patient was using daily, in addition to morphia, several grains of cocaine, smoked from three to seven cigars and chewed from eight to ten cigars daily, and took regularly six ounces of whiskey, to which other alcoholic drugs were often added.

Treatment:

1st Day: Patient took several electrohydic baths; 20 grains of bismuth and 4 gr minims fluid extract of coca bark every two hours, and 1/4 grain of morphia at night. The patient was very nervous all day, having had no morphia since the day before, but slept six or seven hours during the night, by the aid of the neutral electric baths, temperature 92° to 95° F.

2nd Day: The patient suffered considerable pain. Slept a few minutes only. Took 20 grains of trional, but without any apparent benefit. Had neutral electric baths and massage.

3rd Day: Took several neutral electrohydic baths, fomentations to the spine and abdomen, slept six hours. Felt much better, and was allowed to go about in a wheel chair.

4th Day: Slight diarrhea. Had several electrohydic baths, application of faradic electricity and massage. Slept six hours, and felt very comfortable.

5th Day: Neutral baths, massage, electrothermic baths, fomentations to spine. Felt very comfortable indeed. Read newspapers. Slept three and a half hours.

6th Day: Fomentations to the spine, salt glow, <sup>wet</sup> ~~xxx~~ sheet rub. A fair appetite. Improved very rapidly. Slept five hours.

7th Day: Neutral electro-~~hy~~ hydric baths, fomentations to the spine,

massage, faradism. Good appetite. Slept well.

8th Day: Salt glow, fomentations to the spine, massage. Patient now considered himself well. Able to go about as usual, and had no desire for narcotics. Continued to improve in general health, and a few weeks later returned to his home.

A year later he reported himself in perfect health, engaged in active business, and no disposition to relapse.

Case 2. Dr. ---. *Age 38.*

Patient had been using morphia for many years. On arriving was taking 4 grains daily, and in addition smoking daily 10 cigars, and taking alcoholic liquors of various sorts quite freely. Had for some months past been taking several grains of cocaine daily, was not quite sure as to the exact quantity. Patient discontinued the use of morphia at once.

1st Day: By the aid of neutral electro-hydric baths, fomentations to the spine, massage, patient was able to rest quietly seven hours and slept two hours.

2nd Day: Treatment continued. Patient very nervous and quite sick. Had several attacks of vomiting. Received 1/150 grain of atropine. Slept between two and three hours.

3rd Day: Several electro-hydric baths, neutral temperature, massage, fomentations to the spine, abdomen, and head. Warm enema. Several slight attacks of nausea and vomiting. Slept between five and seven hours. Was more comfortable than the day before.

4th Day: Treatment same as the day before. Patient quite restless, but slept between two and four hours.

5th Day: Several neutral electro-~~h~~ hydric baths. Patient very much better. Able to read newspapers. Slept between five and seven hours.

6th Day: Two electro-hydric baths, massage, fomentations to the spine. Patient rested quietly a number of hours, slept well, felt strong, and took some exercise about the room.

7th Day: Wet sheet pack, neutral electro-hydric bath. Strength good, mind clear. Went out for a ride. Slept between five and seven hours.

8th Day: Treatment same as the day before. Patient nervous and restless. Three or four hours sleep.

9th Day: Patient spent almost the entire day out of doors. Took dose of sulphonal on his own responsibility. Slept five to seven hours. Took a cold spray bath on rising. Felt quite comfortable during the day.

10th Day: Neutral baths as usual. Again took sulphonal at night, but obtained no sleep.

11th Day: Treatment same as the day before. In the evening was persuaded that sulphonal would on the whole do him no good, and would probably lead him back to the use of morphia, that he must get rid of drugs of all sorts. Instead of taking the sulphonal, he ate a few apples. ~~xxxxx~~ Slept four and a half hours.

12th Day: Tonic baths consisting of cool shower and spray, followed by massage. Fomentations to the spine at night. Six hours sleep.

13th Day: Treatment the same. Seven hours sleep.

14th Day: Treatment continued. Six hours sleep, patient being much stronger.

From 15th Day to 25th Day: Rapid convalescence. Gained 10 pounds of flesh. Patient returned to his home at the end of a month.

Two years later reported himself well and happy, and attending to an immense practice.



Case 3. Dr. ---, Age 35.

The patient's drug habit began with the use of very strong coffee, which was taken for stimulating effects. Patient was soon compelled to take bromides, 20-grain doses, to quiet his nerves, as he said, and later 2 grains of opium, combined with small doses of atropine, ~~and~~ <sup>were</sup> added  $\frac{1}{2}$  "to maintain a comfortable state of mind."

The treatment pursued with this patient was essentially the same as those outlined in the preceding cases. All the drugs were discontinued at once at the beginning of treatment.

1st Day: Patient suffered very little.

2nd Day: Very nervous.

3rd Day: Somewhat nervous, but much more comfortable and rapidly improving.

4th Day: Considered himself entirely free from his drug habits, and felt well.

5th Day: Had a good night's rest and felt very comfortable, but still weak.

6th Day: Improved rapidly, feeling in every way well.

7th and 8th Days: Patient slept six or eight hours, and on weighing himself at the end of the week of treatment discovered that he had gained twelve pounds of flesh.

A year later he reported himself as feeling better than ever in his life before, and he had not relapsed.

Case 4. Dr. ---, Age 45.

Had been under treatment two years before for the morphia habit. On this occasion the patient insisted on taking sulphonal and other drugs to lessen the inconvenience attending the withdrawal of the drug. He remained but a few days. Got along very well for about a year and a half, then, while suffering from a severe attack of sciatica,

he took morphia to relieve pain, and so found himself again a victim of the habit. He resorted to a so-called specialist for relief, but was treated with morphia under another name, with the addition of strychnia, and on arriving at the Sanitarium was worse than before, taking ~~XXXX~~ three grains of morphia daily. The first night after arrival 1/2 grain of morphia was administered.

1st Day: Slept much of the time and received very little treatment.

2nd Day: Received several neutral electro-hydric baths, and three baths during the night, with frequent fomentations to the spine, and almost constant friction. Felt very weak; considered himself bordering on a collapse. Received one half grain of morphia in the evening.

By 4 A. M. the following day the patient was feeling much better, and by morning he was quite relieved of pain and discomfort.

3rd Day: Patient rested well during the forenoon; during the afternoon and evening had three neutral electro-hydric baths, fomentations to the spine at intervals, and warm enemas. Slept five hours during the night. On awaking in the morning found himself entirely comfortable.

4th Day: Two neutral electro-hydric baths, massage three times, fomentations to the spine, stomach, and abdomen, frequent warm enemas. Slept fairly well during the night. Some discomfort on awaking in the morning.

5th Day: Fomentations to the spine, neutral electro-hydric bath, massage. Slept several hours. Doing fairly well.

6th Day: Quite a sharp pain in arms and shoulders. Electric light bath, fomentations to the spine and arms. Diarrhea. 10 grains ~~sub.~~ subcarbonate of gal. bismuth, and three minims fluid extract of coto bark every two hours. Slept an hour and a half.

7th Day: Neutral electro-hydric bath. Fomentations to spine, feet, and knees. Massage, hot leg bath. Patient felt stronger, took moderate exercise in the gymnasium, also took a short walk in the open

air. Two or three hours sleep during the night.

8th Day: Hot and cold to the spine, static charge, moderate exercise in the gymnasium and out of doors. Took 20 grains of sulphonal and slept four hours.

9th Day: Neutral electro-hydric bath, fomentations to spine. Still quite restless. Took 10 grains of sulphonal, slept seven hours.

10th Day: Much stronger. Took considerable amount of exercise in the gymnasium, and also out of doors. In the evening felt so much better he declared himself well and could not be prevailed upon to remain longer. Went home. A year later the patient was found in good health, engaged in active practice, with no relapse.

*Case 5. Dr. --- Age, 31.*

Had been ~~xxx~~ using morphia two years. Was taking 5 grains daily, and sometimes larger doses, with 5 grains of cocaine regularly, and recently had been taking 25 grains of cocaine daily, also 1/150 grain of strychnia and several grains of caffeine daily, with occasional doses of atropine and quinine. The morphia habit was contracted during an attack of peritonitis.

All drugs were withdrawn at once.

1st Day: Patient very restless. In the evening took neutral electro-hydric bath 95°. The patient was so comfortable he was allowed to remain two hours; was then given two ounces of malted nuts dissolved in hot water. Slept quietly for nine hours.

2nd Day: Patient received 20 grains of subcarbonate of bismuth, with ~~xxxx~~ 4 minims of fluid extract of coto bark every two hours to relieve diarrhea. Electro-hydric bath for one hour at 95°. In the afternoon the patient was very irritable and excited. Received one grain of morphia. Massage to head and limbs almost constantly. Cold compress to the head. Slept nine hours during the night and following

morning.

3rd Day: Neutral baths, hot fomentations to the spine, cool compress to the head continually, with massage and fomentations to the abdomen. The patient was somewhat delirious, had muscular twitchings, but was relieved by the neutral bath and other treatment. Was able to sleep four hours.

4th Day: Massage, neutral electric baths, ice compress to head, hot enemas. Patient comfortable, and slept eight hours.

5th Day: The treatment was the same as on the preceding day. Respiration and temperature normal. Mind clear. Ten hours sleep.

6th Day: Patient felt well. Out of doors in a wheel chair. Slept nine hours.

7th Day: Patient said he felt better than for many years. Appetite good. Received tonic treatment consisting of cool shower bath, salt glow, and massage. Slept seven hours.

10th Day: Patient was weighed and found he had gained ten pounds since beginning treatment. Allowed to walk about, and declared he felt himself in better health than for many years. Experienced no discomfort <sup>of</sup> in any sort whatever.

This patient had made several attempts to rid himself of the morphia habit, but on each occasion treatment has been suspended on account of persistent vomiting, which could not be controlled. Under the treatment outline, this symptom did not appear.

Case 6, Mrs. --- Age, 50 years.

Had used morphia habitually more than twenty years, keeping her friends in ignorance of the fact until within the last three years. Was using from 20 to 30 grains daily. The same method outlined in the above case was pursued, with the result that in less than a week the patient was feeling very comfortable without the use of morphia, and at

the end of three months she returned home enjoying good health. A year later she reported herself well and entirely free from the drug.

Case 7. Miss ---. Age 36.

Had been addicted to the use of morphia for about six months. Used  $3/4$  of a grain at a dose by hypodermatic injection from two to eight times daily. Patient extremely nervous, debilitated, emaciated, and suffered ~~xxx~~ frequent attacks of severe headache, frequent attacks of diarrhea, and severe vomiting, with hemorrhage from the stomach. Bowels very inactive when not loose. Attacks of headache occur<sup>ed</sup> one to three times monthly. Had suffered from the severe headaches ever since early childhood. Weighed 30  $1/2$  pounds. The patient had been confined to her bed for six months.

The morphia was withdrawn at once. The patient was very nervous the first night, but obtained six to nine hours of refreshing sleep each night after. Began walking three weeks after beginning of treatment, and in eleven days gained sufficient strength to be able to walk two miles. Seven weeks after treatment began, bowels moved naturally for the first time in many years.

More than a year has passed since this patient was discharged, but she reports herself still in good health. The treatment employed was the same as has been described in other cases.

Case 8. Miss ---. Age, 56.

Had been using morphia habitually for eighteen years, but had managed to keep the quantity down to two or three <sup>grains</sup> daily. At the time the patient came under treatment, the daily dose was somewhat smaller than this. The drug was withdrawn at once, the usual course of treatment pursued, and with the following results:--

The first few nights the patient slept very little, but was able to rest quietly, and at the end of the week felt herself quite well. Though

a confirmed invalid when she arrived, going about in a wheel chair and able to walk but a few steps, the patient left <sup>so</sup> greatly improved in strength that she was easily able to walk several miles if necessary, and enjoyed better health than for many years before.

Case 9. Mrs. ---. Age, 25 years.

Had been using morphia habitually by hypodermatic injection, and gradually increasing the dose to 30 grains. Suffered greatly from hemorrhoids, indigestion, much nausea and vomiting, and at times manifested symptoms closely resembling hystero-epilepsy. Had several attacks of convulsions, which sometimes occurred daily for three weeks or more. The patient was accompanied by her physician, who had promised to stay by her to see that the drug was not removed too quickly. The dose was gradually reduced from February 20, when the patient arrived, to March 13. During this time the patient suffered much severe pain in the head, vomiting, nausea, and extreme nervousness. Was constantly in a very excited state, ~~xxxxxxx~~ and could not be made entirely comfortable by any treatment which was applied. Finally the physician and patient both consented to an entire withdrawal of the drug, and with the happiest results. The patient obtain four hours sleep the night following, and the next day felt much better. Improvement was so rapid that within two days the patient lost all desire for the drug, the bowels moved normally, and a little more than three months after the patient arrived, she left for her home, declaring herself to be in better health than ever before in her life.

This patient's sufferings were greatly increased and prolonged by the attempt to withdraw the drug gradually. If the drug had been wholly withdrawn within the first forty eight hours, the patient would have been saved much inconvenience and suffering, and would have reached a condition of permanent restoration to health at a much earlier date.

J. H. Kellogg.

A NEW AND SUCCESSFUL METHOD OF TREATMENT FOR THE OPIUM  
HABIT AND OTHER FORMS OF DRUG ADDICTION.

The increase of drug addiction in this country, and probably in all civilized countries in various forms, notwithstanding the earnest efforts of numerous temperance organizations, the terrible penalties inflicted by nature upon the victims of this form of vice, and the frequent and earnest warnings uttered by many of the medical profession, is ample justification for the existence of this association, and it is a fact which calls for most earnest consideration.

That the increase, relative as well as numerical, of neurotic individuals, as shown by the fact that the number of insane and imbeciles per thousand or million at the present time is nearly three times as great as fifty years ago, is both the cause and the consequence of the increased prevalence of drug addiction, probably no one will deny: but it is not my purpose in this paper to enter upon a consideration of the causes of drug addiction, nor methods of prevention, and I only briefly refer to this phase of the subject in order to call attention to the following principle, which I regard as being of fundamental importance in dealing with this class of cases.

The majority of persons who acquire the vice of drug addiction are peculiarly constituted individuals, who may be divided into several classes, as

(1) Those who live upon the sense plain, regarding the body as a harp of pleasure to be played upon so long as its strings can be made to vibrate by force of will or the aid of artificial excitements, and who, when the natural resources of the body are exhausted, seek artificial and unearned felicity through the aid of various nerve tickling, pain- and trouble-annihilating, felicity-producing drugs.

(2) Those hypersensitive, neurotic, delicately organized individuals,

a rapidly increasing class, who are the natural result of the artificial brain and nerve destroying and race-deteriorating conditions of our ~~modern~~ modern life. These persons, lacking physical capacity for enduring the pains, hardships, and tribulations of life from which they suffer untold and indescribable agonies, seek relief in some nepenthe which promises them ease from the present stress of suffering, overlooking all considerations respecting what the future may have in store for them.

Therapeutic methods which do not recognize this principle, and which do not take into consideration the predisposing influence of constitutional tendencies which may be either hereditary or acquired, are likely to prove mere temporizing measures, which deliver the victim of the drug addiction, from the ditch of habit only to give him an opportunity to fall back into the same pit. All who have had experience in the treatment of this class of patients know that the history of nearly every case comprises an account of numerous unsuccessful attempts to escape from the thralldom of the drug or drugs to which the individual has become enslaved. The patient generally enumerates a half dozen or more certain cures which he has tried, institutions of various kinds which he has visited, and at which cures are guaranteed, and not infrequently it appears that the patient's time for a half dozen years or more has been chiefly occupied in going from one to another of such institutions, seeking help, but finding none except a mere temporary surcease of bondage, or, what is perhaps still more common, deliverance from the jaws of one drug demon only to fall into the merciless clutches of another.

Without stopping to enumerate the numerous pathological changes, either general or specific, which result from the various soul- and body-destroying drugs, it is necessary to present a brief summary of the more important of the general morbid conditions encountered, in order to make clear the rationale of the methods of treatment to which I wish to call attention. As I have observed in these cases, the following conditions



are practically common to all the ordinary forms of drug addiction which present themselves for treatment, especially, and in the most pronounced and typical form, in victims of the opium habit:--

1. An unbalanced condition of the vasomotor functions. This loss of vasomotor control is without doubt the cause of the persistent insomnia, the watery diarrhea, and numerous other symptoms which follow the withdrawal of the whole or even a considerable part of the daily dose of opium in a case in which the drug has been largely used.

2. An extremely irritable condition of the sympathetic nervous system, shown by marked hyperesthesia of the lumbar ganglia of the abdominal sympathetic and the solar plexus, with a large group of associated symptoms, such as anorexia, nausea, vomiting, griping, purging, palpitation of the heart, sense of weight and constriction in the chest, shortness of breath, sensation of smothering, sinking feeling, sensation of impending death, extreme nervousness, with indescribable sensations, extraordinary restlessness, paresthesias of all sorts, shivering, general tremor, perspiration, etc.

Opium apparently excites the involuntary muscular fibers in the body while temporarily paralyzing the sensory nerves or fibers. Cocaine dilates the pupil, but at the same time causes contraction of the small blood vessels through its influence upon their constricting fibers. A moderate dose of alcohol causes flushing of the surface, but a man far under the influence of alcohol has a pale skin. Under the prolonged influence of these constricting drugs, the sympathetic nervous system develops a certain compensation, just as do the nerve centers which control the heart and the heart muscle itself, in cases of obstructive valvular disease of the heart. In the withdrawal of the drug, the compensation is no longer required, hence the unbalanced condition manifested by the symptoms mentioned and numerous others which at once appear.

3. Cardiac weakness. This is due to the influence of lethal drugs

upon the vasomotor and sympathetic nervous systems above referred to. The symptoms of heart weakness are palpitation of the heart, a weak, irregular, fluttering pulse, extreme pallor, faintness, and smothering sensation.

4. Reappearance of chronic pains and other distressing symptoms, for the relief of which the drug was perhaps at first administered.

5. Extreme unrest and anxiety, grief, indecision, childishness, utter inability to engage in mental diversion or occupation of any sort. In many cases a condition closely akin to acute mania.

6. Complete or nearly complete loss of fortitude, no courage to endure suffering or annoyance, peevishness, unreliability, generally a determination to obtain the drug by any possible means, without regard to consequences.

7. In cases in which the drug has long been used, and in large quantities, a condition of general malnutrition.

The above is a very faint picture of the condition of a person who has long been addicted to an enslaving drug, as opium, after the drug has been removed, but it will perhaps suffice for my purpose, which is merely to bring forward the general conditions which must be considered in the application of treatment.

Treatment. In the title to my paper, I have spoken of the treatment to be presented as new. I do not wish to be understood as having a new panacea to offer, nor some unique or newly discovered drug or method, to exploit. The measures which I shall describe are none of them new as therapeutic procedures. The general plan of management I have not seen fully described as a whole. Though I am sure many of the measures employed have been used by others, I have been led to think that the method as a whole is the result of my personal experience during the last twenty years in the treatment of this class of cases at the Battle Creek Sanitarium. I have undertaken to write this description of it by the ear-

most request of numerous physicians who have sent patients to the Sanitarium for treatment, or who themselves have been patients. The general plan of management divides itself naturally into three periods, as follows:

First period, that during which the drug is being withdrawn, lasting one or two days.

Second period, that immediately following the complete withdrawal of the drug, lasting from one week to ten days.

Third period, beginning with the recovery from the acute symptoms resulting from withdrawal of the drug or drugs, and lasting from three to six months, or until the individual is fully reinstated in physical, mental, and moral health.

I will now undertake to describe briefly my mode of managing these cases in each of these periods.

#### Treatment during the Withdrawal of the Drug.

In the beginning of my experience with this class of cases, I sought to alleviate the sufferings of the patient by very gradual withdrawal of the drug, but I soon discovered that by this method the patient's sufferings were not really mitigated to any considerable degree, while not infrequently his patience was exhausted by the length of the struggle, and I am thoroughly satisfied that it is in every way better for the patient to make a short, sharp fight and have the battle over than to endure the long drawn out agony of the gradual reduction of the drug during several weeks.

My usual plan is to divide the dose the first day, and the second day give none at all. In very many cases, only one dose is administered after the patient begins treatment. If the size of the dose is not very large, say not more than four or five grains daily, it is not infrequently withdrawn at once, none at all being administered after the course of

treatment has begun. Sometimes a placebo in the form of a normal saline solution is administered, although as a rule I find it much better to let the patient know exactly his condition, the amount of the drug he has taken, and when he has discontinued it, so that he may be encouraged to enter more heartily into the battle for the mastery of the habit.

Attendance. I invariably put the patient to bed, with the understanding that he shall remain in bed for at least one week and perhaps two weeks, and during this time he is not allowed to dress, though he may be often taken out for a half hour in a wheel chair. After treatment is begun, the patient is kept in a special apartment by himself, no one in contact with him except his nurse or nurses and his attending physician. This apartment is fitted up with all the appliances necessary for the special treatment required, having bath tub, spray and douche apparatus, electrical appliances of various sorts, for the administration of galvanism, faradizism, sinusoidal current, etc. Facilities for the electric light bath, with the administration of the d'Arsonval current, together with other hydrotherapeutic and other rational measures, are close at hand. The patient is taken to this apartment in his night clothing, and is kept under the close observation of an attendant every moment, so that he shall have no opportunity whatever to get access to drugs of any kind. Great care is taken in the selection and training of nurses for the care of this class of patients. They must be persons of dignity of character and bearing, good judgment, resolution, ability to command the respect of the patient, trustworthy, and exceptionally skillful, not only in the ordinary care of the sick, but in the employment of hydrotherapeutic measures of all sorts, electricity, massage, manual Swedish movements, etc. The nurse must be of cheerful disposition, full of tact and resources, able to interest and divert his patient's mind during the weary hours of his conflict. He must be untiring in energy, unflagging in interest, and faithful in the minutest details in the carrying out of

instructions. The success of these cases depends very largely indeed upon the tact and efficiency of the nurse or nurses-- for at least two nurses are required in every case, one for the day and the other for the night, and sometimes an assistant nurse is needed during the first twenty four or forty eight hours.

The physician must possess, in addition to all the knowledge and qualifications of the nurse, a sufficient amount of experience with these cases to understand the significance of every symptom, and so be able to meet promptly each indication by rational means. He must be thoroughly possessed of the idea that it is the patient, not his habit, which is to be cured. He must have a ready command of all the resources of physiological medicine, he must have that confidence born of successful experience which will enable him to say to his patient with absolute assurance that however threatening and distressing any symptom may be, relief will certainly come, and that without long delay, if he will but exercise sufficient patience. He must be able to command the fullest confidence and respect of his patient, and this will not be gained by yielding to his importunities, but rather by demonstrating to him that there is a better way than that which he proposes. When the patient discovers that the physician is really master of the situation, and puts himself absolutely in his hands ready to co-operate to the utmost of his ability, the battle is more than half won.

Drugs. I have no hesitancy in saying that any ~~xxxx~~ system of treatment of the opium or alcohol habit, or any other form of drug addiction which depends for its success upon the administration of a substitute drug, is, and must be, a failure. The patient either becomes the victim of the new drug, or returns to the old one. That there may be now and then an exception to this rule does not weaken its validity more than does the fact that patients sometimes escape from the thralldom of a poison habit without any treatment whatever, through the aid of an inter-

current illness of some sort or some favorable combination of circumstances. I do not say that no drug of any sort should be used, for I quite frequently find it advantageous to make use of medicinal agents of various sorts for the palliation of some pressing symptom. For example, for relieving the severe diarrhea, I find it advantageous to employ sub-carbonate of bismuth in large doses, and the fluid extract of coco bark. I begin the use of these remedies as soon as the first symptom of diarrhea appears, and they may be employed with advantage even before the appearance of diarrheal symptoms in cases in which the history of the case shows that severe symptoms of this sort may be expected. In very exceptional cases, I sometimes administer a few small doses of atropia. Strychnia I never find occasion to use, and I find no advantage whatever in the use of bromide of potash, chloral, hyoscyamus, and the numerous other drugs which have been so largely used in these cases. For years I made use of these drugs and others, but I found that they mitigated the patient's symptoms <sup>very</sup> little, while they deranged his digestion to a great degree, and thus only postponed the moment when the vital forces of the patient could begin to rally to the restoration of normal conditions.

Diet. During the period of withdrawal of the drug, I find it advantageous to give the patient a fluid diet. The diet may consist of kumyss, buttermilk, malted nuts, or fruit juices, such as unfermented grape juice, raspberry juice, blackberry juice, etc. These I allow the patient to take freely. They help to sustain his energies, by increasing the volume of the blood, and preventing to a large degree the sensation of "goneness," smothering, and similar other heart failures. Taken hot, it is extremely palatable, and is the most supporting of all food substances with which I am familiar. I give the patient as much food as he will take once in four hours. If nausea and vomiting prevent taking of food by the stomach, I administer an enema consisting of two ounces of malted nuts, dissolved in six ounces of water, and mixed with two

beaten eggs, with the addition of half a dram of salt. This enema is administered with a rectal tube, and is retained as long as possible. It should be repeated every four hours, the bowels being washed out every other time half an hour before the nutritive enema is given. Meats and all other solid foods are carefully excluded from the dietary, also beef tea, which, like beefsteak and other meats, certainly excites the nerves and increases the craving for the drug.

Symptomatic Treatment. It is my custom to administer the last dose of morphia at night. The patient generally manages to get through the night very comfortably, but a few hours after the time for the morning dose has past, various nervous disturbances begin to make their appearance, and by the following night the battle is really begun. As soon as marked nervousness appears, and without waiting for the patient to become greatly agitated, he is placed in a full bath at a temperature of 92° to 93°, or sometimes a slightly higher temperature, as 95°, is employed, but often a slightly lower temperature, as 90°, is found preferable. A bath at this temperature is known in hydrotherapy as a neutral bath. Its temperature is practically that of the skin, consequently neither thermic nor secretory reaction is produced. The body is surrounded by a neutral medium, and thus the disturbing influences of environment of the patient, whether it be a high or low temperature of air, changes of temperature, contact of objects, friction of clothing, or whatever it may be, is shut off.

Under the calmative influence of the neutral bath, the irritability of the nerve centers is radically lessened, and the patient becomes quiet. The bath may be continued for an indefinite length of time, as it neither communicates heat to the body nor absorbs heat to a very considerable degree, and sets up no energy-dissipating reflexes. The patient is generally kept in the bath from three fourths of an hour to an hour and a half, at the end of which time he is removed, enveloped in a

Turkish sheet, and gently rubbed until dry. Not infrequently he falls asleep in the bath. After the bath, the patient generally finds himself very comfortable for an hour or two, then it may be repeated. If necessary, the patient may be kept in the bath almost continuously. Not infrequently it is advantageous, for a change, to apply some different form of sedative bath. One of the very best is the wet sheet pack. The sheet should be wrung out of water at about 75° F., and should be made as dry as possible, so as not to produce too great nor too prolonged reaction. The patient is enveloped with this sheet in the usual way, only it is often advantageous to leave the arms outside of the wet sheet. Care must also be taken not to allow the patient to get chilled, as the reactive capacity of a person in this state is very much reduced. The patient generally falls asleep in the wet sheet pack. He should be allowed to remain in the pack as long as he is comfortable, or as long as he sleeps. The covers should be carefully regulated, so as to prevent profuse perspiration. After the pack, apply a tepid sponge bath.

Great care should be taken to avoid very hot treatment, or prolonged sweating, as these weaken the heart. The electric light bath for two or three minutes, but not long enough to produce perspiration, often affords great relief to the patient, and is an excellent preparation for a neutral bath or the wet sheet pack.

It is advantageous to administer a faradic current while the patient is in the full bath. This is best done by means of a special faradic apparatus, arranged for the administration of electrohydric, or so-called electrothermal bath. A high tension and rapidly interrupted current should be used. I find the rapidly alternated sinusoidal electric current preferable to the faradic in these cases, and also find exceedingly useful the galvanic bath, which is perhaps the most sedative of all electric applications in cases of this sort. Great care must of course be employed in the application of the galvanic current.



Restlessness, fidgets, and a general uneasiness are relieved in a marvelous manner by the baths given, as described, but great care must be taken to regulate the temperature of the bath exactly, and to bring it within the range of the temperature mentioned. A higher temperature depressed the heart and a lower temperature exhausts the nervous energy and increases the irritability of the already over-excited centers.

Massage, properly employed, has a wonderfully soothing effect in these cases. The manipulations must be applied with great gentleness, however, and by a skilled masseur or masseuse. For the trunk and limbs centrifugal friction should be applied. The stroke being wholly in the direction from the heart toward the periphery, a sedative effect will be produced. Massage of the head and back applied in the manner which I have elsewhere described\* is also wonderfully efficacious in relieving the patient's sufferings. It is important that something should be done for the patient every moment when he is not at rest. The maintenance of a constant watchfulness on the part of the nurse, anticipating every want of the patient, and meeting as far as possible all his wishes and fancies, so as to allay mental irritation and to keep his mind continually occupied and diverted, is of great importance.

Cardiac Weakness. I am satisfied that far less importance and significance attaches to this symptom than is generally given to it. The heart certainly derives no strength from morphia or any other drug, and the withdrawal of a toxic agent cannot, in my opinion, entail fatal results through the failure of the heart function. No matter how pressing the symptoms may seem to be, nature will come to the rescue in time to save the patient's life. Nevertheless the inconvenience which the patient suffers from this symptom is not infrequently very great, and on

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\*The Art of Massage, by J. H. Kellogg, M. D., published by the Modern Medicine Pub. Co., Battle, Creek, Mich.

this account it is worthy of careful attention. Of the several hundred cases of morphia addiction which have been under my care, not one has died from heart failure or any possible connection with the heart. In fact, I have been obliged to record but one death of a patient under treatment for the morphia habit, and this occurred several days after the patient was entirely relieved of the drug and of a craving for it, and was due to causes which could not be directly connected with the habit or the treatment administered for his cure. The quantity of morphia used in some cases has been extraordinary, in two or three instances more than one hundred grains of morphia being administered hypodermically each twenty four hours. In one case a patient took by the mouth a full ounce of morphia each day, a half ounce at a dose. In this case I could not believe the patient's statement until verified by the assistant under whose charge the patient was placed, and who saw the dose taken.

The neutral full bath, wet sheet pack, and other measures already suggested, are highly effective means of relieving cardiac disturbances. A still more effective measure, which acts more directly upon the heart, is the application of hot and cold sponging to the spine, from the base of the skull to the lower dorsal region. This application may be made in such a manner as to serve as a most powerful cardiac stimulant, or so as to stimulate only in moderate degree. Two sponges are required, and a vessel of very hot water, and in another vessel a quantity of ice water or pieces of ice the size of the fist. The spine is first sponged with hot water for half a minute. The heat should be as great as can be borne, but care should be taken not to injure the skin. The other sponge is then applied for fifteen or twenty seconds, being wrung just dry enough out of the ice water so it will not drip. For a more vigorous application, a flannel cloth wrung out of very hot water may be applied to the spine, extending from the base of the skull down between the shoulder blades, and being kept in contact with the skin for one or

minutes; then a smooth piece of ice the size of the fist may be rubbed over the same surface, being moved rapidly up and down the whole length of the surface under treatment for five to ten seconds. These applications should be continued in rapid alternation for ten or fifteen minutes, or until the pulse is improved to a satisfactory degree.

Palpitation of the heart is relieved by centrifugal friction, or downward stroking of the trunk and limbs.

The neutral bath has a remarkably quieting and toning effect upon the heart, as does also the wet sheet pack.

In cases of extreme cardiac weakness, a hot bath, preferably the electric light bath, may be applied for one or two minutes, followed by a dash of cold water, preferably a shower or spray, lasting one second. Or the alternating hot and cold shower may be employed. This is the most powerful of all cardiac stimulants, and the effect is lasting to a remarkable degree. It may be repeated as often as necessary.

Free water drinking, begun before the drug is withdrawn, and continued during the treatment, is advantageous as a means of maintaining the volume of the blood, which in itself is of the greatest service in sustaining the heart's action.

The value of the hydrotherapeutic measures mentioned in toning the vasomotor and sympathetic systems, and in <sup>re-</sup>storing a normal balance, can not be overestimated. The skin is the most important sense organ in the body, and one of the most complicated, which is easily seen when one recalls its numerous sensory functions in relation to general sensations and the senses of touch, vision, and temperature. It is richly supplied with constrictor and dilator vasomotor nerves and afferent as well as efferent sympathetic nerves. Through these two systems of nerves the most important organic reflexes are set up by applications to the surface, which affect in the most profound manner the functions of the nerve centers, the organs of circulation, and all the processes of nutrition.

Vomiting and Diarrhea. Under this system of treatment, vomiting and diarrhea are seldom very troublesome symptoms. Not infrequently patients who have abandoned the attempt to dispense with the use of morphia under other systems of treatment in consequence of the persistent and intractable character of these symptoms, have expressed great surprise that they have suffered so little inconvenience in this direction. Nevertheless they sometimes do occur, though I have never found either of these symptoms, or both combined, so stubborn as to make it necessary to abandon or even suspend the treatment or to administer a dose of morphia for their relief, at least not since the plan of treatment outlined has been fully developed.

When vomiting appears, the following measures are used: the patient is kept as quiet as possible in bed, a hot bag is placed at the spine, or in place of it hot and cold applications are made to the central portion of the back. An ice bag is placed over the stomach, and the patient is made to swallow small bits of ice, or if, as is sometimes the case, the taking of substances into the stomach increases the nausea and vomiting, the ice is simply held in the mouth. An ice bag is sometimes placed about the throat and wrists. In some cases an ice bag at the back of the neck is found of service. The patient lies still and keeps his eyes closed. The nausea almost always lasts but a few hours, and is sometimes very quickly relieved. Subcarbonate of bismuth in twenty or thirty grain doses every hour, is sometimes of value.

For the diarrhea it is seldom necessary to administer any specific remedy outside of those which have already been named, which, by restoring the vasomotor equilibrium, prevent the outpouring of serum into the lower alimentary canal and excessive peristalsis. The hot enema is often a measure of real service. A quart of hot water, hot as can be borne, is administered after every movement. The fluid extract of coco

bark, two to four drop doses, with subcarbonate of bismuth in thirty grain doses, is administered every two hours when the patient is awake during the first twenty four hours, when diarrhea exists, and if there is reason to expect this symptom to be troublesome, the use of these remedies is begun as soon as the drug is withdrawn.

In some cases a strong galvanic current, applied by means of large sponges presenting a surface of at least one half square foot each, one over the solar plexus and lumbar ganglia, the other over the spine opposite, is the most effective means of relieving sympathetic irritation which gives rise to disturbance of the alimentary canal, manifested by vomiting and diarrhea. The negative pole should be applied at the back, the positive in front.

Faradism and the sinusoidal current are also of great value in allaying gastric and intestinal irritability. These should be applied in the same way as galvanism. The applications may be made for twenty to thirty minutes, or even longer.

The galvanic current applied, one electro (the negative) over the cervical sympathetic, the other over the solar plexus and lumbar ganglia of the sympathetic, is also an effective means of controlling nervousness arising from irritability of the sympathetic. The negative pole should be applied at the neck, the positive over the abdominal ganglia.

The sinusoidal electrical current, especially the high tension or rapidly alternating current, is of very great value in these cases. It may be applied to the spine and abdomen by means of large electrodes, or through sponges held in the hands, or by the application of one electro to the front, while the other is brushed over the surface. Great relief often follows the application of the current to the patient through the hand of the nurse.

Pain. This symptom, often exceedingly troublesome, is, after all, less difficult to control than might be inferred from the patient's

account of his sufferings, past and present. The pain actually suffered is generally not nearly so great as the patient represents it to be, as his desire for the drug leads him to exaggerate every subjective symptom to an enormous extent. Galvanism, the high tension sinusoidal current, the d'Arsonval high tension current, hot fomentations, mustard fomentations, turpentine stupes, the cotton poultice, menthol liniment, massage, and the ice bag, are measures which should be successively tried and repeated. Some one of them or some combination of two or more will afford relief. For headache, hot application to the back of the head, combined with applications of cloths wrung out of ice water to the whole face, is a most effective measure. A compress consisting of six or eight thicknesses of soft cheese cloth is best for the purpose. By the combination of the measure above suggested, the patient almost invariably gains the victory and begins to feel that he is free, before the morning of the second day, so that the actual battle against the drug really does not last more than about twelve hours, and is often less than this. The patient generally obtains several naps before morning, and by ten o'clock the next day after the withdrawal of the drug, he is able to sleep under the influence of the treatment administered. The diarrhea and vomiting have ceased, the nausea has disappeared, and if on account of vomiting the patient has not been able previously to take much food, he very soon gets an appetite. The time has now arrived for the beginning of the

#### Treatment of the Second Period.

For the first day of this period, no vigorous treatment should be applied. The patient should be allowed to rest as much as possible, such palliative measures being resorted to as may be indicated by any threatened return of nervousness or other unpleasant symptoms, the measures of treatment being essentially the same as those already out-

lined. At bed time a prolonged neutral bath should be administered, temperature 92° F. to 95° F. The length of this bath should be forty five minutes to an hour and a half, or until the patient feels inclined to sleep. He should then be quickly and carefully dried, and put at once to bed. He will very likely sleep four or five hours, after which his uneasiness may return. A hot and cold application may be made to the spine, gentle centrifugal friction may be applied, or if the patient is inclined to be nervous, another neutral bath may be applied, either with or without electricity. In the absence of these facilities, a wet sheet pack, either complete or involving only a portion of the body, as the trunk or the lower half of the body, including the hips and legs, may be administered. Sometimes a moist abdominal bandage alone is sufficient to secure good sleep. This application, under the name of umschlag, or Neptune's girdle, is very widely used in Germany, especially among neurologists, as a remedy for insomnia, and after employing it for more than twenty years, I am bound to say that I know of no more serviceable agent for this purpose, aside from the neutral bath. The readiness with which this measure can be applied, renders it exceedingly practical and advantageous when other means are not accessible.

During the first week after withdrawal of the drug, insomnia is the most annoying symptom with which the patient has to contend. He is nervous, petulant, irritable, and imagines he will never sleep. He should be instructed that two or three hours of natural sleep without the employment of any drug whatever is of greater value to him than ten hours of sleep under the influence of any hypnotic drug. A drug which so profoundly affects the system as to compel sleep, at the same time to an equally profound extent disturbs and interferes with those subtle processes by which the body is repaired and recuperated. Under the influence of a sleep-producing drug, "nature's sweet restorer" fails to restore the wasted energies.

The important thing for the victim of the drug habit who has been removed from the drug itself is to be recuperated as quickly as possible, and brought as fully and as quickly as possible into a normal state. This can only be effectively accomplished by physiological measures, which favorably influence, and do not use up, the natural reparative processes of the body.

The second day of the period of convalescence we may begin more active tonic and recuperative measures. The patient should be given, on awakening in the morning, a cool sponge bath, followed by a light massage. The moist abdominal bandage which is worn over night should be replaced by a dry flannel bandage. He should still adhere to a fruit diet, but beaten eggs may be added to the kumys, and he may take stewed fruit or baked apples with glucose or zwischach softened with hot fruit juice of some sort. His principal meals should be taken at 8 A. M. and 3 P. M. At 12 o'clock and 7 o'clock a couple of glasses of kumys or kumysoon may be administered, or if these are not obtainable, fresh buttermilk. If the patient eats freely of milted nuts at the two principal meals, he will probably scarcely feel the necessity for the minor meals at 12 and 7 o'clock, and if he eats nothing at night, he will be likely to sleep better and will feel much more refreshed on awakening in the morning than if he eats late. Nothing should be taken after three P. M. except kumys, buttermilk, fruit juice, or stewed or fresh fruit. About 10:30 A. M. the patient should have a fomentation to the spine, followed by a cold shower for three seconds. The temperature of this shower bath should not be above 70°, and the effect is better if given at 60° or even as low as 50°. When the last mentioned temperature is used, the bath should continue for not more than one second, and should be immediately preceded by a hot bath. After drying the patient, he should be rubbed with oil, preferably cacao butter or lanolin. He should then be taken out of doors in a wheel chair and allowed to doze if he desires to do so,



in some quiet, shady corner, and should be encouraged to take a nap of an hour or so before dinner, but should not be dressed. In the afternoon the patient may have hot and cold sponging of the spine, or an application of static electricity, preferably the static charge or the electric breeze. At bedtime the neutral bath should be administered as usual, and the moist abdominal bandage should be applied. From day to day during the week of convalescence this treatment may be increased in vigor. Joint movements may be added to the manipulation of massage proper. As the bowels and stomach become less sensitive, abdominal massage may be applied, after each meal, to encourage digestion. The electric light bath or hot full bath for three to five minutes, followed by a cold shower bath for two to five seconds may be employed after the third or fourth day. If the patient has occasional nervous attacks, the prolonged neutral bath or wet sheet pack may be resorted to with excellent effect, but care should be taken not to continue the bath long enough to produce perspiration.

### Third Period.

By the end of the week, if the patient does well, the appetite will be nearly normal and the sleep reasonably good. The patient should be content, however, with a simple diet of fruits, nuts, and grains, and five or six hours' good sleep at night. The physician should not on any account become discouraged and administer sleep-producing drugs, for these lead directly back in the direction of the drug habit from which the patient seeks to be delivered.

The thing which now remains to be accomplished for the patient is to build him up, to make him a strong, self-controlled, well-poised man or woman. For this a more or less prolonged course of physical, mental, and moral training is required in most cases. Before beginning the

course of treatment, the patient should be instructed that when the immediate effects of the withdrawal of the drug have been overcome by treatment, he is by no means out of danger, but must then begin a course of thorough health training by means of treatment and regimen, whereby he may be thoroughly fortified against a relapse which is otherwise almost sure to come. He needs to be born again, physically speaking, and perhaps mentally and socially speaking also. His will is weak, his inhibitory power is small, his ability to learn, the clearings of appetite are too slow for his needs. He has no fortitude to endure patiently grief or trouble. He has been accustomed to flee to his nerve-stimulating drug as a refuge from every pain and trouble, disappointment and sorrow. His nutrition is greatly impaired, every function is disturbed, his mental and moral tone as low as his physical, and he needs thorough-going reconstruction. This can be accomplished only by the stimulation of the normal tissue changes under the influence of those physiological aids by which the nutritive processes may be modified and directed in normal channels.

The diet must be so regulated as to provide suitable material for the construction of solid tissues, and such as to furnish the largest possible amount of blood and tissue building elements in a form most easy of digestion.

All this can be best accomplished by the employment of such physiological measures as hydrotherapy, massage, electricity, gymnastics, manual Swedish movements, medical dietetics, and a helpful environment, but both the treatment and regimen must be carefully graduated and systematized in administration. The patient's daily program must be complete as to include, control, and occupy every hour, and comprise all his habits of life. This may be best accomplished in a well-equipped and scientifically conducted institution especially prepared for the training of chronic invalids, where the effects of treatment may be carefully

watched by an experienced physician, and suitable food day to day as the patient's symptoms may indicate to be necessary.

It is important that the patient should be separated from his friends and associates, and from his accustomed environment until a thorough-going change has been accomplished in him, physically and mentally and morally. It is especially important to thoroughly cure any physical ailments which may have been the incidental cause of the contraction of the habit in the first place, such as chronic neuritis, a dysmenorrhoea, or an insomnia. The patient must be trained to endure hardship, he must be made to feel and appreciate keenly that it is a terrible humiliation and debasement for a human being to become a slave to a thing, and he must be willing to suffer much rather than accept relief at the hands of such a fascinating and deceptive but poisonous and enslaving drug.

It is astonishing what a change may be effected in a weakly man or woman who is not yet too far advanced in years, by a few months of thorough-going, rational health culture. There is no difficulty in keeping <sup>up</sup> the patient's interest, and even excitement, when his training is based upon accurate data obtained by thorough examination, and conducted on scientific lines. The examination should be such as to make it possible to make a graphic and mathematical expression of the patient's physical condition. The dynamometer will show the strength of every important group of muscles. The data thus obtained, placed upon a properly constructed chart, will show the relation of the individual to the average man or woman of the same height, and will show at a glance any special weaknesses or deficiencies which require particular attention. Examination of the blood will show the proportion of haemoglobin and the number of corpuscles, red and white, per cubic millimeter. The examination of the stomach, if this organ is seriously involved, making such an examination necessary, shows not only the size and position of the organ,

but the exact amount and kind of work which it does and the indications for diet and treatment. The examination of the excretions, repeated from time to time, serves as a means of regulating the regimen and treatment. The examination is not complete without a careful physiological examination by the aid of the chronometer and other means for the exact study of the nervous forces and functions.

I am glad to say that when I have been able to keep a patient under treatment long enough to carry out the full program of treatment which I have outlined, I have never yet had the humiliation of seeing him relapse. The great difficulty is to keep the patient long enough under training. These patients are quite too often decidedly self-confident and exuberantly hopeful. When they find themselves delivered from the irresistible longing for the accustomed drug, they almost invariably feel that the whole work is accomplished, and that they have nothing more to fear. Nevertheless I am confident that the subsequent treatment is necessary to reinstate the individual and fortify him, mind and body, or he is very prone to relapse.

I append a few illustrative cases to show the practical application of the method of treatment outlined, duplicates of which might be presented by the score.

CHYME

Case 1. Mr. ---

*Age, 51.*

Had used ten to twelve grains of morphia a day for nearly six years. Had several times been able to discontinue it for a short time, but quickly returned to it again. Had finally become completely enslaved. The patient was using daily, in addition to morphia, several grains of cocaine, smoked from three to seven cigars and chewed from eight to ten cigars daily, and took regularly six ounces of whiskey, to which other alcoholic drugs were often added.

Treatment:

1st Day: Patient took several electrohydic baths; 20 grains of bismuth and 4  $\times$  minims fluid extract of coca bark every two hours, and 1/4 grain of morphia at night. The patient was very nervous all day, having had no morphia since the day before, but slept six or seven hours during the night, by the aid of the neutral electric baths, temperature 93° to 95° F.

2nd Day: The patient suffered considerable pain. Slept a few minutes only. Took 20 grains of trional, but without any apparent benefit. Had neutral electric baths and massage.

3rd Day: Took several neutral electrohydic baths, fomentations to the spine and abdomen, slept six hours. Felt much better, and was allowed to go about in a wheel chair.

4th Day: Slight diarrhea. Had several electrohydic baths, application of faradic electricity and massage. Slept six hours, and felt very comfortable.

5th Day: Neutral baths, massage, electrothermic baths, fomentations to spine. Felt very comfortable indeed. Read newspapers. Slept three and a half hours.

6th Day: Fomentations to the spine, salt glow, ~~xixx~~ <sup>wet</sup> sheet rub. A fair appetite. Improved very rapidly. Slept five hours.

7th Day: Neutral electro-~~hy~~ hydric baths, fomentations to the spine,

massage, faradism. Good appetite. Slept well.

8th Day: Salt glow, fomentations to the spine, massage. Patient now considered himself well. Able to go about as usual, and had no desire for narcotics. Continued to improve in general health, and a few weeks later returned to his home.

A year later he reported himself in perfect health, engaged in active business, and no disposition to relapse.

Case 2. Dr. ---. *Age 38.*

Patient had been using morphia for many years. On arriving was taking 4 grains daily, and in addition smoking daily 10 cigars, and taking alcoholic liquors of various sorts quite freely. Had for some months past been taking several grains of cocaine daily, was not quite sure as to the exact quantity. Patient discontinued the use of morphia at once.

1st Day: By the aid of neutral electro-hydric baths, fomentations to the spine, massage, patient was able to rest quietly seven hours and slept two hours.

2nd Day: Treatment continued. Patient very nervous and quite sick. Had several attacks of vomiting. Received 1/150 grain of atropine. Slept between two and three hours.

3rd Day: Several electro-hydric baths, neutral temperature, massage, fomentations to the spine, abdomen, and head. Warm enema. Several slight attacks of nausea and vomiting. Slept between five and seven hours. Was more comfortable than the day before.

4th Day: Treatment same as the day before. Patient quite restless, but slept between two and four hours.

5th Day: Several neutral electro-~~h~~ hydric baths. Patient very much better. Able to read newspapers. Slept between five and seven hours.

6th Day: Two electro-hydric baths, massage, fomentations to the spine. Patient rested quietly a number of hours, slept well, felt strong, and took some exercise about the room.

7th Day: Wet sheet pack, neutral electro-hydric bath. Strength good, mind clear. Went out for a ride. Slept between five and seven hours.

8th Day: Treatment same as the day before. Patient nervous and restless. Three or four hours sleep.

9th Day: Patient spent almost the entire day out of doors. Took dose of sulphonal on his own responsibility. Slept five to seven hours. Took a cold spray bath on rising. Felt quite comfortable during the day.

10th Day: Neutral baths as usual. Again took sulphonal at night, but obtained no sleep.

11th Day: Treatment same as the day before. In the evening was persuaded that sulphonal would on the whole do him no good, and would probably lead him back to the use of morphia, that he must get rid of drugs of all sorts. Instead of taking the sulphonal, he ate a few apples. ~~xxxxx~~ Slept four and a half hours.

12th Day: Tonic baths consisting of cool shower and spray, followed by massage. Fomentations to the spine at night. Six hours sleep.

13th Day: Treatment the same. Seven hours sleep.

14th Day: Treatment continued. Six hours sleep, patient being much stronger.

From 15th Day to 35th Day: Rapid convalescence. Gained 10 pounds of flesh. Patient returned to his home at the end of a month.

Two years later reported himself well and happy, and attending to an immense practice.

Case 3 Dr. ---, Age 35.

The patient's drug habit began with the use of very strong coffee, which was taken for stimulating effects. Patient was soon compelled to take bromides, 20-grain doses, to quiet his nerves, as he said, and later 2 grains of opium, combined with small doses of atropine, <sup>were</sup> XXX added  $\frac{1}{2}$  "to maintain a comfortable state of mind."

The treatment pursued with this patient was essentially the same as those outlined in the preceding cases. All the drugs were discontinued at once at the beginning of treatment.

1st Day: Patient suffered very little.

2nd Day: Very nervous.

3rd Day: Somewhat nervous, but much more comfortable and rapidly improving.

4th Day: Considered himself entirely free from his drug habits, and felt well.

5th Day: Had a good night's rest and felt very comfortable, but still weak.

6th Day: Improved rapidly, feeling in every way well.

7th and 8th Days: Patient slept six or eight hours, and on weighing himself at the end of the week of treatment discovered that he had gained twelve pounds of flesh.

A year later he reported himself as feeling better than ever in his life before, and he had not relapsed.

Case 4 Dr. ---, Age 45.

Had been under treatment two years before for the morphia habit. On this occasion the patient insisted on taking sulphonal and other drugs to lessen the inconvenience attending the withdrawal of the drug. He remained but a few days. Got along very well for about a year and a half, then, while suffering from a severe attack of sciatica,



he took morphia to relieve pain, and so found himself again a victim of the habit. He resorted to a so-called specialist for relief, but was treated with morphia under another name, with the addition of strychnia, and on arriving at the Sanitarium was worse than before, taking ~~xxxx~~ three grains of morphia daily. The first night after arrival 1/2 grain of morphia was administered.

1st Day: Slept much of the time and received very little treatment.

2nd Day: Received several neutral electro-hydric baths, and three baths during the night, with frequent fomentations to the spine, and almost constant friction. Felt very weak; considered himself bordering on a collapse. Received one half grain of morphia in the evening.

By 4 A. M. the following day the patient was feeling much better, and by morning he was quite relieved of pain and discomfort.

3rd Day: Patient rested well during the forenoon; during the afternoon and evening had three neutral electro-hydric baths, fomentations to the spine at intervals, and warm enemas. Slept five hours during the night. On awaking in the morning found himself entirely comfortable.

4th Day: Two neutral electro-hydric baths, massage three times, fomentations to the spine, stomach, and abdomen, frequent warm enemas. Slept fairly well during the night. Some discomfort on awaking in the morning.

5th Day: Fomentations to the spine, neutral electro-hydric bath, massage. Slept several hours. Doing fairly well.

6th Day: Quite a sharp pain in arms and shoulders. Electric light bath, fomentations to the spine and arms. Diarrhea. 10 grains ~~sub.~~ subcarbonate of gal. bismuth, and three minims fluid extract of coco bark every two hours. Slept an hour and a half.

7th Day: Neutral electro-hydric bath. Fomentation to spine, feet, and knees. Massage, hot leg bath. Patient felt stronger, took moderate exercise in the gymnasium, also took a short walk in the open

air. Two or three hours sleep during the night.

8th Day: Hot and cold to the spine, static charge, moderate exercise in the gymnasium and out of doors. Took 20 grains of sulphonal and slept four hours.

9th Day: Neutral electro-hydric bath, fomentations to spine. Still quite restless. Took 10 grains of sulphonal, slept seven hours.

10th Day: Much stronger. Took considerable amount of exercise in the gymnasium, and also out of doors. In the evening felt so much better he declared himself well and could not be prevailed upon to remain longer. Went home. A year later the patient was found in good health, engaged in active practice, with no relapse.

*Case 5. Dr. --- Age, 31.*

Had been ~~xxx~~ using morphia two years. Was taking 5 grains daily, and sometimes larger doses, with 5 grains of cocaine regularly, and recently had been taking 25 grains of cocaine daily, also 1/150 grain of strychnia and several grains of caffeine daily, with occasional doses of atropine and quinine. The morphia habit was contracted during an attack of peritonitis.

All drugs were withdrawn at once.

1st Day: Patient very restless. In the evening took neutral electro-hydric bath 96°. The patient was so comfortable he was allowed to remain two hours; was then given two ounces of malted nuts dissolved in hot water. Slept quietly for nine hours.

2nd Day: Patient received 20 grains of subcarbonate of bismuth, with ~~xxxx~~ 4 minims of fluid extract of coto bark every two hours to relieve diarrhea. Electro-hydric bath for one hour at 95°. In the afternoon the patient was very irritable and excited. Received one grain of morphia. Massage to head and limbs almost constantly. Cold compress to the head. Slept nine hours during the night and following

morning.

3rd Day: Neutral baths, hot fomentations to the spine, cool compress to the head continually, with massage and fomentations to the abdomen. The patient was somewhat delirious, had muscular twitchings, but was relieved by the neutral bath and other treatment. Was able to sleep four hours.

4th Day: Massage, neutral electric baths, ice compress to head, hot enemas. Patient comfortable, and slept eight hours.

5th Day: The treatment was the same as on the preceding day. Respiration and temperature normal. Mind clear. Ten hours sleep.

6th Day: Patient felt well. Out of doors in a wheel chair. Slept nine hours.

7th Day: Patient said he felt better than for many years. Appetite good. Received tonic treatment, consisting of cool shower bath, salt glow, and massage. Slept seven hours.

10th Day: Patient was weighed and found he had gained ten pounds since beginning treatment. Allowed to walk about, and declared he felt himself in better health than for many years. Experienced no discomfort <sup>of</sup> in any sort whatever.

This patient had made several attempts to rid himself of the morphia habit, but on each occasion treatment has been suspended on account of persistent vomiting, which could not be controlled. Under the treatment outline, this symptom did not appear.

Case 6. Mrs. --- Age, 50 years.

Had used morphia habitually more than twenty years, keeping her friends in ignorance of the fact until within the last three years. Was using from 20 to 30 grains daily. The same method outlined in the above case was pursued, with the result that in less than a week the patient was feeling very comfortable without the use of morphia, and at

the end of three months she returned home enjoying good health. A year later she reported herself well and entirely free from the drug.

Case 7. Miss ---. Age 35.

Had been addicted to the use of morphia for about six months. Used  $3/4$  of a grain at a dose by hypodermatic injection from two to eight times daily. Patient extremely nervous, debilitated, emaciated, and suffered ~~xxx~~ frequent attacks of severe headache, frequent attacks of diarrhea, and severe vomiting, with hemorrhage from the stomach. Bowels very inactive when not loose. Attacks of headache occur<sup>red</sup> one to three times monthly. Had suffered from the severe headaches ever since early childhood. Weighed 80  $1/2$  pounds. The patient had been confined to her bed for six months.

The morphia was withdrawn at once. The patient was very nervous the first night, but obtained six to nine hours of refreshing sleep each night after. Began walking three weeks after beginning of treatment, and in eleven days gained sufficient strength to be able to walk two miles. Seven weeks after treatment began, bowels moved naturally for the first time in many years.

More than a year has passed since this patient was discharged, but she reports herself still in good health. The treatment employed was the same as has been described in other cases.

Case 8. Miss ---. Age, 35.

Had been using morphia habitually for eighteen years, but had managed to keep the quantity down to two or three grains daily. At the time the patient came under treatment, the daily dose was somewhat smaller than this. The drug was withdrawn at once, the usual course of treatment pursued, and with the following results:--

The first few nights the patient slept very little, but was able to rest quietly, and at the end of the week felt herself quite well. Though

a confirmed invalid when she arrived, going about in a wheel chair and able to walk but a few steps, the patient left <sup>so</sup> greatly improved in strength that she was easily able to walk several miles if necessary, and enjoyed better health than for many years before.

Case 9. Mrs. ---. Age, 25 years.

Had been using morphia habitually by hypodermatic injection, and gradually increasing the dose to 20 grains. Suffered greatly from hemorrhoids, indigestion, much nausea and vomiting, and at times manifested symptoms closely resembling hystero-epilepsy. Had several attacks of convulsions, which sometimes occurred daily for three weeks or more. The patient was accompanied by her physician, who had promised to stay by her to see that the drug was not removed too quickly. The dose was gradually reduced from February 20, when the patient arrived, to March 13. During this time the patient suffered much severe pain in the head, vomiting, nausea, and extreme nervousness. Was constantly in a very excited state, ~~xxxxxxx~~ and could not be made entirely comfortable by any treatment which was applied. Finally the physician and patient both consented to an entire withdrawal of the drug, and with the happiest results. The patient obtain four hours sleep the night following, and the next day felt much better. Improvement was so rapid that within two days the patient lost all desire for the drug, the bowels moved normally, and a little more than three months after the patient arrived, she left for her home, declaring herself to be in better health than ever before in her life.

This patient's sufferings were greatly increased and prolonged by the attempt to withdraw the drug gradually. If the drug had been wholly withdrawn within the first forty eight hours, the patient would have been saved much inconvenience and suffering, and would have reached a condition of permanent restoration to health at a much earlier date.

## THE BATTLE CREEK SANITARIUM FIRE.

The whole country has learned of the destruction of two of the main buildings of the Battle Creek Sanitarium by fire on the morning of February 18, 1902. The writer was at the time on the way home from California, and met the news in Chicago on alighting from the train at ten o'clock the evening of the same day. Half an hour later he was ~~on~~ aboard the train for Battle Creek, and an hour later, after dictating replies to a bundle of urgent letters, began making plans for a new and better structure to take the place of the old one.

This institution was planted in Battle Creek nearly thirty-six years ago by a Wise Providence, whose fostering care has prospered and developed it from its small beginning to the proportions of a work of world-wide magnitude which fire cannot consume.

The newspaper announcements have given the impression that the entire establishment has been consumed and that the work of the institution is suspended. This is by no means true. Fortunately, there was left one large building, the Nurses' Dormitory, which has accommodated about two hundred of the three hundred and fifty nurses employed in the institution. In addition to ~~this~~ this, the Sanitarium managers have leased the three splendid buildings just across the way from the Sanitarium which have been occupied by the Battle Creek College. The Sanitarium also has some fifteen other good-sized cottages and other dormitory buildings which have ~~helped~~ helped to house the eight hundred employees and one hundred and fifty doctors and student physicians connected with the institution. The doctors, nurses, students and other ~~employees~~ members of the Sanitarium family have surrendered their quarters to patients, thus making it possible to accommodate in the four large buildings nearly as many patients as before the fire.

The only lack is bath and treatment appliances. Several of the buildings are already well supplied with bath facilities, Electric light

baths and other appliances were on hand, having just been completed, while others are in progress of construction for branch establishments which are being rapidly equipped in New York, Philadelphia, Boston, and other parts of the country. By utilizing these and fitting up bath rooms and private treatment rooms in the several buildings mentioned, the institution will in ten days be able to care for four hundred patients as efficiently and comfortably as before the fire.

The medical work was not seriously interrupted for more than one day as the result of the fire. Since the first day, every patient has received regular treatment.

Plans are being rapidly prepared for a large, new, modern, fire-proof building, which will be erected at an expense of about two hundred and fifty thousand dollars. The work will be pushed with all possible dispatch and it is hoped that it may be completed within six months.

Two hundred and fifty thousand dollars will be required to erect this new structure. The buildings were insured for one hundred and fifty one thousand dollars. One hundred thousand more must be raised to put the institution on a proper footing by the construction of a fire-proof building. The old Sanitarium building was constructed under difficult circumstances by the aid of borrowed capital, and it was necessary to build as large as possible to accommodate the sick people who were waiting to be received. The buildings have never been large enough to hold the whole Sanitarium family. During the past summer the two main buildings which are now in ashes accommodated only about one half of the patients who sought the institution for relief. At the time of the fire the buildings, which were full from top to bottom, accommodated about two thirds of the patients who were here under treatment.

It certainly would not be wise to erect buildings of less capacity than those which have been destroyed.

Plans are being arranged for the raising of the hundred thousand

dollars necessary for the construction of the building. Old friends of the institution, chiefly wealthy patients and business men who have become interested in the work of the institution, are already offering money in considerable sums, and it is believed that it will not be a difficult thing to raise the amount required to erect a new building without incurring debt. If such a building can be constructed and set in operation without incumbrance, it will be a great encouragement to the work everywhere, and such an edifice, standing as a temple of truth, the headquarters for a world-wide movement, a great and beneficent enterprise represented by hundreds of physicians and nurses and many thousands of interested friends in all parts of the world, will be a fitting tribute to the cause of truth and reform from the multitudes who have been helped and blessed by the beneficent influence which has gone out from this work and the glorious principles for which it stands.

The managers, doctors and nurses who are placed by this catastrophe in somewhat trying circumstances appreciate most heartily the kindly ~~expressions~~ appreciation shown them by the citizens of Battle Creek, and by the friends of the institution everywhere as manifested by a perfect avalanche of telegrams and letters of sympathy and encouragement which has poured in upon us since the publication of the notice of the fire, and by multitudes of kindly acts too numerous to mention in detail.

Although two of the largest buildings have burned, the four buildings remaining still constitute with the equipment for treatment which will be completed within a few days the largest and most thoroughly equipped Sanitarium in the world. The several hundreds of patients who remain in the institution are receiving and will continue to receive thorough-going treatment. A New hospital quarters have ~~just~~ been provided, and all patients who may come will be provided for and ~~care~~ ~~ed~~ for as ~~su~~ and can be as successfully treated as heretofore. The doctors, nurses and other employees are all alive and well, and full of energy, courage and



enthusiasm. Buildings may burn but principles survive. The Battle Creek Sanitarium is going on with its work, temporarily crippled a little, but with the blessing of kind Providence on the efforts being put forth, will soon be better prepared than at any previous time in its history for the great work which Providence has placed in its hands to do.

An account of the fire will be published in some form with numerous thrilling and interesting incidents connected with it.

## Suggestions for School of Health Lectures.

1.

The Battle Creek Idea.--What is involved, etc.

2.

Health: What is Health. Nature of Health. Nature of Disease.--What it means to be well. Condition of health as regards longevity, length of years, energy, endurance; shown by typical examples of people who have lived long, and possibilities of human endurance; most remarkable experiences of people who have endured cold,--for hours at a time--been shipwrecked, perhaps 25 or 30; all die but one or two. Example of mental endurance. Ability to work. One man breaks down under a small amount of work because he is weak; another man can do ten times as much work. Gladstone, Bismark, and other men who have been great,--great because they had the power to do more work; were equal to the emergency; had physical capacity to do it. One of the requisites for a great man is great health. Great women; great endurance; women who have great health and because of great health can do great things. Make comparison of animals. "Pacing mustang" good illustration. Man is naturally the strongest and most enduring of all animals; if this were not so, ~~man~~ the race would have been dead long ago--able to endure civilized life.

What is the sign of health: bright eye; clear skin; red lips; warm hands; good appetite; able to digest well; able to sleep well; power to recuperate in one night from a day's work; sweet breath; erect carriage; elastic step; steady hand; cool nerves; uninterrupted physical control; continuous health; ability to act promptly; ability to concentrate in a single effort, and repeat after a period of rest; ability to think

clearly, continuously; ability to meet emergencies. Man's fund of vitality is remarkable; can't possibly expend it all in one day- can work several days continuously.

**Significance of Sick Head-aches.** Nervous headaches; continuous headache; neurasthenic headache. Pain in back of head; strange sensation top of head.

**Significance of rheumatism; indigestion; liability to take colds; chronic catarrh; inactive bowels; neuralgia; mental depression; tawny skin; bad taste in mouth; coated tongue; slimy mouth; tartar infested teeth; cold hands and feet; no appetite; sour stomach; flatulence; putrescent conditions; sleeplessness; frightful dreams---**thousands of people suffering from all these things and call themselves well.

**Beginnings of consumption, pneumonia, old age, arterio-sclerosis, Bright's Disease, etc.** Bring in illustrations.

### 3.

**Eating for Health and Strength.** Food source of energy. Body a machine. Animal expends energy; energy in food. Have chart showing different amount of food energy, etc. Amount of energy required for a day. Compare amount of energy required by a man and amount required by one horse power machine; practically one hundred times as much required by horse power as by man. Foods that are rich in energy; predigested foods; things hard to digest. Starch easy to digest; proportion of food elements; amount of energy furnished the body in different forms in different food elements. Starch; albumin; fats. Starch, 10; albumin, 3; fat, 1-1/2. Amount of energy found in different foods--in a loaf of

bread; medium sized apple, medium sized potato, dozen eggs; pound of beefsteak; pound of protose; pounds of nuts; pound malted nuts; quart of milk.

Different food elements. Use of each food element.

Foods best to produce muscle energy; those which are immediately available; fruit sugars and acids.

Strength of animals. Vegetarians who have endured--Karl Mann, etc.

4.

Chemistry of foods. Digestive juices; Pawlow's experiments.

5.

Natural Diet of Man.

6.

How to Be Strong. How strong man ought to be. How strong a woman ought to be; comparison of civilized men and women; savages. Amount of muscular work required for health in a day; walking 9 to 10 miles. How much work this represents--equivilent to lifting body straight up nearly 1/2 mile. How same work can be done in shorter time by increasing expenditure. Walking in a corner; tipping; heel raising with weights on shoulders or in hands; toe raising; knee bending, and other exercises. Real advantage in exercise; not hardening muscles; increasing breath capacity. Relation of breathing to health--digestion, liver action, etc.

We live in proportion as we breathe--Washington as an athlete.

7.

Common Deformities; How to Correct Them.

Flat chest; round shoulders; weak trunk; weak abdominal muscles; lateral curvatures; swaggering gait; incorrect walking; correct and incorrect sitting--standing. How to climb stairs; running, rowing, swimming; games. Exercises for sedentary people. Horseback riding; bicycle riding.

8.

How the Body defends itself. Skin, mucus membrane, gastric juice; bile; blood; alexins; antitoxins. How to reinforce the vital defences. How the vital defences are broken down by diet, loss of sleep, inactivity, tobacco, liquor, overeating, all sorts of excesses, tea, coffee--many evidences of weakened constitution--pimples, skin diseases, shallow breathing; sallow skin; dull eye; nervousness; weakened appearance.

How to reinforce vital energies. Out door life; out door gymnasium; influence of the sun; electricity; cold bathing; and other physiological agencies.

9.

Nature remedies. The energy manifested in nature. Volcano, hurricane, cyclone, tidal wave. Growth: grass, trees, rain and snow. Curative energy. Can't help it no more than you can bottle up a hurricane or a lightening bolt. Healing power within man because creative power is in man. Same power that creates and maintains also heals. Quite Bietl.

Nature remedies employed by savages and primitive people being the most ancient of all remedies. Egyptians. Moses gave instructions about bathing. Naaman, the leper, instructed to bathe in Jordan.

Wild animals employ bath. Modern development of nature remedies. Preitznitz. Study of electricity--Volta,

galvanism. Light used by ancients. Finson discoveries. Light destroys nearly all germs.

Massage. Manual Swedish Movements. Mechanical Swedish movements.

10.

Medical Dietetics.

Curative value of fruits. Fat foods. Hypopepsia. Pawlow's experiments. Fruit sugars. Different kinds of sugars. Evils of cane sugar. Sugars, fruit acids, vegetables, fruits, kumyss, buttermilk. as compared with grains of all sorts, rice, gruels, soups except fruit soup.

Diet treatment of obesity. Diet for emaciated people. Diet for rickety children. Infant foods.

11.

Dress for Women.

Series of practical illustrations for Nature Remedies:

Hydrotherapy: treatment of fevers by nature remedies; baths--lowering temperature; tonic baths; cleansing baths; diet; rest; general care. Treatment during convalescence. How to prevent fevers. How to cure a cold. How to relieve a pain. Use of heat and use of cold. Fomentations. Compresses. Chest packs. Wet girdle. Heat compress. Wet sheet pack; hot blanket pack. Treatment of sprains. How to take the morning bath.

Series of lessons for cooking school. Health foods.

Breathing exercises. Exercise should be taken in part in sitting position. Arms forward raising, breathing. Heel raising; full breathing. Vocal exercises. Hips firm; forward

bending. Arms upward stretching; breathe in. Deep vocal exercises; ~~lifting~~ laughing exercise. Laughing exercise <sup>has</sup> is a powerful curative value.

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THE BATTLE CREEK SANITARIUM SCHOOL OF HEALTH  
AND  
HOUSEHOLD ECONOMICS

For years there has been an increasing recognition of the necessity for thoroughly trained dietitians. Such experts are needed, not only in hospitals, but in Agricultural colleges, in universities and in various other institutions besides. There has been an increasing demand for scientific housekeepers. The institution itself requires such a large number of trained dietitians, cooks and housekeepers that it is necessary to conduct a course of training to secure sufficient help. This course was especially necessary as the ordinary course as given even in special schools, was not sufficient to give the requisite knowledge and skill required for workers in the dietetic department of the institution. To meet the home demand, and also to aid in meeting the general demand for dietitians and culinary experts made competent by scientific and practical training, the Battle Creek Sanitarium School of Health and Household Economics was organized in 1906.

The curriculum comprises two courses, first, a one-year course in general household chemistry, bacteriology, physiology, household economics and architecture, food and dietaries, practical cookery, the preparation of bills of fare, serving of meals, plain sewing, laundering and other household arts, together with home nursing and physical culture. A second two-year course comprises, in addition to the studies enumerated



above, advanced studies in chemistry, physiology, bacteriology, medical dietetics, institutional management and practical courses in housekeeping, laundering, buying, cooking and medical dietetics. The aim of this course is to prepare the students for practical work as supervisors and dietitians in institutions. The students in this school are given exceptional opportunities for practical experience in the preparation of menus, the arranging of bills of fare and medical dietetics. Students who desire to do so, are enabled to pay part of the expense of the course in work. The members of the Sanitarium and Hospital Training School for Nurses enjoy the advantages of this school, receiving the course of instruction in both general and invalid cookery. Lectures are given by the director of the school to patients in practical dietetics, and once a week an opportunity is given to patients for actual practice in the preparation of the healthful dishes with which they are made familiar by the Sanitarium bill of fare.

GRADUATES

One Year Course

Case, Miss Adelaide  
Cross, Miss Adella  
Emmons, Mrs. Minnie  
Saunders, Miss May  
Tenny, Miss Ruth C.  
Camp, Lida  
Lambert, Miss Clara B.  
Anderson, Chloe  
Smith, Bessie  
Brogan, Mrs. Myrtle  
Smith, A. B.  
Williams, Dr. Annie  
Guinan, Mrs. Grace  
Morah, Françoise  
Parker, Agnes S.  
Reese, Marion  
Ferguson, May  
Wallace, Mary Daisy  
Van Horn, Edna R.  
Sprague, Lona  
Coon, Ruby S.  
Duffie, Mrs. Julia H.  
Holwick, Grace  
Ketcham, Clara  
Kodjbanoff, Lube  
Kodjbanoff, Sophia G.  
Morton, Blanche  
Power, Frances  
Robinson, Carrie M.  
Scanlan, Mary  
Sparling, Mrs. Jessie M.  
Stewart, Christine  
Lucas, Bessie S.  
Whittet, Maud  
Dougherty, Olive  
Hammond, Leah  
Stock, Erma  
Holmes, Aline  
Hostetter, Mabel  
Icke, Helen  
Leedy, Cora  
Plumb, Mrs.  
Sterling, Loraine  
Stump, Ethel  
Tullar, Fnoebe  
Weeks, Mrs. A. H.  
Parker, Ruby  
Nay, Zelma  
Perrin, Fannie

Two Year Course

Koehler, Miss Matelena  
Ketcham, Ruby  
Hubbard, Leah  
Maycock, Mrs. Rena B.  
Sell, Flora

*One*  
~~First~~ Year Course ~~List~~ of Graduates.

Case, Miss Adelaide  
Cross, Miss Adella  
Emmons, Mrs. Minnie  
Saunders, Miss May  
Tenney, Miss Ruth C.  
Camp, Lida  
Lambert, Miss Clara B.  
Anderson, Chloe  
Smith, Bessie  
Brogan, Mrs. Myrtle  
Smith, A. B.  
Williams, Dr. Annie  
Guinan, Mrs. Grace  
Morah, Francoise  
Parker, Agnes S.  
Reese, Marion  
Ferguson, May  
Wallace, Mary Daisy  
Van Horn, Edna R.  
Sprague, Lena  
Coon, Ruby S.  
Duffie, Mrs. Julia H.  
Holwick, Grace  
Ketcham, Clara  
Kodjbanoff, Lube  
Kodjbanoff, Sophia G.  
Morton, Blanche  
Power, Frances  
Robinson, Carrie M.  
Scanlan, Mary  
Sparling, Mrs. Jessie M.  
Stewart, Christine  
Lucas, Bessie S.  
Whittet, Maud  
Dougherty, Olive  
Hammond, Leah  
Stock, Erma  
Holmes, Aline  
Hostetter, Mabel  
Icke, Helen  
Leedy, Cora  
Plumb, Mrs.  
Sterling, Loraine  
Stump, Ethel  
Tullar, Phoebe  
Weeks, Mrs. A. H.  
Parker, Ruby  
Nay, Zelma  
Perrin, Fannie

*Two*  
~~Second~~ Year Course.

Koehler, Miss Matelena  
Ketcham, Ruby  
Hubbard, Leah  
Maycock, Mrs. Rena B.  
Sell, Flora

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The Battle Creek Sanitarium School of Health and Household Economics was organized in 1906 as the result of a demand by patients and others interested in healthful living, for a school where women might be trained in Scientific housekeeping. Accordingly the Course For Housekeepers, a one year course was organized. This course includes General and Household Chemistry, Bacteriology, Physiology, Household Economics and Architecture, Foods and Dietaries, and such practical studies as Cookery, Serving of Meals, Plain Sewing, Laundering, Home Nursing, Physical Culture, etc.

Later came a demand for Institutional workers, scientifically as well as practically trained dietitians, and supervisors.

Hence a two year course for Dietitians and Institutional Supervisors was organized, offering advanced studies in Chemistry, Physiology, and Bacteriology, Medical Dietetics, and Practical Courses in Institutional Management, including Housekeeping, Laundering, Buying and Cooking.

Students are also given exceptional opportunities in the selection and preparation of diets, planning of menus, etc., etc.

Students are also given an opportunity to meet a part of their expenses by work.

The school also gives instruction to the nurses of the Sanitarium, each nurse being required to take both General and Invalid Cookery.

Classes are held for the patients of the Sanitarium - a practice class once a week in which instruction is given in the preparation of recipes in use in the institution, and a lecture and demonstration once a week by the Director of Domestic Science, in which special attention is given to the study of foods and their relation to the bodily needs.

GRADUATING EXERCISES OF THE BATTLE CREEK SANITARIUM SCHOOL  
OF HEALTH AND HOME ECONOMICS,

At the Sanitarium Gymnasium, Battle Creek, Michigan, Wed., June 12, 1912, at  
8. P.M.

Dr. Kellogg:- The Sanitarium School of Health and Home Economics appears tonight for sixth time to present its graduates. The first thing on the program is music by the orchestra.

Music by orchestra.

Prayer by Elder Tenney.

Dr. Kellogg:- We will now have the pleasure of listening to a solo by Mr. Steinel.

Solo by Irving Steinel.

Dr. Kellogg:- Some fifteen years ago I was up at Lansing at the State Legislature in an effort to get a bill passed providing for proper food inspection, particularly the inspection of animals before slaughtering and the inspection of meat in butcher shops. I was invited by some of the members to appear before the Legislature and talk upon the subject and when I got there I found a wide-awake woman had got there ahead of me and I didn't get very much attention from the Legislature for they<sup>had</sup>/someone there who could talk a great deal better than I could, and had this same errand, a lady who had a bill of her own. When I came to look her bill over, I thought it was better than my bill so I didn't have very much to do, but turn around and come home, and Mrs. Caroline B. Crane of Kalamazoo got the only bill passed that we have in the State of Michigan for protecting us against the eating of all kinds of diseased meat, that any conscienceless butcher might think it best to put upon the market. Since that time, Mrs. Crane has

been going up and down the line teaching people civic righteousness. Her voice has been heard in almost every state and for one year she was in the employ of the American Medical Association giving popular instructions in sanitary righteousness in various states and she has been employed by various states to go from town to town to instruct the communities as to their civic rights, relating to the preservation of health.

Recently, Mrs. Crane, as you have seen in the newspapers, has been stirring up the whole country and getting the attention of the whole civilized world for the exposures she has made down there at Washington in the interest of food inspection.

We are certainly very fortunate this evening in having with us Mrs. Crane, who is going to speak to us on the subject of "Wanted, Food Inspection in the Interest of the Consumer", Mrs. Crane. (Applause).

Mrs. Caroline B. Crane:- It is always a pleasure to visit this remarkable institution and to meet the remarkable man who is the founder of it and it is a special pleasure to me tonight to be here to give the address to the class graduating from this School of Health and Household Economics. I have always felt that, in our public schools of Michigan, there is no one branch so well worth spending time and money and efforts upon as the Domestic Science branch.

Now, I believe in Manual training for boys, but I know that not one boy out of twenty who studies carpentry in the grade or the high school is going to be a carpenter, but I know that nineteen girls out of twenty and probably ninety-nine girls out of one hundred, who study, or ought to study, household economics in the grade schools, high schools and the colleges and unive

and everywhere else, are going to have occasion to utilize their knowledge in their homes. So, if there is any one thing that I am enthusiastic about, it is teaching of practical domestic science.

Now, it is my understanding that this class, graduating this evening, are studying domestic science from a somewhat different angle and somewhat more scientific manner than is taught in most schools, that it is primarily, — I may be mistaken, but that is my understanding, — that it is primarily to fit these young women as dietitians to assist and advise in the proper selection and preparation and administration, we may say, of food, especially to those whose condition is not up to the normal.

But I address these young women this evening not merely as those who are to go into institutions of the country as dietitians, but as persons who are going to take their residence in various communities where they may, if they will, take a position of leadership in a most important subject and that is the selection and the proper preparation of wholesome and suitable foods for both the sick and the well.

There is a very great need in communities that we shall have those who are properly trained and instructed to act as leaders of the community at large and it is especially important that women should be so instructed to leadership because it is the women of any community, according to my earnest conviction, who must determine this matter. Women are the patrons of the food producers and purveyors. Women are the responsible personages who set before themselves and their families three times a day, the food of the family. Women are the persons who have the most leisure to look into these matters and women, by virtue of their age, long training as housekeepers, and as cooks

and as purchasers, ought to know, certainly, better than men, what is necessary in the way of an inspection of food, is in the interests of the consumer.

Now, it seems almost unnecessary and superfluous to say that any any food inspection, which is worthy of the name, is an inspection in the interests of the consumer. Yet, when I see, for example, the legend "U.S. inspected and passed" branded most conspicuously printed or embossed most conspicuously upon the containers of Federally inspected meat, and when I know that that meat may have been shipped between *abattoirs* all over this country with no stamp at all, I say that such an inspection as that is more a packer's asset than a packer's liability. If it is not necessary that any stamp shall be placed upon the meat at the time of slaughter, which is the one time to intercept unfit meat, but on the contrary, when that meat is put in our market, for sale, an enormous stamp may be emblazoned on the meat in order to convince people that it is particularly safe and wholesome. Then, I say, that it is very questionable, indeed, whether that inspection is, to any great degree, in the interests of the consumer. I should say it was rather an inspection in the interests of the producer, not the original producer, but the packer, who takes it up at a relatively low cost and sells it to us at an increased cost, because of this federal stamp which is supposed to insure its wholesomeness.

Now, what we want is inspection, as I have said, in the interests of the consumer, and I believe that, until the women are thoroughly aroused, we are not going to be likely to get it, and our conditions are so different today from what they were in Michigan, say thirty or forty years ago, when much of the meat and the milk and the vegetables and all the various things that we



consume were produced by the family itself upon the farm, or in the little half-acre or acre lot which surrounded the home, when, if one chose, he could be careful to have healthy cows and have the milk properly cooled and kept wholesome for the use of his family. How many people slaughtered their own animals and inspected them, <sup>and</sup> when, as I have said, the vegetables and various things came fresh from the gardens of the home and we were not subjected to the dangers that at present surround our food supply, but today these matters are done for us, upon a very large scale, and unless we do exert ourselves to the utmost, there is great probability that this food which the housekeeper or the dietitian undertakes to prescribe and to prepare in a proper way, has been really spoiled before it has reached her hands, or was even <sup>antecedently</sup> ~~antecedently~~ unfit to eat.

I believe that in every community in this country there ought to be a housekeepers' club and that that housekeepers' club should stand with the authorities, if the authorities are doing their duty, and, if necessary, should stand against the authorities, or without the authorities, but by voluntary instruction and by continual vigilance, which is the price of liberty, from these evils, as others, should see that the food that is marketed in that city was wholesome originally and was not contaminated on the way from the place of its production to our kitchen doors. Certainly, if we had such an instruction, as that, we would have fewer sick folks on our hands to choose a very careful diet for. I believe that it is chiefly a woman's problem and I congratulate this graduating class on the opportunity which they have to do, not only their own particular duty, to which they will be called and for which they will be paid, but to create in the community where they locate, a proper sense of respons-

ibility and of power among the women to control this matter as they should.

Now, it is perfectly possible to control these matters. In order that I may be very specific, I want to tell you of a single incident which occurred in a little city of about 14,000, west of the Mississippi River, a city which I visited recently in the state of Minnesota, where I made a survey of some seventeen leading cities there under the auspices of the Board of Health and the State Federation of Women's Clubs and in this city, I visited, in company with the mayor, the health officer, and a number of prominent women, a bakery which was so inconceivably bad. In the first place, it was in a cellar, vermin-infested, dark, leaky plumbing, and all conditions as unsanitary and as really revolting as one could possibly imagine, in the biggest slum in the biggest city anywhere in the world. This bakery was so very bad that one of the men in our party, who owned the largest flour mill in the place, said "Wait a minute. Are you going to any more bakeries?" I said, "I thought I should go to all of them". He said, "I want to get my head baker. I want him to see what terrible things happen to good flour". So he sent for his head baker and other members to our party were recruited, and the next bakery we went to was also in a basement or cellar, not much better than the first one. We then decided to visit them all and we did not find in that town of some fourteen thousand any half way decent bakeries, or any half way decent ice cream place, nor any half way decent confectionery shop, and the groceries were very bad. It really, in that respect, was one of the worst cities I have ever visited, although it had many points of excellence. There were a lot of things in which it was ahead of other cities but in this respect, it was way below other cities,

but we had finished our last, and when it came to the summing up of conditions, I told the people what kind of bakers they had, told them what kind of candy shops they had, that there weren't any of them fit to be patronized at all and the next morning all of these people held a mass meeting and they were going to sue me and do a lot of things, but they didn't, and the mayor, who, by the way, had gone very unwillingly on this trip, only went under a good deal of pressure, became highly excited in the course of our progress and the next morning he issued a manifesto to the papers saying that these people had got to clean up or he would put them all out of business. He would not stand any nonsense at all. I thought it was too bad. It seemed to me the people of the city were somewhat responsible. They never had protested. Things suited them pretty well. There was a nice window front and a good tile counter and that was all that was necessary. They had not invaded the rear parts of these meat markets, they had made no complaint, they had gotten all they asked for, and I thought they should not be quite so hard on these men, and I persuaded the women to undertake periodical voluntary inspection of these places, to use a score card, and to make it a white card, that is, a white list. This is what they did—they announced that any bakeries or other places of the sort, including grocery stores, that desired a reinspection could have it by applying to a committee of the Women's Club, which had the thing in charge. Immediately there was a great rush. The same men who had been furious at us were delighted to have another chance. There was a pledge for reinspection, and a committee of these women who had been with me on the former inspection, revisited

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by these places as fast as application was made and they were wonderfully improved, so ~~that~~ the very first reinspection quite a lot of them got on the white list, but some of them could not get on the white list, do the best they could, because, for example, there was no plumbing, or there were no screens, or the water supply was deficient, or there were various other defects in the building itself. So then, the baker, the butcher, the candlestick maker would take this score to his landlord and say, "Look here. Here I have got a score of 45 and I have lost 20 points, because there is not proper plumbing, and I have lost 15 because there is a wooden floor, when there should be a cement floor, and I have got to move out if you don't straighten things up." The landlord did not want to lose his tenant, so he very grudgingly and grudgingly, but quickly, did what was necessary in order to get his tenant on the white list. In that way, the whole town was made over, so they tell me now that that city is away above the average. Nearly everybody in town was, in a month, gotten up on that white list because they had to get up on that white list or go out of business. I say, women can control these matters just as well as not, if they want to. If they are determined, and at the same time conciliatory and reasonable, determined that they will not buy products which are handled or manufactured in very unsanitary places, they can have things as they want them. We can have things in this line, just as we can get the brand of canned peas which we want.

I think, while I am about it, I will tell you another similar instance, in this state. Perhaps some of you have come from the little city of Big Rapids up in the northern part of the state. A few years ago, I was very much interested, as Dr. Kellogg has suggested, in the matter of wholesome meat. I was asked by the Women's Club of Big Rapids to come and talk with them

about my inspection, and I said "Well, now, I have gotten through going and talking anywhere for the sake of hearing myself talk and for the sake of having anybody else hear me talk. If you are really concerned about your meat supply, and if you will go and investigate it and find there is need of reform, then will promise to try to inaugurate the reform, I will come up, but you must see about it first." So they got the mayor, the health officer, and one or two members of the Council and they made a descent one day, just as I had made a descent one day previous in Kalamazoo, upon all the slaughter houses and meat markets in and about the town, and they found scandalously bad conditions, just as I did in Kalamazoo. In one place, they found a butcher cutting up a carcass which was so evidently diseased, so terribly emaciated and jaundiced, that in his confusion all he could think to say was that he was not going to sell that to anybody. He was just dressing that for his own family, and the mayor asked him "Do you suppose we would believe that you would use that for your own family and that you wouldn't have us use it if you could?" He had no answer to make to that. They sent for me. I went up and when I got there, this modest little Woman's Club had turned into a mass meeting. There were nearly as many men as women and nearly everybody was highly indignant toward the butchers ~~and~~ because of the bad meat. I said I didn't see what they were so mad about. The butcher had given them all they had asked, ~~As~~ Dr. Kellogg, said, the most conscienceless people could kill any kind of animal in any kind of way, <sup>they did not commit</sup> provided/a nuisance that was noticeable to an eye or a nose somewhere, but it seems to me the community had gotten unduly self-righteous over this matter, and I said "I think we all have sinned and I don't think we should be so hard on the butchers for their part." One of the butchers liked that pretty

well. He said "Now, that is straight talk. That is all right. I haven't done just as I ought to have, but neither have these other people. Now, if they really want good meat, all they have got to do is to say so and if I can get the support of the people in this town, I will build a good, model abatoir in this town and have everything just right." And the mayor took a lot of stock in this company and other people did, and they built up there at Big Rapids a most perfect sanitary abatoir. It was a model, in every respect. There were paved outyards, and a good water supply in connection with goodsewers and the market in which the brute was sold was all paved with tile and they had the condensers to render things *so as not to make a nuisance* *that it is* All ~~the work was~~ carried on inside the city. It was a delightful example of what can be done by these women. I said to them they, because I believed it, that the Federal Stamp, "U. S. inspected and passed" was a guarantee for good meat, and that they should be sure to buy that. I have changed my mind about it since, but that was a number of years ago and I honestly believed it then and I think it was a little better then than it is now, but, at any rate, the point is, when women said "We will not buy this local meat until we can be assured that it is fit to eat," one man made a good and perfectly clean and sanitary and really beautiful little abatoir and, by the way, I must tell you, when it was already, the proprietor gave a party to all the members of the Woman's Club and one woman from Kalamazoo, in honor of this event, and they were perfectly delighted with themselves and with the women that they had suggested this thing, and evidently all the acrimony had disappeared. Also, as in this Minnesota city, the very men who were so indignant at the ladies are perfectly

lovely and were very glad the whole thing had happened, because when they do get straightened up, they forget the difficulties and rejoice in what we call the "honest, straight and narrow path".

Now, there was an instance in which, <sup>ere</sup> ~~where~~ there had been meat inspection, cleaning up of the abattoirs was accomplished, not only in this particular instance, but in all the other places because every other slaughterhouse man and meat market man in that town had to get a sanitary place, also, or he could not get any patronage, and the result ~~has~~ really been very, very worth while.

I have given you two instances, which I might multiply by many more, to show what can be accomplished when the women of the community, who are the patrons, decide that they will not tolerate indecent conditions and that things must be brought up to the proper standard.

Now, I want to speak within a reasonable time limit tonight and I hardly know what I should say that might be most interesting to you, but I want particularly to give you instances that may encourage this class, to encourage any one in the audience tonight who is interested in this matter, to believe that a great deal can be accomplished. We are so apt to become basely philosophical over our evils. They always have been, and they always will be, and we can not do anything about it. Now, it is my belief that, when things are wrong, chronically wrong, the people who suffer the wrong are really the ones to blame, at least, in this country where one half the population has a vote. I think that when the other half of the population has a vote, also, things will be more rapidly improved, and yet I am glad to think that the number of things that women can do, even before they have the ballot, that

one of the things most important, one of the things which all women feel it their duty to do is to see about safeguarding the wholesomeness of the food supply.

Now, the milk supply, of course, comes very near to the hearts of women because it is such a vital problem with the children and with invalids, also, who usually fall to the care and the nursing of women. Invalids, who are less able to cope with immense numbers of bacteria and other unwholesome conditions in milk, and it is perfectly possible for women to control this matter, but we can not control it after it reaches our kitchen, neither can we improve, neither can we make any of this food wholesome if it has been made unwholesome before it arrives there. If the meat which comes to us is the product of a diseased carcass, we are not going to make it wholesome after it gets to us. We won't ever believe the cooking renders meat wholesome because, while cooking may kill and probably kill the specific germs of the disease, that might be transmitted to us, without thorough cooking, for example, the germs of tuberculosis, would doubtless all be killed if the meat were thoroughly cooked, there are products that the representatives of this class well know in their study of bacteriology, the bi-products of these germs, the toxins, the poisons, in other words, which are formed in the system of the animal, because it is a sick animal, are not killed by any amount of cooking. So such meat is not wholesome and can not be rendered wholesome by cooking if it is so much diseased that the toxins of disease infuse the parts of the animal which are eaten, and, with regard to milk, it is not possible for us to make the milk wholesome, which has become unwholesome before it arrives, I am always trying to impress upon people that the so-called pastur-



ization of milk, the commercial pasturization, is a delusion and a snare, and that, when we think that in our own homes, we can pasturize milk which is foul and dirty and make it wholesome, we make a great mistake. Not that it is not better to pasturize it than not to pasturize it, given dirty and unfit milk, but the point is we ought not to receive such milk. We ought not to buy such milk. We ought not to tolerate the sale of such milk in any community, and these milk distributing depots, where good, bad and indifferent milk, cold milk and warm milk, dirty milk and clean milk are all mingled in one indistinguishable mass, then treated to rapid fire, commercial pasturization, and served out to us as pure milk, these are among the evils which every city should eradicate from its midst.

Now, the whole question of milk dissolves itself into just three vital things. First, is the health of the animal that produces that milk and the health of the milkers and others, who handle the milk and the containers of the milk. Next, is the cleanliness surrounding the milk, milking, and the handling of the milk, and the washing of the pails and the strainers and the various other things that come in contact with the milk, of course, including the cleanliness of the water which is used in the process, and then comes the cooling of the milk, soon after milking, down to a temperature of 50° or less, better 45° or less, the keeping it at that temperature until it is consumed, and it should be consumed as soon as possible. Now the healthfulness of the cows and the milk, cleanliness surrounding the milking process, handling and washing of all the utensils, the rapid cooling of that milk and keeping it down to a low temperature until it is consumed—now if we only could keep that in mind, we would see that many of the

milk ordinances passed by cities are a delusion and a snare, they do not safeguard these vital points. They have a lot to say about the *butter fat* contents, but very little to say about the manure contents. I would like to impress it upon people that anyone may make a simple test of milk when it arrives in your kitchen to determine the amount of dirt of various sorts that is contained in that milk, by taking a small disk of absorbent cotton and placing it in the bottom of a small funnel and pouring the bottle of milk through that cotton. Every bit of dirt which is not in solution, all the dirt which remains particles, will be left upon the surface of that cotton and you can see where there is any appreciable sediment or not. I tried that the other day and was very glad that there was nothing to be seen upon that cotton. I try it frequently in my own home. But it is a good means of knowing a good deal about the condition of sanitation surrounding milk production of the milk that you have.

Someone has said "I would not eat dirt for anybody" and if you find a sediment upon that cotton, you ought to take it up immediately with your milk man and find the reason why. Now, I can not understand why women have the notion so frequently that their duty does not reach out beyond the home, in these matters. I remember a story told me of a certain woman in St. Paul, who, with a number of other women some years ago, was working hard to secure a proper milk inspection ordinance and helping the health officer, one of the best health officers St. Paul ever had, and some of the council were favorable and others were very much opposed and the leader of the opposition in the council happened to be a milk man himself and finally he lost his temper at the insistence of these women. Now, these women were interested in this

matter because the infant death rate of the city was greater than some other cities that had a better milk supply, and they saw the connection, and they were trying to help save the lives of the children of the community, not merely of their own children, but perhaps even more of the children of mothers who could not afford to buy the best and most expensive milk. So finally this man, who was very much agitated and provoked at the activity of these women, said to one of them "I don't see why it is that you women don't mind your own business and keep inside of the sphere of the home, any way." This woman said "Sir, I would have you to understand that woman's sphere extends not only outside of the home, but inside of the baby." I think that fairly epitomized the answer to all such objections as that. If there is anything on earth that is in woman's sphere and anything on earth that ought to rest day and night upon her conscience, it is the milk supply of her city because we know that wherever the milk supply is purified, where the cattle are tuberculin tested, and otherwise healthy, and where the milk ordinance which really requires the cleanly handling of the product and the *quick* cooling of the product, we find the infant mortality comes down. I would commend to you the figures which have been published within the last few years of the milk inspection and the infant mortality rate in Montclair, New Jersey, which is the only really first class milk inspection, I believe, of any city in the country. The results there have been such to challenge the attention of all people who have any possible doubt of the connection between dirty milk and infant mortality.

Now, I wanted to talk a little, too, about the matter of candy. I don't know what the doctrine is here and I should have

great respect for whatever doctrine is *promulgated* here, but I know there is generally a feeling that candy is a pretty good sort of food. How is it, Dr. Kellogg?

Dr. Kellogg:- I don't recommend it.

Mrs. Crane:- I hear a good deal to the effect that candy is much better as a food than supposed, if only we can get it pure. Now, it does seem as if it was a terrible shame that anything which is eaten so largely by children should be adulterated or should be subjected to any sort of catastrophe, even if it is originally pure, which will make it unfit. Yet, in the candy factories, which I visit, I so often find conditions that are revolting, the exposure of these sweets to flies, which swarm upon them by the thousand, I was going to say millions, exposure of this sticky stuff in open trays, when sweeping is done on the dirty floor, the handling of candy by the hands of workers that are provided no means whatever of washing their hands, and the same thing is true of bread and baked stuff, I should say, also, and it is extremely important that all of these substances, such as candies and baked goods, which are eaten without reesterilization, should be prevented from receiving such contamination. You will find even that bread, when it comes sterile from the oven, will be allowed to stand around in dirty and vermin-infested cupboards and even delicately frosted pies and things of that kind are exposed where there is dry sweepings and all of these things seem so revolting to us that I am sure, if you ever once personally visited places of this sort, you would rise up in arms and say that such condition should not exist in our city, so I advise you to have a housekeepers' committee everywhere who will personally see to these matters and if you have a health officer who is struggling with the

problem, he will be glad of your assistance. If you have not a good health officer, but just a politician who is drawing his salary and doing nothing, particularly, you will be very glad to be rid of his assistance, and to get somebody who will do his duty as he ought.

Now, I think I am expected to talk rather particularly upon the subject of meat tonight. Dr. Kellogg has asked me to tell you something about the problem which is engaging a great deal of my attention at the present time, and I want to tell you that this subject of pure meat, as that of pure milk, and clean streets and the abatement of the smoke nuisance, garbage collection, and a dozen other things, I could mention, engaged my attention years ago, as I was a housekeeper and because I wanted to have things as right as I could, because, for example, I could not keep a clean house around a dirty street, and I could not keep a clean house with the smoke blowing into my windows. O, you are too near to Kalamazoo to believe if I would tell you, we have solved these various problems, because we are very far from having done so, but, at least, I have done my best in that town. The real reason why, just as you in your home, would have a desire to have things right because it made your housekeeping so hard and because you could not make the food fit to eat if it was not fit when it arrived in your home.

Now, some ten years ago last March, I was the Chairman of a committee on household economics for the State Federation of Women's Clubs, and I had made an outline for the study of the

*clubs of the State upon good housekeeping. I have forgotten just the title, but it was dealing with the subject of home economics.*

"Studies <sup>in</sup> of Good Housekeeping", it was called.

Among the subjects down for discussion was the milk supply and the meat supply. I managed to get a woman physician in that town to give a paper on the milk supply, but when it came to the meat supply, I could not get anybody to do it. I could not get the health officer to do it, I could not get the State Board of Health to do it, I couldn't get our local health officer, so I was obliged to tackle the subject myself. It never has been my way to go to <sup>an</sup> encyclopedia to find about things, if I could find out in ~~some~~ other way, so I started out with the mayor's wife and the ex-mayor's wife and three or four other women, and one or two men, to find out about the meat supply of Kalamazoo, anyhow, and we visited, in the course of two days, seven slaughter houses round about the town and each of them was a little worse than the rest. They were all unspeakably bad, unsanitary, filthy, so bad, that if I were describe them accurately to you, I fear you would have a very uncomfortable evening, and then, let me tell you, I went up to Grand Rapids and they were just as bad. I did not come to Battle Creek, but I went to a number of cities round about and I did not see any difference. They were all just as bad as they could be and about as bad as they were up at Big Rapids, as I told you, so at that time, I made the effort which Dr. Kellogg alluded to, where we both tried to get an enabling act for cities to require a sanitation of slaughterhouses and the inspection of the animals before and during the time of slaughter and the proper sanitation of meat markets in all places where meat was sold and transported. For a number of years, I believed implicitly in Federal meat inspection. It was in the year 1905 that, in reading some European articles

on the subject of meat inspection, I saw some very uncomplimentary allusions to American meat inspection, and I was very much surprised. I posted right over to Chicago to find out about it, and the inspector in charge in Chicago assured me that was simply jealousy of Germany, France and England, that there was not a word of it true, and our meat inspection was *faultless* and I went home somewhat reassured, but not wholly, and I continued to study the matter, and my suspicions of it widened and deepened into a certainty that our Federal meat inspection, while I would not undertake to say it was utterly valueless, is practically in the interest of the packers and not in the interest of the consumer. I have spoken of one thing already, and that is a commission which was granted, which I have maintained is in violation of the law. You know, we passed a meat inspection law in the year 1906 because the whole American people had been turned by the revelations that Mr. Sinclair and others have made in regard to the packing houses. We passed a meat inspection law which was supposed to guarantee pure and wholesome meat from that time on. One of the provisions of that law was that no meat should be shipped anywhere from state lines and interstate trade unless it was stamped "U. S. Inspected and Passed". Within three weeks after that law was passed, an amendment was passed permitting the abattoir owners to ship any amount of meat between abattoirs. Armour & Company in Chicago, for instance, could ship to New Hampshire, if they wanted to, meat which had no mark of inspection whatever on it. Therefore, of course, it would be very easy substitute other meat. Not only that, but they were required to seal the car with a "U.S. Inspected and Passed" wire and lead seal, but when those seals were found broken, they released the

meat with very little ceremony. When those seals were found wilfully broken, in many instances, all that was said was that the inspectors should take it up with the proprietors with a view to having the practice discontinued. Now, this is the sort of inspection that we have for over three billion pounds of meat which we ship annually between abatoirs of this country only, a frail car seal, to give us any guarantee at all, and with the frequent wilful breaking of these seals, which is not prosecuted.

In one of the very same notices where this appeared, one of the same bulletins, there was a man who had been arrested for shipping a few immature veal carcasses across the state line and he was fined \$500.00 and sent to the Federal prison in Atlanta for a year for having done this thing. It was all right. We don't want any immature veal carcasses shipped across the state line, but it seems to me there is very great and unwarrantable discrimination between the great packers, who violate the law according to the admission of the bulletin published by the Bureau of Animal Industry, and the little farmer or butcher who does a deed which is so much less serious from the point of view of health. Now, the Federal inspection, as it is remarked by Secretary Wilson, in a recent address which was made before the American Meat Packers' Association in Washington in which he said that the American people would not eat tuberculous meat, that we were more strict than any other nation, that nothing of that kind would be allowed in this country. A statement of Solicitor McCabe, which represents our meat inspection practically perfect, the statement of Dr. Melvin, the head of our Bureau of Animal Industry, tell us of meat that is absolutely free from any



dangerous disease, from any trace of disease. Then he puts in a little post script to say that, of course, disease does not mean just exactly the same for Federal meat inspection as it does for other things, but there may be, he says, for example, an isolated, tuberculous nodule, for example, in the lung, or liver, or some other part of the body, which might make that particular point diseased, but which can have no effect upon the carcass whatever, and should not condemn the carcass.

Armour & Company go on to tell in an article in the Saturday Evening Post how, if they find a trace of disease anywhere in the carcass of an animal when it is slaughtered, it is cut in small pieces, covered with paraffin and put into<sup>a</sup> tank. That is what was said about our Federal meat inspection, but the fact is, animals are passed which have tuberculosis, co-incidental-ly in several organs of the body, in both the thoracic and abdominal cavities, and even the printed regulations allow the packing of meat which has tuberculosis in several portions of the body, but in secret service announcements, which, no doubt, are secret and meant to be so, and if I had time, I would like to produce proof for this, they allow a passing of much more seriously diseased carcasses, and I suppose with great difficulty of the report of the summer school of inspection in Chicago, in 1909, the carcasses that were passed, there twenty-four known tuberculous carcasses of hogs and hogs which were examined that were known to be tuberculous, <sup>to begin with,</sup> and they were slaughtered, and I tell you that out of the twenty-four only one of them escaped entirely doing duty for food on the plea of ill health. The other twenty-three got through as meat, lard, and tallow, or something. One of the animals that was passed was, for example, a hog with tuberculosis in three or four parts of the body, with

several small nodules the in each lung. Now, that isolated, tuberculous nodule of which we hear can not be so very ~~leathesome~~ <sup>loathsome</sup> in a carcass like that. Now, I say, if things like that are fit to eat, all well and good, but let the Department of Agriculture take the public into its confidence, and say "This is the kind of food we are giving you, and this is the sort of thing upon which we are putting the stamp 'U. S. Inspected and Passed'" and if people want that sort of thing, let them have it, but O, I do say, that the United States Department of Agriculture has no right whatever to so wilfully and persistently deceive the American people about the quality of the meat to which they attach the Federal stamp, not only that, but the Department of Agriculture does not have meat like that for Europe. All of these things are kept for home consumption,

For example, recently within six months,—I will go back a little and say this, with regard to tumors, the regulations say that if any organ or part is the seat of a tumor, malignant or benign, that that organ or part shall be fully condemned. In these secret service announcements which came out, soon afterwards, it says, that if the tumor is not a malignant tumor, you may cut it out of the organ and pass on the rest of the organ, which they assume to be wholesome and if there are other troubles such as <sup>suppurating</sup> sores and abscesses, etc., if they are not supposed to be so serious as to affect the whole organ, they are to be cut out, and the rest is passed on. A little while afterwards, in one of these secret service announcements, comes the notice that recently in London, the authorities have condemned and confiscated several ~~hundreds~~ <sup>thousands</sup> of beef livers and sheep livers because from twenty to thirty percent. of them had bad parts cut out.

So the health authorities of England held that these parts had been diseased, therefore were unfit for consumption, and they condemned the whole lot. So Mr. Melvin comes out the next month in one of these secret service announcements and tells the story and says, "In view of these circumstances, these inspectors are instructed hereafter not to certify for export livers and other organs from which portions have been cut, so that they are mutilated".

So we have got the Federal stamp "U. S. Inspected and Passed" not only upon livers from which tumors have been cut, and lumpy jaw, tongues from which ulcers have been cut, that is another thing which is regulated by secret regulations, although the printed regulations declare that the head and tongue of lumpy jawed cattle shall be condemned and destroyed for food purposes. We have not only our own share of these things, but have the share of all the rest of the world because these things can not be certified for export. Not only that, but about a year ago, England announced that she would not take any hog carcasses from America that had any trace of tuberculosis. Now, 97% of all the condemnations of the hog that occur, occur because of tuberculosis, 46% of all the condemnations of cattle, or parts of cattle, occur from tuberculosis. England said that she would not take any hogs that had any trace of tuberculosis. Now, this class knows that the glands are the *signals* of tuberculosis, <sup>that</sup> lesions and swelling etc., will appear in the glands and mean atrophy, and reveal the presence in the organ before you can see it in the organ itself. She requires that all hogs shall be shipped with certain telltale glands situated around the throat and in the cervical regions so that they may know that they have not got any animals afflicted with tuberculosis.

So the secret regulations first and said "England says she will not accept any carcasses that have not these organs entire and these glands in place to show that they are not tuberculous, and inasmuch as we will not use any better inspection for England than for America, we won't ship any more fresh pork to England". Thirty days afterward came the notice saying that "Inasmuch as England would not receive that pork otherwise, inspectors were instructed to ship to England such pork as, by leaving the glands in place, proved the animals were entirely free from tuberculosis.

For years and years, ever since we have had inspection, Germany and France have required that many of the internal organs shall be left in the carcass, with all the glands in place, to show they will not trust us. We are the only nation on earth that will eat what is set before us and ask no questions. So we send this meat, which, because the lungs and the liver and the spleen and all other organs are left in there, natural attachment, can be proved to be free from disease by the countries who require it, and we do not ask anything of the kind. That shows that they select the animals for slaughter because they do not slaughter that way in ordinary cases at all. You know, the viscera are all removed. So that when they are slaughtering for these countries that require this, they certainly must pick out the animals that they believe are most likely to pass the inspection. Then, if one won't pass, of course that is reserved for Americans.

Not only that, but Peru, Mexico, Chile and South American countries require that their consuls shall give special certification of meat in this country before it can be shipped abroad, and many, many of the countries of the world require special guarantee against diseased meat being shipped from America, which means, of

course, as long as we do not require it, we get what is left over. Now, I want to ask you, what is the object of paying \$3,000,000 a year for the sake of being enabled to eat the leavings of all the rest of the world? It seems to me this is a policy that should be reversed, and immediately, and that if the packers want an inspection to enable them to sell meat abroad, at least, let them pay for it.

Now, the question of meat inspection is such an important one, I am going to say just a little more about this matter of secret orders, because that is so vital, and if orders are issued secretly, of course, we never know when we have struck bottom. We never know what may be the state of today, tomorrow or next day, and it is a fact that there are bulletins issued— I have a photograph and it is going to appear presently in one of the leading magazines of the country, and you will see the way in which the inspectors are warned, under penalty of being severely dealt with if they give or show these service announcements to any outsider whatever. The only people who can have them are the inspectors and the packers—the only people who should not have them— but the consumers, you and I, and other near American citizens can not see those things, and it took me two years and a half to get hold of ~~a~~ seven of these and I had a number of people all over the country helping me, and we never did get but seven out of more than one hundred until Congressman Nelson, from the information which I gave to him, introduced this resolution into Congress and called for them. Congress called for them and they were obliged to yield these service announcements.

Among the things contained in those service announcements are the notices of illegally used labels. You may have heard of that lard pail that was filled with candy. What guarantee have we for

trade labels? A trade label is something which a packer may put upon a pail of lard, or upon a canvass that contains ham, or upon various things, with his name and Uncle Sam's name, saying "U. S. Inspected and Passed". If you notice, you will probably find, if it is shipped interstate, that that legend "U. S. Inspected and Passed" was embossed on that pail. Go to Armour & Company's and you will find a great stack of plate tin which is to be made into pails, stamped "U. S. Inspected and Passed" or embossed, already embossed, and all of them. Of course, they say the lard must be put in under the eye of the inspector, an employee of the department, and it seems to me it opens the way for fraud because they manufacture the pails themselves and how are we going to prevent them using those pails as long as they have them in their possession?

Not only that, but it is not generally known that all these big houses have so many so many inspected houses and have a good many more uninspected houses. One has five inspected houses, inspected plants, and 145 uninspected plants, that are selling or making lard, advertising various things and making various things, and putting them out under their name. Evidently they are either exempted establishments or are establishments that are not supposed to do an interstate trade.

Now, in one of these secret service announcements, I read that it has been found that there is a practice of sending their "U. S. Inspected and Passed" trade labels to their uninspected houses. In Washington, I got a pail of lard and showed it to the committee and others there. It said "U. S. Inspected and Passed"; so we took off the cover. Then there was another seal inside, like a false top that fitted down in and that said "U. S. Inspected and

Passed" and when we took that inner cover off, we found it full of taffy and not full of lard. I simply use that as an illustration that anybody who had possession of that pail could have filled it with uninspected lard with inedible grease, which they wanted to pass off as lard, could have put that seal back in it and it was no guarantee at all.

Now, if they wanted to have a guarantee, what they would do would be simply to paste a little paper label on the side of the pail and over the top of the pail. Then, when the cover was opened, the "U. S. Inspected and Passed" label would be broken, and if it was broken, you would know it was not the original package. That would be a perfectly simple thing to do, and why don't they do it?

Not only that, but the law says "You shall not use any detachable device with "U. S. Inspected and Passed" upon it, for obvious reasons". Yet, here was the second false top with "U.S. Inspected and Passed" upon it inside. It is not upon all lard pails, it was upon Armour's lard pail. What has come along? What instruction has caused them to allow this firm to use a detachable device when the law says "You shall not use a detachable device"?

Now, it seems to me, friends, that this is a matter for us to look into, and it is a matter for women to look into, particularly, and it is a matter, above all, for trained women, such as members of this class, to look into. Our meat is going up in price continually. The temptation to use condemned carcasses is greater and greater, because a greater profit can be made off of them. The Department of Agriculture, it seems to me, has not paid the attention which it should to keeping down tuberculosis and other diseases in the country and we are in danger of having an increased

amount of diseased carcasses to eat unless we take the stand that we will not do it, and that, above all, we will not submit to this discrimination against American citizens, in the face of all the other nations on the earth who demand and who get the best and the freshest meat that is produced.

Now, next to the milk, it seems to me the meat problem is the greatest and most grave that we have to face and that it is time that we shall demand that this matter be righted once and for all. I don't believe it will ever be righted until it is taken out of the department of agriculture or at least until Solicitor McCabe and the Chief of the Bureau of Animal Industry and certain other ones are taken out of the Department of Agriculture. I am certain it will not be done. I believe if Mr. Roosevelt had known the condition of things that, while the sanitation was greatly improved, after 1906, by standards of health, if he had known of the practices allowing the law to be broken worse than before, I am sure he would have ordered another investigation and would have fought to make that thing right, also, but as long as we will stand these things, we can. Just as soon as we say we will not stand them, then I think they will be righted.

Now, I have talked a good while upon this subject tonight because I think it is very important because it is the subject of congressional investigation and because I want the help and the support of the good people for this purpose to improve conditions and to make them right.

Now, just a word in closing in regard to the opportunities of women trained as these women <sup>tonight</sup> are/for public service. The important, scientific feeding and nourishing of the body, is, I suppose, is only beginning to be understood and this institution is



a pioneer in this education, and certainly we want all the help that can possibly be given for the benefit of those who are ailing. But we want still more in the world, the scientific feeding of all the people from infancy, and through all the periods of life, and in order to have the very beginning of scientific feeding, we have got to have wholesome food as the basis. So food inspection in the interests of the consumer is of vital importance and can never be neglected without dire results. I believe that when we reckon the destiny of the country, as we hope to do, we will do it very largely through an improved food supply, a food<sup>supply</sup> that is wholesome in the beginning and is kept wholesome all the way along, and I do not doubt that the pupils of this school, the teachers, and the distinguished head of this institution, I think the very fact of inviting me to speak upon this subject here tonight shows that they are alive to the great importance of this subject, but it is a subject that can not be dealt with in a school, which can not be dealt with by any group of people alone, it has got to be through popular education, and a feeling on the part of the buyers, and the buyers are, as I have said, the women. It is an indignity to us that food which is unfit and indecently contaminated should be offered to us. It is a very great danger to us that any such food should be on sale. Now, if only we had a roof over our cities—I believe Mr. Wells suggested that London of the future might be roofed over ~~in-the-future~~ and have a wall around and have an artificial and everything lovely just as you wanted it inside—now, if we had such a roof as that and such walls around us, we would realize that common home and that people who came to rap<sup>at</sup> our gates to get in would be challenged, would have to prove that they were all right and it would seem a very natural thing, but I think our state is our

common home, just as much with the blue dome of Heaven and with the walls of the surrounding hills, and that we have a right to see to it and a sacred duty to see to it that the food supply that comes to us from outside is wholesome and that all the conditions under which it is handled, after it reaches our state, or our city are wholesome. Then the housekeeper, when it arrives at her door, is very confident, and undertakes to do her part.

I am very glad indeed to have this opportunity to speak to this class and audience this evening and I congratulate them on the successful consummation of their years of training and wish them all success in their future work. (Applause).

Music by the orchestra.

Dr. J. H. Kellogg: I am sure we have all been very highly instructed, as well as entertained, by the remarks to which we have listened here tonight. This investigation that has been carried <sup>on</sup> down in Washington, has been an eye-opener for the whole country or the whole world. Mrs. Crane, the speaker, of the evening, has not pictured this matter, in any respect, worse than it is. I am sure it is even worse than it has been described.

One of our doctors a few years ago went down to Chicago and spent three days watching this process of inspection in the large abatoirs there and shipped home a quantity of fragments of animals, cancers and lumpy jaws, and other horrible evidences of disease, and the balance of the animals, to which these specimens belonged, were sent right on to be used as food. He saw it with his own eyes. There was no question about it at all. It certainly is time something should

be done, but it is a shame to the medical profession and the public sanitariums that this should be left to a woman who is not in the profession nor in the public health service, to take this up as a personal matter, and certainly it is a very great honor to Mrs. Crane that she has made this a personal matter in the interest of the whole country. I hope that the American people will be so aroused by the disclosures that have been made that they will insist upon having, at least, healthy animals to eat, if they will continue to eat animals, which we recommend them not to do, in consideration of the great risk involved.

I will add to these facts the remarks of one of the government officials that if the inspection should be carried on as Mrs. Crane insisted it ought to be, that there would be no animals to be sold because they would all be found to be diseased. Mrs. Crane did not tell you that, but I presume she has heard it. That is not certainly a very encouraging thing for the American farmer, but the conditions under which many of these animals are fattened, prepared for market, are such as will make people sick, and that they make animals sick is evidenced by the fact that thirty per cent. of all the livers sent to England, and of course they tried to make the best selection they could for the English market, thirty per cent. of them, after they were shipped, were found to be fragments of cancerous and other sorts of diseased livers.

Some years ago, I went down to a market here in the city and I asked the butcher for a hog's liver. It is a curious thing that physiologically the liver views under a microscope looks more like a human liver than any other liver that can be

obtained. I was after a hog's liver for demonstration purposes <sup>to</sup> ~~in~~ *medical students*. The butcher was a very honest man, a Mr. Green. He said "I have no hog's livers". I said "Don't you ever keep them?" He said "I never had one, because I learned years ago that 99 out of 100 hog's livers contained abscesses and I don't care to offer them to my customers." He was an honest butcher. The United States inspectors, it seems, cut off the abscess and send the rest along.

That milk inspection is necessary was shown very clearly by an incident reported by a government official just a few days ago. He said that he was inspecting dairies and got into the milking stable where the cows were being milked without being seen. He peaked over the shoulders of a boy who was milking and saw that this boy was holding one foot over the milk pail and was washing it off with the milk and after getting one foot clean he held the other foot over the milk pail until it was washed clean. Then the inspector spoke to him about the matter. "Why", he said, "We are not going to eat it. We sell it".

But I must not prolong my remarks. This question of food inspection is certainly one that interests us. Your food is a matter of primary importance. These young ladies who come here to night as graduates of the Sanitarium School of Health & Home Economics have given special study to this subject, and they ought to be fitted to be food inspectors when they go out from this place. I trust that some of them will seek such positions so that they may use their knowledge to good advantage. The question of food is coming to be recognized as primary, as the fundamental question. There was a time when the people, as well

the doctors, or, I may say, the doctors as well as the people, believe that if only the right medicine could be found, every sick man could be cured, so that there was a great world-wide search for medicines, for new remedies. This era has passed. The Medical Profession of the present time understand that metabolism or nutrition is the fundamental thing in all forms of chronic disease and in a great many acute diseases, as well. So the matter of food is coming to be recognized as of primary importance and certainly the time is close at hand when the dietitian will be recognized in every hospital and in every medical institution as occupying just as important a place as the physician. We have to have dietitians because the doctors have neglected to study the subject of dietetics as they should have done, so we have to have specialists in dietetics. The whole question of medicine is getting so large it is necessary to have specialists in almost every branch of it, and we have established for one of the functions of this school, to educate dietitians, who shall be so thoroughly prepared that they will be able to go out and give rational advice to men and women with reference to what they should eat.

This course of instruction in dietetics continues for two years. It includes a thorough study of chemistry of foods, as well as the general properties of foods, and the use of the foods in health and in disease. It includes, also, thorough laboratory training, a study of the excretions of the body and a graduate of our school is prepared to take the food which the patient eats and to take the excretions of the same patient and to make, by careful study of them, a chart which will indicate

how these foods have been appropriated by the body, how they are utilized, so that the doctor, in looking at the chart, can at once see the result of his prescription, or of the dietitian's prescription, and can see exactly what modifications are necessary so that the prescription of food can be made with the same accuracy and precision as <sup>prescriptions for</sup> drugs are now made. This, I trust, is a little advanced over what has been done before in this line. So we feel very proud of these women who have devoted these two years of hard, earnest study to render themselves so efficient in this work. We have tonight eleven graduates from the two-year course, three graduates from the one-year course. The one-year course prepares the graduate for practical work in cooking and dietetics and household economics.

I take great pleasure in presenting to these dietitians these diplomas as an evidence of their work and of their merit.

Presenting diplomas. (Applause).

The following are the names of the graduates:-  
Misses Ethle Bell Stump, Zelma Nay, Cora Viola Walter, Ruby Parker, Grace Hyde, Marolyn Dougherty, Aline Holmes, Cora Leedy, Lorraine Sterling, Mable Hostetter, and Mrs. Mable Hoyt.

Benediction by Elder G. C. Tenney.

For the Review.

THE REBUILDING OF THE BATTLE CREEK SANITARIUM.

By J. H. Kellogg.

The Board of Trustees have felt no small anxiety upon the question of the rebuilding of the Sanitarium and have, up to within a day or two, taken no positive action in reference to the matter. After waiting five weeks, which time has been spent in careful prayer and consideration of the matter, the way seemed clear to rebuild in Battle Creek.

The complete wiping out of two main buildings of the institution by fire was an extraordinary event and one which had never been looked upon as probable, although it had been regarded as possible that one building might burn, or at least a considerable portion of one building, but it was believed to be very improbable that the complete destruction of the main buildings of the institution could be possible because of the fact that every portion of the building was constantly occupied, while facilities for putting out fire were very numerous and as efficient as those usually found in cities the size of Battle Creek. Insurance rates were high, 2% per annum or more. The facts stated above accounts for the comparatively small insurance which was carried, considerably less than the actual value of the total property destroyed. The aim of the managers has always been to carry such an amount of insurance that the insurance money, with the property left after any fire which could possibly occur, would be amply sufficient to pay every dollar of indebtedness, this policy being necessary for the proper protection of the creditors. The loss occasioned by the fire was severe, and yet the amount of property left was sufficient to pay the indebtedness without the money received from the insurance

companies.

If considering the situation after the fire, the Board reasoned thus: The destruction of the buildings is a circumstance which must have in it some important lesson. To learn this lesson was the most earnest desire of the Board. Several interpretations suggested themselves. For example, it might be suggested that the work of the Sanitarium had been so completely a failure that it was of no use in the world and hence should be wiped out like a barren fig tree. Again, it might be suggested that the work of the Sanitarium in Battle Creek was finished and that it should be moved to some other place, either some more favorable locality or to some place where the work was more needed or where it might be better appreciated. Again, the thought was suggested that Providence had permitted the destruction of these buildings in order that the grand principles represented by the institution might have in a new, modern, and more carefully constructed building a better setting, and the principles a more consistent and adequate representation. Which of these interpretations was the true one the Board did not feel themselves competent to decide and so felt powerless to do anything but quietly wait for Providence to make things clear, and the weeks which have elapsed since the fire have been by no means days of leisure or idle waiting. It has been a time of anxious suspense and of most intense and earnest seeking for the path of duty.

The moving of an institution like the Sanitarium which has existed for so long a time in the same locality, some thirty-six years, is like undertaking to move a giant tree like an oak or an elm, which for a like number of years has been putting down its roots into the soil and spreading them out far and wide. It is by



no means an easy matter. For many years four or five thousand invalids have been coming annually to Battle Creek for treatment. The name "Battle Creek" is associated with certain ideas and principles and has come to be known throughout the civilized world. Sanitarium methods and the truths represented in them and through the institution have come to be very widely known as "The Battle Creek Idea." The eyes of millions of men and women have been turned toward this place as the center of light and truth from which life saving principles have been going out for more than a third of a century, <sup>and through</sup> the distribution of health books, magazines, and other health literature from this point have entered millions of homes, and have been the means of revolutionizing tens of thousands of households. For any man or set of men to say arbitrarily that the time had come to close up this work in Battle Creek and to start in some other place would be a usurpation of authority. God planted the Sanitarium tree in Battle Creek as he planted the cedars of Lebanon, and Divine Providence alone could decide the location of the new building.

After giving the matter most earnest consideration for some days, the Sanitarium Board decided to put the matter to a test, and in such a way that no power but God Himself could decide the question at issue. The proposition was put in this form: If it is the will of God that the Sanitarium should be moved from Battle Creek, then the way for the rebuilding of the institution in Battle Creek will be closed up, while the way will be opened elsewhere. Having arrived at this decision the Board simply waited for developments. Several hundred letters were sent out to old patients, business men, senators, lawyers, clergymen, and other people of influence, asking their advice in reference to the location of the

new building, putting the matter in such a way as to give no suggestion whatever.

Observing that the managers were not at once taking hold of the matter of rebuilding, the citizens of Battle ~~Creek~~ began making inquiries in reference to the matter, and were informed that the Board did not feel clear upon the question of rebuilding, that they had not yet any providential indication upon the question of location and they felt there were reasons why another location might be desirable. Within a few days messages began flowing in from all parts of the United States, some advising the erection of the new building in another place, but the majority advising to rebuild in Battle Creek, the very name seeming to be dear to multitudes who had here found restoration to health and knowledge whereby to maintain health and usefulness.

The citizens of Battle Creek took the matter in hand with great earnestness. The Business Men's Association appointed a committee, which, after visiting the Sanitarium, and full<sup>y</sup> informing themselves respecting the work and the financial affairs of the institution, undertook a most earnest and vigorous missionary campaign of the City for the purpose of removing misconceptions and prejudices which were in most cases the result of ~~exaggerations~~ *ignorance* or incorrect information. This committee left no stone unturned, and the result of their efforts was the creation in the city of an intense and earnest sympathy for the Sanitarium and its work such as was never known before. Such a revolution of feeling has never occurred before in the history of Battle Creek, and has probably rarely <sup>been</sup> seen in any city. The efforts of this committee not only broke down the enormous walls of prejudice which the enemies of the institution had built up, but resulted in the raising of a large

sized sum of money towards the erection of the new building.

The committee is still at work, so the amount cannot be stated in exact figures, but it may be stated as between thirty-five and fifty thousand dollars.

The members of our own church caught the spirit and enthusiasm which prevailed in the whole city, and, led by the church committee, turned out on a similar campaign with the result that several thousand dollars more were added, ~~xxx~~ the total amount raising by the church to date being about ..... Neither the citizens nor the church committee were urged to do this. The Board simply stated the situation and left the matter for the Lord to move upon the hearts of the citizens and brethren to act as might seem to them right and proper under the circumstances. The result has been that the citizens, church members and the members of the Sanitarium family have together raised the handsome sum of nearly one hundred thousand dollars toward the erection of the new building.

This is certainly very tangible evidence that something ought to be done for Battle Creek. Such expressions of sympathy and interest on the part of any other city, backed up in such a tangible way, would most certainly receive consideration, and would be considered a very loud call for the establishment of a Sanitarium. No mere human influence could have possibly created such a general uprising on the part of the whole city in behalf of truth and reform. God alone has power to work so wondrous a miracle. Many equally remarkable providences has seemed to open the way for rebuilding in Battle Creek. Eminent talent of various sorts has seemed to be divinely sent to help us in our extremity~~xxx~~. Architects and builders of great experience and ability have come to our aid without seeking, and it seems to be as clear as anything well could be that the Sanitarium should be rebuilt in Battle Creek.

The Board still felt themselves wholly incompetent for the task of deciding whether or not the Sanitarium building should be reconstructed, and if so, where; and not wishing to take the responsibility of settling this important question in which many thousand are interested, a council of the general conference officers and Union conference presidents was called. These brethren convened Monday, March 24th, and spent nearly a week in the consideration of this and other matters pertaining to the Sanitarium and its work. The advice and counsel of these brethren was greatly appreciated by the Board of managers, and it is proper to say that the steps which have been taken looking toward the erection of the Sanitarium in Battle Creek was by the unanimous advice and recommendation of these brethren, and the members of the Medical Missionary Board, as well as the Sanitarium management.

Another consideration which has not been mentioned, but one to which considerable weight must be attached, is the fact that to remove the institution to some other ~~ex~~place would require a loss of a hundred thousand dollars in the shape of property which could not be removed, but which will be valuable to the building constructed here. This consists of our large heating plant, underground conduits, dormitories for helpers, business buildings, etc. That the Sanitarium work has not been unsuccessful at Battle Creek is known to all. There has not been one year in the last twenty-five years in which the annual business has not exceeded that of the previous year, and this notwithstanding the fact that within the last few years a large number of branch establishments have been set in operation in various cities. At the time of the fire the weekly receipts from patients was over seven thousand dollars, and the number of patients under treatment the largest ever in the

institution in the winter season.

After deciding that the Sanitarium must be rebuilt at Battle Creek, the next question of moment~~x~~ous was that of the size of the building. The temptation naturally would be to erect a building able to accomo<sup>m</sup>date all the patients likely to visit the institution, providing the patronage should continue as it has been during the last two years. There might be even a temptation to erect even a larger building to provide for the increase in patronage such as has been coming steadily on for several years back. Indeed, this would be looked upon as good business judgment. For nearly a dozen years between four and five thousand dollars has been expended in the renting of cottages, some eighty rented buildings being occupied the greater portion of the time for years past in addition to the twenty buildings own by the institution. The buildings burned were large structures aggregating in all, including the wings~~s~~ and additions, space sufficient to make a building a thousand feet long, forty feet wide, and four stories in height, and yet this building, notwithstanding that for the most part~~x~~ were rather small, many quite too small for the highest ~~sanitary~~ sanitary requirements, did not accommodate during the five or six busiest months of the year more than half the patients under treatment at the Sanitarium, and during the very busi~~ast~~est season, during July, August, and September, not more than forty per cent. of the patients; the remainder of our patients were obliged to seek lodging wherever they could find places among the citizens of the town, and in buildings rented for the purpose. During the greater part of last year, the expense for rented buildings has risen to six or seven thousand dollars per annum. Five thousand dollars would pay five percent interest on a building costing one hundred thousand dollars. It would accommodate

the patients much more comfortably than in the scattered buildings.

The Sanitarium family of helpers has ~~been far~~ sometimes reached the number of eight or nine hundred. To accommodate these only one dormitory has been provided which is capable of holding less than two hundred, so that three-fourths of the helpers have been obliged to room in various places scattered about the greater part of town, even at a considerable distance from the institution, a fact which has been a source of very great inconvenience. Thus the temptation has been for many years to erect buildings for the accommodation of patients who could not be admitted to the existing buildings, and for the erection of dormitories for the better accomodation of helpers. Nevertheless the Board has steadily set its face against making such improvements for the reason that its purpose has been to increase the establishment of branches in various parts of the world rather than the centralization of the work in Battle Creek. There has notx been a time since the erection of the first large buildings that the institution was capable of holding the family of patients and helpers and for many years there has been no time at any season of the year when the Sanitarium accommodations for patients were sufficient to make it possible to furnish room for all under treatment, except by the use of hired buildings.

In determining the site of the new building, the Board have thought it their duty to adhere to the same principle and policy, and hence in the erection of the new building, it will not be attempted to erect a building large enough to accommodate all of ~~xx~~ those who visit the Sanitarium for treatment. The number of patients under treatment last summer at one time was about seven hundred,

The managers have thought it wise to construct a building which would furnish about three hundred moderate-sized sleeping rooms. If means were sufficient, large airy rooms would be provided, but the Board have felt the necessity of reducing the building to the smallest size possible, hoping that they may be able to furnish accommodations for approximately half of those who come from abroad for treatment.

As before stated, the burned buildings were equivalent to a four story building over one thousand feet in length. The new buildings will be approximately half this length, five stories in height, with one two-story expansion in the rear for bath and gymnasium purposes. Plans have been made in the most economical manner possible. The building must be severely plain, but dignified, and beautiful in lines and proportions, but without artificial decoration. Even the roof will be utilized as an exercise ground, being made flat for this purpose. A fuller description will be published later when the plans are more fully perfected.

It is expected that the cost of the new buildings will be less than the cost of the buildings which burned, or at least no more, but the construction will be far more substantial and enduring. Brick, iron, stone and cement will be the materials used so that the building will be absolutely fireproof. The building will look very much larger than the old structure through the avoidance of wings, the whole structure being arranged in one long building, running north and south so as to furnish an equal supply of light and air to each room.

The managers very earnestly desire the support, the prayers and the sympathy of all the friends of the great principles and reforms which the Battle Creek Sanitarium represents, that in their

efforts to reconstruct and equip the institution they may be divinely led, and may make such a representation of these truths and principles as will command the respect of the world and redound to the glory of God and the blessing of humanity.



613.12  
(Good Health)

### THE REBUILDINGS OF THE BATTLE CREEK SANITARIUM.

Old friends and patrons of the Battle Creek Sanitarium will be glad to know that the new building is very rapidly approaching completion. This edifice will represent when completed by far the most complete and well equipped medical institution in the world. The building is absolutely fire proof, being constructed almost wholly of stone, iron, brick, and cement. Each floor consists practically of one solid slab of artificial stone, reaching from one end of the building to the other, five hundred and forty feet, and covering a width of forty-six to sixty feet. The floor is six to eight inches thick. The surface is covered with marble mosaic, is smooth, impervious, and of a color agreeable to the eye. There are no hollow spaces in the walls or partitions, and no hiding-place for roaches or vermin of any description.

The dining-room, kitchen, and operating-room are at the top. Two separate bath-buildings, one for the ladies and one for the gentlemen, also one building to be used as a gymnasium, are connected ~~at~~ the rear by a corridor communicating with the main building. A semi-circular space between these buildings, which are grouped on the east side of the building, between these and the main structure, is occupied by a beautiful palm garden, which is connected with the lobby of the main building and will be one of the most prominent and beautiful features of the institution.

The rooms are well lighted, thoroughly ventilated, and heated. Many of the rooms are provided with private bath-

rooms and lavatories. There are bathrooms on every floor of the main building in which feeble patients can receive treatment without being taken to the main bathroom.

The building is furnished with five elevators, one in each bathroom, and three in the main building. These elevators are of the most improved hydraulic pattern, and will be provided with every safety device.

The heating, plumbing, and plastering are practically done and little remains to be completed with the exception of the wood finish which is now being put on and will be complete within a few weeks. It is possible that some portions of the building will be occupied within a week or two, and it is believed that within <sup>or eight</sup> six weeks it will be possible to fit up rooms for patients. The letters we receive from all parts of the United States indicate that hundreds of people are waiting for the completion of this Bethesda. We hope to be able to publish in the next number the date fixed upon for the dedicatory ceremonies.

SPECIAL FEATURES OF THE BATTLE CREEK SANITARIUM  
BILL OF FARE

**IT IS UNIQUE.** On no other table have first appeared so many new and wholesome foods and food preparations which later became known and used throughout the civilized world.

**IT IS BIOLOGIC** Nothing is permitted to appear upon the bill of fare which is in the smallest degree objectionable from a health standpoint. Great care is taken to provide an unusual variety of appetizing and palate-satisfying nutrients of the highest quality obtainable.

**THE CALORIE BALANCE** As a pioneer in dietary progress, The Battle Creek Sanitarium was first to place upon its tables a bill of fare showing the energy values of each article of food served.

**THE VITAMIN BALANCE** Since vitamin deficiency is now known to be one of the chief causes of disease and a great obstacle to recovery, great care is taken to provide all the necessary vitamins in more than ample quantity.

**THE FOOD MINERAL BALANCE** Equal care is taken to include in each bill of fare foods rich in lime, iron, copper and other food minerals known to be essential for blood building and complete nutrition.

**DIETETIC SUPERVISION** Skilled dietitians cooperate with the physician in arranging the patient's bill of fare for each meal.

**UNUSUAL SANITARY PRECAUTIONS TAKEN** To insure against possible bacterial or parasitic contamination, extraordinary precautions are taken not only in the selection and examination of foods but the thorough sterilization of all uncooked foodstuffs before they appear upon the table and the thorough disinfection of the hands of waiters, cooks and other food handlers not only daily but many times daily.

TABOOS

The **MUSTARD POT**, **THE PEPPER BOX**, **CURRIES** and other hot condiments and sauces and vinegar and pickles are responsible for many cases of gastro-duodenitis, gall bladder and other digestive disorders and so are excluded from our bill of fare. Vitamin sauce is highly palatable as well as health promoting.

**TEA** and **COFFEE**, the well recognized foes of sound sleep and healthy nerves, are replaced by wholesome and refreshing beverages.

**MEATS** of all sorts, flesh, fish and fowl, are taboo because they do not belong to the human bill of fare and are quite unnecessary since better protein is provided in many plant foods as well as milk and eggs.

**WINE**, **BEER** and all **INTOXICANTS** are conspicuously absent from the Sanitarium tables because of their anti-vital properties and their utter lack of health promoting value.

The **CIGAR** and **CIGARETTE**, like the other taboos mentioned, have never been seen in the Battle Creek Sanitarium dining room. Smoking on the premises is forbidden.

\*DIRECTIONS FOR USE OF THE TABLE FOR  
BALANCING THE DIET

Calories.--Note the number of calories you eat, the average for a person of your height and age, the number prescribed for you, and the difference + or -.  
Study the calorie value of different foods.

Vitamins.--Be careful to get the full requirement of vitamin units prescribed, especially of vitamins A and G.

Food Minerals.--The totals will indicate the percentage of a day's requirement of each food mineral. The normal is 100.

From

The Battle Creek Sanitarium,  
Battle Creek, Mich.

7-23-30

THE BATTLE CREEK SANITARIUM  
SENDS A SKILLED DISTITION TO LABRADOR

Sir Wilfred Grenfell, the world famous hero of Labrador, whose whole life has been devoted to the betterment of the benighted people in that country, has found that beriberi, a disease which until recently destroyed more than 15,000 lives annually in the Philippines and hundreds of thousands in Japan and China and other oriental countries, has made its appearance in Labrador in the fisher-men villages along the coast.

At the request of Dr. Grenfell the Sanitarium last year sent Dr. Helen Mitchell, the Director of the Sanitarium Nutrition Laboratory, to Labrador to try to discover the causes of the beriberi outbreak and of other conditions affecting the nutrition and general health of the people. From Dr. Mitchell's highly interesting report it appeared that the average family in Labrador lives largely on tea and fine flour bread. The usual allowance is a barrel of white flour per year for each adult. Plenty of molasses, corn beef and salt pork, oleomargarine and a few peas and beans and some salt fish make up the balance of the diet. Fresh vegetables are almost wholly unknown. As a result the whole population is suffering from malnutrition, with the frequent occurrence of night blindness, beriberi, rickets and scurvy, all diseases that may be easily prevented

by proper regulation of the diet.

As a result of Dr. Mitchell's survey and her report of the conditions found, another Battle Creek College dietitian, Miss Vaughn, has this year gone to Labrador under the auspices of the International Grenfell Association, and will spend a year in that country and North New Foundland where similar conditions exist, instructing the people in the principles of right living. She carried with her a large stock of seeds and gardening implements, besides special foods for combating beriberi and other diseases due to a deficiency of vitamins. The result will doubtless be a marked improvement in the health of the people of Labrador.

Unfortunately there are millions of people in the United States who are suffering from malnutrition in ways not different from those in which the people of Labrador are afflicted except in degree. Perhaps the majority of all the chronic ailments from which men and women suffer are due to malnutrition from wrong habits of eating, such as lack of roughage, inducing slow and deficient elimination, too much cane sugar and candy, chronic nervousness and insomnia from the use of tea and coffee, and gout and kidney disease from the free use of flesh foods of various sorts.

Our bodies are made of what we eat. What we eat today is walking around and talking tomorrow. Food is fuel. It supplies the energy which keeps up steam in our body engines. Intelligent men and women everywhere are giving more attention to the question of eating.

The Health Extension Department of the Battle  
Creek Sanitarium will send you for the asking a little  
book in which you will find interesting and dependable  
information. Ask for booklet <sup>B,</sup> Eating for Health and  
Efficiency. ^

## BATTLE CREEK COLLEGE

Battle Creek College, as such, is one of the youngest of our Michigan colleges, having been incorporated in 1925. This, however, was simply the cap-stone in the evolution of an institution whose history dates back to 1880.

The history of Battle Creek College must be positively identified with the educational activities of Dr. John Harvey Kellogg of the Battle Creek Sanitarium. Dr. Kellogg, one of the earliest exponents of the theory "that it is easier to keep well than to get well", now so generally accepted by the medical profession, has from the very beginning of his medical activities been interested in the educating of people to a sane and simple regimen of daily living.

The first project was the founding of the Battle Creek Sanitarium School of Nursing which proved to be the first of a series of units to be incorporated into the Battle Creek College. This was likewise one of the earliest training schools for nurses in the United States, and was founded in connection with the Battle Creek Sanitarium. A more definite step towards the building of the college was taken in 1895 when Dr. Kellogg incorporated the American Medical Missionary College which continued as a training center for physicians until 1910. At that time it was merged with the University of Illinois, with the transference of students and records to Chicago.

The School of Home Economics was organized in 1906 under the name of the Battle Creek Sanitarium School of Health and Home Economics. This organization was effected as a result of the demand from patients and guests at the Sanitarium for instruction in



the preparation of food and related subjects. The first offering was a summer course with an enrollment of seven pupils. In the fall of 1906 a one-year course for matrons and housekeepers was established. The first class of eleven graduated in June 1907 and most of these graduates found employment at the Sanitarium. The work was completely reorganized in the fall of 1907 and the course was extended into a two-year program designed particularly for lecturers and teachers. To insure the placing of the work on a thoroughly scientific basis an arrangement was made with the American Medical Missionary College faculty to teach the science courses included in this new Home Economics program.

An increasing demand for trained dietitians and other institutional workers resulted in the organization two years later of a two-year course for dietitians. In 1910 as a result of the removal of the Medical College to Chicago the faculty was enlarged so as to provide for the proper teaching of the subjects included in these several courses. The teacher training course leading to a Michigan State Teachers Certificate was introduced in 1919. This was a two-year course preparing its graduates to teach home economics subjects in elementary and high schools.

In 1909 The Kellogg School of Physical Education was organized, offering a full two-year program and including two six-week summer sessions. The purpose of this school was to train young men and women to occupy professional positions in physical education.

In 1918, responding to the call of their country, all of the men enrolled in this school volunteered for service under the leadership of Dr. James T. Case (now of the Northwestern University Medical School) and were accepted as a unit in the ambulance corps. This made it necessary to temporarily discontinue the training

course for men. Two years later a six-week summer camp program was incorporated. This work was conducted at Gull Lake on Pottawottamie Island. The purpose was to train camp counselors to meet the increasing demand for this type of personnel. The next year the physical education course itself was extended to three years to meet the state requirements. This program also included the necessary teacher training for the Michigan State Life Certificate.

In view of the higher standards which had slowly but surely been making themselves evident in the world of education as well as in the professional fields, the need was felt for a four-year program in both Home Economics and Physical Education. There was likewise a growing demand for the cultural subjects usually included in a Liberal Arts curriculum. The courses of study already broadening beyond the three years made the transition into the four-year course of study relatively easy. The necessary academic chairs were added to the faculty in 1923 and two years later the Liberal Arts College was created and the doors of the institution were opened to young men as well as to young women.

The work of coordinating the several schools into a full fledged college was accomplished under the leadership of Paul F. Voelker who served as president of the institution from 1925 to 1932. In 1933 Dr. Voelker was elected State Superintendent of Public Instruction for the state of Michigan. The administration of the college was taken over by Professor Emil Leffler who had served the college as head of the department of History for four years.

The college campus consists of eight buildings, the newest of which is the library and administration building erected in 1929. This building contains a large and beautiful auditorium, seating

1200 people, and also provides a recreation room large enough to accommodate gatherings of the entire student body.

The college is unique in that it is founded upon the principles of race betterment and biologic living. For this reason the institution emphasizes the development of a sound body in which to house a sound mind. The fundamental object of the college is to train young people in the science of life and living so that they may in turn work for the building of a better and stronger race. Graduates of Battle Creek College have achieved distinction in their respective fields.

There were 34 members of the faculty and there were 532 students enrolled during the year 1932-33. Among other facilities of the college is Camp Pottawottamie, the summer camp of the School of Physical Education, located on the island in Gull Lake. This ideal spot, whose equipment includes a large lodge, a number of smaller cottages and the necessary equipment for a summer camp, is one of the major attractions of the School of Physical Education.

The college likewise controls a large tract of wild land which it reserves as a biologic preserve. This is particularly helpful to the students specializing in the department of biology.

In addition to the ample facilities of the college a great many of those of the Battle Creek Sanitarium are available for the students of the College, where they have an opportunity to see the practical application of that which is studied theoretically in the classroom. The college offers courses of study in the Liberal Arts and Sciences, including the pre-professional fields such as medicine, law and engineering; specialized training in Home Economics, Dietetics and Nutrition; in Physical Education with the usual arrangements for teacher training as prescribed by the State of Michigan.

Read April 25, 1929, at a meeting of the Michigan Hospital Association and the Southeastern Michigan Dietetic Association. A copy was sent to Dr. Stewart for the Bulletin, Jan. 3, 1930.

used for  
B.H.

~~SECRET~~

## HOW THE SICK ARE HEALED

Healing power is not possessed by doctors, neither does it reside in remedies. The only real power to heal is found in the body itself. The healing forces or agency is that same force by which our bodies are maintained in health. It resides in that mysterious principle of life for which science has not yet afforded an explanation. The only solution of the mystery is that afforded by Holy Writ with which scientific men are now in general accord; namely, the presence in nature, in every living being, in man, of a beneficent intelligence which is continually creating, restoring, renewing, building and rebuilding, always doing the best than can possibly be done under the circumstances. The life principle in man is the real healing power. This principle is active in every living cell, and particularly in the blood.

This idea is by no means new. More than a hundred years ago it was demonstrated by John Hunter, who showed that a part quickly dies when the arteries leading to it have been ligated so that the blood supply has been cut off; and more than four thousand years ago the use of blood as food was forbidden. "For the blood is the life." As the blood courses through the channels provided for its distribution throughout the body, it comes in contact with every tissue, vitalizing, energizing, purifying, repairing, healing,

"While far and wide, the crimson jet  
Leaps forth to fill the woven net,  
Which in unnumbered crossing tides  
The flood of burning life divides,  
Then, kindling each decaying part,  
Creeps back to find the throbbing heart."

The healing process is active in our bodies continually. Muscular activities and every other kind of work performed by the body wears out the

working parts, and they must be repaired or healed before they are ready to work again. This is as true of the stomach, the liver, or the brain as of the muscles. A fatigued brain or a tired stomach is sick and must be cured by the reparative powers of the body, acting under the favorable conditions afforded by rest before the parts are ready to work again. The nature of this ordinary every-day healing which is going on in our bodies is precisely the same as that required for the restoration of the sick to health. The stomach which is exhausted for the first time as a consequence of the eating of an unusually large meal will recover quickly, perhaps over night; while the stomach which has become chronically exhausted as the result of continued over-eating or through transgression of the laws of health, so that a state of slow digestion, or hypopepsia, has been induced, requires rest and the very best of care, and every possible favorable condition during several weeks or months, but if recovery occurs it will be effected in precisely the same way as that from the consequence of its everyday work.

The process of healing, then, is not a strange or a mysterious operation, but a natural process, as natural as sleep, digestion, or any other bodily function. It is not, then, a process which can be ascribed to the influence of mystical agencies.

Life comes to us from the great store-house of life, energy and power. Healing comes from the same source. It is evident, then, that healing power is not a thing which can be bottled up and dealt out in drops or teaspoonful doses. Neither can it be compounded into pills or electuaries. It is not something which can be put into a man. The healing power is already in the sick man. It needs only to be stimulated to activity, if dormant, and aided in its healing processes when necessary.