JOHN HARVEY KELLOGG (1352-1943)

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BIOLOGIC LIVING

When one adopts a thoroughly biologic way of life, he soon discovers changes in the direction of physical betterment which afford marvelous compensation for the small effort required to conform one's habits to natural bodily requirements.

The rules are very simple. One of the chief requirements is to simplify the bill of fare and to cease the use of meat, cane sugar and tea and coffee and hot condiments, that is, those that burn, sting and blister on the way to the stomach. It should contain an abundance of fresh fruits and ~~a-variety of greens~~ and cooked and uncooked vegetables, and not only greens of various sorts, but especially green lettuce (Matchless is best. Head lettuce has little value). Hard and semi-solid foods are better than soups, mushes and other preparations which do not require use of the teeth. Nuts may be used rather freely every day and with great profit replace meats in the bill of fare.

This change will often cause nearly complete disappearance of the foul odors which are always present in the stools of persons who habitually include steaks, chops and other meats in their bills of fare. Practically all fresh meats are in a state of more or less advanced putrefaction when eaten and leave undigested fragments in the colon and undergo there the same changes as does a rat in a closet or a dead calf in a fence vorner.

The highly offensive odors which accompany putrefaction are volatile poisons which when absorbed into the body cause high blood pressure by causing, according to Dr. Harris, eminent heart specialist of Liverpool, England, such an increase in the work required that a rise of blood pressure is necessary to drive the blood through the kidneys with sufficient rapidity to prevent rapid injury to the heart, bloodvessels and kidneys.

The feeding formula is really very simple.

1. A sufficient amount of natural foodstuffs to supply the energy requirement of the body, that is, the amount needed to keep the body warm to support the various vital functions and to supply energy for work. The amount needed by the average adult is two thousand to three thousand calories a day, or about twenty-eight calories per pound of body weight. Children require more than this, and sedentary and elderly people considerably less, and laborers who do much muscular work, a great deal more.

2. Make sure that the bill of fare includes all the vitamins in quantity. Vitamin concentrations may be used advantageously, but a

liberal supply from original vegetable sources is not only preferable but necessary.

3. The daily diet must include an ample intake of calcium, iron and copper from natural sources.

4. Putrefaction of food residues in the colon must be studiously avoided by avoiding an excessive intake of protein. Eliminating meat will usually accomplish this, especially if at the same time care is taken to completely empty the colon of residues before retiring. Washing the colon out with an enema before going to bed is a harmless procedure provided that care is taken to see that natural movements occur after each meal. This may easily be accomplished by proper regulation of the diet, the free use of milk sugar, three to six ounces daily, in place of other carbohydrates, with essential requirements of natural or artificial bulkage.

AN ARISTOCRACY OF HEALTH

BASED ON

BIOLOGIC LIVING

Rules for "Right Living"

by

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(Fine type)

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Foreword

The greatest problem before the world today is "How to save the human race from extinction through degeneracy." The only hope is to create an Aristocracy of Health, that is, to form a group of intelligent men and women who think it worth while to thoroughly inform themselves respecting the marvelous progress made in modern times in knowledge of personal hygiene, euthenics, and race hygiene, eugenics, and to make practical use of this invaluable information in so treating their bodies in everything pertaining to their physical and mental welfare as to develop and maintain the super health and efficiency which modern scientific research (Sherman and others) have shown to be easily possible by meticulous application of established scientific facts to human living; that is, by living in a strictly biologic or physiologic way.

This booklet is a brief summary of more than a half century's search for the right way to live. The writer, now in his 84th year, has devoted his whole life to an intensive study of human habits and living conditions in their relation to health. With the cooperation of hundreds of interested and intelligent colleagues, the Battle Creek Sanitarium, of which the writer has been Medical Director since October 1, 1876, has been made a center of research, experiment, clinical study and adventure in the fine art of biologic living.

Laboratories have been fitted up and provided with the most elaborate and up to date appliances for chemical, nutritional and physiologic research and placed in the charge of trained experts, some of international fame. Close touch has been maintained with the great research laboratories of the world and a constant wide survey made of scientific literature. New discoveries bearing on health have been tested and when found meritorious adopted. More than a million dollars has been

expended in this world wide search and intensive research. Among the practical results may be mentioned the Battle Creek Sanitarium where more than 300,000 persons have been treated, which has grown in 60 years from a small two story frame building with 12 patients to its present proportions with accommodations for 1200 patients. The treatment of these patients by physiologic methods and health training in accordance with biologic principles and methods has afforded an excellent opportunity for testing and validating the methods and ideals presented in this booklet as means of aiding chronic invalids to recovery.

Battle Creek College, with its Schools of Nursing, Home Economics, and Physical Education in addition to the usual Liberal Arts Departments and a student body of nearly five hundred with more than 4,000 graduates from its schools scattered over the whole civilized world and to be found in every mission field, is another notable result of the Battle Creek scientific health movement. The fine resident student body of Battle Creek College not only study the principles of biologic living but live them and grow enthusiastic in their appreciation of their basic soundness and rationality.

Out of this work has also grown the great food industries which have made Battle Creek known throughout the world for its unique and wholesome food products. This work, begun at the Sanitarium, is continued in the laboratories of the Battle Creek Food Co.

Finally may be mentioned a great number of health promoting methods and appliances, electrical, mechanical and physiotherapeutic, some of which are found in every hospital and in many doctors' offices. Among these might be mentioned the electric light cabinet and other light appliances, the sinusoidal electrical current, and numerous mechanical devices.

The results of the practical application of these biologic methods in restoring to health and efficiency many thousands of chronic invalids who had been regarded as incurable has created a wide demand for a brief epitome of the Battle Creek Idea of right living which is the occasion for the publication of this booklet. A full account of the technic of "biologic living" will be found in the writer's recent volume "How to Have Good Health" and in other books, a list of which will be found on the third cover page of this booklet.

The monthly magazine Good Health, edited by the writer for more than 60 years, and the Battle Creek Sanitarium News present a popular account of practical biologic methods and of the most recent discoveries and advances.

Those who desire further information about biologic living or suggestions for health training at home are invited to write to us with the assurance that their inquiries will receive without charge, courteous and competent attention since the Battle Creek Sanitarium and its allied health activities are purely philanthropic enterprises devoted to the extension of health promoting ideals and race betterment.

Address Battle Creek Health Extension Bureau

The Battle Creek Idea

Biologic Living. What It Is

Biology is the science of life.

Biologic living is the science of right living.

We study the biology of our horses, cows, pigs, and chickens, and feed them and care for them scientifically, that is, biologically. And in consequence we have the most wonderful horses, cows, pigs, and chickens the world ever saw. But we forget that we have a biology of our own, a way of life peculiar to our species, a diet specially suited to the genus homo sapiens, a regimen and environment to which we are by nature adapted, which belongs to us.

In consequence of our neglects, the human race is becoming dwarfed and weazened, neurotic, daft, dyspeptic, and degenerate and according to the eugenists is doomed to extinction. In other words, while our humble relatives are through scientific, biologic living rising in the scale of being, we, their masters, the lords of creation, are going down because of our neglect to obey the laws of life and health.

Biologic living is not an innovation. It is simply a return to the "old paths" from which the perversions of our modern civilization have gradually diverted many millions of men and women, perversions that are responsible for the multitudinous maladies and degeneracies which yearly multiply in number and gravity.

Biologic living means health, comfort, efficiency, long life. It means good digestion, sound sleep, a clear head, a placid mind, and joy to be alive.

To live biologically is simply to treat one's body in a natural or physiologic way. What more sensible thing can one do than to cherish

and develop and make wise use of all his physical powers, in other words, becomes a health aristocrat?

Tens of thousands of men and women, through adherence to biologic principles, have been delivered from feebleness, misery and inefficiency and brought to the enjoyment of stable and exuberant health, the real joy of living. The reader is here invited to enter upon the same experience.

Why a Change Is Needed

There's something seriously wrong with the world. The birth rate is diminishing and so rapidly that according to Prof. Wilcox, of Cornell University, by the year 2,000 A. D., no babies will be born. Lunatics, idiots and epileptics are increasing at such a rate that, if continued, in less than 250 years the world's population will consist chiefly of lunatics, idiots and epileptics. Man, once the longest lived and toughest of all his compeers in the animal kingdom, has become a short-lived and puny representative of the genus homo, and is, according to Prof. Darwin, of Oxford University, son of the famous Charles Darwin, Prof. C. B. Davenport, of the Carnegie Institute, and other leading scientists, hastening down the hill of race degeneracy to extinction.

George Ade, the humorist, says the average man is dead at 30 and buried at 60. Certainly the average man is less than half alive during the last half of his life. This half alive condition is the result of unnatural living.

In the development of civilization, living habits and conditions have been chiefly dictated by chance, taste, fancy, convenience, economy, fashion, rather than by considerations of health or biologic adaptation.

To those who hesitate to adopt new habits, especially in diet,

we commend the following observations by that noblest of Roman sages, the wise Seneca, who, like Pythagoras and Socrates, lived a biologic life:-

"There is nothing against which we ought to be more on our guard than, like a flock of sheep, following the crowd of those who have preceded us, going, as we do, not where we ought to go, but where men have walked before.

"We shall recover our sound health if only we shall separate ourselves from the herd, for the crowd of mankind stands opposed to right reason-- the defender of its own evils and miseries. The very fact of the approbation of the multitude is a proof of the badness of the opinion or practice. Let us ask what is best, not what is most customary."

We grow old prematurely because we depart from the simple, economic ways of Nature which make small demands upon the life mechanism, especially those highly essential viscera, the liver, kidneys and heart, load the body down with unnecessary work in the disposal of excess, and especially the elimination and destruction of poisons generated in infected colons, duodenums, gall bladders and other organs which often become the seat of germ infections and incubators of parasitic bacteria and their venomous products.

Anything which lightens the load on the overworked viscera, promotes rejuvenation and length of days. It is this that gives the vacation its value as a means of recuperating wasted energy. Recreation we call it, not realizing the full significance of the word re-creation, a renewal of the wasted energies and depleted body. The vacationist returns to his task looking and feeling younger, and that very often in spite of the fact that he has continued to smoke, drink coffee and perhaps cocktails and to do

many other things against the best interests of the body.

Biologic living is simply conforming not to a few only, but to all the rules of physiologic living.

The biologic life is not at all a hardship. It is a most delightful experience. It does not require any sacrifice. It simply replaces harmful ways for wholesome ones which are not merely equally enjoyable but far more delightful. It is not, for example, an abandonment of gustatory pleasures, but an acquaintance with new and even more delightful ones. And the results in relief of headaches, gastric miseries and other ills is so prompt and so pleasing that satisfaction and enthusiasm grow with each day's experience.

The Proofs

The soundness of this philosophy of physiologic rectitude which has been worked out at the Battle Creek Sanitarium during the last half century has been proven in the experience of tens of thousands of intelligent men and women among the more than a third of a million persons who have entered the doors of this university of health.

To watch the transformation of this sick and often despairing throng of suffering men and women from invalidism with all its helplessness and miseries into healthy, happy and useful people, has been a delightful experience. The change from a disease promoting regimen and harmful habits to health building habits and regimen has been the chief factor in giving to the institution such a degree of success that without endowment or gifts, except from its managers and workers, it has grown from its beginning in 1876 in a small two story building with a few cottages and a dozen patients to the largest sanitarium in the world, drawing patients from every part of the globe, at the rate of 10,000 to 12,000 a year.

And among the rest have come many notable people, such as Sir Horace

Plunkett, Fellow of the Royal Society and Member of King George's Privy Council and Minister of Agriculture for Ireland, who was sent to the Sanitarium by the King's physician, Lord Dawson of London, Jacob Reis of New York, the civic reformer, Dr. Stephen Smith, founder of Bellevue Hospital and of the American Public Health Association, John D. Rockefeller, Jr., the world's greatest philanthropist, who, although not sick, desired to learn how to live and who still adheres to the biologic way as do many others of the country's most eminent statesmen, and not a few of its leading scientists and educators.

The fundamental principle of the Battle Creek Idea is to follow Nature, to live close to Nature, to cultivate natural tastes and habits, and to establish strict taboos against everything which lays upon the body unnecessary burdens to hamper its functions, clog and cripple its delicate machinery and wear it out prematurely, a category which includes not only alcohol, tobacco, tea, coffee and chocolate, but pepper and other hot and irritating condiments, unnatural foods such as meats, unsafe foods such as market-contaminated fruits and vegetables, unless disinfected, denatured foods and culinary monstrosities.

The idea is by no means new. It did not originate at Battle Creek nor in recent times. As man has advanced in civilization, he has left behind many of the good things which he enjoyed in his primitive state and has adopted many perverse ways and harmful practices which have created a thousand maladies and become the cause of untold miseries.

Begin the Biologic Life Today

And why not begin today? If you could know thehappy experience that awaits you, you would start at once. It will be a delight to feel the headaches and backache, weariness and dullness, lack of zest and pep and a hundred other miseries one by one slipping off and a sense of returning youth taking their place. Rejuvenescence is what you need, and

through natural living you may reasonably expect to find it. Benjamin Franklin tried it. Through biologic living when a boy, to which he was led by reading the writings of a pioneer diet reformer, he became a model of vigor and endurance and laid the foundation for his amazingly active and successful career. In his prosperous old age he departed from the simple wholesome ways of his youth and became so badly crippled with rheumatism and gout that at 70, as he wrote his wife when 74, he found himself so ill that he felt sure he would soon reach the end of his career unless he made a radical change. He returned to the simple biologic habits of his youth and, as the result was able to report to his wife, "I have walked back four years so that you may now consider me as 66 instead of 74."

Biologic living is the only road back toward youth and health and all the felicities associated with a sound mind in a sound body.

How to Begin

Make a survey of yourself and your surroundings.

Take an inventory of your knowledge about health and conditions which promote physical well being.

Look over your library and see that it is supplied with up-to-date health literature from a dependable source.

Get in touch with your State Board of Health and read the literature the secretary will send you.

Visit your family physician or the best physician available and have a thorough examination of your heart, lungs, blood, blood pressure, urine, every organ and function. Don't be satisfied with an ordinary cursory examination, but find out everything you can about yourself. Repeat the examination at least once every year.

Very few people are perfectly well even though they feel no discomfort. The early or so-called "little symptoms" of disease often pass unnoticed long after they are discoverable if carefully looked for by an up-to-date physician aided by up-to-date diagnostic appliances.

Carefully consider your habits,-- do they tend toward health or disease? Resolve to eliminate every disease-producing factor, to cultivate health, to fight disease, and to make this a part of your daily program.

Concentrate on health. Read what you find about health in magazines and newspapers. Don't believe all you read, of course, but discuss it and accept what appeals to your good sense, but avoid sensational ideas and fads.

Become a health enthusiast. After you have read, reread and studied carefully this booklet, make a list of your defects and set to work systematically to correct them. Resolve to become a real health aristocrat, to enjoy not simply comfortable health, but the super health which results from meticulous attention to health culture.

THE RULES

1. Breathe Deep. Take a dozen deep breaths everal times a day; several times an hour is better.

Taking a deep breath is like blowing a smoldering fire. It brightens the vital flame. Deep breathing does more. It gives the liver a hearty hug and compresses and sucks the stagnent blood out of it and sends it on its way to the lungs to be emptied of its poisonous gases.

Deep breathing is an important aid to the heart. The chest is a blood pump as well as an air pump, and so deep breathing helps the heart.

Deep breathing aids the elimination of residues. Each breath

pushes along in the colon the unused remnants of foods and other residues which are eliminated through the bowels. Every deep breath gives a little push. Exercise helps bowel action by inducing deep breathing.

2. Work, play, read, study, and rest in the open air.

Do your work under the trees instead of behind doors and opaque walls. Dig in the garden, explore the woods and hills. Follow the brooks, watch the squirrels and learn the songs of the birds. If compelled to remain indoors, be sure that the living and work rooms have an ample, continual supply of fresh moving air. The lower the temperature the better, so long as the body is kept comfortably warm. Temperatures much above 70° are depressing.

Sleep in the Open Air

Fix up a sleeping-porch or a balcony and so take an outing all night long and every night, and don't move inside when frost comes. Outdoor sleeping is one of the best life-preservers known.

3. Take a sun bath often enough to keep the skin well browned.

In the warm months take a good sun bath once a week at least. Don't be afraid of getting slightly sunburned. No harm will result except a temporary inconvenience from skin irritation. A sunburn is a solar erythema and not a real burn. It does not destroy the skin as does a true burn. Expose the skin to the air and the sunshine as much as possible. The skyshine is highly beneficial as well as the sunshine. A mild "sun burn" increases immunity (Hill).

About Eating

4. Eat what you like; that is, food which you can relish. Food must be well relished to be well digested. The taste and the odors of foods if agreeable, cause the saliva and gastric juice to flow. "The mouth waters" and the stomach also. The "appetite juice" thus formed,

even before the food reaches the stomach, is the most active agent in gastric digestion. Says Pavlov, "Appetite means juice."

5. Prefer Natural Foods

Use the same good sense and judgment in feeding yourself that you do in feeding your dog, a pet canary or a prize winning horse. Primitive man ate his food as he found it prepared for him in the forest. In other words, he ate all his food in a raw or natural state. We cannot easily do this, but may profit greatly by eating largely of natural uncooked foods.

Biology teaches that man's natural diet is the same as that of his nearest relatives, the primates, such as the gorilla, the chimpanzee, the orang-utan and the gibbon, viz., fruits, grains, nuts, tender shoots and succulent roots (Cuvier, Buffon and other naturalists) rather than meats.

6. Avoid too Much Protein

The daily amount of protein required is small compared with that of other food elements. An ample amount is supplied by such foods as bread and other cereals, beans, peas, soy beans, supplemented with the proteins of milk, soy bean milk or nuts to insure good nutrition. A pint of milk or soy milk daily or three or four ounces of nuts or two of soy beans taken with plenty of other foods will amply supply all the protein needed and of excellent quality.

7. Avoid meats, fish, flesh and fowl because they are unnatural foods and hence not well adapted to man's use as are natural foodstuffs. Here are other good reasons:

(1) Meats are very deficient in vitamins and lime. The iron of meat is of an inferior sort. Meat eating animals suffer most from pernicious anemia.

(2) Lean meat contains uric acid (14 grains to the pound) and other harmful toxins and tissue wastes-- about one-fourth of its weight. When fed to mice, this material causes nephritis in a few days.

(3) Fresh meats are grossly infected with colon germs during or after killing. Ordinary cooking does not kill all the colon germs of meat, which in some meats outnumber those in animal droppings.

(4) The meat-eating Eskimos are short lived-- old at 50 and worthless at 55 years (McMillan). Stefansson's meat-eating stunt, performed for the meat packers, was a shabby fake.

(5) Bright's disease is most frequent in meat-eating countries (Hindhede).

(6) Meats, especially pork, are often infected with living parasites. The pork parasite, trichina, is spreading rapidly. Government inspection has failed to stop it and has been abandoned and hence all pork is dangerous. The government warning to avoid eating raw pork is insufficient. All pork is dangerous. Ordinary cooking does not kill all the parasites. The sale or use of pork as food should be forbidden.

Eggs

8. Do not use eggs freely. They may be discarded without injury if care is taken to provide sufficient protein, iron and vitamins by the use of nuts, soy bean milk and plenty of green vegetables.

Infected eggs cause colitis. According to Tissier of the Pasteur Institute, most eggs are infected. The yolk of the egg is more wholesome than the white when it has been hard boiled. Raw eggs encourage intestinal putrefaction. Avoid egg-nog.

Milk--Dairy Products

9. Cow's milk disagrees with many persons. In the case of a person suffering from hyperacidity, large hard curds are often formed

which are difficult of digestion and encourage intestinal putrefaction and biliousness. Many persons are sensitized to cow's milk and cannot make use of milk in its ordinary form without headache, constipation, asthmatic attacks, skin eruptions, coated tongue, or other unpleasant symptoms.

Boiled milk is often less objectionable than raw. A small portion of good cream or buttermilk often causes no inconvenience. Sometimes cottage cheese or cream cheese may be safely eaten by persons who cannot eat ordinary milk.

Persons who discard meat may make sure of getting an ample amount of "complete" protein by using daily from a pint to a pint and a half of milk. When dairy products or eggs are eaten, meat is superfluous.

Milk may be replaced by milk prepared from nuts (malted nuts, almond cream) or the soy bean (soy milk, soy acidophilus milk) which has been in use in Oriental countries for thousands of years with entire success as a substitute for dairy products.

Many persons, including the author, have found it highly profitable to dispense with animal products of every sort, practically excluding from the dietary eggs and dairy milk as well as fish, flesh and fowl. It should be noted that such a restriction of the diet requires careful balancing of the bill of fare by a trained dietitian.

Butter and Other Fats

10. Give preference to vegetable fats, excepting butter. Animal fats, with the exception of butter, are less wholesome than vegetable fats and less digestible. Tainted butter or other rancid fats, either animal or vegetable, are harmful. Fats generally lack vitamins and should be supplemented by carrots, spinach or tomatoes.

Butter is an important source of vitamins A and D.

Nuts and nut emulsions (almond cream, malted nuts, nut butters)

are excellent sources of easily digestible fats. The soy bean contains 20 per cent of an exceptionally fine fat which is rich in lecithin.

The actual fat requirement is very small when greens and carrots are eaten freely to supply the fat soluble vitamin. It is well to add wheat germ.

Cereals--Bread and Breakfast Foods

11. Avoid very free use of cereals. Bread and breakfast foods are cheap and concentrated sources of nourishment, but contain an excess of phosphoric acid and when used too freely tend to cause acidosis. Whole meal or graham bread, wheat flakes, bran flakes, shredded wheat, and rice (preferably unpolished) are the best cereals, but they should not be made the chief sources of nourishment. Eat less cereals and more potatoes.

Raw starch is not easily digestible. For this reason, unripe fruit is unwholesome when eaten raw. Bananas, which are usually eaten before becoming fully ripe, often disagree for this reason.

12. Restrict the Use of Cane Sugar. Carbohydrates in the form of sugar are attractive on account of their sweetness.

There are five food sugars,--cane sugar (white or granulated sugar, brown sugar, beet sugar, molasses, syrup, raw sugar, maple sugar, maple syrup, sorghum); malt sugar (maltose, malt syrup); fruit sugar (lactose), found only in milk.

Of the five, cane sugar is least wholesome. Taken in concentrated form, as usually eaten, it irritates the stomach and encourages infection of the stomach, duodenum and gall bladder.

Malt sugar is the natural sugar of the body, being produced in abundance when starch is digested by the saliva, the pancreatic juice

and the intestinal juice. It is digested and absorbed much more quickly than cane sugar.

Fruit sugar is of all sugars the sweetest and the most easily assimilated. It requires no digestion,-- is ready for immediate absorption.

Dextrose or glucose is less sweet than cane, malt or fruit sugar, and in its pure state as found in fruits, requires no digestion.

Milk sugar, although least sweet, is one of the most important of all the sugars. It is provided by nature not only as a carbohydrate food for the infant mammal, but as a nutrient for the protective germ, the Bacillus acidophilus, which combats putrefective, pus-forming and other disease-producing germs in the intestine, thus preventing the development of putrefaction and infection in the intestine. By the liberal use of this sugar, bottle-fed infants, older children, and adults may enjoy much the same protection against colitis, appendicitis, and other intestinal infections, as have breast-fed infants. Ordinary milk sugar has little sweetness. A recent discovery makes it possible to make lactose three times as sweet and three times as soluble by converting it into beta-lactose, sometimes commercially known as B-Lac, which is excellent for table use in place of cane sugar.

Green Vegetables

13. Make fresh green vegetables a part of every meal because of their richness in vitamins and food minerals, of which they are the chief source. At least one fresh uncooked food such as lettuce, celery, cabbage, carrots or cucumbers should be eaten at every meal. It is a good plan to make at least one meal consist largely of uncooked foods. The juice of the raw turnip and other vegetables is most excellent. Sauerkraut juice has little value and contains too much salt.

Fresh Fruits and Fruit Juices

13. Make fresh fruits or fruit juice a part of every meal. Of highest value are the orange, grapefruit, apple, and tomato. Canned tomato juice is nearly as good as fresh juice. Eat very freely of all fresh fruits in their season. Such juicy fruits as apples, citrus fruits, peaches and melons may be eaten at any time as well as at meals. They require little digestive work.

Bulkage Foods

14. Eat bran or other bulkage freely to encourage colon activity. The natural unprocessed bran is most efficient. Fresh fruits and vegetables have value, especially berries, prunes and figs, but the hemi-cellulose of fruits and vegetables is digestible. Wheat bran is more efficient because its cork cells are indigestible. It may be made a part of every meal by most persons with great profit. It is best to take it at intervals during the meal so that it will be thoroughly mixed with the rest of the food, thus avoiding impaction. For a like reason mineral oil is often needed with bran and other bulkage. Agar is also useful. Psyllium seed is highly efficient. Paramels, a paraffin oil which melts at the temperature of the body, is more efficient as a laxative than the ordinary forms of paraffin oil, and has the advantage that it is active in smaller amounts, and that it does not leak or cause "accidents."

15. Food Combinations. Do not forget that the proper combinations of foods are necessary to insure a complete assortment and abundant supply of all the needed vitamins and food minerals as well as the necessary protein, starch and fat required for tissue building and energy production.

Ignore the current notions about food combinations. It is an error to suppose that fruits and vegetables should not be eaten together, or that starch and protein are a bad combination, or fruit acids with starches

unwholesome, or acids and milk indigestible. Fruits and vegetables agree perfectly if thoroughly chewed. Fruit acids do not prevent the digestion of starch.

Starch and proteins are associated in normal foodstuffs. A meat and bread diet causes acidosis.

How Much to Eat

16. Be careful to eat enough but not too much. A good rule is to leave the table while still able to eat more. Never eat so much as to feel a sense of discomfort or to cause dulness or drowsiness. The amount of food needed depends upon the age, size and activity of the individual. Men need more food than women because they are larger and use their muscles more. Children need more in proportion because they are growing. The individual requirement may be determined by reference to the accompanying tables (See back of booklet). The energy value of the ration may be determined by multiplying the normal weight for a person of the given height by 14. This gives the total number of calories required. Of the energy value of the food (calories) one-tenth may be protein, three-tenths fat and six-tenths carbohydrates.

17. The following represents the food needs of an average adult weighing 136 pounds doing light work:

A day's bills of fare

Breakfast

Dinner

Supper

Hard muscular work requires one-third more food or even more. Mental work requires little more food than loafing.

After 50, the food requirement is about half that of middle age.

18. Weigh once a week. Consult table of heights and weights (See Appendix).

If 5 to 10 per cent underweight, be thankful if over 40 years. If under 30, eat more, especially of carbohydrate foods (See Appendix).

19. Masticate thoroughly. Every morsel of food should be chewed until it becomes a smooth puree or semi-liquid in the mouth. Thorough chewing greatly aids digestion and will cure many cases of indigestion. Tasting and chewing the food cause the gastric glands to pour out their secretion and stimulate the colon to push its contents along and so aid bowel action. Careful mastication affords opportunity for the nutritive instincts to select the food and food elements adapted to the body needs, and to say "Enough," at the proper moment. Hence, give preference to dry foods. Sip liquid foods slowly.

20. Be careful to balance the bills of fare.

(a) For protein, fats and carbohydrates. Although protein is a highly essential food element, there is little danger of a deficiency, as the amount needed is comparatively small, not more than one-seventh by weight of the total ration, and not more than one-tenth of the energy value (calories). Even the potato, cabbage, beet, parsnip, carrot and the humble pumpkin contain the requisite amount of protein and of excellent quality, while bread offers an excess. One egg, a glass of milk, an ounce of soy beans or a small handful of nut meats in addition to ample meals without meat will insure an intake of all the protein the body can utilize.

The amount of fat may be greatly varied without injury. One-tenth the water-free weight of the daily intake is ample. The body can make

its own fat from starch and other carbohydrates.

Carbohydrates, chiefly starch, make up three-fifths of the total normal ration (energy value) and are the body's chief source of heat and energy.

(b) <u>For all vitamins</u>, A, B, C, D, E and G. For A, by use of butter, cream, and greens; for B, by fruit juices, greens, bran, yeast and yeast extract (Savita, Marmite); for C, by fresh fruits and vegetables and their juices, especially orange or lemon juice, tomato, turnip and cabbage juice; for D, by use of butter, greens, and radiated foods; for E, wheat germ.

(c) <u>For food lime</u>, by free use of greens, dairy milk, soy beans, whole grains and fresh vegetables. For food iron use freely, greens, egg yolk, wheat flakes, bran flakes, Krusty Bran, shredded wheat, oatmeal, raisins, dates, figs.

(d) <u>For chemical balance</u> make the chief constituents of the bill of fare consist of fresh fruits and vegetables, avoiding meats and eggs and excess of cereals.

<u>Things to Avoid in Eating</u>

21. <u>Avoid condiments</u>-- mustard, pepper, pepper sauce, cayenne, capsicum, vinegar, hot, irritating sauces, and spices of all kinds. All hot sauces must be wholly discarded. They irritate the stomach and cause gastric and intestinal catarrh and gastric ulcer, colitis, and damage to the liver and kidneys.

22. <u>Avoid free use of denatured foods</u> such as fine flour bread, new process corn meal, polished rice, corn starch, tapioca, lard, refined sugar. Use instead, whole meal cereals, raw or unrefined sugar, maple sugar, honey, and sweet fruits, malt sugar, milk sugar (lactose, lacto-dextrin, beta-lactose).

23. Avoid richly and highly seasoned dishes, sauces, fried foods and flaky pie crust. They are most indigestible.

24. Avoid many varieties and dishes at one meal, but also avoid a monotonous diet. Vary the diet from day to day.

25. Avoid poison-containing foods. Vinegar and foods pickled in vinegar are indigestible and interfere with the gastric digestion of starch. Pieplant and sorrel contain oxalic acid, an active poison which arrests starch digestion. Death has been caused by pieplant greens, and acute and fatal relapse in cases of Bright's disease by use of stewed pieplant.

26. Common salt, or chlorid of sodium, should be used sparingly. According to Richet and others, the food naturally contains all the chlorid of sodium actually required by the body, so that the addition of salt to the food is necessary only to please a cultivated taste. A safe rule is: The less salt the better. Persons who have dropsy, Bright's disease, arteriosclerosis, gastric ulcer, hyperacidity. obese persons and epileptics should discard salt entirely.

27. Avoid use of beef tea, bouillon, chicken and other animal broths. They have practically no food value but consist almost exclusively of extrectives or tissue wastes. The composition of bouillon is practically the same as that of urine. One is an extract of flesh made by the kidneys, the other by the cook. The most eminent French and English physicians condemn their use as did the late famous Dr. Austin Flint, Sr. of New York. Good extracts of brewers' yeast (Wavita, Cenovis) supply a similar and better flavor together with the highly important vitamins (A and C), of which it is the richest source.

28. Avoid irregularity of meals. Food should be taken at regular intervals to insure regular evacuations of residues. It is especially

harmful to take meals too near together, thus introducing food into the stomach before the previous meal has passed out. It is desirable that the meals should be so spaced that the stomach may be completely emptied for at least a half hour before a new meal is taken.

Eat when hungry, never because it is mealtime or because invited to eat. When appetite is lacking, eat fruit and bulkage, avoiding much protein and fats. Remember that food must be well relished to be well digested. According to Pavlov, "appetite juice," which is produced by stimulation of the nerves of taste by palatable food, is the most important factor in gastric digestion.

If the tongue is coated, clear the bowels by enema or irrigation. Cultivate appetite by exercise and cold bathing.

29. Eat at regular hours to help maintain the normal intestinal rhythm of three daily movements of the bowels. Rather than omit a meal entirely eat some fruit, or a cake of Laxa with fruit juice, or some other simple nutrient which will keep up the peristaltic procession and rhythm. Never take food into the stomach when remains of a previous meal are present.

30. A good plan, especially for sedentary persons, is to eat twice a day, 8:00 A. M. and 1:00 to 3:00 P. M. or 11:00 A. M. and 5:00 P. M. if the retiring hour is necessarily late. When breakfast is omitted or taken very late, it is an excellent plan to take some fruit soon after rising.

31. If you eat three meals a day, take the heartiest meal at noon. The breakfast should be substantial, the evening meal very light especially avoiding pastry, fats, rich sauces, and hearty foods. If troubled with insomnia, make the last meal consist chiefly of ripe or cooked fruits, liquid foods, and such cereals as boiled rice or cereal flakes. Avoid pastry. Do not eat hurriedly nor just before retiring. A ten minutes'

nap after dinner is not objectionable, but long sleeping after meals is harmful.

Eating a little fresh fruit half an hour before retiring encourages bowel action.

33. Avoid eating too fast. Chew every morsel until reduced to liquid in the mouth. Thorough chewing develops "gastric juice" in the stomach and combats intestinal autointoxication, a most prolific cause of disease. Careful mastication affords opportunity for the nutritive instincts to select the food and food elements adapted to the body needs, and to say "Enough" at the proper moment. Hence, give preference to dry foods. Sip liquid foods slowly, taking care to insalivate thoroughly. It is advantageous to take liquid foods like milk through a straw or small glass tube to insure admixture of saliva.

34. Dismiss worries and annoyances while eating. Good cheer promotes good digestion. Anger, worry, and irritation stop digestion.

Water-Drinking--Beverages

35. Take three or four pints of water a day, including liquid food. Take a few sips whenever thirsty. It is a good plan to drink a glassful of water on rising in the morning, on retiring at night, an hour before each meal, and each time the bladder is emptied.

The chief object in drinking at meals is to refresh the sense of taste. Cold increases nerve sensibility. It is for this reason that cold drinks are preferred. Small sips of cold or even iced water refresh the mouth and do no harm. Drinking much cold water at meals hinders digestion.

Exercise

36. Do some good, hard muscular work every day, enough to produce slight muscular fatigue and free perspiration, but avoid exhaustion.

Walking, housework, gardening, farm work, ordinary laborer's occupations are excellent forms of exercise. In walking, always hold the chest high and carry it well to the front. Swing the arms moderately and walk fast enough to hasten the breathing a little. Nine miles walking a day at the rate of three miles an hour is the necessary amount for the average adult. Most housekeepers and laborers do more. Rapid walking and hill climbing are excellent; stair climbing is good.

Working in the open air is one of the best forms of exercise, especially working in the garden, digging, hoeing, pruning, etc.

For persons advanced in years, walking, horseback riding and bicycle riding are excellent exercises, practiced in moderation.

37. Develop the abdominal muscles by some simple exercises, such as walking on tiptoe with the chest held high, or running round the room "on all fours"; or lying on the back, hold the legs straight and raise them to the perpendicular, repeating thirty to forty times three times a day. Then raise the body from the lying to the sitting position with the hands placed upon the back of the neck. Repeat ten to twenty times three times a day, gradually increasing the work from day to day. The Health Ladder is a good health trainer for daily practice (phonograph records).

38. Practice deep breathing with chest well expanded and clothing removed or loosened, several times a day. Hold the chest high and breathe as deep as you can ten or twenty times every hour or oftener.to develop the lungs and to keep the chest walls flexible. Stimulate the lungs by exercise for a few minutes several times a day sufficiently vigorous to cause quickened respiration. The best "breath" gymnastics are swimming,

hill or stair climbing and running or rapid walking. Always breathe through the nose.

Posture

39. Always sit erect, with chest held high and the small of the back supported. Sit as little as possible. Standing and lying are more natural and healthful positions than sitting.

When sitting or standing, keep the body erect.

In standing, hold the hips well back, the chest forward, the chin drawn in.

In sitting, do not slump, but keep the chest up. This requires an effort which becomes tiresome if long continued, unless proper support is given to the lumbar spine or so-called hollow of the back. To keep the shoulders from dropping forward and flattening the chest, support should be given to the upper spine between the shoulder blades.

A chair constructed so as to support the lower back and the upper spine will hold the body in perfect position when completely relaxed as is necessary for complete rest. Such chairs are now available.

Rest and Sleep

40. Learn to relax both mentally and physically. Merely stopping work is not sufficient if "tension" continues. This is especially true of vocations which do not involve much muscular effort. It is a good plan to lie down and relax completely with the eyes closed in a cool, quiet place for half an hour in the middle of the day. Very arduous occupations require a short rest at more frequent intervals. Practice deep breathing while resting and not asleep.

41. <u>Avoid long periods of strain, mental, nervous or physical, and especially avoid overstrain.</u> The effect is likely to appear later in

premature mental or nervous breakdown.

42. Make the weekly Sabbath a day of complete rest from work. Spend most of the day out of doors if possible. Take a half day off for an outing in the middle of the week.

43. Sleep 8 hours each night. Elderly persons need 9 or 10. If not strong or if neurasthenic, sleep an hour before dinner. An hour's rest in the horizontal position is very refreshing, even without sleep.

Growth, assimilation and repair are most active during sleep. The nerve and brain storage batteries are recharged during sleep.

Surroundings at night should be quiet. Sleep amid noise is not normally refreshing.

On the side is the best position during sleep for most persons. Change sides.

The bed should be neither too hard nor too soft. Avoid feathers. The covers should be dry, warm, light and porous. Avoid overheating by excess of clothing. Use a thin pillow and discard bolsters. A sand bag at the back aids relaxation.

Provide an abundant supply of outdoor air during sleep by means of wide open windows, a window tent, a fresh-air tube or a sleeping baleony.

To insure sound sleep at night empty the colon at bedtime (by enema if necessary) and avoid late and heavy meals. A fruit supper is conducive to sleep.

Clothing

45. <u>Avoid too much clothing</u>. Over-heating is depressing. Dress according to the temperature and weather, regardless of the season, and do not slavishly follow the fashions but dress for health and comfort.

The clothing should be loose, comfortable, light and porous. Restrictive clothing is necessarily damaging. The trunk of the body when in action is continually changing in form and size. Wear porous cotton underclothing next the skin. Avoid waterproofs except for temporary protection. Clothe the extremities so as to keep them always warm and dry.

44. Use care in selecting footwear. Avoid shoes with high heels or narrow toes. Wear shoes with broad soles, low heels and a stiff shank. Avoid flexible shanks. They cause flat feet. If the feet ache from long standing or walking, have them examined by a good foot specialist. Great harm may result from neglect. Sandals are most healthful.

If you have flat feet, wear Chinese slippers.

The Toilet

45. Cleanse the mouth and teeth thoroughly before and after each meal, on rising and on retiring. A foul tongue and decaying teeth indicate mouth infection and intestinal autointoxication and general low resistance. Diseased teeth often cause rheumatism, neuritis or heart disease.

46. Bathe daily at night in warm weather. Twice a week in winter take a warm, cleansing bath before retiring. If the skin is dry and irritated, apply lanolin cream, of which the following is the formula:

Lanolin	2 drams
Boroglyceride	1 dram
Cold cream	6 drams

47. Keep clean. Always avoid so far as possible any contact with infectious material. It is to be remembered that the risk of contamination is especially great in visiting a public water-closet, or, in fact, any other.

48. Take a cold bath on rising to set the vital machinery in motion. Young and robust persons may take a plunge in a bath tub or swimming pool. Elderly and feeble persons may rub the body with the hand dipped in cold water or with a dry towel in a cool room.

49. For the hands, use a good soap and rinse well with soft water. If rough, apply skin cream (as given above).

50. Cleanse the anal region after bowel movements by washing. This is the universal practice in India. If hemorrhoids are present, apply carbolated vaseline as an antiseptic after every bowel movement.

Colon Hygiene

51. Move the bowels at least three times a day,-- after each meal. Visit the toilet regularly after eating, on rising, and before retiring at night. Do not wait for a call.

52. When a "call" is experienced, respond immediately. Five minutes may postpone action indefinitely. Support the feet on a stool before the closet seat.

After the bowels have moved, observe the results. The stool should be ample, soft, never hard or lumpy and should have little or no odor, and there should be no mucus present.

Putrid, foul-smelling stools are an indication of intestinal auto-intoxication, and are due to an excess of protein (meat or eggs) or of decay due to stasis or stagnation in some part of the colon. Such a condition always breeds disease and indicates need for a "change of flora." Write for instruction how to change the flora and keep it changed.

53. Once or twice a week test the intestinal "motility" by taking at breakfast one or two five grain capsules of carmine at breakfast. Note the time required for the red color to disappear from the stools.

More than 24 hours indicates delay and resulting putrefaction of residues and need to "change the flora" and increase bowel activity.

54. Never go to bed with a loaded colon. If necessary empty the colon by a succession of enemas. If carmine has been taken at breakfast, repeat the bedtime enema until the red color is practically absent when the water returns. See Appendix, "How to Take an Enema."

Important to Avoid

55. Avoid alcohol in every form. It is not a stimulant, but a narcotic. It is not a food. It is not a remedy for any disease. It hinders digestion, weakens the heart, lessens strength and endurance, dulls the brain, perverts the judgment, blunts all fine sensibilities, is an enemy of health, intelligence and morals and of all human welfare interests and progress. It is public enemy No. 1.

56. Avoid tobacco. This baneful drug is used, aside from smoking, for nothing else but to kill things. It is an excellent insecticide. The farmer, the horticulturist, and the market gardener could hardly get along without it. It is a heart poison, a nerve poison, a muscle poison. It raises blood pressure, shortens life, and is a leading string to vice. Said Tolstoy, "I never had a twinge of conscience after the third whiff." Do not permit yourself to be fooled by the "moderation" delusion. There may be excess and moderation in the use of food and other wholesome things, but use of a poison in any quantity is excess. Beware of "denicotinized" cigars. They all contain nicotine in harmful quantities.

57. Do not drink tea, coffee, cocoa or maté. All these drugs contain poisons which raise the blood pressure, cause insomnia, indigestion, trembling and nervousness, lessen endurance and hasten senility and wrinkles. Roasted cereal coffees are not wholly free from objectionable qualities. Kaffee Hag contains less caffein than ordinary coffee, but is open to other objections which prohibit the use of coffee. Cereal coffee

prepared without roasting (Minute Brew) may be used in place of coffee, but it is better to overcome the taste for coffee and to take in place of it such wholesome substitutes as hot fruit juices or vegetable bouillon prepared from yeast extract (Savita) and fragrant herbs.

58. Avoid nostrums and patent medicines. The habitual use of any drug is harmful. Very few drugs have any real curative value. The essential thing is right habits, biologic living, removal of causes.

59. Avoid especially sleep-producing drugs, "tonics" and so-called nerve stimulants. They are all nerve-foolers. "Tonics" do not increase strength, but lessen it. Hypnotic drugs do not cure insomnia, but tend to aggravate the disease and make it more chronic. All sleep-producing drugs are depressing agents.

60. Avoid pain-relieving drugs unless prescribed by a physician. Most pains can be wholly relieved or very greatly mitigated by harmless means. One of the best is applications of heat. The habit of using aspirin and various other drugs for headache and other discomforts is most harmful. The proper thing to do is to seek out the cause of the pain or other symptoms and to remove it.

61. Avoid the habitual use of laxative drugs. They cause colitis, appendicitis, duodenitis, indigestion and worse constipation. Use only non-irritating food accessories (see Appendix). Cultivate normal bowel habits by a visit to the toilet after each meal and the use of laxative foods, increasing the quantity of bulkage until the desired effect is produced. If necessary, use the enema. It is practically harmless if inconvenient, while all laxative drugs are injurious.

Mental Hygiene

62. Do not worry. Think, concentrate, study, but do not worry. Worry wastes energy, stops digestion, causes constipation, colitis, insomnia, and does no good.

63. Concentrate on your problems, study them, do your best to solve them, pray about them."Cast thy burden upon the Lord and he shall sustain thee." (Ps. 55:22).

It is just as natural to pray as it is to breathe. There is a scientific basis for faith and prayer. Every creature that has a voice is led by a universal instinct to appeal to God for help when in trouble.

If food did not exist, there would be no hunger. If there were no water, there would be no thirst. If there were no source of help for a creature in trouble, there would be no universal instinct to appeal for help in a cry of distress. Every creature that has a voice turns to its maker for help when in trouble. It is as natural to pray as to breathe. The Infinite Intelligence that created us remains with us to keep the heart beating and to energize all the vital machinery. Prayer is a means by which available help may be facilitated.

63. At least two or three times every day, concentrate the thoughts upon your personal welfare, physical, mental and moral. If done in a reverential and appealing attitude of mind, such concentration of the mind is real prayer. Earnest prayer is the most intense concentration.

Make a note of the new ideas that come to you when meditating or praying, or after. Especially note the first thoughts on awakening after a refreshing sleep. The subconscious works while we sleep.

APPENDIX

Food Accessories

Food accessories are non-medicinal substances which aid body functions although not actually appropriated as are foods. Among the most useful food accessories are the following:

Agar, sometimes called vegetable gelatine because of its resemblance to gelatine, an animal substance, although it is wholly unlike animal gelatine, which in its composition is identical with glue. Agar is pure cellulose. It is indigestible, but is useful as bulkage because it is insoluble in the digestive juices and hence indigestible and swells greatly when in contact with water. It is obtained from seaweed.

Psyllium, a seed obteined from several members of the plantain (Plantago) family, a highly useful form of bulkage.

Kaba, prepared from a highly hygroscopic gum from the Orient. It is insoluble in water, but swells enormously when moistened. Much used as a constituent of laxative remedies in combination with cascara sagrada and other harmful drugs which excite bowel action by irritation. Kaba is an effective preparation of the gum without the irritant drug.

Wheat Bran in all forms is useful as bulkage. It is rarely contraindicated. It may be used advantageously in most cases of chronic colitis; but is contraindicated in cases of acute colitis, active ulcer of the stomach or duodenum, acute infection of the duodenum.

Yeast and Yeast Extracts.--Brewer's yeast is remarkably rich in the B family of vitamins which are essential to growth and health maintenance, especially of the nerves and the digestive organs, but which are lacking in many common foods such as white bread, polished rice, sugar, lard, corn meal and others of our many denatured foods. Vitamin G is also present

in brewer's yeast, giving it great value as a remedy for pellagra. Another highly valuable property of yeast extract is its remarkably agreeable flavor which is like that of choice mushrooms and the famous soy sauce of Japan, and superior to the best meat extracts which are wholly lacking in vitamins and resemble urine in their composition. Yeast extracts are prepared from purified brewer's yeast which is 10 to 20 times as potent in vitamins as is the ordinary bread yeast of the groceries.

How to Take an Enema

Use an enema can or a rubber bag.

The quantity of water should be 2 quarts or less, rarely more.

The temperature should be 105° F. to 115° F.; average 110° F. Cool or cold water at the end is not necessary.

The fountain should hang about 2½ to 3 feet above the couch on which the patient lies.

Allow water to enter the bowel slowly to avoid unpleasant reaction. Lie on the right side during inflow of water. After inflow ceases, continue on right side for 2 minutes. Then lie on back for 2 minutes, and finally, 2 minutes on the left side.

Then evacuate.

Repeat the enema until sure that the colon is empty.

Proof of the complete emptying of the colon may be obtained by taking at breakfast two capsules of carmine which will color the stool red. As successive enemas are taken, the red color diminishes and finally disappears, signaling the disappearence of the test breakfast residues.

The enema is best taken at bedtime. This avoids interference with the natural movements which occur after meals, which should be maintained by the free use of physiologic means to encourage bowel action, carefully avoiding laxative drugs.

When necessary, the enema may be used for an indefinite period without injury, provided that care is taken to avoid using so large a quantity of water at one time as to overdistend the bowel and also provided that the dietetic measures, bulkage, etc. necessary to insure normal bowel movements are systematically employed, the enema being used not as a substitute for normal bowel movements, but as a supplementary means to secure complete daily clearance of the colon. In

many cases of chronic constipation the colon is so badly crippled that the daily use of the enema is needed to insure the complete evacuation of residues necessary to secure complete suppression of intestinal putrefaction.

To Change the Intestinal Flora and thus Suppress Putrefaction in the Colon

Normally there should be no putrefaction in the interior of the body. The food residues evacuated by the colon should have little odor. When the stools are highly offensive, it is because the protective germs which Nature supplies from the mother's breast in the act of suckling have been enfeebled or possibly lost, so that putrefactive and disease and poison producing germs have become dominant. To restore the normal condition of freedom from putrefaction, it is necessary to do several things, each of which is as essential as the individual links in a chain.

1. Cease to eat putrescent or putrescible foods, such as meats of all sorts (fish, flesh and fowl). In bad cases, even eggs should be at least temporarily discarded.

2. Increase the activity of the bowels so as to prevent the long retention of residues. The bowels should move after each meal. The colon should be completely emptied every day. Use the enema if necessary, but avoid drug laxatives. Eat freely of fresh fruits and green vegetables, especially foods which supply much bulkage. Especially useful are figs, prunes, raisins, wheat bran in all forms and non-medicinal laxative food accessories such as agar, psyllium, etc.

3. Take at each meal one to four level tablespoonfuls of lactose or lacto-dextrin to feed the protective germs.

4. If the above means are not successful in changing the flora as shown by clearing of the tongue and the disappearence of a bad breath and foul odor of the stools, take at each meal a glassful (6-8 ounces) of a good acidophilus culture.

Helps to Biologic Living

The human body is the most intricate, delicately constructed and finely balanced machine in existence. Its scientific care is a fine art. At no place in the world has the subject of physiologic living been so long and so closely studied as at the Battle Creek Sanitarium which in fact for more than half a century has been virtually a research laboratory in which the quest for health promoting modes of living and helps thereto have been a major objective. More than a million dollars has been expended in this effort. The result has been many new and highly important discoveries, some of which have made the name of Battle Creek known throughout the civilized world, and have made a little town the world center of the breakfast food industry. Not only new foods but "a new cookery"-- new methods of preparing foods for use-- has been created, which provides a bill of fare wholly free from harmful qualities but at the same time even more attractive and satisfying than the unwholesome viands which it displaces.

Methods of treatment and health training have been devised whereby many thousands of persons regarded as hopelessly ill have been restored to health and usefulness and had their lives greatly prolonged.

To the Reader.--If the reader has become convinced of the truth of the teachings of this booklet and desires to earn the rich rewards for physiologic living by following them, he should begin at once a serious study of the subject by the aid of dependable books and other literature and should provide himself with the needful appliances, accessories and other helps whereby he may be enabled to make a successful venture in "high living" of a sort which insures greatly increased efficiency, comfort, real joy of living, and a notable increase in longevity.

If you are really interested, and will address the Health Extension Department of the Battle Creek Sanitarium, you will receive the

information you desire.

In conclusion the author desires to say that his purpose in preparing this booklet has been to spread information which might aid those who desire to know the truth about right living and help them to qualify for membership in the coming Aristocracy of Health which the world awaits as the only means of saving the human race from degeneracy and final extinction.

The author will be pleased to hear from any reader who is interested in the principles and methods set forth in this booklet and to answer inquiries.

John Harvey Kellogg,

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AN ARISTOCRACY OF HEALTH

BASED ON

BIOLOGIC LIVING

Rules for "Right Living"

by

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(fine type)

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Foreword

The greatest problem before the world today is "How to save the human race from extinction through degeneracy." The only hope is to create an Aristocracy of Health, that is, to form a group of intelligent men and women who think it worth while to thoroughly inform themselves respecting the marvelous progress made in modern times in knowledge of personal hygiene, euthenics, and race hygiene, eugenics, and to make practical use of this invaluable information in so treating their bodies in everything pertaining to their physical and mental welfare as to develop and maintain the super health and efficiency which modern scientific research (Sherman and others) have shown to be easily possible by meticulous application of established scientific facts to human living; that is, by living in a strictly biologic or physiologic way.

This booklet is a brief summary of more than a half century's search for the right way to live. The writer, now in his 84th year, has devoted his whole life to an intensive study of human habits and living conditions in their relation to health. With the cooperation of hundreds of interested and intelligent colleagues, the Battle Creek Sanitarium, of which the writer has been Medical Director since October 1, 1876, has been made a center of research, experiment, clinical study and adventure in the fine art of biologic living.

Laboratories have been fitted up and provided with the most elaborate and up to date appliances for chemical, nutritional and physiologic research and placed in the charge of trained experts, some of international fame. Close touch has been maintained with the great research laboratories of the world and a constant wide survey made of scientific literature. New discoveries bearing on health have been tested and when found meritorious adopted. More than a million dollars has been

expended in this world wide search and intensive research. Among the practical results of this effort in the direction of race betterment may be mentioned the following: The Battle Creek Sanitarium where more than 300,000 persons have been treated, which has grown in 60 years from a small two story frame building with 12 patients to its present proportions with accommodations for 1200 patients. The treatment of these patients by physiologic methods and health training in accordance with biologic principles and methods has afforded an excellent opportunity for testing and validating the methods and ideals presented in this booklet as means of aiding chronic invalids to recovery.

The Race Betterment Foundation, a philanthropic organization having for its purpose the promotion of race betterment ideals and projects, one of the most notable of which is Battle Creek College, with its Schools of Nursing, Home Economics, and Physical Education (formerly conducted by the Battle Creek Sanitarium) in addition to the usual Liberal Arts Departments; a student body of nearly five hundred, representing all parts of the United States, with more than 4,000 graduates from the several schools scattered over the whole civilized world. The fine resident student body of Battle Creek College not only study the principles of biologic living but live them and profit greatly by the practical application of biologic ideals.

Out of this work has also grown the great food industries which have made Battle Creek known throughout the world for its unique and wholesome food products. This special food research, begun at the Sanitarium, is continued in the laboratories of the Battle Creek Food Co.

Finally may be mentioned a great number of health promoting methods and appliances, electrical, mechanical and physiotherapeutic, some of which

are found in every hospital and in many doctors' offices. Among these might be mentioned the electric light cabinet and other light appliances, the now popular sinusoidal electrical current and generator and numerous other electrical and mechanical devices.

The results of the practical application of these biologic methods in restoring to health and efficiency many thousands of chronic invalids who had been regarded as incurable has created a wide demand for a brief epitome of the Battle Creek Idea of right living which is the occasion for the publication of this booklet. A full account of the technic of "biologic living" will be found in the writer's recent volume "How to Have Good Health" and in other works.

The monthly magazine Good Health, edited by the writer for more than 60 years, and the Battle Creek Sanitarium News present a popular account of practical biologic methods and of the most recent discoveries and advances.

Those who desire further information about biologic living or suggestions for health training at home are invited to write to us with the assurance that their inquiries will receive without charge, courteous and competent attention since the Battle Creek Sanitarium and its allied health activities are purely philanthropic enterprises devoted to the extension of health promoting ideals and race betterment.

Address Battle Creek Health Extension Bureau.

Biologic Living. What It Is

Biology is the science of life.

Biologic living is the art of right living.

We study the biology of our horses, cows, pigs, and chickens, and feed them and care for them scientifically, that is biologically. In consequence, we have the most wonderful horses, cows, pigs, and chickens the world ever saw. But we forget that we have a biology of our own, a way of life peculiar to our species, a diet specially suited to the genus homo sapiens, a regimen and environment to which we are by nature adapted, which belongs to us.

In the development of civilization, human living habits and conditions have been chiefly dictated by chance, taste, fancy, convenience, economy, fashion, rather than by considerations of health or biologic adaptation.

In consequence of our abuses and neglects, the human race is becoming dwarfed and weazened, neurotic, daft, dyspeptic, and degenerate and according to the eugenists is doomed to extinction. We are progressing downward instead of upward. President Nicolas Murray Butler thus writes the epitaph of the average man, "Dead at 30, buried at 60."

Biologic living is not an innovation. It is simply a return to the "old paths" from which the perversions of our modern civilization have gradually diverted many millions of men and women, perversions that are responsible for the multitudinous maladies and degeneracies which yearly multiply in number and gravity.

Biologic living means health, comfort, efficiency, long life. It means good digestion, sound sleep, a clear head, a placid mind, and joy to be alive.

To live biologically is simply to treat one's body in a natural or physiologic way. What more sensible thing can one do than to cherish

and develop and make wise use of all his physical powers, in other words, become a health enthusiast and in time a real health aristocrat?

Tens of thousands of men and women, through adherence to biologic principles, have been delivered from feebleness, misery and inefficiency and brought to the enjoyment of stable and exuberant health.

To those who hesitate to adopt new habits, especially in diet, we commend the following observations by that noblest of Roman sages, the wise Seneca, who, like Pythagoras and Socrates, lived a biologic life:

"There is nothing against which we ought to be more on our guard than, like a flock of sheep, following the crowd of those who have preceded us, going, as we do, not where we ought to go, but where men have walked before. We live not according to reason, but according to mere fashion and tradition. * * *

"We shall recover our sound health if only we shall separate ourselves from the herd, for the crowd of mankind stands opposed to right reason-- the defender of its own evils and miseries. Let us ask what is best, not what is most customary."

Biologic Living a Safe Road to Rejuvenation

We grow old prematurely because we depart from the simple, economic ways of Nature which make small demands upon the life mechanism, especially those highly essential viscera, the liver, kidneys and heart, load the body down with unnecessary work in the disposal of excess, and especially the elimination and destruction of poisons generated in infected colons, duodenums, gall bladders and other organs which often become the seat of germ infections and incubators of parasitic bacteria and their venomous products.

Anything which lightens the load on the overworked viscera, promotes rejuvenation and length of days. It is this that gives the vacation its value as a means of recuperating wasted energy. Recreation we call it,

not realizing the full significance of the word re-creation, a renewal of the wasted energies and depleted body. The vacationist returns to his task looking and feeling younger, and that very often in spite of the fact that he has continued to smoke, drink coffee and perhaps cocktails and to do many other things against the best interests of the body.

Biologic living is simply conforming not to a part only, but to the whole code of physiologic living. This is not at all a hardship. It is a most delightful experience. It does not require any sacrifice. It simply replaces harmful ways for wholesome ones which are not merely equally enjoyable but far more delightful. It is not, for example, an abandonment of gustatory pleasures, but an acquaintance with new and even more delightful ones. And the results in relief of headaches, gastric miseries and other ills and the return of youthful pep and appetite and the disappearance of some annoying wrinkles and "that tired feeling" are so prompt and so pleasing that satisfaction and enthusiasm grow with each day's experience.

The soundness of this philosophy of physiologic rectitude which has been worked out at the Battle Creek Sanitarium during the last half century has been proven in the experience of tens of thousands of intelligent men and women among the more than a third of a million persons who have entered the doors of this university of health.

To watch the transformation of this sick and often despairing throng of suffering men and women from invalidism with all its helplessness and miseries into healthy, happy and useful people, has been a delightful experience. The change from a disease promoting regimen and harmful habits to health building habits and regimen has been the chief factor in giving to the institution such a degree of success that without endowment or gifts, except from its managers and workers, it has grown from its beginning in 1876 in a small two story building with a few cottages and a dozen patients

to the largest sanitarium in the world, drawing patients from every part of the globe, at the rate of 10,000 to 12,000 a year.

And among the rest have come many notable people, such as Sir Horace Plunkett, Fellow of the Royal Society and Member of King George's Privy Council and Minister of Agriculture for Ireland, who was sent to the Sanitarium by the King's physician, Lord Dawson of London, Jacob Reis of New York, the civic reformer, Dr. Stephen Smith, founder of Bellevue Hospital and of the American Public Health Association, John D. Rockefeller, Jr., the world's greatest philanthropist, who, although not sick, desired to learn how to live and who still adheres to the biologic way as do many others of the country's most eminent statesmen, and not a few of it leading scientists and educators.

Start Today on the Road to Rejuvenation

And why not begin today? If you could know the happy experience that awaits you, you would start at once. It will be a delight to feel the headaches and backache, weariness and dullness, lack of zest and pep and a hundred other miseries one by one slipping off and a sense of returning youth taking their place. Rejuvenescence is what you need, and through natural living you may reasonably expect to find it. Benjamin Franklin tried it. Through biologic living when a boy, to which he was led by reading the writings of a pioneer diet reformer, he became a model of vigor and endurance and laid the foundation for his amazingly active and successful career. In his prosperous old age he departed from the simple wholesome ways of his youth and became so badly crippled with rheumatism and gout that at 70, as he wrote his wife when 74, he found himself so ill that he felt sure he would soon reach the end of his career unless he made a radical change. He returned to the simple biologic habits of his youth and as the result was able to report to his wife, "I have walked

back four years so that you may now consider me as 66 instead of 74."

Biologic living is the only road back toward youth and health and all the felicities associated with a sound mind in a sound body.

How to Begin

Make a survey of yourself and your surroundings.

Take an inventory of your knowledge about health and conditions which promote physical well being.

Look over your library and see that it is supplied with up-to-date health literature from a dependable source.

Get in touch with your State Board of Health and read the literature the secretary will send you.

Visit your family physician or the best physician available and have a thorough examination of your heart, lungs, blood, blood pressure, urine, every organ and function. Don't be satisfied with an ordinary cursory examination, but find out everything you can about yourself. Repeat the examination at least once every year.

Very few people are perfectly well even though they feel no discomfort. The early or so-called "little symptoms" of disease often pass unnoticed long after they are discoverable if carefully looked for by an up-to-date physician aided by up-to-date diagnostic appliances.

Carefully consider your habits,-- do they tend toward health or disease? Resolve to eliminate every disease-producing factor, to cultivate health, to fight disease, and to make this a part of your daily program.

Read and Reread.--Not only read, but reread and carefully study each one of the 66 rules of this booklet. Reread it from cover to cover, once a week until each one is well fixed in the mind.

Become a health enthusiast. After you have read, reread and studied carefully this booklet, make a list of your defects and set to

work systematically to correct them. Resolve to become a realth health aristocrat, to enjoy not simply comfortable health, but the <u>super</u> health which results from meticulous attention to health culture.

THE RULES

1. <u>Breathe Deep</u>. Take a dozen deep breaths several times a day; several times an hour is better.

Taking a deep breath is like blowing a smoldering fire. It brightens the vital flame. Deep breathing does more. It gives the liver a hearty hug and compresses and sucks the stagnant blood out of it and sends it on its way to the lungs.

Deep breathing is an important aid to the heart. The chest is a blood pump as well as an air pump, and so deep breathing helps the heart.

Deep breathing aids the elimination of residues. Each breath pushes along in the colon the unused remnants of foods and other residues which are eliminated through the bowels. Every deep breath gives a little push. Exercise helps bowel action by inducing deep breathing.

2. <u>Work, play, read, study, and rest in the open air</u>.

Do your work in the sun or under the trees instead of behind doors and opaque walls. Dig in the garden, explore the woods and hills. Follow the brooks, watch the squirrels and learn the songs of the birds. If compelled to remain indoors, be sure that the living and work rooms have an ample, continual supply of fresh moving air. The lower the temperature the better, so long as the body is kept comfortably warm. Temperatures much above 70° are depressing.

<u>Sleep in the Open Air</u>

Fix up a sleeping-porch or a balcony and so take an outing all night long and every night, and don't move inside when frost comes. Out-

door sleeping is one of the best life-preservers known.

3. Take a sun bath often enough to keep the skin well browned.

In the warm months take a good sun bath once a week at least. Don't be afraid of getting slightly sunburned. No harm will result except a temporary inconvenience from skin irritation. A sunburn is a solar erythema and not a real burn. It does not destroy the skin as does a true burn and leaves no scars. Expose the skin to the air and the sunshine as much as possible. The skyshine is highly beneficial as well as the sunshine. A mild "sun burn" increases immunity (Hill).

About Eating

4. Eat what you like; that is, food which you can relish. Food must be well relished as well as wholesome to be well digested. The taste and the odors of foods if agreeable, cause the saliva and gastric juice to flow. "The mouth waters" and the stomach also. The "appetite juice" thus formed, even before the food reaches the stomach, is the most active agent in gastric digestion. Says Pavlov, "Appetite means juice."

5. Prefer Natural Foods

Use the same good sense and judgment in feeding yourself as in feeding your dog, a pet canary or a prize winning horse. Primitive man ate his food as he found it prepared for him in the forest. In other words, he ate all his food in a raw or natural state. We cannot easily do this, but may profit greatly by eating largely of foods which are edible in a natural or uncooked state, such as lettuce, celery, cabbage, carrots, turnips, fresh fruits, nuts and dairy products.

Biology teaches that man's natural diet is the same as that of his nearest relatives, the primates, such as the gorilla, the chimpanzee, the orang-utan and the gibbon, viz., fruits, grains, nuts, tender shoots and succulet roots (Cuvier, Buffon and other naturalists) rather than meats.

6. <u>Avoid too Much Protein</u>

The daily amount of protein required is small compared with that of other food elements. An ample amount is supplied by such foods as bread and other cereals, beans, peas, soy beans, supplemented with the proteins of milk, soy beans, soy bean milk or nuts to insure good nutrition. A pint of milk or soy milk daily or three or four ounces of nuts or two of soy beans taken with plenty of other foods will amply supply all the protein needed and of excellent quality.

7. <u>Avoid meats, fish, flesh and fowl</u> because <u>they are unnatural foods and hence not well adapted to man's use as are natural foodstuffs</u>. Here are other good reasons:

(1) Meats are very deficient in vitamins and lime. The iron of meat is of an inferior sort. Meat eating animals suffer most from pernicious anemia.

(2) Lean meat contains uric acid (14 grains to the pound) and about one-fourth of its weight of other harmful toxins and tissue wastes. When fed to mice, this material causes nephritis in a few days.

(3) Fresh meats are grossly infected with colon germs during and after killing. Ordinary cooking kills only part of the colon germs of meat, which in some meats, such as hamburger steak, may outnumber those in animal droppings.

(4) MacMillan, the Arctic explorer informed the writer that the meat-eating Eskimos are short lived-- old at 50 and worthless at 55 years. Stefansson's meat-eating stunt, performed for the meat packers, was a shabby fake. His diet was three-fourths fat and only one-fourth protein, according to the official report. A diet of lean meat only made him sick. He refused to eat it.

(5) Bright's disease is most frequent in meat-eating countries (Hindhede). The same is true of cancer.

(6) Meats, especially pork, are often infected with living parasites. The pork parasite, trichina, is spreading rapidly. Government inspection has failed to stop it and has been abandoned and hence all pork is dangerous. The government warning to avoid eating raw pork is insufficient. All pork is dangerous. Ordinary cooking does not kill all the parasites. Most outbreaks of trichinae infestation are caused by eating cooked pork. The sale or use of pork as food should be forbidden.

Eggs

8. Use eggs sparingly, and only when known to be perfectly fresh. They may be discarded without injury if care is taken to provide sufficient protein, iron and vitamins by the use of nuts, soy bean milk and plenty of green vegetables.

Infected eggs cause colitis. According to Tissier of the Pasteur Institute, most eggs are infected. The hard boiled yolk of egg is more wholesome than the white. Raw eggs encourage intestinal putrefaction. Avoid egg-nog.

Milk--Dairy Products

9. Cow's milk disagrees with many persons. In the case of a person suffering from hyperacidity, large hard curds are often formed which are difficult of digestion and encourage intestinal putrefaction and so-called "biliousness." Many persons are sensitized to cow's milk and cannot make use of it without headache, constipation, asthmatic attacks, skin eruptions, coated tongue, or other unpleasant symptoms.

Boiled milk is often less objectionable than raw. A small portion of cream or buttermilk often causes no inconvenience. Sometimes cottage cheese or cream cheese may be safely eaten by persons who cannot eat ordinary milk.

Persons who discard meat may make sure of getting an ample amount of "complete" protein by using daily from a pint to a pint and a half of milk. When dairy products or eggs are eaten, meat is superfluous.

Milk may be replaced by milk prepared from nuts (malted nuts, almond cream) or the soy bean (soy milk, soy acidophilus milk) which has been in use in Oriental countries for thousands of years with entire success as a substitute for dairy products.

Many persons, including the author, have found it highly profitable to dispense with animal products of every sort, practically excluding from the dietary eggs and dairy milk as well as fish, flesh and fowl, which have been discarded for 70 years. It should be noted that such a restriction of the diet requires a carefully balanced and varied bill of fare.

Butter and Other Fats

10. Give preference to vegetable fats, excepting butter. Butter is an important source of vitamins A and D. Other animal fats are less wholesome than vegetable fats and much less digestible. Tainted butter or other rancid fats, either animal or vegetable, are harmful. Fats, other than butter, generally lack vitamins and should be supplemented by carrots, spinach or tomatoes.

Nuts and nut emulsions (almond cream, malted nuts, nut butters) are excellent sources of easily digestible fats. The soy bean contains 20 per cent of an exceptionally fine fat which is rich in lecithin.

The actual fat requirement is very small when greens and carrots are eaten freely to supply the fat soluble vitamin A. It is well to add wheat germ, which is rich in all the vitamins except C.

Cereals--Bread and Breakfast Foods

11. Avoid free use of cereals. Bread and breakfast foods are

cheap and concentrated sources of nourishment, but contain an excess of phosphoric acid and when used too freely tend to cause acidosis. Whole meal or graham bread, wheat flakes, bran, bran flakes, shredded wheat, and rice (preferably unpolished) are the best cereals, but they should not be made the chief sources of nourishment. Eat less cereals and more potatoes.

Raw starch is not easily digestible. For this reason, unripe fruit is usually very unwholesome when eaten raw. Bananas, which are usually eaten before becoming fully ripe, often disagree for this reason.

12. Restrict the use of cane sugar. Carbohydrates in the form of sugar are attractive on account of their sweetness, but not always wholesome. There are five food sugars,-- cane sugar (white or granulated sugar, brown sugar, beet sugar, molasses, syrup, raw sugar, maple sugar, maple syrup, sorghum); malt sugar (maltose, malt syrup); milk sugar (lactose), found only in milk; corn sugar, glucose, (made from corn starch); and fruit sugar, levulose, the sugar of sweet fruits and honey.

Cane sugar is least wholesome. Taken in concentrated form, as usually eaten, it irritates the stomach and encourages infection of the stomach, duodenum and gall bladder.

Malt sugar is the natural sugar of the body, being produced in abundance when starch is digested by the saliva, the pancreatic juice and intestinal juice. It is digested and absorbed much more quickly than cane sugar.

Milk sugar, although least sweet, is one of the most important of all the sugars. It is provided by nature not only as a carbohydrate food for the infant mammal, but as a nutrient for the protective germ, the Bacillus acidophilus, which combats putrefactive, pus-forming and

other disease-producing germs in the intestine, thus preventing the development of putrefaction and infection in the intestine. By the liberal use of this sugar, bottle-fed infants, older children, and adults may enjoy much the same protection against colitis, appendicitis, and other intestinal infections, as have breast-fed infants. Ordinary milk sugar has little sweetness. A recent discovery makes it possible to make lactose three times as sweet and three times as soluble by converting it into beta-lactose, sometimes commercially known as B-Lac, which is excellent for table use in place of cane sugar.

Dextrose or glucose is less sweet than cane, malt or fruit sugar, and in its pure state as found in fruits, requires no digestion.

Fruit sugar is of all sugars the sweetest and the most easily assimilated. It requires no digestion-- is ready for immediate absorption.

Green Vegetables

13. Make fresh green vegetables a part of every meal because of their richness in vitamins and food minerals, of which they are the chief source. At least one fresh uncooked food such as lettuce, celery, cabbage, carrots or cucumbers should be eaten at every meal. It is a good plan to make at least one meal daily consist largely of uncooked foods. The juice of the raw turnip and other vegetables is most excellent. Sauerkraut juice has little value and contains too much salt.

Fresh Fruits and Fruit Juices

14. Make fresh fruits or fruit juice a part of every meal. Of highest value are the orange, grapefruit, apple, and tomato. Canned tomato juice is nearly as good as fresh juice. Eat very freely of all fresh fruits in their season. Such juicy fruits as apples, citrus fruits, peaches and melons may be eaten at any time as well as at meals. They

require little digestive work.

Bulkage Foods

15. Eat bran or other bulkage freely to encourage colon activity. The natural unprocessed bran is most efficient. Fresh fruits and vegetables have value, especially berries, prunes and figs, but the hemi-cellulose of fruits and vegetables is digestible. Wheat bran is more efficient because its woody or cork cells are indigestible. It may be made a part of every meal by most persons with great profit. It is best to take it at intervals during the meal so that it will be thoroughly mixed with the rest of the food, thus avoiding impaction. For a like reason mineral oil is often needed with bran and other bulkage. Agar is also useful. Psyllium seed is highly efficient. Paramels, a paraffin oil which melts at the temperature of the body, has the advantages that it is active in smaller amounts and that it does not leak or cause "accidents."

16. Food Combinations. Do not forget that a variety of foods is necessary to insure a complete assortment and abundant supply of all the needed vitamins and food minerals as well as the necessary protein, starch and fat required for tissue building and energy production. Ignore the current notions about food combinations. It is an error to suppose that fruits and vegetables should not be eaten together, or that starch and protein are a bad combination, or fruit acids with starches unwholesome, or acids and milk indigestible. Fruits and vegetables agree perfectly if thoroughly chewed. Fruit acids do not prevent the digestion of starch. Starch and proteins are associated in normal foodstuffs. A meat and bread diet is unwholesome. It causes acidosis.

How Much to Eat

17. Be careful to eat enough but not too much. Never eat so much as to cause dulness or drowsiness or a sense of discomfort. The amount of

food needed depends upon the age, size and activity of the individual. Men need more food than women because they are larger and use their muscles more. Children need more in proportion because they are growing. The individual requirement may be determined by reference to ration tables (See Appendix). The energy value of the ration may be determined by multiplying the normal weight for a person of the given height by 14. This gives approximately the total number of calories required. Of the energy value of the food (calories) one-tenth may be protein, three-tenths fat and six-tenths carbohydrates. Less protein is sufficient.

18. Estimate your food needs by comparison of your bills of fare with model menus shown in the Appendix, which see.

Hard muscular work requires one-third more food or even more. Mental work requires little more food than loafing.

After 80, the food requirement is about half that of middle age.

19. Weigh once a week. Consult table of heights and weights (See Appendix). If 5 to 10 per cent underweight, be thankful if over 40 years, for you will live longer; if under 30, eat more, especially of carbohydrate foods (See Appendix).

20. Masticate thoroughly. Every morself of food should be chewed until it becomes a smooth puree or semi-liquid in the mouth. Thorough chewing greatly aids digestion and will cure many cases of indigestion. Tasting and chewing the food cause the gastric glands to pour out their secretion and stimulate the colon to push its contents along and so aid bowel action. Careful mastication affords opportunity for the nutritive instincts to select the food and food elements adapted to the body needs, and to say "Enough," at the proper moment. Hence, give preference to dry foods. Sip liquid foods slowly, taking care to insalivate thoroughly. It is advantageous to take liquid foods like milk through a straw or small glass tube to insure admixture of saliva.

21. Be careful to balance the bills of fare

(a) For protein, fats and carbohydrates. Although protein is a highly essential food element, there is little danger of a deficiency, as the amount needed is comparatively small, not more than one-seventh by weight of the total ration, and not more than one-tenth of the energy value (calories). Even the potato, cabbage, beet, parsnip, carrot and the humble pumpkin contain the requisite amount of protein and of excellent quality, while bread offers an excess. One egg, a glass of milk, an ounce of soy beans or a small handful of nut meats in addition to ample meals without meat will insure an intake of all the protein the body can utilize.

The amount of fat may be greatly varied without injury. One-tenth the water-free weight of the daily intake is ample. The body can make its own fat from starch and other carbohydrates.

Carbohydrates, chiefly starch, make up three-fifths of the total normal ration (energy value) and are the body's chief source of heat and energy.

(b) For all vitamins, A, B, C, D, E and G. For A, by use of butter, cream, greens, carrots and tomatoes; for B, by use of fruit juices, greens, bran, yeast and yeast extract (Savita, Marmite); for C, by fresh fruits and vegetables and their juices, especially orange or lemon juice, tomato, turnip and cabbage juice; for D, by use of butter, greens, and radiated foods; for E, wheat germ.

(c) For food lime, by free use of greens, dairy milk, soy beans, whole grains and fresh vegetables. For food iron use freely, greens, egg yolk, wheat flakes, bran flakes, Krusty Bran, shredded wheat, oatmeal, raisins, dates, figs.

(d) For chemical balance make the chief constituents of the bill of fare consist of fresh fruits and vegetables, avoiding meats and eggs and excess of cereals.

Things to Avoid in Eating

22. Avoid condiments-- mustard, pepper, pepper sauce, cayenne, capsicum, vinegar, hot, irritating sauces, and spices of all kinds. All hot sauces must be wholly discarded. They irritate the stomach and cause gastric and intestinal catarrh, duodenitis, duodenal and gastric ulcer, colitis, and damage to the liver and kidneys.

23. Avoid free use of denatured foods such as fine flour bread, new process corn meal, polished rice, corn starch, tapioca, lard, refined sugar. Use instead whole meal cereals, raw or unrefined sugar, maple sugar, honey, and sweet fruits, malt sugar, milk sugar (lactose, lacto-dextrin, beta-lactose).

24. Avoid rich and highly seasoned dishes, sauces, fried foods and flaky pie crust. They are highly indigestible.

25. Avoid many varieties and dishes at one meal, but also avoid a monotonous diet. Vary the diet from day to day.

26. Avoid poison-containing foods. Vinegar and foods pickled in vinegar are indigestible and interfere with the gastric digestion of starch. Pieplant and sorrel contain oxalic acid, an active poison which arrests starch digestion. Death has been caused by pieplant greens, and acute and fatal relapse in cases of Bright's disease by an ordinary serving of stewed pieplant.

27. Common salt, or chlorid of sodium, should be used sparingly. According to Richet and others, the food naturally contains all the chlorid of sodium actually required by the body, so that the addition of salt to the food is necessary only to please a cultivated taste. A safe rule is: The less salt the better. Persons who have dropsy, Bright's disease, arteriosclerosis, gastric ulcer, hyperacidity , obese persons and epileptics should discard salt entirely.

28. Avoid use of beef tea, bouillon, chicken, oyster and other animal broths. They have practically no food value but consist almost exclusively of extractives or tissue wastes. The composition of bouillon is practically the same as that of urine. One is an extract of flesh made by the kidneys, the other by the cook. The most eminent French and English physicians condemn the use of animal broths as did the late famous Dr. Austin Flint, Sr. of New York. Good extracts of brewers' yeast (Savita, Cenovis) supply a similar and better flavor together with the highly important vitamins (A and G), of which it is the richest source.

29. Avoid irregularity of meals. Food should be taken at regular intervals to insure regular evacuations of residues. It is especially harmful to take meals too near together, thus introducing food into the stomach before the previous meal has passed out. It is desirable that the meals should be so spaced that the stomach may be completely emptied for at least a half hour before a new meal is taken.

30. Eat when hungry; never eat simply because it is mealtime or because invited to eat. When appetite is lacking, eat fruit and bulkage, avoiding much protein and fats. Remember that food must be well relished to be well digested. According to Pavlov, "appetite juice," which is produced by stimulation of the nerves of taste by palatable food, is the most important factor in gastric digestion.

If the tongue is coated, clear the bowels daily by enema or irrigation and change the flora (See Appendix).

31. Eat at regular hours to help maintain the normal intestinal rhythm of three daily movements of the bowels. Rather than omit a meal entirely eat some fruit, or a cake of Laxa with fruit juice, or some other simple nutrient which will keep up the peristaltic procession and rhythm. Never take food into the stomach when it contains the undigested

remains of a previous meal.

32. A good plan, especially for sedentary persons, is to eat twice a day, 8:00 A. M. and 1:00 to 3:00 P. M.; or at 11:00 A. M. and 5:00 P. M. if the retiring hour is necessarily late. When breakfast is omitted or taken very late, it is an excellent plan to take some fruit soon after rising.

33. <u>If you eat three meals a day, take the heartiest meal at noon.</u> The breakfast should be substantial, the evening meal very light especially avoiding pastry, fats, rich sauces, and hearty foods. If troubled with insomnia, make the last meal consist chiefly of ripe or cooked fruits, liquid foods, and such cereals as boiled rice or cereal flakes. Avoid pastry. Do not eat hurriedly nor just before retiring. A ten minutes' nap after dinner is not objectionable, but long sleeping after meals is harmful. Elderly persons should rest an hour after meals.

Eating a little fresh fruit half an hour before retiring encourages bowel action.

34. <u>Dismiss worries and annoyances while eating.</u> Good cheer promotes good digestion. Anger, worry, and irritation stop digestion.

<u>Water-Drinking--Beverages</u>

35. <u>Take three or four pints of water a day,</u> including liquid food. Take a few sips whenever thirsty. It is a good plan to drink a glassful of water on rising in the morning, on retiring at night, an hours before each meal, and each time the bladder is emptied.

36. <u>Sip cold water at meals if you wish.</u> The chief object in drinking at meals is to refresh the sense of taste. Cold increases nerve sensibility. It is for this reason that cold drinks are preferred. Small sips of cold or even iced water refresh the mouth and do no harm. Drinking much cold water at meals hinders digestion.

Exercise

37. Do some good, hard muscular work every day, enough to produce slight muscular fatigue and free perspiration, but avoid exhaustion. Walking, housework, gardening, farm work, ordinary laborer's occupations are excellent forms of exercise. In walking, always hold the chest high and carry it well to the front. Swing the arms moderately and walk fast enough to hasten the breathing a little. Nine miles walking a day at the rate of three miles an hour is the necessary amount for the average adult. Most housekeepers and laborers do more. Rapid walking and hill climbing are excellent for young and middle aged persons; stair climbing is good.

Working in the open air is one of the best forms of exercise, especially working in the garden, digging, hoeing, pruning, etc.

For persons advanced in years, walking, horseback riding and bicycle riding are excellent exercises, practiced in moderation.

38. Develop the abdominal muscles by some simple exercises, such as walking on tiptoe with the chest held high, or running round the room "on all fours"; or lying on the back, hold the legs straight and raise them to the perpendicular, repeating thirty to forty times three times a day. Then raise the body from the lying to the sitting position with the hands placed upon the back of the neck. Repeat ten to twenty times three times a day, gradually increasing the work from day to day. The Health Ladder(phonograph records) is a good health trainer for daily practice.

39. Practice deep breathing with the chest well expanded and clothing removed or loosened, several times a day. Hold the chest high and breathe as deep as you can ten or twenty times every hour or oftener to develop the lungs and to keep the chest walls flexible. Stimulate the lungs by exercise for a few minutes several times a day with sufficient vigor to

cause quickened respiration. The best "breath" gymnastics are swimming, hill or stair climbing and running or rapid walking. Always breathe through the nose.

Posture

40. Always sit erect, with chest held high and the small of the back supported. Sit as little as possible. Standing and lying are more natural and healthful positions than sitting.

When standing, hold the body erect, the hips well back, the chest forward, the chin drawn in.

In sitting, do not slump, but keep the chest up. This requires an effort which becomes tiresome if long continued, unless proper support is given to the lumbar spine or so-called hollow of the back. To keep the shoulders from dropping forward and flattening the chest, support should also be given to the upper spine between the shoulder blades.

A chair constructed so as to support the lower back and the upper spine will hold the body in perfect position when completely relaxed as is necessary for complete rest. Such chairs are now available.

Rest and Sleep

41. Learn to relax both mentally and physically. Merely stopping work does not secure rest if "tension" continues. This is especially true of vocations which do not involve much muscular effort. It is a good plan to lie down and relax completely with the eyes closed in a cool, darkened quiet place for half an hour in the middle of the day. Very arduous occupations require a short rest at more frequent intervals. Practice deep breathing while resting and not asleep.

42. Avoid long periods of strain, mental, nervous or physical, and especially avoid overstrain. The effect is likely to appear later in

premature mental or nervous breakdown.

43. Make the weekly Sabbath a day of complete rest from work. Spend most of the day out of doors if possible. Take a half day off for an outing in the middle of the week.

44. Sleep 8 hours each night. Elderly persons need 9 or 10 hours or even more. One who is not strong or is neurasthenic should rest or sleep an hour before dinner. An hour's rest in the horizontal position is very refreshing, even without sleep.

Growth, assimilation and repair are most active during sleep. The nerve and brain storage batteries are recharged during sleep.

Surroundings at night should be quiet. Sleep amid noises is not refreshing as it should be.

The best position during sleep is lying on one side, preferably the left, unless a meal has been eaten within two or three hours. A cushion or sand bag at the back, another in front against the abdomen and a cushion between the knees aid relaxation and hence promote sleep.

The bed should be neither too hard nor too soft. Avoid feathers. The covers should be dry, warm, light and porous. Avoid overheating by excess of clothing. Use a thin pillow and discard bolsters. A sand bag at the back aids relaxation.

Provide an abundant supply of outdoor air during sleep by means of wide open windows, a window tent, a fresh-air tube or a sleeping balcony.

To insure sound sleep at night empty the colon at bedtime (by enema if necessary) and avoid late and heavy meals. A fruit supper is conducive to sleep.

Clothing

45. Avoid too much clothing. Over-heating is depressing. Dress

according to the temperature and weather, regardless of the season, and do not slavishly follow the fashions. Dress for health and comfort.

The clothing should be loose, comfortable, light and porous. Restrictive clothing is necessarily damaging. The trunk of the body when in action is continually changing in form and size. Wear porous cotton underclothing next the skin. Avoid waterproofs except for temporary protection. Clothe the extremities so as to keep them always warm and dry.

46. Use care in selecting footwear. Avoid shoes with high heels or narrow toes. Wear shoes with broad soles, low heels and a stiff shank. Flexible shanks cause flat feet. If the feet ache from long standing or walking, have them examined by a good foot specialist. Great harm may result from neglect. Sandals are most healthful. If you have flat feet, wear Chinese slippers at home. Have your shoes properly adapted to your feet by a dependable specialist.

47. Cleanse the mouth and teeth thoroughly before and after each meal, on rising and on retiring. A foul tongue and decaying teeth indicate mouth infection and intestinal autointoxication and general low resistance. Diseased teeth often cause rheumatism, neuritis or heart disease.

48. Bathe daily at night in warm weather. Twice a week in winter take a warm, cleansing bath before retiring. If the skin is dry and irritated, apply Lanolin Cream, of which the following is the formula:

Lanolin	2 drams
Boroglyceride	1 dram
Cold cream	6 drams

49. Keep clean. Always avoid so far as possible any contact with infectious material. It is to be remembered that the risk of contamination is especially great in visiting a public water-closet, or, in fact, any toilet or lavatory.

50. Take a cool or cold bath on rising to set the vital machinery in motion. Young and robust persons may take a plunge in a bath tub or swimming pool. Elderly and feeble persons may rub the body with the hand dipped in cold water in a warm room or with a dry towel in a cool room.

51. For the hands, use a good soap and rinse well with soft water. If rough, apply Lanolin Cream (See above).

52. Cleanse the anal region after bowel movements by washing. This is the universal practice in India. If hemorrhoids are present, cleanse well and then apply carbolated vaseline as an antiseptic after every bowel movement.

Colon Hygiene

53. Move the bowels at least three times a day,-- after each meal. Visit the toilet regularly after eating, on rising, and before retiring at night. Do not wait for a "call."

54. When a "call" is experienced, respond immediately. Five minutes' delay may postpone action indefinitely.

In moving the bowels, use a low toilet seat or support the feet on a stool before the seat, and after the bowels have moved, observe the results. The stools should be ample, soft, never hard or lumpy and should have little or no odor, and there should be no mucus present.

Putrid, foul-smelling stools are an indication of intestinal auto-intoxication, and are due to an excess of protein (meat or eggs) or of decay due to stasis or stagnation in some part of the colon. Such a condition always breeds disease and indicates need for a "change of flora (See Appendix).

55. Once or twice a week test the intestinal "motility" by taking at breakfast one or two five grain capsules of carmine. Note the time required for the red color to disappear from the stools. More than 24

hours indicates delay and resulting putrefaction of residues and need to "change the flora" and increase bowel activity (See Appendix).

56. Never go to bed with a loaded colon. If necessary, empty the colon by a succession of enemas. If carmine has been taken at breakfast, repeat the bedtime enema until the red color is practically absent when the water returns. (See Appendix, "How to Take an Enema.")

Important to Avoid

57. Avoid alcohol in every form. It is not a stimulant, but a narcotic. It is not a food. It is not a remedy for any disease. It hinders digestion, weakens the heart, lessens strength and endurance, dulls the brain, perverts the judgment, blunts all fine sensibilities, is an enemy of health, intelligence and morals and of all human welfare interests and progress. It is public enemy No. 1.

58. Avoid tobacco. This baneful drug is used, aside from smoking, for nothing else but to kill things. It is an excellent insecticide. The farmer, the horticulturist, and the market gardener could hardly get along without it. But for man, it is a heart poison, a nerve poison, a muscle poison. It raises blood pressure, shortens life, and is a leading string to vice. Said Tolstoy, "I never had a twinge of conscience after the third whiff." Do not permit yourself to be fooled by the "moderation" delusion. There may be excess and moderation in the use of food and other wholesome things, but use of a poison in any quantity is excess. Beware of "denicotinized" cigars. They all contain nicotine in harmful quantities. The smoking mothers of infants poison their offspring.

59. Do not drink tea, coffee, cocoa or maté. All these drugs contain poisons which raise the blood pressure, cause incomnia, indigestion, trembling and nervousness, lessen endurance and hasten senility and wrinkles.

Roasted cereal coffees are not wholly free from objectionable qualities. Decaffeinated coffee contains much less caffein than ordinary coffee, but is open to other objections. Cereal coffee if prepared without roasting, may be used in place of coffee, but it is better to overcome the taste for coffee and to take in place of it such wholesome substitutes as hot fruit juices or vegetable bouillon prepared from yeast extract (Savita) and fragrant herbs such as the delicious Kaffir tea from South Africa.

60. Avoid nostrums and patent medicines. The habitual use of any drug is harmful. Very few drugs have any real curative value. The essential thing is right habits, biologic living, removal of causes.

61. Avoid especially sleep-producing drugs, "tonics" and so-called nerve stimulants. They are all nerve-foolers. "Tonics" do not increase strength, but lessen it. Hypnotic drugs do not cure insomnia, but tend to aggravate the disease and make it more chronic. All sleep-producing drugs are depressing agents.

62. Avoid pain-relieving drugs unless prescribed by a physician. Most pains can be wholly relieved or very greatly mitigated by harmless means. One of the best is applications of heat. The habit of using aspirin and various other drugs forheadache and other discomforts is most harmful. The proper thing to do is to seek out the cause of the pain or other symptoms and to remove it.

63. Avoid the habitual use of laxative drugs. They cause colitis, appendicitis, duodenitis, indigestion and worse constipation. Use only non-irritating food accessories. Cultivate normal bowel habits by a visit to the toilet after each meal and the use of laxative foods, increasing the quantity of bulkage until the desired effect is produced. If necessary, use the enema. It is practically harmless while all laxative drugs are injurious.

Mental Hygiene

64. Do not worry. Think, concentrate, study, but do not worry. Worry wastes energy, stops digestion, causes constipation, colitis, insomnia, and does no good.

65. Concentrate on your problems, study them, do your best to solve them, pray about them. "Cast thy burden upon the Lord and he shall sustain thee." (Ps. 55;22).

It is just as natural to pray as it is to breathe. There is a scientific basis for faith and prayer. Every creature that has a voice is led by a universal instinct to appeal to its Maker for help when in trouble. If food did not exist, there would be no hunger. If there was no water, there would be no thirst. If there were no source of help for a creature in trouble, there would be no universal instinct to appeal for help by a cry of distress. Every creature that has a voice turns to its maker for help when in trouble. It is as natural to pray as to breathe.

The Infinite Intelligence that created us remains with us to keep the heart beating and to energize all the vital machinery. Prayer is a means by which available help may be facilitated.

66. At least two or three times every day, concentrate the thoughts upon your personal welfare, physical, mental and moral, on some one of your serious problems. If done in a reverential and appealing attitude of mind, such concentration of the mind is real prayer. Earnest prayer is the most intense concentration. Make a note of the new ideas that come to you when meditating or praying, or after. Especially note the first thoughts on awakening after a refreshing sleep. The subconscious works while we sleep.

Food Accessories

Food accessories are non-medicinal substances which aid body functions although not actually appropriated as are foods. Among the most useful food accessories are the following:

Agar, sometimes called vegetable gelatine because of its resemblance to gelatine, an animal substance. However, in composition it is wholly unlike animal gelatine or glue. Agar is a form of cellulose of purely vegetable origin. It is useful as bulkage because it is insoluble in the digestive juices and hence indigestible and swells greatly when in contact with water. It is obtained from seaweed.

Psyllium, a seed obtained from a member of the plantain (Plantago) family, a highly useful form of bulkage.

Kaba, prepared from a highly hygroscopic gum from the Orient. It is insoluble in water, but swells enormously when moistened. Much used as a constituent of laxative remedies in combination with cascara sagrada and other harmful drugs which excite bowel action by irritation. Kaba is an effective preparation of the gum without the irritant drug.

Wheat Bran in all forms is useful as bulkage. It is rarely contraindicated. It may be used advantageously in most cases of chronic colitis, but is contraindicated in cases of acute colitis, active ulcer of the stomach or duodenum and acute infections of the duodenum.

Yeast and Yeast Extracts.--Brewer's yeast is remarkably rich in the B family of vitamins which are essential to growth and health maintenance, especially of the nerves and the digestive organs. Vitamin B is lacking in many common foods such as white bread, polished rice, sugar, lard, corn meal and others of our many denatured foods. Vitamin G is also present in efficient quantities in brewer's yeast, giving it great value as a remedy

for pellagra. Another highly valuable property of yeast extract is its remarkably agreeable meaty flavor which is like that of choice mushrooms and the famous soy sauce of Japan, and is superior to the best meat extracts which are wholly lacking in vitamins and resemble urine in their composition. Yeast extracts are prepared from purified brewer's yeast which is 10 to 20 times as potent in vitamins as is the ordinary bread yeast of the groceries.

How to Take an Enema

Use an enema can or a rubber bag.

The quantity of water should be 2 quarts or less, rarely more.

The temperature should be 105° F. to 115° F.; average 110° F. Cool or cold water at the end is rarely necessary.

The fountain should hang about 2½ feet above the couch on which the patient lies.

Allow the water to enter the bowel slowly to avoid unpleasant reaction.

Lie on the right side during the inflow of the water. After inflow ceases, continue lying on the right side for 2 minutes. Then lie on the back for 2 minutes, and finally, lie for 2 minutes on the left side.

Then evacuate on a low toilet, or with feet raised.

Repeat the enema until sure that the colon is empty.

Proof of the complete emptying of the colon may be obtained by taking at breakfast two capsules of carmine which will color the stool red. As successive enemas are taken, the red color diminishes and finally disappears, signaling the evacuation of the breakfast residues and clearance of the colon.

The enema is best taken at bedtime. This avoids interference with the natural movements which should occur after meals. These tri-daily movements should be maintained by the free use of physiologic measures which encourage bowel action, carefully avoiding laxative drugs.

When necessary, the enema may be used for an indefinite period without injury, provided that care is taken to avoid using such large quantities of water as to overdistend the bowel and also provided that the dietetic measures, bulkage, etc. necessary to insure normal bowel movements are systematically employed, the enema being used not as a substitute for normal bowel movements, but as a supplementary means to secure complete daily

clearance of the colon. In many cases of chronic constipation the colon is so badly crippled that the daily use of the enema is needed to insure the complete evacuation of residues necessary to suppress intestinal putrefaction.

To Change the Intestinal Flora and thus Suppress Putrefaction in the Colon

Normally there should be no putrefaction in the interior of the body. The food residues evacuated by the colon should have little odor. When the stools are highly offensive, it is because the protective germs which Nature supplies from the mother's breast in the act of suckling have been enfeebled or possibly lost, so that putrefactive and disease and poison producing germs have become dominant. To restore the normal condition of freedom from putrefaction, it is necessary to do several things, each of which is as essential as the individual links in a chain.

1. Cease to eat putrescent or putrescible foods, such as meats of all sorts (fish, flesh and fowl). In bad cases, even eggs should be at least temporarily discarded.

2. Increase the activity of the bowels so as to prevent the long retention of residues. The bowels should move after each meal. The colon should be completely emptied every day. Use the enema if necessary, but avoid drug laxatives. Eat freely of fresh fruits and green vegetables, especially foods which supply much bulkage. Especially useful are figs, prunes, raisins, wheat bran in all forms and non-medicinal laxative food accessories such as agar, psyllium, etc.

3. Take at each meal one to four level tablespoonfuls of lactose or lacto-dextrin to feed the protective germs.

4. If the above means are not successful in changing the flora as shown by clearing of the tongue and the disappearance of a bad breath and foul odor of the stools, take at each meal a glassful (6-8 ounces) of a good acidophilus culture.

Helps to Biologic Living

The human body is the most intricate, delicately constructed and finely balanced machine in existence. Its scientific care is a fine art. At no place in the world has the subject of physiologic living been so long and so closely studied as at the Battle Creek Sanitarium which in fact for more than half a century has been virtually a research laboratory in which the quest for health promoting modes of living and helps thereto have been a major objective. More than a million dollars has been expended in this effort. The result has been many new and highly important discoveries, some of which have made the name of Battle Creek known throughout the civilized world, and have made a little town the world center of the breakfast food industry. Not only new foods but a "new cookery"-- new methods of preparing foods for use-- has been created, which provides a bill of fare wholly free from harmful qualities but at the same time even more attractive and satisfying than the unwholesome viands which it displaces.

Methods of treatment and health training have been devised whereby many thousands of persons regarded as hopelessly ill have been restored to health and usefulness and had their lives greatly prolonged.

To the Reader.--If the reader has become convinced of the truth of the teachings of this booklet and desires to earn the rich rewards for physiologic living by following them, he should begin at once a serious study of the subject by the aid of dependable books and other literature and should provide himself with the needful appliances, accessories and other helps whereby he may be enabled to make a successful venture in "high living" of a sort which insures greatly increased efficiency, comfort, real joy of living, and a notable increase in longevity.

If you are really interested, and will addressed the Health Extension Department of the Battle Creek Sanitarium, you will receive the information

you desire.

In conclusion the author desires to say that his purpose in preparing this booklet has been to spread information which might aid those who desire to know the truth about right living and help them to qualify for membership in the coming Aristocracy of Health which the world awaits as the only means of saving the human race from degeneracy and final extinction.

The author will be pleased to hear from any reader who is interested in the principles and methods set forth in this booklet and to answer inquiries.

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AN ARISTOCRACY OF HEALTH

BASED ON

BIOLOGIC LIVING

Rules for "Right Living"

by

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(fine type)

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Foreword

The greatest problem before the world today is "How to save the human race from extinction through degeneracy." The only hope is to create an Aristocracy of Health, that is, to form a group of intelligent men and women who think it worth while to thoroughly inform themselves respecting the marvelous progress made in modern times in knowledge of personal hygiene, euthenics, and race hygiene, eugenics, and to make practical use of this invaluable information in so treating their bodies in everything pertaining to their physical and mental welfare as to develop and maintain the super health and efficiency which modern scientific research (Sherman and others) have shown to be easily possible by meticulous application of established scientific facts to human living; that is, by living in a strictly biologic or physiologic way.

This booklet is a brief summary of more than a half century's search for the right way to live. The writer, now in his 84th year, has devoted his whole life to an intensive study of human habits and living conditions in their relation to health. With the cooperation of hundreds of interested and intelligent colleagues, the Battle Creek Sanitarium, of which the writer has been Medical Director since October 1, 1876, has been made a center of research, experiment, clinical study and adventure in the fine art of biologic living.

Laboratories have been fitted up and provided with the most elaborate and up to date appliances for chemical, nutritional and physiologic research and placed in the charge of trained experts, some of international fame. Close touch has been maintained with the great research laboratories of the world and a constant wide survey made of scientific literature. New discoveries bearing on health have been tested and when found meritorious adopted. More than a million dollars has been

expended in this world wide search and intensive research. Among the practical results may be mentioned the following: the Battle Creek Sanitarium where more than 300,000 persons have been treated, which has grown in 60 years from a small two story frame building with 12 patients to its present proportions with accommodations for 1200 patients. The treatment of these patients by physiologic methods and health training in accordance with biologic principles and methods has afforded an excellent opportunity for testing and validating the methods and ideals presented in this booklet as means of aiding chronic invalids to recovery.

Battle Creek College, with its Schools of Nursing, Home Economics, and Physical Education in addition to the usual Liberal Arts Departments, and a student body of nearly five hundred with more than 4,000 graduates from the several schools scattered over the whole civilized world, ~~and to be found in every mission field, is another notable result of the Battle Creek scientific health movement.~~ The fine resident student body of Battle Creek College not only study the principles of biologic living but live them and grow enthusiastic in their appreciation of their basic soundness and rationality.

Out of this work has also grown the great food industries which have made Battle Creek known throughout the world for its unique and wholesome food products. This special food industry work, begun at the Sanitarium, is continued in the laboratories of the Battle Creek Food Co.

Finally may be mentioned a great number of health promoting methods and appliances, electrical, mechanical and physiotherapeutic, some of which are found in every hospital and in many doctors' offices. Among these might be mentioned the electric light cabinet and other light appliances, the new rotular and generator sinusoidal electrical current, and numerous other electrical and

The results of the practical application of these biologic methods in restoring to health and efficiency many thousands of chronic invalids who had been regarded as incurable has created a wide demand for a brief epitome of the Battle Creek Idea of right living which is the occasion for the publication of this booklet. A full account of the technic of "biologic living" will be found in the writer's recent volume "How to Have Good Health" and in other works, ~~a list of which will be found on the third cover page of this booklet.~~

The monthly magazine Good Health, edited by the writer for more than 60 years, and the Battle Creek Sanitarium News present a popular account of practical biologic methods and of the most recent discoveries and advances.

Those who desire further information about biologic living or suggestions for health training at home are invited to write to us with the assurance that their inquiries will receive without charge, courteous and competent attention since the Battle Creek Sanitarium and its allied health activities are purely philanthropic enterprises devoted to the extension of health promoting ideals and race betterment.

Address Battle Creek Health Extension Bureau

The Battle Creek Idea

Biologic Living. What It Is

Biology is the science of life.

Biologic living is the ~~science~~ art of right living.

We study the biology of our horses, cows, pigs, and chickens, and feed them and care for them scientifically, that is, biologically. ~~And~~ In consequence we have the most wonderful horses, cows, pigs, and chickens the world ever saw. But we forget that we have a biology of our own, a way of life peculiar to our species, a diet specially suited to the genus homo sapiens, a regimen and environment to which we are by nature adapted, which belongs to us.

In consequence of our neglects, the human race is becoming dwarfed and weazened, neurotic, daft, dyspeptic, and degenerate and according to the eugenists is doomed to extinction. In other words, while our humble relatives are through scientific, biologic living ~~rising~~ in the scale of being, we their masters, the lords of creation, are going down because of ~~our~~ neglect to obey the laws of life and health.

Biologic living is not an innovation. It is simply a return to the "old paths" from which the perversions of our modern civilization have gradually diverted many millions of men and women, perversions that are responsible for the multitudinous maladies and degeneracies which yearly multiply in number and gravity.

Biologic living means health, comfort, efficiency, long life. It means good digestion, sound sleep, a clear head, a placid mind, and joy to be alive.

To live biologically is simply to treat one's body in a natural or physiologic way. What more sensible thing can one do than to cherish

and develop and make wise use of all his physical powers, in other words, become a health ~~aristocrat~~?

Tens of thousands of men and women, through adherence to biologic principles, have been delivered from feebleness, misery and inefficiency and brought to the enjoyment of stable and exuberant health, ~~the real joy of living~~. The reader is ~~here~~ invited to enter upon the same experience.

Why a Change Is Needed

There's something seriously wrong with the world. The birth rate is diminishing and so rapidly that according to Prof. Wilcox, of Cornell University, by the year 2,000 A. D., no babies will be born. Lunatics, idiots and epileptics are increasing at such a rate that, if continued, in less than 250 years the world's population will consist chiefly of lunatics, idiots and epileptics. Man, once the longest lived and toughest of all his compeers in the animal kingdom, has become a short-lived and puny representative of the genus homo, and is, according to Prof. Darwin, of Oxford University, son of the famous Charles Darwin, Prof. C. B. Davenport, of the Carnegie Institute, and other leading scientists, hastening down the hill of race degeneracy to extinction.

George Ade, the humorist, says the average man is dead at 30 and buried at 60. Certainly the average man is less than half alive during the last half of his life. This half alive condition is the result of unnatural living.

In the development of civilization, living habits and conditions have been chiefly dictated by chance, taste, fancy, convenience, economy, fashion, rather than by considerations of health or biologic adaptation.

To those who hesitate to adopt new habits, especially in diet,

we commend the following observations by that noblest of Roman sages, the wise Seneca, who, like Pythagoras and Socrates, lived a biologic life:-

"There is nothing against which we ought to be more on our guard than, like a flock of sheep, following the crowd of those who have preceded us, going, as we do, not where we ought to go, but where men have walked before. We live not according to reason but according to mere fashion and tradition. xxx

"We shall recover our sound health if only we shall separate ourselves from the herd, for the crowd of mankind stands opposed to right reason-- the defender of its own evils and miseries. ~~The very fact of the approbation~~ of the multitude is a proof of the badness of the opinion ~~or practice.~~ Let us ask what is best, not what is most customary."

We grow old prematurely because we depart from the simple, economic ways of Nature which make small demands upon the life mechanism, especially those highly essential viscera, the liver, kidneys and heart, load the body down with unnecessary work in the disposal of excess, and especially the elimination and destruction of poisons generated in infected colons, duodenums, gall bladders and other organs which often become the seat of germ infections and incubators of parasitic bacteria and their venomous products.

Anything which lightens the load on the overworked viscera, promotes rejuvenation and length of days. It is this that gives the vacation its value as a means of recuperating wasted energy. Recreation we call it, not realizing the full significance of the word re-creation, a renewal of the wasted energies and depleted body. The vacationist returns to his task looking and feeling younger, and that very often in spite of the fact that he has continued to smoke, drink coffee and perhaps cocktails and to do

many other things against the best interests of the body.

Biologic living is simply conforming not to a few only, but to all the rules of physiologic living.

The biologic life is not at all a hardship. It is a most delightful experience. It does not require any sacrifice. It simply replaces harmful ways for wholesome ones which are not merely equally enjoyable but far more delightful. It is not, for example, an abandonment of gustatory pleasures, but an acquaintance with new and even more delightful ones. And the results in relief of headaches, gastric miseries and other ills is so prompt and so pleasing that satisfaction and enthusiasm grow with each day's experience.

The Proofs

The soundness of this philosophy of physiologic rectitude which has been worked out at the Battle Creek Sanitarium during the last half century has been proven in the experience of tens of thousands of intelligent men and women among the more than a third of a million persons who have entered the doors of this university of health.

To watch the transformation of this sick and often despairing throng of suffering men and women from invalidism with all its helplessness and miseries into healthy, happy and useful people, has been a delightful experience. The change from a disease promoting regimen and harmful habits to health building habits and regimen has been the chief factor in giving to the institution such a degree of success that without endowment or gifts, except from its managers and workers, it has grown from its beginning in 1876 in a small two story building with a few cottages and a dozen patients to the largest sanitarium in the world, drawing patients from every part of the globe, at the rate of 10,000 to 12,000 a year.

And among the rest have come many notable people, such as Sir Horace

Plunkett, Fellow of the Royal Society and Member of King George's Privy Council and Minister of Agriculture for Ireland, who was sent to the Sanitarium by the King's physician, Lord Dawson of London, Jacob Reis of New York, the civic reformer, Dr. Stephen Smith, founder of Bellevue Hospital and of the American Public Health Association, John D. Rockefeller, Jr., the world's greatest philanthropist, who, although not sick, desired to learn how to live and who still adheres to the biologic way as do many others of the country's most eminent statesmen, and not a few of its leading scientists and educators.

The fundamental principle of the Battle Creek Idea is to follow Nature, to live close to Nature, to cultivate natural tastes and habits, and to establish strict taboos against everything which lays upon the body unnecessary burdens to hamper its functions, clog and cripple its delicate machinery and wear it out prematurely, a category which includes not only alcohol, tobacco, tea, coffee and chocolate, but pepper and other hot and irritating condiments, unnatural foods such as meats, unsafe foods such as market-contaminated fruits and vegetables, unless disinfected, denatured foods and culinary monstrosities.

The idea is by no means new. It did not originate at Battle Creek nor in recent times. As man has advanced in civilization, he has left behind many of the good things which he enjoyed in his primitive state and has adopted many perverse ways and harmful practices which have created a thousand maladies and become the cause of untold miseries.

Begin the Biologic Life Today

And why not begin today? If you could know thehappy experience that awaits you, you would start at once. It will be a delight to feel the headaches and backache, weariness and dullness, lack of zest and pep and a hundred other miseries one by one slipping off and a sense of returning youth taking their place. Rejuvenescence is what you need, and

through natural living you may reasonably expect to find it. Benjamin Franklin tried it. Through biologic living when a boy, to which he was led by reading the writings of a pioneer diet reformer, he became a model of vigor and endurance and laid the foundation for his amazingly active and successful career. In his prosperous old age he departed from the simple wholesome ways of his youth and became so badly crippled with rheumatism and gout that at 70, as he wrote his wife when 74, he found himself so ill that he felt sure he would soon reach the end of his career unless he made a radical change. He returned to the simple biologic habits of his youth and, as the result was able to report to his wife, "I have walked back four years so that you may now consider me as 66 instead of 74."

Biologic living is the only road back toward youth and health and all the felicities associated with a sound mind in a sound body.

How to Begin

Make a survey of yourself and your surroundings.

Take an inventory of your knowledge about health and conditions which promote physical well being.

Look over your library and see that it is supplied with up-to-date health literature from a dependable source.

Get in touch with your State Board of Health and read the literature the secretary will send you.

Visit your family physician or the best physician available and have a thorough examination of your heart, lungs, blood, blood pressure, urine, every organ and function. Don't be satisfied with an ordinary cursory examination, but find out everything you can about yourself. Repeat the examination at least once every year.

Very few people are perfectly well even though they feel no discomfort. The early or so-called "little symptoms" of disease often pass unnoticed long after they are discoverable if carefully looked for by an up-to-date physician aided by up-to-date diagnostic appliances.

Carefully consider your habits,-- do they tend toward health or disease? Resolve to eliminate every disease-producing factor, to cultivate health, to fight disease, and to make this a part of your daily program.

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Concentrate on health. Read what you find about health in magazines and newspapers. Don't believe all you read, of course, but discuss it and accept what appeals to your good sense, but avoid sensational ideas and fads.

Become a health enthusiast. After you have read, reread and studied carefully this booklet, make a list of your defects and set to work systematically to correct them. Resolve to become a real health aristocrat, to enjoy not simply comfortable health, but the super health which results from meticulous attention to health culture.

THE RULES

1. Breathe Deep. Take a dozen deep breaths several times a day; several times an hour is better.

Taking a deep breath is like blowing a smoldering fire. It brightens the vital flame. Deep breathing does more. It gives the liver a hearty hug and compresses and sucks the stagnant blood out of it and sends it on its way to the lungs, to be emptied of its poisons as ~~gases~~.

Deep breathing is an important aid to the heart. The chest is a blood pump as well as an air pump, and so deep breathing helps the heart.

Deep breathing aids the elimination of residues. Each breath

pushes along in the colon the unused remnants of foods and other residues which are eliminated through the bowels. Every deep breath gives a little push. Exercise helps bowel action by inducing deep breathing.

2. Work, play, read, study, and rest in the open air.

Do your work in the open under the trees instead of behind doors and opaque walls. Dig in the garden, explore the woods and hills. Follow the brooks, watch the squirrels and learn the songs of the birds. If compelled to remain indoors, be sure that the living and work rooms have an ample, continual supply of fresh moving air. The lower the temperature the better, so long as the body is kept comfortably warm. Temperatures much above 70° are depressing.

Sleep in the Open Air

Fix up a sleeping-porch or a balcony and so take an outing all night long and every night, and don't move inside when frost comes. Outdoor sleeping is one of the best life-preservers known.

3. Take a sun bath often enough to keep the skin well browned.

In the warm months take a good sun bath once a week at least. Don't be afraid of getting slightly sunburned. No harm will result except a temporary inconvenience from skin irritation. A sunburn is a solar erythema and not a real burn. It does not destroy the skin as does a true burn and leaves no scars. Expose the skin to the air and the sunshine as much as possible. The skyshine is highly beneficial as well as the sunshine. A mild "sun burn" increases immunity (Hill).

About Eating

4. Eat what you like; that is, food which you can relish. Food must be well relished as well as wholesome to be well digested. The taste and the odors of foods if agreeable, cause the saliva and gastric juice to flow. "The mouth waters" and the stomach also. The "appetite juice" thus formed,

even before the food reaches the stomach, is the most active agent in gastric digestion. Says Pavlov, "Appetite means juice."

5. Prefer Natural Foods

Use the same good sense and judgment in feeding yourself as ~~that you do~~ in feeding your dog, a pet canary or a prize winning horse. Primitive man ate his food as he found it prepared for him in the forest. In other words, he ate all his food in a raw or natural state. We cannot easily do this, but may profit greatly by eating largely of ~~natural uncooked~~ foods.

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Biology teaches that man's natural diet is the same as that of his nearest relatives, the primates, such as the gorilla, the chimpanzee, the orang-utan and the gibbon, viz., fruits, grains, nuts, tender shoots and succulent roots (Cuvier, Buffon and other naturalists) rather than meats.

6. Avoid too Much Protein

The daily amount of protein required is small compared with that of other food elements. An ample amount is supplied by such foods as bread and other cereals, beans, peas, soy beans, supplemented with the proteins of milk, soy bean milk or nuts to insure good nutrition. A pint of milk or soy milk daily or three or four ounces of nuts or two of soy beans taken with plenty of other foods will amply supply all the protein needed and of excellent quality.

7. Avoid meats, fish, flesh and fowl because they are unnatural foods and hence not well adapted to man's use as are natural foodstuffs. Here are other good reasons:

(1) Meats are very deficient in vitamins and lime. The iron of meat is of an inferior sort. Meat eating animals suffer most from pernicious anemia.

(2) Lean meat contains uric acid (14 grains to the pound) and other harmful toxins and tissue wastes-- about one-fourth of its weight. When fed to mice, this material causes nephritis in a few days.

(3) Fresh meats are grossly infected with colon germs during or after killing. Ordinary cooking ~~does not~~ kill ~~all~~ the colon germs of meat, which in some meats outnumber those in animal droppings.

(4) The meat-eating Eskimos are short lived-- old at 50 and worthless at 55 years ~~(McMillan).~~ Stefansson's meat-eating stunt, performed for the meat packers, was a shabby fake.

(5) Bright's disease is most frequent in meat-eating countries (Hindhede).

(6) Meats, especially pork, are often infected with living parasites. The pork parasite, trichina, is spreading rapidly. Government inspection has failed to stop it and has been abandoned and hence all pork is dangerous. The government warning to avoid eating raw pork is insufficient. All pork is dangerous. Ordinary cooking does not kill all the parasites. The sale or use of pork as food should be forbidden.

Eggs

8. ~~Do not use eggs freely.~~ They may be discarded without injury if care is taken to provide sufficient protein, iron and vitamins by the use of nuts, soy bean milk and plenty of green vegetables.

Infected eggs cause colitis. According to Tissier of the Pasteur Institute, most eggs are infected. The yolk of ~~the~~ egg is more wholesome than the white ~~when it has been hard boiled.~~ Raw eggs encourage intestinal putrefaction. Avoid egg-nog.

Milk--Dairy Products

9. Cow's milk disagrees with many persons. In the case of a person suffering from hyperacidity, large hard curds are often formed

which are difficult of digestion and encourage intestinal putrefaction and "biliousness." Many persons are sensitized to cow's milk and cannot make use of ~~milk in its ordinary form~~ without headache, constipation, asthmatic attacks, skin eruptions, coated tongue, or other unpleasant symptoms.

Boiled milk is often less objectionable than raw. A small portion of ~~sour~~ cream or buttermilk often causes no inconvenience. Sometimes cottage cheese or cream cheese may be safely eaten by persons who cannot eat ordinary milk.

Persons who discard meat may make sure of getting an ample amount of "complete" protein by using daily from a pint to a pint and a half of milk. When dairy products or eggs are eaten, meat is superfluous.

Milk may be replaced by milk prepared from nuts (malted nuts, almond cream) or the soy bean (soy milk, soy acidophilus milk) which has been in use in Oriental countries for thousands of years with entire success as a substitute for dairy products.

Many persons, including the author, have found it highly profitable to dispense with animal products of every sort, practically excluding from the dietary eggs and dairy milk as well as fish, flesh and fowl. It should be noted that such a restriction of the diet requires careful balancing ~~of the~~ bill of fare ~~by a trained dietitian.~~

Butter and Other Fats

10. Give preference to vegetable fats, excepting butter. Animal fats, ~~with the exception of butter,~~ are less wholesome than vegetable fats and less digestible. Tainted butter or other rancid fats, either animal or vegetable, are harmful. Fats generally lack vitamins and should be supplemented by carrots, spinach or tomatoes.

Butter is an important source of vitamins A and D.

Nuts and nut emulsions (almond cream, malted nuts, nut butters)

are excellent sources of easily digestible fats. The soy bean contains 20 per cent of an exceptionally fine fat which is rich in lecithin.

The actual fat requirement is very small when greens and carrots are eaten freely to supply the fat soluble vitamin. A It is well to add wheat germ, which is rich in all the vitamins except C.

Cereals--Bread and Breakfast Foods

11. Avoid ~~very~~ free use of cereals. Bread and breakfast foods are cheap and concentrated sources of nourishment, but contain an excess of phosphoric acid and when used too freely tend to cause acidosis. Whole meal or graham bread, wheat flakes, bran flakes, shredded wheat, and rice (preferably unpolished) are the best cereals, but they should not be made the chief sources of nourishment. Eat less cereals and more potatoes.

Raw starch is not easily digestible. For this reason, unripe fruit is unwholesome when eaten raw. Bananas, which are usually eaten before becoming fully ripe, often disagree for this reason.

12. Restrict the Use of Cane Sugar. Carbohydrates in the form of sugar are attractive on account of their sweetness, but not always wholesome. There are five food sugars,--cane sugar (white or granulated sugar, brown sugar, beet sugar, molasses, syrup, raw sugar, maple sugar, maple syrup, sorghum); malt sugar (maltose, malt syrup); ~~fruit~~ milk sugar (lactose), found only in milk,

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~~Of the five,~~ cane sugar is least wholesome. Taken in concentrated form, as usually eaten, it irritates the stomach and encourages infection of the stomach, duodenum and gall bladder.

Malt sugar is the natural sugar of the body, being produced in abundance when starch is digested by the saliva, the pancreatic juice

and the intestinal juice. It is digested and absorbed much more quickly than cane sugar.

Fruit sugar is of all sugars the sweetest and the most easily assimilated. It requires no digestion,-- is ready for immediate absorption.

Dextrose or glucose is less sweet than cane, malt or fruit sugar, and in its pure state as found in fruits, requires no digestion.

Milk sugar, although least sweet, is one of the most important of all the sugars. It is provided by nature not only as a carbohydrate food for the infant mammal, but as a nutrient for the protective germ, the Bacillus acidophilus, which combats putrefactive, pus-forming and other disease-producing germs in the intestine, thus preventing the development of putrefaction and infection in the intestine. By the liberal use of this sugar, bottle-fed infants, older children, and adults may enjoy much the same protection against colitis, appendicitis, and other intestinal infections, as have breast-fed infants. Ordinary milk sugar has little sweetness. A recent discovery makes it possible to make lactose three times as sweet and three times as soluble by converting it into beta-lactose, sometimes commercially known as B-Lac, which is excellent for table use in place of cane sugar.

Green Vegetables

13. Make fresh green vegetables a part of every meal because of their richness in vitamins and food minerals, of which they are the chief source. At least one fresh uncooked food such as lettuce, celery, cabbage, carrots or cucumbers should be eaten at every meal. It is a good plan to make at least one meal daily consist largely of uncooked foods. The juice of the raw turnip and other vegetables is most excellent. Sauerkraut juice has little value and contains too much salt.

Fresh Fruits and Fruit Juices

13. Make fresh fruits or fruit juice a part of every meal. Of highest value are the orange, grapefruit, apple, and tomato. Canned tomato juice is nearly as good as fresh juice. Eat very freely of all fresh fruits in their season. Such juicy fruits as apples, citrus fruits, peaches and melons may be eaten at any time as well as at meals. They require little digestive work.

Bulkage Foods

14. Eat bran or other bulkage freely to encourage colon activity. The natural unprocessed bran is most efficient. Fresh fruits and vegetables have value, especially berries, prunes and figs, but the hemi-cellulose of fruits and vegetables is digestible. Wheat bran is more efficient because its cork cells are indigestible. It may be made a part of every meal by most persons with great profit. It is best to take it at intervals during the meal so that it will be thoroughly mixed with the rest of the food, thus avoiding impaction. For a like reason mineral oil is often needed with bran and other bulkage. Agar is also useful. Psyllium seed is highly efficient. Paramels, a paraffin oil which melts at the temperature of the body, ~~is more efficient as a laxative than the ordinary forms of paraffin oil,~~ and has the advantages that it is active in smaller amounts, and that it does not leak or cause "accidents."

15. Food Combinations. Do not forget that ~~the proper combinations~~ a variety of foods are necessary to insure a complete assortment and abundant supply of all the needed vitamins and food minerals as well as the necessary protein, starch and fat required for tissue building and energy production.

Ignore the current notions about food combinations. It is an error to suppose that fruits and vegetables should not be eaten together, or that starch and protein are a bad combination, or fruit acids with starches

unwholesome, or acids and milk indigestible. Fruits and vegetables agree perfectly if thoroughly chewed. Fruit acids do not prevent the digestion of starch.

Starch and proteins are associated in normal foodstuffs. A meat and bread diet causes acidosis.

How Much to Eat

16.7 Be careful to eat enough but not too much. A good rule is to leave the table while still able to eat more. Never eat so much as to feel a sense of discomfort or to cause dulness or drowsiness. The amount of food needed depends upon the age, size and activity of the individual. Men need more food than women because they are larger and use their muscles more. Children need more in proportion because they are growing. The individual requirement may be determined by reference to the accompanying tables (See back of booklet). The energy value of the ration may be determined by multiplying the normal weight for a person of the given height by 14. This gives the total number of calories required. Of the energy value of the food (calories) one-tenth may be protein, three-tenths fat and six-tenths carbohydrates.

17. The following represents the food needs of an average adult weighing 136 pounds doing light work:

A day's bills of fare

Breakfast

Dinner

Supper

Hard muscular work requires one-third more food or even more. Mental work requires little more food than loafing.

After 80, the food requirement is about half that of middle age.

19. Weigh once a week. Consult table of heights and weights (See Appendix).

If 5 to 10 per cent underweight, be thankful if over 40 years. If under 30, eat more, especially of carbohydrate foods (See Appendix).

20. Masticate thoroughly. Every morsel of food should be chewed until it becomes a smooth purée or semi-liquid in the mouth. Thorough chewing greatly aids digestion and will cure many cases of indigestion. Tasting and chewing the food cause the gastric glands to pour out their secretion and stimulate the colon to push its contents along and so aid bowel action. Careful mastication affords opportunity for the nutritive instincts to select the food and food elements adapted to the body needs, and to say "Enough," at the proper moment. Hence, give preference to dry foods. Sip liquid foods slowly.

21. Be careful to balance the bills of fare.

(a) For protein, fats and carbohydrates. Although protein is a highly essential food element, there is little danger of a deficiency, as the amount needed is comparatively small, not more than one-seventh by weight of the total ration, and not more than one-tenth of the energy value (calories). Even the potato, cabbage, beet, parsnip, carrot and the humble pumpkin contain the requisite amount of protein and of excellent quality, while bread offers an excess. One egg, a glass of milk, an ounce of soy beans or a small handful of nut meats in addition to ample meals without meat will insure an intake of all the protein the body can utilize.

The amount of fat may be greatly varied without injury. One-tenth the water-free weight of the daily intake is ample. The body can make

its own fat from starch and other carbohydrates.

Carbohydrates, chiefly starch, make up three-fifths of the total normal ration (energy value) and are the body's chief source of heat and energy.

(b) For all vitamins, A, B, C, D, E and G. For A, by use of butter, cream, and greens; for B, by fruit juices, greens, bran, yeast and yeast extract (Savita, Marmite); for C, by fresh fruits and vegetables and their juices, especially orange or lemon juice, tomato, turnip and cabbage juice; for D, by use of butter, greens, and radiated foods; for E, wheat germ.

(c) For food lime, by free use of greens, dairy milk, soy beans, whole grains and fresh vegetables. For food iron use freely, greens, egg yolk, wheat flakes, bran flakes, Krusty Bran, shredded wheat, oatmeal, raisins, dates, figs.

(d) For chemical balance make the chief constituents of the bill of fare consist of fresh fruits and vegetables, avoiding meats and eggs and excess of cereals.

Things to Avoid in Eating

21. Avoid condiments-- mustard, pepper, pepper sauce, cayenne, capsicum, vinegar, hot, irritating sauces, and spices of all kinds. All hot sauces must be wholly discarded. They irritate the stomach and cause gastric and intestinal catarrh and gastric ulcer, colitis, and damage to the liver and kidneys.

22. Avoid free use of denatured foods such as fine flour bread, new process corn meal, polished rice, corn starch, tapioca, lard, refined sugar. Use instead, whole meal cereals, raw or unrefined sugar, maple sugar, honey, and sweet fruits, malt sugar, milk sugar (lactose, lacto-dextrin, beta-lactose).

23. Avoid richly and highly seasoned dishes, sauces, fried foods and flaky pie crust. They are most indigestible.

24. Avoid many varieties and dishes at one meal, but also avoid a monotonous diet. Vary the diet from day to day.

25. Avoid poison-containing foods. Vinegar and foods pickled in vinegar are indigestible and interfere with the gastric digestion of starch. Pieplant and sorrel contain oxalic acid, an active poison which arrests starch digestion. Death has been caused by pieplant greens, and acute and fatal relapse in cases of Bright's disease by use of stewed pieplant.

26. Common salt, or chlorid of sodium, should be used sparingly. According to Richet and others, the food naturally contains all the chlorid of sodium actually required by the body, so that the addition of salt to the food is necessary only to please a cultivated taste. A safe rule is: The less salt the better. Persons who have dropsy, Bright's disease, arteriosclerosis, gastric ulcer, hyperacidity. obese persons and epileptics should discard salt entirely.

27. Avoid use of beef tea, bouillon, chicken and other animal broths. They have practically no food value but consist almost exclusively of extractives or tissue wastes. The composition of bouillon is practically the same as that of urine. One is an extract of flesh made by the kidneys, the other by the cook. The most eminent French and English physicians condemn their use, as did the late famous Dr. Austin Flint, Sr. of New York. Good extracts of brewers' yeast (Savita, Cenovis) supply a similar and better flavor together with the highly important vitamins (A and G), of which it is the richest source.

28. Avoid irregularity of meals. Food should be taken at regular intervals to insure regular evacuations of residues. It is especially

harmful to take meals too near together, thus introducing food into the stomach before the previous meal has passed out. It is desirable that the meals should be so spaced that the stomach may be completely emptied for at least a half hour before a new meal is taken.

29 **Eat when hungry**; never because it is mealtime or because invited to eat. When appetite is lacking, eat fruit and bulkage, avoiding much protein and fats. Remember that food must be well relished to be well digested. According to Pavlov, "appetite juice," which is produced by stimulation of the nerves of taste by palatable food, is the most important factor in gastric digestion.

If the tongue is coated, clear the bowels by enema or irrigation. Cultivate appetite by exercise and cold bathing.

~~29.~~ **Eat at regular hours** to help maintain the normal intestinal rhythm of three daily movements of the bowels. Rather than omit a meal entirely eat some fruit, or a cake of Laxa with fruit juice, or some other simple nutrient which will keep up the peristaltic procession and rhythm. Never take food into the stomach when remains of a previous meal ~~are present.~~

~~30.~~ A good plan, especially for sedentary persons, is to eat twice a day, 8:00 A. M. and 1:00 to 3:00 P. M. or 11:00 A. M. and 5:00 P. M. if the retiring hour is necessarily late. When breakfast is omitted or taken very late, it is an excellent plan to take some fruit soon after rising.

~~31.~~ **If you eat three meals a day, take the heartiest meal at noon.** The breakfast should be substantial, the evening meal very light especially avoiding pastry, fats, rich sauces, and hearty foods. If troubled with insomnia, make the last meal consist chiefly of ripe or cooked fruits, liquid foods, and such cereals as boiled rice or cereal flakes. Avoid pastry. Do not eat hurriedly nor just before retiring. A ten minutes'

nap after dinner is not objectionable, but long sleeping after meals is harmful. Elderly persons should rest one hour after meals

Eating a little fresh fruit half an hour before retiring encourages bowel action.

33. Avoid eating too fast. Chew every morsel until reduced to liquid in the mouth. Thorough chewing develops "gastric juice" in the stomach and combats intestinal autointoxication, a most prolific cause of disease. Careful mastication affords opportunity for the nutritive instincts to select the food and food elements adapted to the body needs, and to say "Enough" at the proper moment. Hence, give preference to dry foods. Sip liquid foods slowly, taking care to insalivate thoroughly. It is advantageous to take liquid foods like milk through a straw or small glass tube to insure admixture of saliva.

34. Dismiss worries and annoyances while eating. Good cheer promotes good digestion, Anger, worry, and irritation stop digestion.

Water-Drinking--Beverages

35. Take three or four pints of water a day, including liquid food. Take a few sips whenever thirsty. It is a good plan to drink a glassful of water on rising in the morning, on retiring at night, an hour before each meal, and each time the bladder is emptied.

The chief object in drinking at meals is to refresh the sense of taste. Cold increases nerve sensibility. It is for this reason that cold drinks are preferred. Small sips of cold or even iced water refresh the mouth and do no harm. Drinking much cold water at meals hinders digestion.

Exercise

36. Do some good, hard muscular work every day, enough to produce slight muscular fatigue and free perspiration, but avoid exhaustion.

Walking, housework, gardening, farm work, ordinary laborer's occupations are excellent forms of exercise. In walking, always hold the chest high and carry it well to the front. Swing the arms moderately and walk fast enough to hasten the breathing a little. Nine miles walking a day at the rate of three miles an hour is the necessary amount for the average adult. Most housekeepers and laborers do more. Rapid walking and hill climbing are excellent; stair climbing is good.

Working in the open air is one of the best forms of exercise, especially working in the garden, digging, hoeing, pruning, etc.

For persons advanced in years, walking, horseback riding and bicycle riding are excellent exercises, practiced in moderation.

3. Develop the abdominal muscles by some simple exercises, such as walking on tiptoe with the chest held high, or running round the room "on all fours"; or lying on the back, hold the legs straight and raise them to the perpendicular, repeating thirty to forty times three times a day. Then raise the body from the lying to the sitting position with the hands placed upon the back of the neck. Repeat ten to twenty times three times a day, gradually increasing the work from day to day. The Health Ladder is a good health trainer for daily practice (phonograph records).

3. Practice deep breathing with chest well expanded and clothing removed or loosened, several times a day. Hold the chest high and breathe as deep as you can ten or twenty times every hour or oftener.to develop the lungs and to keep the chest walls flexible. Stimulate the lungs by exercise for a few minutes several times a day with sufficiently vigorous to cause quickened respiration. The best "breath" gymnastics are swimming,

hill or stair climbing and running or rapid walking. Always breathe through the nose.

Posture

~~39~~ 38. **Always sit erect,** with chest held high and the small of the back supported. Sit as little as possible. Standing and lying are more natural and healthful positions than sitting.

When ~~sitting or~~ standing, ~~keep~~ hold the body erect.

~~In standing, hold~~ the hips well back, the chest forward, the chin drawn in.

In sitting, do not slump, but keep the chest up. This requires an effort which becomes tiresome if long continued, unless proper support is given to the lumbar spine or so-called hollow of the back. To keep the shoulders from dropping forward and flattening the chest, support should also be given to the upper spine between the shoulder blades.

A chair constructed so as to support the lower back and the upper spine will hold the body in perfect position when completely relaxed as is necessary for complete rest. Such chairs are now available.

Rest and Sleep

40. Learn to relax both mentally and physically. Merely stopping work does not secure rest ~~is not sufficient~~ if "tension" continues. This is especially true of vocations which do not involve much muscular effort. It is a good plan to lie down and relax completely with the eyes closed in a cool, darkened quiet place for half an hour in the middle of the day. Very arduous occupations require a short rest at more frequent intervals. Practice deep breathing while resting and not asleep.

41. Avoid long periods of strain, mental, nervous or physical, and especially avoid overstrain. The effect is likely to appear later in

premature mental or nervous breakdown.

43. Make the weekly Sabbath a day of complete rest from work. Spend most of the day out of doors if possible. Take a half day off for an outing in the middle of the week.

44. Sleep 8 hours each night. Elderly persons need 9 or 10. If not strong or if neurasthenic, sleep an hour before dinner. An hour's rest in the horizontal position is very refreshing, even without sleep.

Growth, assimilation and repair are most active during sleep. The nerve and brain storage batteries are recharged during sleep.

Surroundings at night should be quiet. Sleep amid noise is not normally refreshing.

~~On the side is the best position during sleep for most persons. Change sides.~~

The bed should be neither too hard nor too soft. Avoid feathers. The covers should be dry, warm, light and porous. Avoid overheating by excess of clothing. Use a thin pillow and discard bolsters. A sand bag at the back aids relaxation.

Provide an abundant supply of outdoor air during sleep by means of wide open windows, a window tent, a fresh-air tube or a sleeping balcony.

To insure sound sleep at night empty the colon at bedtime (by enema if necessary) and avoid late and heavy meals. A fruit supper is conducive to sleep.

Clothing

45. Avoid too much clothing. Over-heating is depressing. Dress according to the temperature and weather, regardless of the season, and do not slavishly follow the fashions but dress for health and comfort.

The clothing should be loose, comfortable, light and porous. Restrictive clothing is necessarily damaging. The trunk of the body when in action is continually changing in form and size. Wear porous cotton undercloth-ing next the skin. Avoid waterproofs except for temporary protection. Clothe the extremities so as to keep them always warm and dry.

4[illegible] Use care in selecting footwear. Avoid shoes with high heels or narrow toes. Wear shoes with broad soles, low heels and a stiff shank. ~~Avoid~~ flexible shanks; ~~They~~ cause flat feet. If the feet ache from long standing or walking, have them examined by a good foot specialist. Great harm may result from neglect. Sandals are most healthful.

If you have flat feet, wear Chinese slippers. Have your shoes properly adapted to your feet by a dependable Specialist.

The Toilet

45. Cleanse the mouth and teeth thoroughly before and after each meal, on rising and on retiring. A foul tongue and decaying teeth indi-cate mouth infection and intestinal autointoxication and general low re-sistance. Diseased teeth often cause rheumatism, neuritis or heart disease.

4[illegible] Bathe daily at night in warm weather. Twice a week in winter take a warm, cleansing bath before retiring. If the skin is dry and irri-tated, apply lanolin cream, of which the following is the formula:

Lanolin	2 drams
Boroglyceride	1 dram
Cold cream	6 drams

47. Keep clean. Always avoid so far as possible any contact with infectious material. It is to be remembered that the risk of contamination is especially great in visiting a public water-closet, or, in fact, any ~~other.~~ toilet or lavatory.

1948. Take a cold bath on rising to set the vital machinery in motion. Young and robust persons may take a plunge in a bath tub or swimming pool. Elderly and feeble persons may rub the body with the hand dipped in cold water or with a dry towel in a cool room.

~~49~~. For the hands, use a good soap and rinse well with soft water. If rough, apply ~~skin~~ cream (~~as given~~ above).

50. Cleanse the anal region after bowel movements by washing. This is the universal practice in India. If hemorrhoids are present, apply carbolated vaseline as an antiseptic after every bowel movement.

Colon Hygiene

51. Move the bowels at least three times a day,-- after each meal. Visit the toilet regularly after eating, on rising, and before retiring at night. Do not wait for a "call."

52. When a "call" is experienced, respond immediately. Five minutes may postpone action indefinitely. Support the feet on a stool before the ~~closet~~ seat.

After the bowels have moved, observe the results. The stool should be ample, soft, never hard or lumpy and should have little or no odor, and there should be no mucus present.

Putrid, foul-smelling stools are an indication of intestinal auto-intoxication, and are due to an excess of protein (meat or eggs) or of decay due to stasis or stagnation in some part of the colon. Such a condition always breeds disease and indicates need for a "change of flora." ~~Write for instruction how to change the flora and keep it changed.~~

55. Once or twice a week test the intestinal "motility" by taking at breakfast one or two five grain capsules of carmine ~~at breakfast.~~ Note the time required for the red color to disappear from the stools.

More than 24 hours indicates delay and resulting putrefaction of residues and need to "change the flora" and increase bowel activity. (See Appendix)

54. Never go to bed with a loaded colon. If necessary, empty the colon by a succession of enemas. If carmine has been taken at breakfast, repeat the bedtime enema until the red color is practically absent when the water returns. (See Appendix, "How to Take an Enema.")

Important to Avoid

55. Avoid alcohol in every form. It is not a stimulant, but a narcotic. It is not a food. It is not a remedy for any disease. It hinders digestion, weakens the heart, lessens strength and endurance, dulls the brain, perverts the judgment, blunts all fine sensibilities, is an enemy of health, intelligence and morals and of all human welfare interests and progress. It is public enemy No. 1.

56. Avoid tobacco. This baneful drug is used, aside from smoking, for nothing else but to kill things. It is an excellent insecticide. The farmer, the horticulturist, and the market gardener could hardly get along without it. But for many it is a heart poison, a nerve poison, a muscle poison. It raises blood pressure, shortens life, and is a leading string to vice. Said Tolstoy, "I never had a twinge of conscience after the third whiff."

Do not permit yourself to be fooled by the "moderation" delusion. There may be excess and moderation in the use of food and other wholesome things, but use of a poison in any quantity is excess. Beware of "denicotinized" cigars. They all contain nicotine in harmful quantities. (25)

57. Do not drink tea, coffee, cocoa or maté. All these drugs contain poisons which raise the blood pressure, cause insomnia, indigestion, trembling and nervousness, lessen endurance and hasten senility and wrinkles. Roasted cereal coffees are not wholly free from objectionable qualities. ~~Kaffee Hag~~ They contain much less caffein than ordinary coffee, but are open to other objections ~~which prohibit the use~~ of coffee. Cereal coffee,

prepared without roasting, (~~Minute~~ ~~Brew~~) may be used in place of coffee, but it is better to overcome the taste for coffee and to take in place of it such wholesome substitutes as hot fruit juices or vegetable bouillon prepared from yeast extract (Savita) and fragrant herbs.

58. Avoid nostrums and patent medicines. The habitual use of any drug is harmful. Very few drugs have any real curative value. The essential thing is right habits, biologic living, removal of causes.

59. Avoid especially sleep-producing drugs, "tonics" and so-called nerve stimulants. They are all nerve-foolers. "Tonics" do not increase strength, but lessen it. Hypnotic drugs do not cure insomnia, but tend to aggravate the disease and make it more chronic. All sleep-producing drugs are depressing agents.

60. Avoid pain-relieving drugs unless prescribed by a physician. Most pains can be wholly relieved or very greatly mitigated by harmless means. One of the best is applications of heat. The habit of using aspirin and various other drugs for headache and other discomforts is most harmful. The proper thing to do is to seek out the cause of the pain or other symptoms and to remove it.

61. Avoid the habitual use of laxative drugs. They cause colitis, appendicitis, duodenitis, indigestion and worse constipation. Use only non-irritating food accessories ~~(see Appendix)~~. Cultivate normal bowel habits by a visit to the toilet after each meal and the use of laxative foods, increasing the quantity of bulkage until the desired effect is produced. If necessary, use the enema. It is practically harmless ~~if inconvenient~~, while all laxative drugs are injurious.

Mental Hygiene

62. Do not worry. Think, concentrate, study, but do not worry. Worry wastes energy, stops digestion, causes constipation, colitis, insomnia, and does no good.

63. Concentrate on your problems, study them, do your best to solve them, pray about them."Cast thy burden upon the Lord and he shall sustain thee." (Ps. 55:22).

It is just as natural to pray as it is to breathe. There is a scientific basis for faith and prayer. Every creature that has a voice is led by a universal instinct to appeal to its Maker for help when in trouble.

If food did not exist, there would be no hunger. If there were no water, there would be no thirst. If there were no source of help for a creature in trouble, there would be no universal instinct to appeal for help by a cry of distress. Every creature that has a voice turns to its maker for help when in trouble. It is as natural to pray as to breathe. The Infinite Intelligence that created us remains with us to keep the heart beating and to energize all the vital machinery. Prayer is a means by which available help may be facilitated.

64. At least two or three times every day, concentrate the thoughts upon your personal welfare, physical, mental and moral, If done in a reverential and appealing attitude of mind, such concentration of the mind is real prayer. Earnest prayer is the most intense concentration.

Make a note of the new ideas that come to you when meditating or praying, or after. Especially note the first thoughts on awakening after a refreshing sleep. The subconscious works while we sleep.

APPENDIX

Food Accessories

Food accessories are non-medicinal substances which aid body functions although not actually appropriated as are foods. Among the most useful food accessories are the following:

Agar, sometimes called vegetable gelatine because of its resemblance to gelatine, an animal substance, however, in composition although it is wholly unlike animal gelatine, or glue ~~which in its composition is identical with glue~~. Agar is ~~pure~~ a form of purely vegetable origin. cellulose. It is ~~indigestible, but is~~ useful as bulkage and because it is insoluble in the digestive juices and hence indigestible and swells greatly when in contact with water. It is obtained from seaweed.

Psyllium, a seed obtained from ~~several~~ a members of the plantain (Plantago) family, a highly useful form of bulkage.

Kaba, prepared from a highly hygroscopic gum from the Orient. It is insoluble in water, but swells enormously when moistened. Much used as a constituent of laxative remedies in combination with cascara sagrada and other harmful drugs which excite bowel action by irritation. Kaba is an effective preparation of the gum without the irritant drug.

Wheat Bran in all forms is useful as bulkage. It is rarely contraindicated. It may be used advantageously in most cases of chronic colitis; but is contraindicated in cases of acute colitis, active ulcer of the stomach or duodenum, and acute infections of the duodenum.

Yeast and Yeast Extracts.--Brewer's yeast is remarkably rich in the B family of vitamins which are essential to growth and health maintenance, especially of the nerves and the digestive organs, ~~but which are~~ Vitamin B is lacking in many common foods such as white bread, polished rice, sugar, lard, corn meal and others of our many denatured foods. Vitamin G is also present

Efficient guaranteed

in brewer's yeast, giving it great value as a remedy for pellagra. Another highly valuable property of yeast extract is its remarkably agreeable meaty flavor which is like that of choice mushrooms and the famous soy sauce of Japan, and superior to the best meat extracts which are wholly lacking in vitamins and resemble urine in their composition. Yeast extracts are prepared from purified brewer's yeast which is 10 to 20 times as potent in vitamins as is the ordinary bread yeast of the groceries.

How to Take an Enema

Use an enema can or a rubber bag.

The quantity of water should be 2 quarts or less, rarely more.

The temperature should be 105° F. to 115° F.; average 110° F. Cool or cold water at the end is not necessary.

The fountain should hang about 2½ to 3 feet above the couch on which the patient lies.

Allow water to enter the bowel slowly to avoid unpleasant reaction.

Lie on the right side during inflow of water. After inflow ceases, continue on right side for 2 minutes. Then lie on back for 2 minutes, and finally, 2 minutes on the left side.

Then evacuate.

Repeat the enema until sure that the colon is empty.

Proof of the complete emptying of the colon may be obtained by taking at breakfast two capsules of carmine which will color the stool red. As successive enemas are taken, the red color diminishes and finally disappears, signaling the ~~disappearance~~ of the ~~test~~ breakfast residues.

The enema is best taken at bedtime. This avoids interference with the natural movements which occur after meals, ~~which~~ should be maintained by the free use of physiologic ~~means to~~ encourage bowel action, carefully avoiding laxative drugs.

When necessary, the enema may be used for an indefinite period without injury, provided that care is taken to avoid using ~~so~~ large ~~a~~ quantity of water ~~at one time~~ as to overdistend the bowel and also provided that the dietetic measures, bulkage, etc. necessary to insure normal bowel movements are systematically employed, the enema being used not as a substitute for normal bowel movements, but as a supplementary means to secure complete daily clearance of the colon. In

many cases of chronic constipation the colon is so badly crippled that the daily use of the enema is needed to insure the complete evacuation of residues necessary to ~~secure complete~~ suppression ~~of~~ intestinal putrefaction.

To Change the Intestinal Flora and thus Suppress Putrefaction in the Colon

Normally there should be no putrefaction in the interior of the body. The food residues evacuated by the colon should have little odor. When the stools are highly offensive, it is because the protective germs which Nature supplies from the mother's breast in the act of suckling have been enfeebled or possibly lost, so that putrefactive and disease and poison producing germs have become dominant. To restore the normal condition of freedom from putrefaction, it is necessary to do several things, each of which is as essential as the individual links in a chain.

1. Cease to eat putrescent or putrescible foods, such as meats of all sorts (fish, flesh and fowl). In bad cases, even eggs should be at least temporarily discarded.

2. Increase the activity of the bowels so as to prevent the long retention of residues. The bowels should move after each meal. The colon should be completely emptied every day. Use the enema if necessary, but avoid drug laxatives. Eat freely of fresh fruits and green vegetables, especially foods which supply much bulkage. Especially useful are figs, prunes, raisins, wheat bran in all forms and non-medicinal laxative food accessories such as agar, psyllium, etc.

3. Take at each meal one to four level tablespoonfuls of lactose or lacto-dextrin to feed the protective germs.

4. If the above means are not successful in changing the flora as shown by clearing of the tongue and the disappearance of a bad breath and foul odor of the stools, take at each meal a glassful (6-8 ounces) of a good acidophilus culture.

Helps to Biologic Living

The human body is the most intricate, delicately constructed and finely balanced machine in existence. Its scientific care is a fine art. At no place in the world has the subject of physiologic living been so long and so closely studied as at the Battle Creek Sanitarium which in fact for more than half a century has been virtually a research laboratory in which the quest for health promoting modes of living and helps thereto have been a major objective. More than a million dollars has been expended in this effort. The result has been many new and highly important discoveries, some of which have made the name of Battle Creek known throughout the civilized world, and have made a little town the world center of the breakfast food industry. Not only new foods but "a new cookery"-- new methods of preparing foods for use-- has been created, which provides a bill of fare wholly free from harmful qualities but at the same time even more attractive and satisfying than the unwholesome viands which it displaces.

Methods of treatment and health training have been devised whereby many thousands of persons regarded as hopelessly ill have been restored to health and usefulness and had their lives greatly prolonged.

To the Reader.--If the reader has become convinced of the truth of the teachings of this booklet and desires to earn the rich rewards for physiologic living by following them, he should begin at once a serious study of the subject by the aid of dependable books and other literature and should provide himself with the needful appliances, accessories and other helps whereby he may be enabled to make a successful venture in "high living" of a sort which insures greatly increased efficiency, comfort, real joy of living, and a notable increase in longevity.

If you are really interested, and will address the Health Extension Department of the Battle Creek Sanitarium, you will receive the

information you desire.

In conclusion the author desires to say that his purpose in preparing this booklet has been to spread information which might aid those who desire to know the truth about right living and help them to qualify for membership in the coming Aristocracy of Health which the world awaits as the only means of saving the human race from degeneracy and final extinction.

The author will be pleased to hear from any reader who is interested in the principles and methods set forth in this booklet and to answer inquiries.

John Harvey Kellogg,

Medical Director of the Battle Creek Sanitarium,

Battle Creek, Michigan, U. S. A.

Colon Hygiene

51. Move the bowels at least three times a day,-- after each meal. Do not wait for a call. Visit the toilet regularly after eating, on rising, and before retiring at night.

After the bowels have moved, observe the results. The stool should be ample and should have little odor, ~~never rancid or putrid~~, and there should be no mucus present.

Putrid, foul-smelling stools are an indication of intestinal auto-intoxication, and are due to an excess of protein ~~in the form of meat, eggs~~ or of decay (stasis or stagnation) in some part of the colon. Such a condition always breeds disease and indicates need for a "change of flora." ~~Find~~ how to change the flora and keep it changed.

~~Visit the toilet regularly after each meal to train the bowels.~~

52. When a "call" is experienced, respond immediately. Five minutes may postpone action indefinitely. Support the feet on a stool before the closet seat.

53. Once or twice a week test the intestinal "motility" by taking at breakfast ~~a liberal~~ quantity of ~~some highly colored foodstuff such as huckleberries or carrots, spinach or charcoal. Carmine is a convenient marker~~, one or two grain capsules at breakfast. ~~The color should disappear within 24 hours.~~

54. Never ~~retire~~ with a loaded ~~intestine. Empty~~ the colon by a succession of enemas. If carmine has been taken at breakfast, repeat the bedtime enema until the red color is practically absent when the ~~enema~~ returns.

Important to Avoid

55. Avoid alcohol in every form. It is not a stimulant, but a

Roasted cereal coffees are not wholly free from objectionable qualities. Kaffee Hag contains less caffein than ordinary coffee, but is open to other objections which prohibit the use of coffee. Cereal coffee prepared without roasting (Minute Brew), may be used in place of coffee, but it is better to overcome the taste for coffee and to take in place of it such wholesome substitutes as hot fruit juices ~~and~~ or vegetable bouillon prepared from yeast extract (Savita) and fragrant herbs.

~~7. Avoid condiments, such as~~

narcotic. It is not a food. It is not a remedy for any disease. It hinders digestion, weakens the heart, lessens strength and endurance, perverts the judgment, blunts all fine sensibilities, is an enemy of health, intelligence, moral and all human welfare and progress. It is public enemy No. 1.

56. Avoid tobacco. This baneful drug is used, aside from smoking, for nothing else but to kill things. It is an insecticide. The farmer, the horticulturist, and the market gardener could hardly get along without it. Beware of "denicotinized" cigars. It is a heart poison, a nerve poison, a muscle poison. It raises blood pressure, shortens life, and is a leading string to vice. Said Tolstoy, "I never had a twinge of conscience after the third whiff." Do not permit yourself to be fooled by the "moderation" delusion. There may be excess and moderation in the use of food and other wholesome things, but use of a poison in any quantity is excess.

57 Do not drink tea, coffee, cocoa or maté. All these drugs contain poisons which raise the blood pressure, cause insomnia and indigestion, lessen endurance and hasten senility, wrinkles, trembling, and nervousness.

27. Avoid use of beef tea, bouillon, chicken and other animal broths. They have practically no food value but consist almost exclusively of extractives or tissue wastes. The composition of bouillon is practically the same as that of urine. One is an extract of flesh made by the kidneys, the other by the cook. The most eminent French and English physicians condemn their use as did the ~~writer's teacher~~, the late famous Dr. Austin Flint, Sr. of New York. Extracts of brewers' yeast supply a similar and better flavor together with highly important vitamins (A and G), of which it is the richest source (Savita, ~~Marmite~~).

58. Avoid nostrums and patent medicines. The habitual use of any drug is harmful. ~~The most eminent physicians are now agreed that~~ very few drugs have any real curative value. The essential thing is right habits, biologic living, removal of causes.

59. Avoid, especially sleep-producing drugs, "tonics" and so-called nerve stimulants. They are all nerve-foolers. "Tonics" do not increase strength, but lessen it. Hypnotic drugs do not cure insomnia, but tend to aggravate the disease and make it more chronic. All sleep-producing drugs are depressing agents.

60. Avoid pain-relieving drugs, ~~as much as possible~~. Most pains can be wholly relieved or very greatly mitigated by harmless means. One of the best is ~~hot~~ applications. ~~They hide an important warning symptom, but cure nothing.~~ The habit of using aspirin and various other drugs for headache and other discomforts is most harmful. The proper thing to do is to seek out the cause of the pain or other symptoms and to remove it.

61. Avoid the habitual use of laxative drugs. They cause colitis, appendicitis, duodenitis, indigestion and worse constipation. Use only non-irritating food accessories (see appendix). Cultivate normal bowel habits by a visit to the toilet after each meal and the use of laxative foods, increasing the quantity of bulkage until the desired effect is produced. If necessary, use the enema. It is practically harmless if inconvenient. ~~But~~ all laxative drugs are injurious. ~~When a "call" is experienced respond immediately. Five minutes may postpone action indefinitely. Support the feet on a stool before the closet seat.~~

AN ARISTOCRACY OF HEALTH

BASED ON

BIOLOGIC LIVING

Rules for "Right Living"

By

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fine type

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Foreword

The greatest problem before the world today is "How to save the human race from extinction through degeneracy." The only hope is to create an Aristocracy of Health, that is, to form a group of intelligent men and women who think it worth while to thoroughly inform themselves respecting the marvelous progress made in modern times in knowledge of personal hygiene, euthenics, and race hygiene, eugenics, and to make practical use of this invaluable information in so treating their bodies in everything pertaining to their physical and mental welfare as to develop and maintain the super health and efficiency which modern scientific research (Sherman and others) have shown to be easily possible by meticulous application of established scientific facts to human living; that is, by living in a strictly biologic or physiologic way.

This booklet is a brief summary of more than a half century search for the right way to live. The writer, now in his 84th year, has devoted his whole life to an intensive study of human habits and living conditions in their relation to health. With the cooperation of hundreds of interested and intelligent colleagues, the Battle Creek Sanitarium has been made a center of research, experiment, clinical study and adventure in the fine art of biologic living.

Laboratories have been fitted up and provided with the most elaborate and up to date appliances for chemical, nutritional and physiologic research and placed in the charge of trained experts, some of international fame. Close touch has been maintained with the great research laboratories of the world and a constant wide survey made of scientific literature. New discoveries bearing on health have been tested and when found meritorious adopted. More than a million dollars has been expended in this world wide search and intensive research. Among the practical results may be mentioned the Battle Creek Sanitarium where more than 300,000

persons have been treated, which has grown in 60 years from a small two story frame building with 12 patients to its present proportions with accommodations for 1200 patients. The treatment of these patients by physiologic methods and health training in accordance with biologic principles and methods has afforded an ~~unparalleled~~ excellent opportunity for testing and validating the methods and ideals presented in this booklet as means of aiding chronic invalids to recovery.

Battle Creek College, with its Schools of Nursing, Home Economics, and Physical Education in addition to the usual Liberal Arts Departments and a student body of nearly five hundred with more than 4,000 graduates from its schools scattered over the whole civilized world and to be found in every mission field, is another notable result of the Battle Creek scientific health movement. The fine resident student body of Battle Creek College not only study the principles of biologic living but live them and grow enthusiastic in their appreciation of their basic soundness and rationality.

Out of this work also have grown the great food industries which have made Battle Creek known throughout the world for its unique and wholesome food products, a work ~~which was~~ begun by ~~the writer~~ at the Sanitarium, ~~and~~ is continued in the laboratories of the Battle Creek Food Co.

Finally may be mentioned a great number of health promoting methods and appliances, electric, mechanical and physiotherapeutic, ~~such as the electric light bath, the sinusoidal electrical current~~, some of which are found in every hospital and in many doctors' offices.

The results of the practical application of these biologic methods in restoring to health and efficiency many thousands of chronic invalids who had been regarded as incurable has created a wide demand for a brief epitome of the Battle Creek Idea of right living which is the occasion for the publication of this booklet. A full account of the technic of

"biologic living" will be found in the writer's recent volume "How to Have Good Health" and in other books, a list of which will be found on the third cover page. The monthly magazine Good Health, edited by the writer for more than 60 years, and the Battle Creek Sanitarium News present a popular account of practical biologic methods and of the most recent discoveries and advances.

Those who desire further information about biologic living or suggestions for health training at home are invited to write to us with the assurance that their inquiries will receive without charge, courteous and competent attention since the Battle Creek Sanitarium and its allied health activities are purely philanthropic enterprises devoted to the extension of health promoting ideals and race betterment.

Address Battle Creek Health Extension Bureau

The Battle Creek Idea

Biologic Living. What It Is

Biology is the science of life.

Biologic living is the science of right living.

We study the biology of our horses, cows, pigs, and chickens, and feed them and care for them scientifically, that is, biologically. And in consequence we have the most wonderful horses, cows, pigs, and chickens the world ever saw.

But we forget that we have a biology of our own, a way of life peculiar to our species, a diet specially suited to the genus homo sapiens, a regimen and environment to which we are by nature adapted, which belongs to us.

In consequence of our neglect, the human race is becoming dwarfed and weazened, neurotic, daft, dyspeptic, and degenerate and according to the eugenists is doomed to extinction. In other words, while our humble relatives are through scientific, biologic living rising in the scale of being we, their masters, the lords of creation, are going down because of our neglect to obey the laws of life and health.

The "simple life" is not an innovation. It is simply a return to the "old paths" from which the perversions of our modern civilization have gradually diverted many millions of men and women, perversions that are responsible for the multitudinous maladies and degeneracies which yearly multiply in number and gravity.

The writer has devoted his life for more than 60 years to active research, observation and experiment-- in an earnest effort to find how to live in a truly biologic or scientific way. The results are in this booklet epitomized in a few simple rules.

Every suggestion made has been thoroughly tried and tested by years of actual experience.

Biologic living means health, comfort, efficiency, long life. It means good digestion, sound sleep, a clear head, a placid mind, ~~con-~~ ~~tent and~~ joy to be alive.

To live biologically is simply to treat one's body in a natural or physiologic way. ~~That means to treat one's body,~~ his ~~corpomobile;~~ as well as he treats his automobile.

What more sensible thing can one do than to cherish and develop and make wise use of all his physical powers, in other words, become a health aristocrat?

Tens of thousands of men and women, through adherence to ~~these~~ biologic principles ~~of living~~, have been delivered from feebleness, misery and inefficiency and brought to the enjoyment of stable and exuberant health, the real joy of living, ~~and you are~~ here invited to enter upon the same ~~rosy~~ happy experience.

Why a Change is Needed

There's something seriously wrong with the world. The birth rate is diminishing and ~~at such a rate~~ that according to Prof. Wilcox, by the year 2,000 no babies will be born. Lunatics, idiots and epileptics are increasing at such a rate that ~~in~~ 250 years the world's population will ~~be~~ lunatic, idiotic ~~or~~ epileptic. Man, once the longest lived and toughest of all his compeers in the animal kingdom, has become a short-lived and puny representative of the genus homo, and is, according to Prof. Darwin, of Oxford University, son of the famous Charles Darwin, Prof. C. B. Davenport, of the Carnegie Institute, and other leading scientists, hastening down the hill of race degeneracy to extinction.

George Ade, the humorist, says the average man is dead at 30 and buried at 60. Certainly the average man is less than half alive during the last half of his life.

This half alive condition is the result of unnatural living. When an animal of any sort departs from its normal conditions of life, it soon begins to deteriorate and ultimately perishes. As a race, we have departed so far from the mode of life to which we are naturally adapted, that it is indeed a marvel that we have not disappeared along with the thousands of species of animals that changing world conditions have destroyed and geological upheavals have buried in the earth's crust. That we are hastening down the same road, however, cannot be doubted. A bird dies when it gets under water, a fish when it gets out of water. Man's inventiveness enables him to mitigate and to some degree neutralize the damaging effects of departures from the natural order, and so to postpone the full penalty of his misadventures.

Close adherence to the natural or biologic way is imperiously necessary because the natural conditions of life represent for any animal or race the environment to which it has become adapted by long centuries of experience. Those individuals who could not adapt themselves have died off; hence the survivors fit their environment or life habits and conditions, and the reverse is equally true.

In the development of civilization, living habits and conditions have been chiefly dictated by chance, taste, fancy, convenience, economy, fashion, rather than by considerations of health or biologic adaptation.

~~A Noble Example~~

To those who hesitate to adopt new habits, especially in diet, we commend the following observations by that noblest of Roman sages, the wise Seneca, who, like Pythagoras and Socrates, lived ~~the~~ a biologic life:- ~~outlined in this booklet:-~~

"There is nothing against which we ought to be more on our guard than, like a flock of sheep, following the crowd of those who have pre-

ceded us, going, as we do, not where we ought to go, but where men have walked before.

"We shall recover our sound health if only we shall separate ourselves from the herd, for the crowd of mankind stands opposed to right reason-- the defender of its own evils and miseries. The very fact of the approbation of the multitude is a proof of the badness of the opinion or practice. Let us ask what is best, not what is most customary; ~~what may place us firmly in the possession~~ of an everlasting felicity."

We grow old prematurely because we depart from the simple, ~~vitally~~ economic ways of Nature which make small demands upon the life mechanism, especially those highly essential viscera, the liver, kidneys and heart, load the body down with unnecessary work in the disposal of excess, and especially the elimination and destruction of poisons generated in infected colons, duodenums, gall bladders and other organs which often become the seat of germ infections and incubators of parasitic bacteria and ~~bacteria poisons~~ their venemous products.

Anything which lightens the load on the overworked viscera, promotes rejuvenation and length of days. It is this that gives the vacation its value as a means of recuperating wasted energy. Recreation we call it, not realizing the full significance of the word re-creation, a renewal of the wasted energies and depleted body. The vacationist returns to his task looking and feeling younger, and that very often in spite of the fact that he has continued to smoke, drink coffee and perhaps ~~drink~~ cocktails and to do many other things against the best interests of the body.

Biologic living is simply conforming not to a few only, but to all the rules of physiologic living.

~~This is not a new idea~~. It is simply a return to the natural, simple ~~ways of our remote ancestors~~.

Biologic ~~living~~ is not at all a hardhip. It is a most delightful experience. It does not require any sacrifice. It simply replaces harmful ways for wholesome ones which are not merely equally enjoyable but far more delightful. It is not, for example, an abandonment of gustatory pleasures, but an acquaintance with new and even more delightful ones. And the results in relief of headaches, gastric miseries and other ills is so prompt and so pleasing that satisfaction and enthusiasm grow with each day's experience.

The Proofs

The soundness of this philosophy of physiologic rectitude which has been worked out at the Battle Creek Sanitarium during the last half century has been proven in the experience of tens of thousands of intelligent men and women among the more than a third of a million persons who have entered the doors of this university of health.

To watch the transformation of this sick and often despairing throng of suffering men and women from invalidism with all its helplessness and miseries into healthy, happy and useful people, has been a delightful experience. The change from a disease promoting regimen and harmful habits to health building habits and regimen has been the chief factor in giving to the institution such a degree of success that without endowment or gifts, except from its managers and workers, it has grown from its small beginning in 1876 in a small two story building with a few cottages and a dozen patients to the largest sanitarium in the world, drawing patients from every part of the globe, at the rate of 10,000 to 12,000 a year.

And among the rest have come many notable people, such as Sir Horace Plunkett, ~~F. R. S.~~ and Minister of Agriculture for Ireland, who was sent to the Sanitarium by the King's physician, Lord Dawson of London, Jacob Reis of New York, the civic reformer, Dr. Stephen Smith, founder of Bellevue Hospital and of the American Public Health Association, John D. Rockefeller,

Jr., the world's greatest philanthropist, who, although not sick, desired to learn how to live and who still adheres to the biologic way as do many others of the country's most eminent statesmen, and not a few of its leading scientists and educators.

The fundamental principle of the Battle Creek Idea is to follow Nature, to live close to Nature, to cultivate natural tastes and habits, and to establish strict taboos against everything which lays upon the body unnecessary burdens to hamper its functions, clog and cripple its delicate machinery and wear it out prematurely, a category which includes not only alcohol, tobacco, tea, coffee and chocolate, but pepper and other hot and irritating condiments, unnatural foods such as meats, unsafe foods such as market-contaminated fruits and vegetables, unless disinfected, denatured foods and culinary monstrosities.

The idea is by no means new. It did not originate at Battle Creek nor in recent times. As man has advanced in civilization, he has left behind many of the good things which he enjoyed in his primitive state and has adopted many perverse ways and harmful practices which have created a thousand maladies and become the cause of untold miseries.

Begin the Biologic Life Today

And why not begin today? If you could know the happy experience that awaits you, you would start at once. It will be a delight to feel the headaches and backache, weariness and dullness, lack of zest and pep and a hundred other miseries one by one slipping off and a sense of returning youth taking ~~its~~ their place. Rejuvenescence is what you need, and through natural living you may reasonably expect to find it. Benjamin Franklin tried it. Through biologic living when a boy, to which he was led by reading the writings of a pioneer diet reformer, he became a model of vigor and endurance and laid the foundation for his amazingly active

and successful career. In his prosperous old age he departed from the simple wholesome ways of his youth and became so badly crippled with rheumatism and gout that at 70, as he wrote his wife when 74, he found himself so ill that he felt sure he would soon reach the end of his career. He returned to the simple biologic habits of his youth and, as the result was able to report, "I have walked back four years so that you may now consider me as 66 instead of 74."

Biologic living is the ~~shortest~~ road back toward youth and health and all the felicities associated with a sound mind in a sound body.

How to Begin

Make a survey of yourself and your surroundings.

Take an inventory of your knowledge about health and conditions which promote physical well being.

Look over your library and see that it is supplied with up-to-date health literature from a dependable source.

Get in touch with your State Board of Health and read the literature the secretary will send you.

Visit your family physician or the best physician available and have a thorough examination of your heart, lungs, blood, ~~of~~ blood pressure, urine, every organ and function. Don't be satisfied with an ordinary cursory examination, but find out everything you can about yourself. Very few people are perfectly well even though they feel no discomfort. The early or so-called "little symptoms" of disease often pass unnoticed long after they are discoverable if carefully looked for by an up-to-date physician aided by up-to-date diagnostic appliances.

Carefully consider your habits,-- do they tend toward health or disease? Resolve to eliminate every disease-producing factor, to cultivate health, to fight disease, and to make this a part of your daily program.

Concentrate on health. Read what you find about health in magazines and newspapers. Don't believe all you read, of course, but discuss it and accept what appeals to your good sense, but avoid sensational ideas and fads.

Become a health enthusiast. After you have read carefully this booklet, make a list of your defects and set to work systematically to correct them.

THE RULES

1. Breathe Deep. Take a dozen deep breaths several times a day; several times an hour is better.

Air is the first essential of life. Without air, a fire goes out. With increased air, a forced draft, the fire waxes to melting heat. Life is likewise a flame which waxes and wanes with the air supply. Taking a deep breath is like a puff at a smoldering blaze. It brightens the vital flame.

Deep breathing does more. It gives the liver a hearty hug and sucks the stagnant blood out of it and sends it on its way to the lungs to be emptied of its poisonous gases gathered from the tissues and the colon.

Deep breathing is an important aid to the heart. The chest is a blood pump. The compression of the liver and other abdominal organs in deep breathing, squeezes the blood out of them and drives it toward the heart while the suction caused by the expansion of the upper portion of the chest causes a strong movement in that direction.

Still another very substential benefit from deep breathing is its aids to the elimination of residues. Each breath pushes along in the colon the unused remnants of foods and other residues which are eliminated

Every deep breath gives a little push.

through the bowels. Exercise helps bowel action by inducing deep breathing.

2. Live out of doors ~~as much~~ as possible.

Do your work under the trees instead of behind doors and opaque walls. Dig in the garden, explore the woods and hills. Follow the brooks, watch the squirrels and learn the songs of the birds.

2. Work, play, read, study, and rest ~~and sleep~~ in the open air ~~when possible~~. If compelled to remain indoors, be sure that the living and moving work rooms have an ample, continual supply of fresh air. The lower the temperature the better, so long as the body is kept comfortably warm. Temperatures much above 70° are depressing.

Sleep ~~out of Doors~~ in the Open Air

Fix up a sleeping-porch or a balcony and so take an outing all night long and every night, and don't move inside when frost comes. Outdoor sleeping is one of the best life-preservers known.

~~For many years the writer~~ has practiced out-of-door sleeping at ~~all seasons of~~ the year ~~and with great profit.~~ Have the bed dry and warm on retiring.

3. Take a sun bath often enough to keep the skin well browned.

In the warm months take a good sun bath once a week at least. Don't be afraid of getting slightly sunburned. No harm will result except a temporary inconvenience from skin irritation. A sunburn is a solar erythema and not a real burn. It does not destroy the skin as does a true burn. Expose the skin to the air and the sunshine as much as possible. The skyshine is highly beneficial as well as the sunshine. A mild "sun burn" increases immunity (Hill). ~~Repeat at least every two or three weeks.~~

About Eating

4. Eat what you like; that is, food which you can relish. Food must be

well relished to be well digested. The taste and the odors of foods if agreeable, cause the saliva and gastric juice to flow. "The mouth waters" and the stomach also. The "appetite juice" thus formed, even before the food reaches the stomach, is the most active agent in gastric digestion. Says Pavlov, "Appetite means juice."

5. Prefer Natural Foods

Use the same good sense and judgment in feeding yourself that you do in feeding your dog, a pet canary or a prize winning horse. Primitive man ate his food as he found it prepared from him in the forest. In other words, he ate all his food in a raw or natural state. We cannot easily do this but may profit greatly by eating largely of natural uncooked foods.

6. Biology teaches that man's natural diet is the same as that of his nearest relatives ~~among~~ the primates, such as the gorilla, the chimpanzee, the orang-utan and the gibbon, viz., fruits, grains, nuts, tender shoots and succulent roots (Cuvier, Buffon and other naturalists) rather than meats.

6 Avoid too Much Protein

The daily amount of protein required is small compared with that of other food elements. An ample amount is supplied by such foods as bread and other cereals, and beans, peas, soy beans, supplemented with the proteins of milk, soy bean milk or nuts to insure good nutrition. A pint of milk or soy milk daily or three or four ounces of nuts or two of soy beans taken with plenty of other foods will amply supply all the protein needed and of excellent quality.

7. Avoid meats, fish, flesh and fowl because they are unnatural foods and hence not well adapted to man's use as are natural foodstuffs. Here are other good reasons:

(1) Meats are very deficient in vitamins and lime. The iron of

meat is of an inferior sort. Meat eating animals suffer most from pernicious anemia.

(2) Lean meat contains uric acid (14 grains to the pound) and other harmful toxins and tissue wastes-- about one-fourth of its weight. When fed to mice, this material causes nephritis in a few days.

(3) Fresh meats are grossly infected with colon germs during or after killing. Ordinary cooking does not kill the germs of meat, which sometimes outnumber those in animal droppings.

(4) The Eskimos are short-lived-- old at 50 and worthless at 55 years (McMillan).

(5) Bright's disease is most frequent in meat-eating countries.

(6) Meats, especially pork, are often infected with living parasites. The pork parasite, trichina, is spreading rapidly. Government inspection has failed to stop it and has been abandoned and hence all pork is dangerous. The government warning to avoid eating raw pork is insufficient. ~~Investi-~~ gation shows that three-fourths of all cases of trichinae infection followed the use of ~~cooked~~ pork. Ordinary cooking does not kill all the parasites.

Eggs

8. Do not use eggs freely. They may be discarded without injury if care is taken to provide sufficient protein, iron and vitamins by the use of nuts, soy bean milk and plenty of green vegetables.

Infected eggs cause colitis. According to Tissier of the Pasteur Institute, most eggs are infected. The yolk of the egg is more wholesome than the white, ~~It should be~~ hard boiled. Raw eggs encourage intestinal putrefaction. Avoid egg-nog.

Milk--Dairy Products

9. Cow's milk disagrees with many persons. In the case of a person suffering from hyperacidity, large hard curds are often formed which are

difficult of digestion and encourage intestinal putrefaction and biliousness.

2 Many persons are sensitized to cow's milk and cannot make use of milk in its ordinary form without headache, constipation, asthmatic attacks, skin eruptions, coated tongue, or other unpleasant symptoms.

~~In some cases,~~ B boiled milk is less objectionable than raw. ~~In others,~~ A small portion of good cream or buttermilk causes no inconvenience. Sometimes cottage cheese or cream cheese may be safely eaten by persons who cannot eat ordinary milk.

~~In general,~~ P persons who discard meat ~~should take with their meals~~ daily from a pint to a pint and a half of milk ~~to~~ make sure of ~~supplying the proper~~ amount of "complete" protein. ~~One who does this may without any risk whatever wholly discard meat in all forms. In fact,~~ When dairy products or eggs are eaten, ~~any meat taken will be treated by the body as a surplus and soon eliminated as urea in the urine, thus adding greatly to the work of the kidneys.~~

~~When~~ milk disagrees, it may be replaced by milk prepared from nuts (malted nuts, almond cream) or the soy bean (soy milk, soy acidophilus milk) which has been in use in Oriental countries for thousands of years with entire success as a substitute for dairy products.

Many persons, including the author, have found it highly profitable to dispense with animal products of every sort, practically excluding from the dietary eggs and dairy milk as well as fish, flesh and fowl. It should be noted that such a restriction of the diet requires careful balancing of the bill of fare by a trained dietitian.

Butter and Other Fats

10. Give preference to vegetable fats, excepting butter. Animal fats, with the exception of butter, are less wholesome than vegetable fats and

less digestible. It is best to avoid the use of lard and suet. Strong or rancid butter or other rancid fats, either animal or vegetable, are especially harmful. Most vegetable fats lack vitamins, and when used should be supplemented by butter, cream, carrots, spinach and tomatoes.

Butter is an important source of vitamins A and D, and is readily digestible when made from sterilized cream and perfectly fresh. Butter with the slightest taint should be discarded. It contains butyric acid and the unwholesome germs that produce it.

Such animal fats as lard and suet encourage putrefaction. Cream is more easily digestible than butter and when sterile is a most wholesome form of fat. It may sometimes be used in moderation by persons who are sensitized to milk.

Nuts and nut emulsions (almond cream, malted nuts, nut butters) are excellent sources of easily digestible fats. The soy bean contains 20 per cent of an exceptionally fine fat which is rich in lecithin. The actual fat requirement is small, provided greens and carrots are eaten freely to supply the fat soluble vitamin.

Carbohydrates--Starches, Sugars, Dextrins

Choose carbohydrates as the chief and best source of energy, or fuel foods.

Cereals--Bread and Breakfast Foods

11. Avoid too free use of cereals. Bread and breakfast foods are cheap and concentrated sources of nourishment, but contain an excess of phosphoric acid and when used too freely tend to cause acidosis. Whole meal or graham bread, wheat flakes, bran flakes, shredded wheat, and rice (preferably unpolished) are the best cereals, but they should not be made the chief sources of nourishment. Eat less cereals and more potatoes.

Raw starch is not easily digestible. For this reason, unripe fruit is unwholesome. Bananas, which are usually eaten before becoming fully ripe, often disagree for this reason.

12 Restrict the Use of Cane Sugar.

Carbohydrates in the form of sugar are attractive on account of their sweetness.

There are five different food sugars,--cane sugar (white or granulated sugar, brown sugar, beet sugar, molasses, syrup, raw sugar, maple sugar, maple syrup, sorghum); malt sugar (maltose, malt syrup); fruit sugar (sweet fruits, honey); corn sugar (glucose, dextrose); milk sugar (lactose), found only in milk.

Of the five, cane sugar is least wholesome. Taken in concentrated form, as usually eaten, it irritates the stomach and encourages infection of the stomach, duodenum and gall bladder.

Malt sugar is the natural sugar of the body, being produced in abundance when starch is digested by the saliva, the pancreatic juice and the intestinal juice. It is digested and absorbed much more quickly than cane sugar.

Fruit sugar is of all sugars the sweetest and the most easily assimilated. It requires no digestion,-- is ready for immediate absorption.

Dextrose or glucose is less sweet than cane, malt or fruit sugar, and in its pure state as found in fruits, requires no digestion.

Milk sugar, although least sweet, is one of the most important of all the sugars. It is provided by nature not only as a carbohydrate food for the infant mammal, but as a nutrient for the protective germ, the Bacillus acidophilus, which combats putrefactive, pus-forming and other disease-producing germs in the intestine, thus preventing the development of putrefaction and infection in the intestine.

By the liberal use of this sugar, bottle-fed infants, older children, and adults may enjoy much the same protection against colitis, appendicitis, and other intestinal infections, as have breast-fed infants. Ordinary milk sugar has little sweetness.

A recent discovery makes it possible to make lactose three times as sweet and three times as soluble by converting it into <u>beta-lactose</u>. ~~In the form of beta-lactose,~~ sometimes commercially known as B-Lac, ~~milk sugar is~~ excellent for table use.

Green Vegetables

Fresh green vegetables ~~should be made~~ a part of every meal because of their richness in vitamins and food minerals, of which they are the chief source. At least one fresh uncooked food such as lettuce, celery, cabbage, carrots or cucumbers should be eaten at every meal. It is a good plan to make at least one meal consist ~~almost wholly~~ of uncooked foods.

Make fresh fruits or fruit juice a part of every meal. Of highest value are the orange, grapefruit, apple, and tomato, Canned tomato juice is nearly as good as fresh juice. The juice of the raw turnip and other vegetables is most excellent. Sauerkraut juice has little value and contains too much salt. Eat very freely of all fresh fruits in their season. Such juicy fruits as apples, citrus fruits, peaches and melons may be eaten at any time as well as at meals. They require little digestive work.

Bulkage Foods

~~A proper amount of bulkage food should be taken at every meal~~ Eat bran or other bulkage freely to encourage colon activity. Fresh fruits and vegetables have value, especially berries, but the hemi-cellulose of fruits and vegetables is digestible. Wheat bran is more efficient because its cork cells are indigestible, and may be made a part of every meal by most persons with great profit. It is best to

take it at intervals during the meal so that it will be thoroughly mixed with the rest of the food, thus avoiding impaction. Mineral oil or some other lubricant is often needed with bran and other bulkage.

Food Combinations

Most of the current notions about food combinations are based on fancy rather than scientific fact. It is an error to suppose that fruits and vegetables should not be eaten together, or that starch and protein are a bad combination, or fruit acids with starches unwholesome, or acids and milk indigestible.

Fruits and vegetables agree perfectly if thoroughly chewed. Fruit acids do not prevent the digestion of starch. The gastric juice is much more acid (hydrochloric) than any fruit acid. Starch digestion begins in the mouth, continues during the first hour of gastric digestion, but is chiefly effected in the intestine by the pancreatic and intestinal juices. Acetic acid, the acid of vinegar, and the oxalic acid of pieplant are harmful and prevent the digestion of starch in the stomach (Sir Wm. Roberts).

The notion that starch and proteins should not be eaten together is absurd. These food elements are associated in normal foodstuffs. It is true that meat and cereals is a bad combination because of the excess of acid salts in meats and also in bread and breakfast cereals. The writer as well as McCollum has for many years opposed the meat and bread dietary. The chief benefit derived from avoidance of this dietary is due to the disuse of meat.

Proper combinations of foods are necessary to insure a complete assortment and abundant supply of all the needed vitamins and food minerals as well as the necessary protein, starch and fat required for tissue building and energy production.

How Much to Eat

16. Be careful to eat enough but not too much. A good rule is to leave the table while still able to eat more. Never eat so much as to feel a sense of discomfort or to cause dulness or drowsiness. The amount of food needed depends upon the age, size and activity of the individual. Men need more food than women because they are larger and use their muscles more. Children need more in proportion because they are growing. The individual requirement may be determined by reference to the accompanying tables (See back of booklet). The energy value of the ration may be determined by multiplying the normal weight for a person of the given height by 14. This gives the total number of calories required. Of the energy value of the food (calories) one-tenth may be protein, three-tenths fat and six-tenths carbohydrates.

17. The following represents the food needs of an average adult weighing 136 pounds doing light work:

A day's bills of fare

Breakfast

Dinner

Supper

Hard muscular work requires one-third more food or even more. Mental work requires little more food than loafing. After 80, the food requirement is about half that of middle age.

18. Weigh once a week. Consult table of weight for height and age (See Appendix). If 5 to 10 per cent underweight, be thankful if over 40 years. If under 30, eat more, especially of carbohydrate foods (See Appendix).

19. Masticate thoroughly. Every morsel of food should be chewed until it becomes a smooth purée or semi-liquid in the mouth. Thorough chewing greatly aids digestion and will cure many cases of indigestion. Tasting and chewing the food cause the gastric glands to pour out their secretion and stimulate the colon to push its contents along and so aid bowel action. Careful mastication affords opportunity for the nutritive instincts to select the food and food elements adapted to the body needs, and to say "Enough," at the proper moment. Hence, give preference to dry foods. Sip liquid foods slowly, ~~taking care to insalivate thoroughly.~~

20 Be careful to balance the bills of fare

(a) For protein, fats and carbohydrates. Although protein is a highly essential food element, there is little danger of a deficiency, as the amount needed is comparatively small, not more than one-seventh by weight of the total ration, and not more than one-tenth of the energy value (calories). Even the potato, cabbage, beet, parsnip, carrot and the humble pumpkin contain the requisite amount of protein and of excellent quality, while bread offers an excess. One egg, a glass of milk, an ounce soy beans or a small handful of nut meats in addition to an ample meal without meat will insure an intake of all the protein the body can utilize.

The amount of fat may be greatly varied without injury. One-tenth to one-fourth of the water-free weight of the daily intake is ample. The

body can make its own fat from starch and other carbohydrates.

Carbohydrates, chiefly starch, make up three-fifths of the total normal ration (energy value) and are the body's chief source of heat and energy.

(b) For all vitamins, A, B, C, D, E and G. For A, by feeding butter, cream, and greens; for B, by fruit juices, greens, bran, yeast and yeast extract (Savita, Marmite); for C, by fresh fruits and vegetables and their juices, especially orange or lemon juice, tomato, turnip and cabbage juice; for D, by use of butter, greens, and radiated foods; for E, by use of ~~brewer's yeast.~~ wheat germ.

(c) For food lime, by free use of greens, dairy milk, soy beans, whole grains and fresh vegetables. For food iron use freely, greens, egg yolk, wheat flakes, bran flakes, Krusty Bran, shredded wheat, oatmeal, raisins, dates, figs.

(d) For chemical balance make the ~~preponderant~~ chief constituents of the bill of fare consist of fresh fruits and vegetables, avoiding meats and eggs and excess of cereals.

~~For bulkage~~ use fruits and vegetables, especially berries, prunes, figs, greens, bran and laxative food accessories.

Things to Avoid in Eating

21. Avoid condiments-- mustard, pepper, pepper sauce, cayenne, capsicum, vinegar, hot, irritating sauces, and spices of all kinds. All hot sauces must be wholly discarded. They irritate the stomach and cause gastric and intestinal catarrh and gastric ulcer, colitis, and damage to the liver and kidneys.

22 Avoid ~~making~~ free use of denatured foods such as fine flour bread, new process corn meal, polished rice, corn starch, tapioca, lard, refined sugar. Use instead, whole meal cereals, raw or unrefined sugar, maple sugar, honey, and sweet fruits. malt sugar, milk sugar (lactose, c

23. Avoid richly and highly seasoned dishes, sauces, fried foods and flaky pie crust. They are most indigestible.

24. Avoid many varieties and dishes at one meal, but also avoid a monotonous diet. Vary the diet from day to day.

Avoid alcoholic liquors of all sorts. They all hinder digestion (Chittenden, Sir Wm. Roberts). They are not foods, but poisons.

25. Avoid poison-containing foods.

Vinegar and foods pickled in vinegar are indigestible and interfere with the gastric digestion of starch. Pieplant and sorrel contain oxalic acid, an active poison which arrests starch digestion. Death has been caused by pieplant greens, and acute and fatal relapse in cases of Bright's disease by use of pieplant sauce.

26. Common salt, or chlorid of sodium, should be used sparingly. According to Richet and others, the food naturally contains all the chlorid of sodium actually required by the body, so that the addition of salt to the food is necessary only to please a cultivated taste. A safe rule is: The less the better.

Persons who have dropsy, Bright's disease, arteriosclerosis, gastric ulcer, hyperacidity, obese persons and epileptics should discard salt entirely.

See (a) p. 31

28. Avoid irregularity of meals. Food should be taken at regular intervals to insure regular evacuations of residues. It is especially harmful to take meals too near together, thus introducing food into the stomach before the previous meal has passed out. It is desirable that the meals should be so spaced that the stomach may be completely emptied for at least a half hour before a new meal is taken. Remember that food must be well relished to be well digested. According to Pavlov, "appetite juice," which is produced by stimulation of the nerves of taste by palatable food, is

Note p. 23

affords opportunity for the nutritive instincts to select the food and food elements adapted to the body needs, and to say "Enough" at the proper moment. Hence, give preference to dry foods. Sip liquid foods slowly, taking care to insalivate thoroughly. It is advantageous to take liquid foods like milk through a straw or small glass tube to insure admixture of saliva.

34. Dismiss worries, business cares and annoyances while eating. Good cheer promotes good digestion. Anger, worry, and irritation stop digestion.

Water-Drinking--Beverages

35. Take at least three or four pints of water a day, including liquid food. Do not drink much at nor immediately after meals. Take a few sips whenever thirsty. It is a good plan to drink a glassful of water on rising in the morning, on retiring at night, an hour before each meal, and each time the bladder is emptied.

The chief object in drinking at meals is to refresh the sense of taste. Cold increases nerve sensibility. It is for this reason that ice cold drinks are preferred. Small sips of cold or even iced water refresh the mouth and do no harm. Drinking much cold water at meals hinders digestion.

Exercise

Walking, housework, gardening, farm work, ordinary laborer's occupations are excellent forms of exercise. In walking, always hold the chest high and carry it well to the front. Swing the arms moderately and walk fast enough to hasten the breathing a little. Nine miles walking a day at the rate of three miles an hour is the necessary amount for the average adult. Most housekeepers and laborers do more.

Working in the open air is one of the best forms of exercise, especially working in the garden, digging, hoeing, pruning, etc. 36. Do some good, hard muscular work every day, enough to produce slight muscular

fatigue and free perspiration; but avoid exhaustion. Exercise out of doors is most beneficial. Swimming in water at 76° to 78° is the best of all special health exercises. Rapid walking and hill climbing are excellent; stair climbing is good.

For persons advanced in years, walking, horseback riding and bicycle riding are excellent exercises, practiced in moderation.

37. Develop the abdominal muscles by some simple exercises, such as walking on tiptoe with the chest held high, or running round the room on all fours; or lie on the back, hold the legs straight and raise them to the perpendicular, repeating thirty to forty times three times a day. Lying on the back, raise the body from the lying to the sitting position with the hands placed upon the back of the neck. Repeat ten to twenty times three times a day, gradually increasing the number.

38. Practice deep breathing with chest well expanded and clothing removed or loosened, several times a day. ~~Ten deep breaths every hour will help~~ to keep the chest walls flexible. Stimulate the lungs by exercise for a few minutes several times a day sufficiently vigorous to cause quickened respiration.

Deep breathing aids digestion, encourages liver and bowel action, develops the lungs and purifies the blood. ~~The only directions needed are:~~ Hold the chest high and breathe as deep as you can ten or twenty times every hour or oftener. The best "breath" gymnastics are swimming, hill or stair climbing and running or rapid walking. Always breathe through the nose.

Posture

39. Always sit erect, with chest held high and the small of the back supported. Sit as little as possible. Standing and lying are more natural

and healthful positions than sitting. When sitting or standing, keep the body erect. In standing, hold the hips well back, the chest forward, the chin drawn in. In sitting, do not slump, but keep the chest up. This requires an effort which becomes tiresome if long continued, unless proper support is given to the lumbar spine or so-called hollow of the back. To keep the shoulders from dropping forward and flattening the chest, support should be given to the upper spine between the shoulder blades. A chair constructed so as to support the lower back and the upper spine will hold the body in perfect position when completely relaxed as is necessary for complete rest. Such chairs are now available.

Rest and Sleep

40. Learn to relax both mentally and physically. Merely stopping work is not sufficient if "tension" continues. This is especially true of vocations which do not involve much muscular effort. It is a good plan to lie down and relax completely with the eyes closed in a cool, quiet place for half an hour in the middle of the day. Very arduous occupations require a short rest at more frequent intervals. Practice deep breathing while resting.

41. Avoid long periods of strain, mental, nervous or physical, and especially avoid overstrain. The effect is likely to appear later in premature mental or nervous breakdown.

42. Make the weekly Sabbath a day of complete rest from work. Spend most of the day out of doors if possible. Take a half day off for an outing in the middle of the week.

43. Sleep 8 hours each night. Elderly persons need 9 or 10. If not strong or if neurasthenic, sleep an hour before dinner. Growth, assimilation and repair are most active during sleep. The nerve and brain storage batteries are recharged during sleep.

(a) page 13

24½ 47. Keep clear.

Always avoid so far as possible any contact ~~of the hands~~ with infectious material. It is to be remembered that the risk of contamination is especially great in visiting a public water-closet, or, in fact, any other.

Surroundings at night should be quiet. Sleep amid noise is not normally refreshing.

On the side is the best position during sleep for most persons. Change sides.

The bed should be neither too hard nor too soft. Avoid feathers. The covers should be dry, warm, light and porous. Avoid overheating by excess of clothing. Use a thin pillow and discard bolsters.

When asleep, always breathe outdoor air supplied by means of wide open windows, a window tent, a fresh-air tube or a sleeping balcony. Do not sleep within two hours after eating.

To insure sound sleep at night empty the colon at bedtime and avoid late and heavy meals. A fruit supper is conducive to sleep.

Take a cold bath on rising to set the vital machinery in motion. Young and robust persons may take a plunge in a bath tub or swimming pool. Elderly and feeble persons may rub the body with the hand dipped in cold water or with a dry towel in a cool room. If the skin is dry, rub with lanolin cream. If it itches, touch repeatedly with a towel dipped in very hot water.

Clothing

Dress according to the temperature and weather, regardless of the season, and do not slavishly follow the fashions but dress for health and comfort. Avoid too much clothing. Over-heating is depressing. The clothing should be loose, comfortable, light and porous. Restrictive clothing is necessarily damaging, for the trunk of the body is continually changing in form and size. Wear porous cotton underclothing next the skin. Avoid waterproofs except for temporary protection. Clothe the extremities so as to keep them warm and dry. Avoid too much clothing.

Use care in selecting footwear. Avoid shoes with high heels, flexible shank or narrow toes. If the feet ache from long standing or walking, have them examined by a good foot specialist.

Great harm may result from improper
~~shoes with~~ ~~Avoid flexible shanks.~~ Sandals
are most deadly
when ~~there are~~ shoes for
~~flat feet.~~
if you have flat feet, wear
Shoes or slippers.

*** p. 14.

Wear shoes with broad soles, low heels and a stiff shank. Flexible shanks, ~~are highly objectionable.~~ Avoid because flatfoot.

Do not eat hurriedly just before retiring. A ten minutes' nap after dinner is not objectionable, but long sleeping after meals is harmful. Eating a little fresh fruit, ~~particularly~~ before retiring, encourages bowel action.

the most important factor in gastric digestion. Eat when hungry, never because it is mealtime or because invited to eat. When appetite is lacking, eat fruit and bulkage, avoiding protein and fats. If the tongue is coated, change the flora and clear the bowels by enema or irrigation. Cultivate appetite by exercise and cold bathing.

29. Eating at regular hours helps to maintain the normal intestinal rhythm which secures the daily movements of the bowels. Rather than omit a meal entirely eat some fruit, or a cake of Laxa with fruit juice, or some other simple nutrient which will keep up the peristaltic procession and rhythm. Never take food into the stomach when remains of a previous meal are present.

30. The best plan, especially for sedentary persons, is to eat twice a day. Eight to nine A. M. and three to four P. M. are the best hours: or eleven A. M. and six P. M. if the retiring hour is necessarily very late. When breakfast is omitted or taken very late, it is an excellent plan to take some fruit soon after rising.

31. If you eat three meals a day, take the heartiest meal at midday. The breakfast should be substantial, the evening meal very light especially avoiding pastry, fats, rich sauces, and hearty foods. The evening meal should consist chiefly of ripe or cooked fruits, liquid foods, and such cereals as boiled rice or cereal flakes.

. Avoid iced foods and drinks. Very cold foods or drinks, if taken at all, should be swallowed slowly and in very small quantities to avoid chilling the stomach.

33. Avoid Eating too Fast

Chew every morsel until reduced to liquid in the mouth. Thorough chewing develops "gastric juice" in the stomach and combats intestinal autointoxication, a most prolific cause of disease. Careful mastication

The Toilet

45. Cleanse the mouth and teeth thoroughly before and after each meal, on rising and on retiring. A foul tongue and decaying teeth indicate mouth infection and intestinal autointoxication and general low resistance.

46. Bathe daily at night in warm weather. Twice a week in winter, take a warm, cleansing bath before retiring. If the skin is dry and irritated, apply lanolin cream, of which the following is the formula:

Lanoline	2 drams
Boroglyceride	1 dram
Cold cream	6 drams

Rub the scalp with the finger tips dipped in cold water twice a day.

48. ~~Take a short cold~~ bath ~~every morning on rising. This is an excellent tonic.~~ Or take a cool air bath morning and night, rubbing the skin with a dry towel.

~~The hands, nose and ears also require sanitary attention.~~ For the hands, use a good soap and rinse well with soft water. If rough, apply skin cream (as given above).

50. Cleanse the anal region after each bowel movement. If hemorrhoids or fissure, apply carbolated vaseline on cotton after every bowel movement.

Foreword

This booklet is a brief summary of more than a half century search for the right way to live. The writer, now in his 84th year, has devoted his whole life to an intensive study of human habits and living conditions in their relation to health. With the cooperation of hundreds of interested and intelligent colleagues, the Battle Creek Sanitarium has been made a center of research, experiment, clinical study and adventure in the fine art of biologic living.

Laboratories have been fitted up and provided with the most elaborate and up to date appliances for chemical, nutritional and physiologic research and placed in the charge of trained experts, some of international fame. Close touch has been maintained with the great research laboratories of the world and a constant wide survey made of scientific literature. New discoveries bearing on health have been tested and when meritorious adopted. More than a million dollars has been expended in this world wide search and intensive research. Among the practical results may be mentioned the Battle Creek Sanitarium where more than 300,000 persons have been treated, which has grown in 60 years from a small two story frame building with 12 patients to its present proportions with accommodations for 1200 patients. The treatment of these patients by physiologic methods and health training in accordance with biologic principles and methods has afforded an unparalled opportunity for testing and validating the methods and ideals presented in this booklet as means of aiding chronic invalids to recovery.

Battle Creek College, with its schools of nursing, home economics, and physical education in addition to the usual liberal arts departments and a student body of nearly five hundred with more than _____

graduates scattered over the whole civilized world and found in every mission field, is another notable result of the Battle Creek health movement. The fine student body of Battle Creek College not only study the principles of biologic living but live them and grow enthusiastic in their appreciation of their basic soundness and rationality.

Out of this work also have grown the great food industries which have made Battle Creek known throughout the world for its unique and wholesome food products, a work which began at the Sanitarium and is continued in the laboratories of the Battle Creek Food Co.

Finally may be mentioned a great number of health promoting methods and appliances, electric, mechanical and physiotherapeutic, such as the electric light bath, the sinusoidal electrical current, some of which are found in every hospital and in many doctors' offices.

The results of the practical application of these biologic methods in restoring to health and efficiency many thousands of chronic invalids who had been regarded as incurable has created a wide demand for a brief epitome of the Battle Creek Idea of right living which is the occasion for the publication of this booklet. A full account of "biologic living" will be found in the writer's volume "How to Have Good Health" and in other books, a list of which will be found on the third cover page. The monthly magazine Good Health, edited by the writer for more than 60 years, and the Battle Creek Sanitarium News present a popular account of practical biologic methods and of the most recent progress.

Those who desire further information about biologic living or suggestions for health training at home are invited to send in their inquiries with assurance that they will receive without charge, courteous and competent attention.

Battle Creek Health Extension Bureau

How to Begin

Make a survey of yourself and your surroundings.

Take an inventory of your knowledge about health and conditions which promote physical well being.

Look over your library and see that it is supplied with up-to-date health literature from a dependable source.

Get in touch with your State Board of Health and read the literature the secretary will send you.

Visit your family physician or the best physician available and have a thorough examination of your heart, lungs, blood, of blood pressure, urine, every organ and function. Don't be satisfied with an ordinary cursory examination, but find out everything you can about yourself. Very few people are perfectly well even though they feel no discomfort. The early or so-called "little symptoms" of disease often pass unnoticed long after they are discoverable if carefully looked for by an up-to-date physician aided by up-to-date diagnostic appliances.

Carefully consider your habits,-- do they tend toward health or disease? Resolve to eliminate every disease-producing factor, to **culti-vate** health, to fight disease, and to make this a part of your daily program.

Concentrate on health. Read what you find about health in magazines and newspapers. Don't believe all you read, of course, but discuss it and accept what appeals to your good sense, but avoid sensational ideas and fads.

Become a health enthusiast. After you have read carefully this booklet make a list of your defects and set to work systematically to correct them.

Table of Heights and Weights of Men as Prepared by the Association of Life Insurance Medical Directors*

	Ages	15-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69
5 ft.	0 in.	120	125	128	131	133	134	134	134	131	130
	1 in.	122	126	129	131	134	136	136	136	134	132
	2 in.	124	128	131	133	136	138	138	138	137	135
	3 in.	127	131	134	136	139	141	141	141	140	140
	4 in.	131	135	138	140	143	144	145	145	144	143
	5 in.	134	138	141	143	146	147	149	149	148	147
	6 in.	138	142	145	147	150	151	153	153	153	151
	7 in.	142	147	150	152	155	156	158	158	158	156
	8 in.	146	151	154	157	160	161	163	163	163	162
	9 in.	150	155	159	162	165	166	167	168	168	168
	10 in.	154	159	164	167	170	171	172	173	174	174
	11 in.	159	164	169	173	175	177	177	178	180	180
6 ft.	0 in.	165	170	175	179	180	183	182	183	185	185
	1 in.	170	177	181	185	186	189	188	189	189	189
	2 in.	176	184	188	192	194	196	194	194	192	192
	3 in.	181	190	195	200	203	204	201	198	196	196

Table of Heights and Weights of Men as Prepared by the Association of Life Insurance Medical Directors*

	Ages	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	56-59	60-64
4 ft.	11 in.	111	113	115	117	119	122	125	128	128	126
5 ft.	0 in.	113	114	117	119	122	125	128	130	131	129
	1 in.	115	116	118	121	124	128	131	133	134	132
	2 in.	117	118	120	123	127	132	134	137	137	136
	3 in.	120	122	124	127	131	135	138	141	141	140
	4 in.	123	125	127	130	134	138	142	145	145	144
	5 in.	125	128	131	135	139	143	147	149	149	148
	6 in.	128	132	135	139	143	146	151	153	153	152
	7 in.	132	135	139	143	147	150	154	157	156	155
	8 in.	136	140	143	147	151	155	158	161	161	160
	9 in.	140	144	147	151	155	159	163	166	166	165
	10 in.	144	147	151	155	159	163	167	170	170	169

*The figures given include the ordinary house clothing. For net weight subtract 4 per cent.

Relative Food Needs at Different Ages

According to Atwater the food needs of persons of different sex and ages are as follows, the needs of an adult man being taken as unity:-

Man	1.0
Woman	0.8
Boys (14-17)	0.8
Girls (14-17)	0.7
Children (10-13)	0.6
Children (6-9)	0.5
Children (2-4)	0.4
Children (under 2)	0.3

Food Requirements of Adults

Height Inches	Weight Pounds	Calories
	MEN	
60	120-130	1900-2000
61	122-132	1950-2100
62	124-135	2000-2150
63	127-140	2050-2200
64	131-143	2100-2250
65	134-147	2150-2350
66	138-151	2200-2400
67	142-156	2250-2500
68	146-162	2300-2550
69	150-168	2400-2650
70	154-174	2450-2750
71	159-180	2500-2850
72	165-185	2600-2900
73	170-189	2700-3000
74	176-192	2800-3050
75	181-196	2900-3100

Height Inches	Weight Pounds	Calories
	WOMEN	
59	111-126	1775-2000
60	113-129	1800-2050
61	115-132	1850-2100
62	117-136	1875-2175
63	120-140	1900-2250
64	123-144	1950-2300
65	125-148	2000-2350
66	128-152	2050-2400
67	132-155	2100-2450
68	136-160	2150-2500
69	140-165	2200-2600
70	144-169	2300-2700

THE TEN LAWS OF HEALTH

The following simple diets comprise the essential requirements for a normal or physiologic life.

I

Live in the open air and the sunshine as much as possible.

II

Eat and drink temperately, simply and biologically.

III

Evacuate body wastes at least three times a day.

IV

Exercise freely and maintain a correct posture.

V

Rest sufficiently. Avoid tension and relax when possible.

VI

Keep clean internally and externally.

VII

Avoid poisons.

VIII

Avoid infections.

IX

Dress properly.

X

Cultivate optimism, amiability, serenity and poise.

Biologic living means health, comfort, efficiency, long life. It means good digestion, sound sleep, a clear head, a placid mind, content and joy to be alive. (1)

Live out of doors. Do you work under the trees instead of behind doors and opaque walls. Dig in the garden, explore the woods and hills. Follow the brooks, watch the squirrels in their gambols and learn the songs of the birds. (2)

Fix up a sleeping porch or balcony and so take an outing all night long and every night, and don't move inside when frost comes. Outdoor sleeping is the best life-preserver known. (3)

"Close to Nature" is a safe place, a haven of rest and peace, where one may breathe the air of heaven and freedon; may feel the thrill of vital joys and hear the music of the spheres. (4)

The "simple life" is not an innovation. It is a return to the "old paths" from which the perversions of our modern civilization have gradually diverted millions of men and women, perversions that are responsible for the multitudinous maladies and degeneracies which yearly multiply in number and gravity. (5)

Modern medical research has demonstrated that most maladies from which human beings suffer, chronic as well as acute, are due to infection of the alimentary canal with poisonforming germs. Many scores of such germs are known. The poisons are absorbed, and give rise to a great variety of distressing maladies and symptoms. Unnatural foods and unwholesome habits of life encourage infection of the intestine by introducing poisonforming bacteria and promoting their growth. Natural food and natural (6)

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Give attention daily to cultivating health. It will pay. Study the conditions and the surroundings of the home and the business, and give careful thought to personal habits and practices with special reference to their bearing on health.

Recognizing that health of mind and body is one of the most valuable of all personal assets, make every reasonable effort to maintain intact, and if possible, increase the capital of physical and mental strength.

Give to the body and its functions that care and study which you would accord to any other valuable and costly mechanism, so as to become familiar with its needs and the best means of supplying them.

Eat only natural foods; that is, those which are naturally adapted to the human constitution. The natural dietary includes fruits, nuts, cooked grains, legumes, and vegetables. Natural food imparts to the body the greatest amount of energy, and maintains normal conditions of life. No animals but scavengers and men eat everything. We should follow our nearest relatives, the orang and chimpanzee, in diet.

12 Avoid meats of all sorts (flesh, fowl, fish, including "sea food"). These are unnatural foods. They are all likely to contain deadly parasites of various kinds, and always contain countless numbers of noxious germs, "meat bacteria" or "wild germs," which infect the intestines, cause putrefaction and other poison-forming processes, and inoculate the body with colitis and many other diseases. These germs are not destroyed by ordinary cooking, such as stewing, broiling, frying, and roasting.

13 Take care to avoid an excess of protein, that is, the albuminous element which is represented by lean meat, the white of eggs, and the curd of milk. An excess of protein promotes putrefaction, and thus intestinal autointoxication, the chief cause of "biliousness," colitis, appendicitis, gall-stones, arterio-sclerosis, possibly cancer, Bright's disease, and premature old age. Ordinary bread contains a sufficient amount of protein, as do also other cereals. Most nuts, also peas and beans, contain an excess of protein, and should be eaten sparingly.

14 Eggs should be eaten in great moderation, if at all. They encourage autointoxication, and thus often cause "biliousness." The yolk of the egg is more wholesome then the white.

15 Many

Cow's milk is not altogether suited for human food. ~~A large proportion of invalids -- nearly half, perhaps --~~ suffer from "casein dyspepsiz," and can not take milk without suffering from constipation, headache, "biliousness," coated tongue, or other unpleasant symptoms which indicate intestinal autointoxication. Such persons may sometimes make use of fresh buttermilk, sour milk, cottage cheese, ~~yogurt cheese or yogurt butter~~milk, with less difficulty, and even with benefit. Excellent substitutes for milk may be prepared from nuts (Almond cream, Malted Nuts).

Soy beans

Soy acidophilus

Animal fats, such as lard, suet, and ordinary butter, should be avoided. They are difficult of digestion, and promote intestinal autointoxication, and thus cause "biliousness." Vegetable fats are more easily digestible, and do not encourage intestinal autointoxication. To be wholesome, butter must be perfectly sweet, and should be made from sterilized cream.

Persons who are ~~not~~ subject to casein dyspepsia are often able to digest sterilized cream more easily than butter. Persons who suffer from hyperpepsia -- "sour stomach" -- may take sterilized butter and cream more freely than those who suffer from slow digestion. When butter and cream produce pimples on the face, a coated tongue, or a bad taste in the mouth, they must be diminished in quantity, or omitted altogether. Nuts, Malted Nuts, ripe olives, and alive oil are excellent substitutes for butter and cream.

Avoid poison-containing foods. Tea, coffee, chocolate and cocoa contain poisonous alkaloids which impair digestion, damage the nerves, and promote disease of the liver, kidneys and blood-vessels. Cereal beverages and hot fruit juices are wholesome substitutes for tea and coffee.

Avoid all hot sauces

Condiments -- mustard, pepper, pepper sauce, cayenne, capsicum, vinegar, hot, irritating sauces, and spices of all kinds, must be wholly discarded. They irritate the stomach and cause gastric and intestinal catarrh and gastric ulcer, colitis, and damage to the liver and kidneys.

Common salt, or chlorid of sodium, should be used sparingly. ~~According to (Richet) and others,~~ the food naturally contains all the chlorid of sodium actually required ~~by the body~~, so that the addition of salt to the food is necessary only to please a cultivated taste. A safe rule is: "The less the better."

Persons who have dropsy, Bright's disease, arteriosclerosis, gastric ulcer, hyperacidity, obese persons, and epileptics should discard salt. also Ether.

Avoid complicated dishes and great variety at one meal, but vary the diet from day to day, as the appetite may indicate.

Eating Habits

~~Eat~~ at regular hours, ~~so as~~ to maintain the normal intestinal rhythm which secures the daily movements of the bowels. Rather than omit a meal entirely eat some fruit, or a cake of colax (agar-agar) with fruit juice, or some other simple nutrient which will keep up the peristaltic procession and rhythm. Never take food into the stomach when remains of a previous meal are present.

especially for sedentary persons

The best meal plan is to eat twice a day. Eight to nine A. M. and three to four P. M. are the best hours; or eleven A. M. and six P. M., if the retiring hour is necessarily very late. When breakfast is omitted or taken very late, it is an excellent plan to take some fruit soon after rising.

~~If three meals are eaten, the heartiest meal should be taken at midday.~~ The breakfast should be substantial, the evening meal very light, especially avoiding pastry, fats, rich sauces, and hearty foods. The evening meal should consist chiefly of ripe or cooked fruits, liquid foods, and such cereals as boiled rice or cereal flakes.

Avoid iced foods and drinks. Very cold foods or drinks, if taken at all, should be swallowed slowly and in very small quantities to avoid chilling the stomach.

gastric

Chew every morsel until reduced to liquid in the mouth. Thorough chewing develops "~~appetite~~ juice" in the stomach and combats intestinal autointoxication, a most prolific cause of disease. Careful mastication affords opportunity for the nutritive instincts to select the food and food elements adapted to the body needs, and to say, "Enough," at the proper moment. Hence, give preference to dry foods. Sip liquid foods slowly, taking care to insalivate thoroughly.

It is advantageous to take liquid foods like milk through a straw or small glass tube to insure admixture of saliva.

Food combinations should be such as to give the proper proportion to the several elements, -- proteins, carbohydrates, and fats. Fruits and vegetables, as well as other combinations of natural foodstuffs, agree perfectly when mastication is sufficiently thorough to reduce the food to a liquid state in the mouth.

Remember that

Food must be well relished to be well digested. According to Pawlow, "appetite juice," which is produced by stimulation of the nerves of taste by palatable food, is the most important factor in gastric digestion. Eat when hungry, never because it is mealtime, or because invited to eat. When appetite is lacking, eat fruit and bulkage, avoiding protein and fats. If tongue is coated clean flora. Clear bowels by enema or irrigation. Cultivate appetite by exercise + cold bathing.

Cane-sugar should be eaten only in small quantity. Large quantities cause acidity and give rise to gastric catarrh and indigestion. Sweet fruits, such as raisins and figs, honey and meltose or malt sugar, are natural and wholesome sweets and may be eaten freely.

A sedentary life tends to produce intestinal inactivity, that is, slow digestion and constipation; hence, the ordinary daily bill of fare should supply an adequate amount of laxative foodstuffs, fresh sweet fruits (not preserves), especially figs and prunes, acid fruits and fruit juices, fresh vegetables, bran, whole grain preparations.

Some fresh, uncooked food should be eaten at each meal in the form of fresh fruits or fruit juices, lettuce, raw cabbage, cucumber and other salads.

Fresh vegetables and whole grain cereals are needed to supply lime, potash and other salts. The blood and all living cells require these salts, as do the teeth and the bones. The free use of cane-sugar and meats leads to lime starvation, because of the deficiency in lime. Avoid white bread. Eat baked potatoes freely.

Dismiss work, worries, business cares and annoyances while eating. Good cheer promotes good digestion. Anger, worry, irritation, stop digestion.

What we eat today will be walking about and talking tomorrow; hence all foods not known to be pure and wholesome should be avoided. Especially avoid rich and socalled hearty (hard to digest) foods, and such indigestibles as pickles, green olives, and preserves.

Take three or four pints of water a day, including liquid food.

Do not drink much at nor immediately after meals. Take a few sips whenever thirsty.

Drink a glassful of water on rising in the morning, on retiring at night, an hour before each meal, ~~and two or three hours after eating,~~ and each time the bladder is emptied.

Live ~~as much as possible~~ in the open air. If compelled to ~~work~~ indoors, be sure that the living and work rooms have an ample, continual supply of fresh air. The lower the temperature the better, so long as the body is kept comfortably warm. Temperatures above 70° are depressing. ~~The breathing of cold air is a continuous tonic; every breath is a tonic bath, a vital lift. A thousand breaths an hour count greatly~~ much toward health or disease, according as the air breathed is pure and cool, or impure and hot.

Wroking in the open air is one of the best forms of exercise, especially working in the garden, digging, hoeing, pruning, etc. Do some good, hard muscular work every day, enough to produce slight muscular fatigue and free perspiration; but avoid exhaustion. Exercise out of doors is most beneficial.

Swimming in water at 76° to 78° is the best of all special health exercises. Rapid walking and hill climbing are excellent; stair climbing is good.

42 One need not degenerate physically because his occupation is sedentary. Always sit erect, with chest held high and the small of the back supported. Sit as little as possible. Standing and lying are more natural and healthful positions than sitting. One may exercise while sitting at work by deep breathing and by stiffening the muscles of first one limb a few seconds, then the other. All the muscles in the body may be exercised in this way.

Deep breathing aids digestion, encourages liver and bowel action, develops the lungs, and purifies the blood. The only directions needed are: Hold the chest high and breathe as deep as you can ten or twenty times every hour, or oftener. The best "breath" gymnastics are swimming, hill or stair climbing, and rapid walking or running. Always breathe through the nose.

In walking, always hold the chest high and carry it well to the front. Swing the arms moderately, and walk fast enough to hasten the breathing a little. Nine miles walking a day at the rate of three miles an hour is the necessary amount for the average adult. Most housekeepers and laborers do more.

Develop the abdominal muscles by some simple exercises, such as walking on tiptoe with chest held high, or running round the room on all fours; or lie on the back, hold the legs straight and raise them to the perpendicular, repeating thirty to forty times three times a day. Lying on the back, raise the body from the lying to the sitting position with the hands placed upon the back of the neck. Repeat ten to twenty times three times a day, gradually increasing the number.

116 If the abdominal muscles are weakened, so that the lower abdomen bulges forward, a tight flannel bandage, or more substantial support, should be worn about the lower abdomen when on the feet, until the muscles have been strengthened by exercise.

Cleanse the mouth and teeth thoroughly before and after each meal, on rising and on retiring. A foul tongue and decaying teeth indicate mouth infection and intestinal autointoxication and general low resistance.

Bathe daily at night in warm weather, and twice a week in winter, take a warm cleansing bath before retiring. Apply olive oil or fine vaseline after the bath if the skin is dry.

Take a short cold bath every morning on rising. This is an excellent tonic. Or take a cool air bath morning and night, rubbing the skin with a dry towel.

The bowels should move thoroughly three times a day, most naturally soon after each meal. Many persons move the bowels soon after rising. Train the bowels by trying to move them on rising and after meals.

Sleep ~~eight~~ 8 hours each night. If not strong, or if neurasthenic, ~~take a nap~~ before dinner. Growth, assimilation, and repair are most active sleep.

Surroundings at night should be quiet. Sleep amid noise is not normally refreshing. On the side is the best position during sleep for most persons, ~~Change sides~~.

The bed should be neither too hard nor too soft. Avoid feathers. The covers should be dry, warm, light, and porous. Avoid overheating by excess of clothing. Use a thin pillow and discard bolsters.

When asleep, always breathe outdoor air supplied by means of wide open windows, a window tent, a fresh-air tube, or a sleeping balcony. Do not sleep within two hours after eating.

To insure sound sleep at night empty the colon at bedtime, and avoid late and heavy meals. A fruit supper is conducive to sleep.

Make the weekly Sabbath a day of complete rest from work. Spend most of the day out-of-doors if possible. Take a half-day off for an outing in the middly of the week.

The clothing should be loose, comfortable, light and porous. Restrictive clothing is necessarily damaging, for the trunk of the body is continually changing in form and size. Wear porous, cotton ~~or linen~~ underclothing next the skin.

Avoid waterproofs except for temporary protection. Clothe the extremities so as to keep them warm and dry. Avoid too much clothing.

Do not worry. The Power that made us can and does take care of us. There is no need to worry. The Intelligence that controls and energizes heart and lungs can rule our destinies and with our co-operation will lead our lives in ways where "all things work together for good" to us. Worry kills. Hope inspires, uplifts. Cheer up.

Do not become self-centered. Avoid thinking or talking about ailments or other unpleasant things. Cultivate altruistic ideals and wholesome and optimistic thoughts.

Exercise self-control and restraint in all things. Work uses energy moderately; the passions and the emotions, enormously.

Discard tobacco, alcoholic beverages, "tonic drugs" and other nerve foolers. They are poisons which lessen efficiency and shorten life.

Avoid nostrums and patent medicines. The habitual use of any drug is harmful. The most eminent physicians are now agreed that very few drugs have any real curative value. The essential thing is right habits, ~~of life.~~ biologic living.

For inactive bowels, knead the abdomen well with the hands night and morning, especially the lower side parts. Eat laxative foods, especially fruits and nuts, and whole-grain "cereals." Drink a glass of cold water or eat an orange on rising and retiring. Exercise the abdominal muscles. If necessary, use a ~~cool~~ enema (80° F.) within an hour after breakfast daily for a week or two. Use one and a half to two ounces of sterilized bran daily. Use Colax biscuit (agar-afar) at each meal. Take one to three tablespoonfuls of Para-lax (emulsion of Russian paraffine oil) at night. ~~Visit the closet regularly after each meal to train the bowels.~~ When a "call" is experienced respondimmediately. Five minutes may postpone action indefinitely. Support the feet on a stool before the closet seat.

For a cold, take an electric light or other sweating bath on retiring; drink three quarts of water or weak lemonade daily and eat little but fruit for a day or two, and stay out-of-doors. Live in the fresh air and avoid colds.

as much as possible. sleep out.

If sleepless or nervous, take a warm bath at 102° F. for one to two minutes, then cool to 93° to 95°; continue half an hour to two hours if necessary. This rarely fails. If "bilious," take several enemas until the bowels are thoroughly emptied. Drink two or three quarts of water daily. Eat freely of fresh fruits and green vegetables. Avoid fats almost wholly for a few days, and diminish the amount of fats in the regular diet. Discard milk. Make the bowels move three to four times a day by the use of bran, Colax, or Para-lax, or all three, if necessary. Use besides if required a daily enema at 80° F.

The best foods in the order of excellence: Fresh, ripe fruits, cooked fresh fruits, cooked dried fruits, nuts, graham bread, rice, zwieback, toasted wheat flakes, potato, cauliflower, carrots, greens and other fresh vegetables, lettuce, cabbage, cucumber, honey, meltose, malted nuts, yogurt buttermilk, sterilized milk and cream, peas, beans, lentils, raised bread, sterilized butter.

Eat, drink, sleep, exercise, -- do all for efficiency. Said Paul, "Whether ye eat or drink, whatsoever ye do, do all for the glory of God." A man can do credit to his Creator only in following the natural order of life intended for him.

The chief merit claimed for the Battle Creek Sanitarium System is that it is not a novelty or in any sense a new departure, but rather, like the "Brook Farm" experiment of Ripley, Wendell Phillips, Emerson, Alcott, Thoreau, and their colleagues, "an effort to return to nature." On the occasion of his visit to the Battle Creek Sanitarium some years before his death, the Concord philosopher, Bronson Alcott, recognized in the enterprise the successful working out of some of the ideals of the Brook Farm experiment. The Brook Farm effort failed for lack of financial support, but the idea of a return to natural, wholesome ways, of cultivating sympathy with nature, was a spark from Heaven's altar which could not be extinguished, a divine thought born into the world with a great purpose behind it, to meet the needs of a suffering race and stem the tide of invalidism and inefficiency.

68

The most important measures which can be employed in dealing with the sick may be said to be fresh air, baths, exercise, and diet. The chronic invalid can be made well only by being reconstructed. The sick man must be transformed into a healthy man by a process of gradual change. Little by little the old tissues must be torn down and new tissues built in their place.

69

Health-getting, for the chronic invalid, is chiefly a matter of training, of health culture, under favorable conditions, which include the discarding of all disease-producing habits, such as the use of tobacco, tea, coffee, and all irritating, indigestible, and disease-producing foods.

70

The great majority of invalids are suffering the ill effects of flesh eating. Rheumatism, gout, certain forms of Bright's disease, gall-stone, renal calculi (stone in the kidneys), many forms of neurasthenia, migraine or headache, gastric ulcer, hyperacidity, and many other maladies belong to a class which has been aptly designated as "meateater's disorders," because directly promoted by flesh eating.

7(

The observations of Combe, Tissier, Metchnikoff and others have shown that flesh foods promote intestinal autointoxication. There are two reasons for this. Flesh rapidly undergoes putrefaction within the body as well as outside of it. The same germs which cause the offensive decay of a dead rat are found present in beefsteak, fish, fowl, oysters and flesh of all sorts. The following table shows the number of bacteria found in different samples of meat freshly obtained and examined in the Sanitarium clinical laboratory:

Specimen	Putrefactive Bacteria per gram (moist)	
	When purchased	After 20 hrs. at room temp.
No.		
1. Large sausage	420,000,000	490,000,000
2. Small sausage	663,000,000	640,000,000
3. Round steak	560,000,000	840,000,000
4. Roast beef	560,000,000	750,000,000
5. Smoked ham	43,120,000	750,000,000
6. Hamburger steak	129,000,000	700,000,000
7. Pork	126,040,000	1,036,000,000
8. Porterhouse steak	30,000,000	700,000,000
9. Sirloin steak	378,000,000	
10. Tenderloin (well done)	25,200,000	
11. Tenderloin (rare)	168,000,000	

Second, flesh foods encourage intestinal autointoxication by supplying the sort of material which promotes the gorwth of poison-forming germs. The samples of meat examined and shown to have the number of bacteria indicated in the above table were taken from portions of meat about to be served on the table of a first-class hotel, and represent meat in the form in which it is ordinarily eaten.

A pound of beefsteak contains fourteen grains of uric acid. The amount produced and eliminated daily by a person living on a non-flesh diet is only six grains, or less than half the amount which is swallowed in eating a pound of beefsteak.

A pound of liver contains nineteen gains of uric acid, or three times as much as the body ordinarily discharges in one day.

A pound of sweetbreads contains seventy grains of uric acid, or more than twelve times the amount which the body is normally required to dispose of in a day.

Chicken, fish, oysters, an other flesh foods contain uric acid in about the same proportion as beefsteak.

A pint of beef tea contains eight grains of uric acid, or twice as much as the same quantity of urine.

A person's liver and kidneys may be able to destroy and ilininate the uric acid produced in his own body, while not at all prepared to deal with two to ten times the quantity.

Nuts of various sorts are the vegetable analogue of meat, and require only suitable preparation to render them not only exceedingly palatable, but in the highest degree wholesome and digestible. The invention of methods by which this can be done, and the discovery of such interesting preparations as protose, malted nuts, nut butters, creams, etc., has made it easily possible for any person to at once and entirely dispense with the use of flesh foods.

Healthy people soon become sick when fed exclusively on meat; even dogs become sick and die on an exclusive meat diet. Dog fanciers give dogs very little meat, and the keepers of trained dogs exclude meat entirely from their dietary. Hunters feed their dogs cornmeal cakes, asserting that the use of flesh spoils the dog's wind and also his scent. Flesh foods are not the natural diet of man, who is naturally, according to Cuvier and other comparative anatomists, a frugivorous or a fruit-and-nut-eating animal.

Chittenden and others have demonstrated the necessity for a low-protein standard in diet. The experiments of Chittenden and numberous other investigators have shown that the amount of protein formerly supposed to be necessary is about three times as much as the body actually requires. By the aid of experiments conducted by Chittenden, in which more than a score of men lived upon a low-protein diet for nine months, it has been shown that the necessary amount of protein (the food element represented by the lean of meat and the white of egg) is so small that an ample supply can be obtained from vegetable sources, so that it is not at all necessary to resort to the eating of flesh foods in order to obtain a supply of this element. All of the persons who were the subjects of the experiment improved. Six athletes who were in good condition at the beginning of the experiment doubled in strength. Experiments made by Fisher have shown that the endurance of flesh-abstainers is far greater than that of flesh-eaters. One of these tests consisted in holding the arms straight out until they could no longer be maintained in a horizontal position. Fifteen flesh-abstaining physicians, nurses and bath attendants of the Battle Creek Sanitarium corps were able to hold out their arms nine times as long as fifteen of the well-trained athletes of the Yale gymnasium. The facts were published by Professor Fisher of Yale University, who conducted the tests in a most thoroughly scientific manner.

A fruit diet is of the highest value in cases of chronic disease, especially when the stomach is infected with germs. Germs will not grow in fruit juices. Even cholera and typhoid fever germs succumb in a short time to the influence of the juices of such fruits as the orange, the lemon, the apple and the strawberry. A fruit diet is the best means of disinfecting the stomach and the alimentary canal in general. An exclusive fruit dietary for three or four days is sometimes advantageous. In other cases a fruit breakfast, a fruit supper, and a mixed diet for dinner, is a practical plan. Fresh ripe fruits are somewhat more effective than stewed fruits for the destruction of germs. In several cases which have been under treatment at the Sanitarium the stomach fluid has been found to contain more than two hundred and fifty million germs to the ounce. After a test meal, consisting exclusively of fruit, no living germs could be found.

Fruits should be masticated with great care. Fruits are not digested in the stomach, and hence must be reduced to as nearly a liquid state as possible in the mouth by thorough mastication. Neglect to do this is the principal cause for inconvenience from the use of fruits, of which many invalids complain. Bananas, which are thought to be quite indigestible by many, become readily digestible when reduced to a smooth pulp before eating or by means of thorough mastication.

Strongly acid fruits sometimes interfere with the digestion of starch in the stomach, and in such cases should be avoided or eaten only at the close of the meal.

In the use of melons, the pulp should be rejected; the juice only should be swallowed. Fruits, with the exception of the banana and the olive, contain but very little nutrient material, consisting chiefly of water, they tax the digestive organs but very little, and may therefore be taken when other foods cannot be eaten.

Fruit juices require no digestion, and hence may be taken between meals without taxing the digestive organs. The nourishment which they contain is ready to be immediately absorbed and assimilated. This fact explains the peculiarly refreshing properties of fruit juices. Fruit juices containing considerable quantities of cane-sugar are very objectionable on account of the irritating effects of this sugar, which is not a natural foodstuff. Fruit juices should not be swallowed rapidly, but should be sipped slowly and mixed with the saliva.

Cereals of all sorts are highly antitoxic. This is especially true of dextrinized cereals. Experiments have shown that rice is the most antitoxic of all cereals. The reason for this is that the starch of cereals encourages the growth in the intestines of the acid-forming germs which prevent the development of the poison-forming putrefactive germs. Meltose, malt honey in the form of syrup and in the form of sugar, are highly valuable antitoxic foods, as they greatly encourage the growth of the friendly germs or antitoxic ferments.

Fresh vegetables may be freely used, if care is taken to thoroughly masticate each morsel. Their use is important to give bulk to the food mass, so as to encourage intestinal activity and also to supply the body with useful salts.

Such fresh green vegetables as lettuce and raw cabbage should be used freely when not contraindicted by chronic inflammation of the stomach or by some other morbid condition which renders the stomach incapable of dealing with bulky foods. Lettuce and cabbage are often contaminated with the eggs or embryos of intestinal parasites as the result of the use of fresh manure or night-soil as a top dressing by gardeners. Metchnikoff has called attention to the face that certain forms of intestinal parasites are generally acquired in this way. It is claimed by Metchnikoff that
91 appendicitis and typhoid fever may be often traced to the use of raw vegetables which have been thus affected. This danger is entirely avoided at the Sanitarium by the production of lettuce and other vegetables which are eaten in a raw atate, in gardens and greenhouses connected with the institution. Fresh fruits which are purchased in the market are submitted to a thorough washing and disinfection by means of harmless germicides.

The potato is in general a most wholesome vegetables but must be avoided in certai cases in which there is great gastric irritability, becuase of the large amount of alkaline salts which it contains. In such cases rice is much preferable, as the rice contains less than one-twenty-fifth part as much of these salts as does
92 the potato. In the use of potatoes, it is highly important that each morsel shoul be thoroughly chewed. It must be reduced to a perfect luquid state before leaving the mouth. When swallowed in lumps, potato is almost indigestiable in the stomach, as it consists so largely of starch. When thoroughly reduced to a liquid state, the potato leaves the stomach very quickly and enters the intestine, where it is digested by the pancreatic juice. Soggy potatoes are very indigestible because of the difficulty in reducing them to a liquid state. The potato is highly antitoxic and is recommended by Metchnikoff and his pupils.

Tea and coffee are discarded from the Sanitarium bill of fare because they are poisons, mild intoxicants, capable of producing decidedly injurious effects upon the nervous system, and highly detrimental to digestion. The digestion of starch ceases entirely in the presence of tea or coffee. Tea is, on the whole, more detrimental to starch digestion then coffee, but both are in the highest degree
93 objectionable. They interfere with the action of the salivary glands by rinsing the food down before it has been properly insalivated. They prevent the action of the saliva upon the starch both in the mouth and in the stomach. Sir Wm. Roberts showed that tea and coffee interfere with the digestion of albumin, and that their total effect is to delay or prevent digestion. Many dyspeptics know this by experience. Dr. Haig has shown that their effect is the same as that of meat-eating in producing sick-headache, rheumatism, and other uric-acid disorders. Tea and coffee contain caffein, a poison which is essentially identical with uric acid. A pound of tea, coffee, cocoa, or chocolate contains from 150 to 200 grains of uric acid, or its physiological equivalents, thein, caffein, or theobromin.

The habitual use of this poison is undoubtedly a potent cause of arteriosclerosis and high blood-pressure, and leads to Bright's disease and apoplexy. Dr. H. W. Wiley has pointed out that a cup of coffee contains four grains of caffein, which is a medicinal dose of the drug. A glass of coca-cola contains the same amount of caffein. A cupful of coffee contains twice as much uric acid as the same quantity of urine. These poisonous drugs are responsible for a vest deal of mischief. Their use should be discarded by persons in health as well as by the sick.

Thorough mastication of the food is to be especially commended for the following reasons:

1. Mastication develops the flovors of the food and thus stimulates the gustatory nerves to notify the stomach through the psychic centers, thereby enabling the stomach to prepare in advance the gastric juice required for the digestion of the food. This "appetite juice," discovered by Pawlow, is a most important element of the gastric secretion, being more active and powerful than any other.

Prolonged mastication secures the admixture with the food of the saliva required to digest the starchy portion, and thus prepares the food for the action of the gastric juice and other juices later on. The action of the saliva is not confined to the mouth; it is continued in the stomach, and although it is interrupted by the secretion of the acid gastric juice the saliva is reactivated by the digestive fluid after the food mass leaves the stomach and so continues its work in the intestine. This fact, recently discovered, greatly emphasizes the importance of securing an abundant secretion of saliva by thorough and prolonged mastication.

By thorough mastication the food is finely divided so that the various degestive fluids may come in direct contact with each minute particle, thus greatly facilitating the process of digestion. By thorough mastication the gustatory nerve is enabled to exercise a most interesting and important function by which the nutrition of the body is very exactly and automatically regulated. When the proper opportunity is thus afforded for the performance of their function, the gustatory nerves not only determine the amount of food but indicate which particular foodstuffs are required to meet the nutritive needs of the tissues.

Thorough chewing of the food need not be a tedious matter; in fact, the proper chewing of the food really increases to a marked degree the pleasure and satisfaction of eating. The length of time required need not be more than thirty or forty minutes for an ordinary meal. When the food has been sufficiently masticated, it seems to be drawn into the throat by a semi-automatic process, or, as one has siad, "swallows itself." The tongue, as well as the teeth, should be used in masticating the food, not only by rolling the food about but by pressing it against the roof of the mouth, by which means also the presence of uncreshed particles may be detected and detained. In many cases it is better to reject the coarse hulls of beans, peas and green corn. These are sometimes retained in the stomach, especially in cases of dilatation.

Most chronic invalids have badly depreciated bodies. Their muscles are weak and flabby, they have feeble hearts, shallow breathing, flat chest, round shoulders, and little endurance. These conditions are the natural results of malnutrition and the chronic toxemia nearly always present. This state of physical inefficiency must be combated not only by removal of causes but by systematic training of the heart and muscles by scientific physical culture.

Systematic exercise of some sort is thus an essential feature in the Sanitarium system of treatment. The fatigue and muscular soreness occasionally produced at the start disappear rapidly when exercise is taken systematically. By means of exercise, heart and nerves as well as muscles are strangthened, and the tissue changes necessary for a thoroughgoing cure are encouraged.

Hydrotherapy, or the use of water as a means of cure, is chiefly relied upon to stimulate the vital activities necessary for the curative process. By cold applications suitably applied, every bodily function may be stimulated. By hot applications properly applied excessive action may be controlled, pains relived, and blood diverted from congested parts. By various other applications most powerfully sedative, alterative, and restorative effects may be produced. Scientific hydrotherapy afforts the most direct and most rapid means of influencing the great functions of life, the circulation of the blood, the process of respiration, the action of the brain and nerves, the functions of the liver, kidneys, stomach, and bowels. There is no means by which the various bodily functions may be so perfectly and so quickly controlled as by hydriatic measures applied with intelligence and skill.

The wonderful influence of the sunlight as a curative agent has been appreciated from the most ancient times. The Greeks and Romans provided most excellent arrangements for "insolation" or sun bathing in connection with their great public baths as well as in the palaces of the rich. Sick animals show preference for the sun.

The Mechanotherapy department, in which the mechanical Swedish movements are given, is much appreciated. There are kneading machines for the abdomen, to stimulate sluggish bowels to normal action. There are vibrating chairs, tables, stools, and bars, which warm the extremities, dissipate weariness and the "numb", "cold", "creeping" and other queer sensations which worry the neurasthenic. It is really remarkable how quickly the heaviness and other discomforts which follow eating in many cases of dyspepsia disappear under the influence of vigorous vibration. Then there are rubbing and percussing machines, and other appartus, all of which do something helpful. This department may be visited twice a day with profit by most patients. Improved new apparatus of the Zander type -- the trotting horse, the camel, and various other machines -- have been recently added to this department.

Diathermy, or Thermo-penetration. This is a new method of applying electricity in which the electrical current is converted into heat within the body. None of the ordinary effects of electricity are experienced; that is, there is no electrical sensation, no muscular contraction; the only sensation is that of warmth. By proper arrangement of the electrodes the heat may be concentrated in any part of the body. This invention renders it possible to apply heat to internal parts heretofore inaccessible.

The Battle Creek Sanitarium is not a hospital, neither is it what the public understands by a sanitarium or sanatorium, -- which is a sort of medical boarding house,-- neither is it a headquarters faddists and cranks. It is in no sense a commercial or mercenary enterprise. It is the center of a reform movement, the essential principle of which is to return to nature and seek for those paths which lead men to harmony with nature and with themselves. The movement which centers here in this institution has become world-wide and is making progress everywhere among intelligent and reasoning people of all classes. The corporate name of the Battle Creek Sanitarium is the Michigan Sanitarium and Benevolent Association, which is organized under the provisions of Act. No. 242 of the Public Acts of 1863 for the organization of charitable institutions, and is by statute exempt from taxation. No physician or any other person has any share in the earnings of the institution. All excess of receipts over

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The generosity of the original founders of this institution in devoting all earnings to its equipment, operation, and betterment, and the altruistic spirit which has always dominated its board of managers, have rendered possible the building up of a scientific medical enterprise devoted forever to the public welfare in which the attempt is made --

First -- To put into active, effective, and systematic use every practical method which modern medical science has provided for the accurate determination of deviations from the normal standard of health instructure or function, and for the estimation of the amount of such variation, so far as possible expressing these variations by means of coefficients, so as to make exact comparisons possible.

Second -- To make available in most approved form every rational curative means known to medical science, so that the same may be brought to bear in any individual case, giving special prominence to physical therapy, or so-called physiologic therapeutics.

Third -- To combine with the special professional, technical, and institutional advantages of the modern hospital, the luxuries and comforts of the modern hotel, together with the genial atmosphere, security and freedom of the home.

Fourth -- To organize and carry forward various lines of research having for their purpose the improvement of the conditions of human life, especially in relation to diet and nutrition.

Fifth -- The organization and maintenance of various charities, especially hospitals and dispensaries for the treatment of the sick poor.

"Nature alone can cure; this is the highest law of practical medicine, and the one to which we must adhere - - - Nature creates and maintains; she must therefore be able to sure."

"Diseases are not entities that have entered into the body; they are not parasites that take root in the body; they merely show us the course of the vital processes under altered conditions."

The application of the physiologic method requires much more than simply a knowledge of the technique of baths, electricity, movements, etc. It especially requires a knowledge of physiology, and an intelligent grasp of all the resources of modern medical science. For, while the physiologic method depends for its curative effects upon those natural agencies which are the means of preserving health, and which may be relied upon to prevent disease as well as to cure it, it recognizes and employs as collateral and supplementary remedies, all rational means which have by experience been proved to be effective as adjuvants or palliatives.

As regards the methods of dealing with individual ailments, the Battle Creek Sanitarium System offers no panaceas and claims no secret methods or processes. There is no routine or "course of baths," no violent beroic measures, no empirical formulas for any disease or class of maladies. The "system" is simply a rational plan of leading the individual out of suffering and inefficiency into health comfort, and useful activity. Its claims as a system are based (1) upon a working plan which many years of experience have developed for the ultilization of all rational curative measures, especially those of a physiologic character, combined (2) with the complete superivision and control of the life of the patient, and (3) tha application of methods of precision in the study of vital conditions, normal and patholigical.

"It is the Blood that Heals"

Great pains are taken to render the patient intelligent in relation to these facts and principles. He is taught that it is "the blood that heals"; that mostchronic disorders are the result of deteriorative changes in the blood; that some abnormal content or some deficiency has led to minute functional or structural changes which, slowly advanctin during a long period, have finally resulted in so great a disturbance that attention is called to the fact by symptoms, so that he discovers that he is ill; that the chronically sick person is in a state of low vital resistance, and hence that his treatment necessarily requires, first of all, the exact regulation of all his habits, and the establishment of natural canditions of life. The "simple life" and "return to nature" are the ideals constantly held up before him. He must work out his own salvation; he must "cease to do evil and learn to do well;" he must cease to sow seeds of disease, and by every means in his power cultivate health.

Food Combinations.

7 6. Most of the current notions about food combinations are based on fancy rather than scientific fact. It is an error to suppose that fruits and vegetables should not be eaten together, or that starch and protein are a bad combination, or fruit acids with starches unwholesome, or acids and milk indigestible.

Fruits and vegetables agree perfectly if thoroughly chewed.

Fruit acids do not prevent the digestion of starch. Acetic acid, the acid of vinegar, and the oxalic acid of pie-plant are harmful and prevent the digestion of starch in the stomach. (Sir Wm Roberts).

The notion that starch and proteins ~~do not agree~~ is absurd. These food elements are ~~nearly always~~ associated in normal foodstuffs. It is true that meat and ~~bread~~ cereals is a bad combination because of the excess acid salts.

Proper combinations of foods are necessary to insure a complete assortment and abundant supply of all the needed vitamins and food minerals as well as the necessary protein, starch and fat required for tissue building and energy production.

8 7. Be careful to eat enough but not too much. A good rule is to leave the table while still able to eat more. Never eat so much as to feel a sense of discomfort or to cause dulness or drowsiness. The amount of food needed depends upon the size, sex, and activity of the individual. Men need more food than women because they are larger and use their muscles more. The individual requirement may be determined by reference to the accompanying tables(See back of booklet). The energy

The* gastric juice is much more acid (hydrochloric) than ceny fruit acid. Starch digestion begins in the mouth, continued during the first hour of gastric digestion, but is chiefly effected in the intestine by the pancreatic and intestinal juices.

+x

in meats and also in bread and breakfast cereals. The writer as well as McCollum has for many years opposed the meat and bread dietary. The chief benefit derived from avoidance of this dietary is due to the diminuse of meat.

value of the ration may be determined by multiplying the normal weight for a person of the same height by 14. This gives the total number of calories required.

For determining the amount of protein, fat and carbohydrate, proceed as follows: Find the normal weight of a person of the same height (See table). Multiply the weight by one and one-third; this gives the number of calories of protein required. Multiply the protein by 4 to find the figures for fat. Multiply the fats by 2 to find the quantity of carbohydrates.

The following represents the average food needs of an adult doing light work: (*)

Hard muscular work requires one-third more food. Mental work requires no more food than loafing. After 80, the food requirement is only half that of middle age.

Weigh once a week. Consult table of weight for height and age (See Appendix).

7. Masticate thoroughly. Every morsel of food should be chewed until it becomes a smooth purée or semi-liquid in the mouth.

Thorough chewing greatly aids digestion and lessens materially the length of time the food remains in the stomach.

Thorough chewing enables the salivary glands to secrete sufficient saliva to soften the food and to digest the starch.

Tasting the food causes the gastric glands to pour out their secretion and stimulates the colon to push its contents along and so aids bowel action.

8. Eat what you like; that is, food which you can relish. Food must be well relished to be well digested. Says Pavlov, "Appetite means juice." When the writer visited the laboratory

of Prof. Pavlov, at St. Petersburg, he found the assistants busy collecting "appetite juice" from dogs to sell at a good price to German gourmands as a means of supporting the laboratory. Of course one must cultivate a liking for wholesome foods. The fact that a food is healthful will commend it to a normal appetite.

10, 9. Give preference to vegetable fats. Animal fats, except butter, are less wholesome than vegetable fats and less digestible. Butter is an important source of vitamins A and D, and is readily digestible when made from sterilized cream and perfectly fresh. Butter with the slightest taint should be discarded. It contains butyric acid and the unwholesome germs that produce it.

Animal fats encourage putrefaction. Vegetable fats do not. But most vegetable fats lack vitamins and should be eaten with foods known to be rich in vitamins, such as tomatoes, carrots, spinach, and other greens. Cream is more easily digestible than butter and when sterile is a most wholesome form of fat. It may be sometimes used in moderation by persons who are sensitized to milk.

Cafe

Nuts and nut emulsions (almond cream, Malted Nuts, nut butters) are excellent sources of easily digestible fats. The soy bean contains 20 per cent of an exceptionally fine fat which is rich in lecithin. The actual fat requirement is small, provided greens and carrots are eaten freely to supply the fat soluble vitamin. Carbohydrates - Starches, Sugars, Dextrins

11, ~~10~~. Choose carbohydrates as the chief and best source of energy ~~values. A minimum of protein is needed but only for repairs.~~ Fats, like carbohydrates, serve chiefly as fuel.

Raw starch is not easily digestible. For this reason, unripe fruit is unwholesome. Bananas, which are usually eaten before becoming fully ripe, often disagree for this reason, although one of the most easily digestible of foods when its starch has been completely converted into sugar by the digestive process of ripening.

The starch of a cooked potato is more quickly digested than any other. Cooked cereal starches require much longer time. Half cooked cereals, especially oatmeal, digest quite readily and in the case of oatmeal, at least, appear to be more wholesome than when long cooked. The Scotch prepare their "brose" by pouring hot water over the oatmeal and stirring until it thickens.

Restrict Use of Cane Sugar

12. Avoid the free use of confectionery and cane sugar. Carbohydrates in the form of sugar are most attractive on account of their sweetness.

There are five different food sugars,-cane sugar(white or granulated sugar, brown sugar, beet sugar, molasses, raw sugar, syrup, maple sugar, maple syrup, sorghum); malt sugar (maltose, malt syrup); fruit sugar (sweet fruits, honey); corn sugar (glucose, dextrose); milk sugar (lactose), found only in milk.

Of the five, cane sugar is least wholesome. Taken in concentrated form, as usually eaten, it irritates the stomach and encourages infection of the stomach, duodenum and gall bladder.

Malt sugar is the natural sugar of the body, being produced in abundance when starch is digested by the saliva, the pancreatic juice and the intestinal juice. It is digested and absorbed much more quickly than cane sugar.

Fruit sugar is of all sugars the sweetest and the most easily

assimilated. It requires no digestion,-is ready for immediate absorption.

Dextrose or glucose is less sweet than cane, malt or fruit sugar, and in its pure state as found in fruits, requires no digestion.

Milk sugar, although least sweet, is one of the most important of all the sugars. It is provided by nature not only as a carbohydrate food for the infant mammal, but as a nutrient for the protective germ, the Bacillus acidophilus, which combats putrefactive, pus-forming and other disease-producing germs in the intestine, thus preventing the development of putrefaction and infection in the intestine.

By the liberal use of this sugar, bottle-fed infants, older children, and adults may enjoy much the same protection against colitis, appendicitis, and other intestinal infections, as have breast-fed infants. Ordinary milk sugar has little sweetness.

A recent discovery makes it possible to make lactose three times as sweet and three times as soluble by ~~recrystallizing it at a temperature above 190° F. and thus~~ converting it into beta-lactose. In the form of beta-lactose, sometimes commercially known as B-Lac, milk sugar is ~~an~~ excellent table ~~sweet, and may be freely used~~ in place of cane sugar ~~without injury~~, but with great benefit as a most efficient means of preventing intestinal putrefaction and infections, and thus lessening the work of the liver and kidneys, and other important vital organs, and so combating old age as well as many other forms of disease.

(a+)

The amount of fat may be greatly varied without injury. One-tenth to one-fourth of the water-free weight of the daily intake is enough, the body making its own fat from carbohydrates. Starch and carbohydrates, chiefly starch, make up from three-fifths to four-fifths of the total normal ration (energy value) and are the chief source of heat and energy.

adapted. Had it not been
a marvel that
not disappeared among
the thousands of
species & animals that
have existed since
time began & geological ages
have destroyed
animals have buried in
the earth's
crust. That fact
leaves the road
road, however, cannot be
doubled. Another
(over)

inventions enables him
to predict and to some
degree neutralize the
damaging effects of
departures from the
natural order, and so
to just that the result
predicted of his departures.

Close adherence to
the ~~natural~~ natural
order is in-
variably necessary
because the natural

conditions of life represent per day amid
more, the environment
to which it has become
adapted has experienced. Those
who ~~have~~ individuals
~~who~~ could not adapt
~~who~~ have died off. ~~Leaving~~ only
themselves ~~to~~ ~~reproduce~~
~~More individuals were~~
hence to survive to get
their environment or
life habits and conditions

and the reverse is
gradually true.

In the development
of civilization, living tissue
and conditions have
clothes dictated law clearer, taste
decency, convenience. econ-
omy, fashion, rather than
the considerations of health
or biologic adaptation.

More than 60 years
ago the writer heard
convinced the lecturer

To those who hesitate to
adopt new habits, especially in diet, and
the following observations by that
noblest of Romans Seneca are commended:-

See How to H. G. H.
a/p/k 19, 20
(a) (b) (c) /20

We are old prematurely
because we depart from
simple, vital
laws of Nature which make
our daily demands upon the
life machinery, especially
those highly essential ~~glands~~
ones, the liver, and heart, and
kidneys. and
load the secretary work
with unnecessary poisons
in the disposal
~~of the~~ excess, and especially
the elimination and distruction

B. bronchi occasionally infected cholecystitis duodenum, gallbladder and other organs which often become the seat of general infections and identical to B. parathyphosus. Bacteria and B. bacterial poisons.

Any thing which lightens the heart, prolongs length of days. ~~Enzo~~ Anything ~~that~~ ~~fluid~~ is the vaccine its value gives at a ~~time~~ means B. requires

ating waistline energy. Recre-
ation, we call it, real realiz-
ing the requirements of the
mind, re-creation, a renewal
of the wasted energies and
depleted body. The weekend
relieves this task working
and feeling younger, until
Monday in spite of the fact
that the night's
drinks, drink coffee and
perhaps cocktails used to
do nicely after the
against the

(a) (not a new idea)

Unity a Change is Needed

"Here's something serious
Going with the world.
And respect & all that
engineers in the ancient
Kingdom,
Part-time and
Army representative
of the general Methodist
to Prof.
in accordance
Darwin of Oxford University
Law of the Games Charles

Lacroix, Prof. C. B. Lamen-
tent of the Carnegie
Institute and after
leading accounts, has-
tening Borrow to
[illegible] degeneracy to
extinction.

George Ade, the humorist
says the average man
is dead right and worried
at all. certainly the
average man is less
than half alive during

" " " "

the last half of his
life.

flies half-a-dozen com-
mercial flights a day part
departments & life; it occu
conditions & life; it occu
requires to date
and ultimately provides.
As a result we have started
90 days from the receipt of
life to which we ultimately

What more sensible thing can one do than to cherish and develop and make wise use of all his physical powers, in other words, become a health aristocrat?

And why not begin to-day? If you could ~~only realize~~ know, the happy experience that awaits you, you would start at once. It will be ~~such~~ a delight to feel the headaches and backache, weariness and dullness, lack of zest and pep and a hundred other miseries one by one slipping off and a sense of returning youth taking its place. Rejuvenescence is what you need, and through natural living you may reasonably expect find it. Benjamin Franklin tried it. Through biologic living when a boy, to which he was led by reading the writings of _____, he became a model of vigor and endurance and laid the foundation for his amazingly active and successful career. In his prosperous old age he departed from the simple wholesome ways of his youth and became so badly crippled with rheumatism and gout that ~~he~~ at 70, as he wrote his wife when ~~he was~~ 74, he found himself so ill that he felt sure he would soon reach the end of his career. He returned to the simple biologic habits of his youth and, as the result was able to report ~~to his wife~~, "I have walked back four years so that you may now consider me as 66 instead of 74"

Biologic living is the shortest road back toward youth and health and all the felicities associated with a sound mind in a sound body.

~~Not a New Idea~~

and weazened, neurotic, daft, dyspeptic, and degenerate and according to the eugenists is doomed to extinction. In other words, while our humble relatives are through scientific, biologic living rising in the scale of being, we, their masters, the lords of creation, are going down because of our neglect to obey the laws of life and health.

The "simple life" is not an innovation. It is a return to the "old paths" from which the perversions of our modern civilization have gradually diverted many millions of men and women, perversions that are responsible for the multitudinous maladies and degeneracies which yearly multiply in number and gravity.

The writer has devoted his life for more than 60 years to active research, observation and experiment-- in an earnest effort to find how to live in a truly biologic or scientific way. The results are ~~here~~ epitomized in a few simple rules.

Every suggestion made has been thoroughly tried and tested by years of actual experience.

Tens of thousands of men and women, through adherence to these biologic principles of living, have been delivered from feebleness, misery and inefficiency and brought to the enjoyment of stable and exuberant health, the real joy of living, and you are invited to enjoy the same happy experience.

Biologic living means health, comfort, efficiency, long life. It means good digestion, sound sleep, a clear head, a placid mind, content and joy to be alive.

To live biologically is simply to treat one's body in a natural or physiologic way. That means to treat one's body, his corpomobile, as well as he treats his automobile.

Information has been sought
from every source available—
Experts have been employed to research, many
the world's great libraries have been made to
journies have great laboratories
and through their bulletins and
the world's reports, touch has been
scientific maintained with the leading
research centers and use made of
the new discoveries which have made
appeared from time to time. Research
and testing maintained by corps of able experts
maintained at an expenditure of some hundreds
of thousands of dollars at the Battle
Creek Sanitarium and Battle
Creek College, and for 60 years
at the time of this writing (1875 to 1935)
clinical studies and observations
have been made by the cosites
and his colleagues on more than
300,000 persons who have visited
the Battle Creek Sanitarium or patients

Biologic Living

Biologic living is the code of the Aristocracy of Health which offers the only hope of saving the human race from extinction. Biologic living is simple, sane, sensible, satisfying and successful.

Biology is the science of life.

Biologic living is the science of right living.

We study the biology of our horses, cows, pigs, and chickens, and feed them and care for them scientifically, that is, biologically. And in consequence we have the most wonderful horses, cows, pigs, and chickens the world ever saw.

But we forget that we have a biology of our own, a way of life peculiar to our species, a diet specially suited to the genus homo sapiens, a regimen and environment to which we are by nature adapted, which belongs to us.

In consequence of our neglect the human race is becoming dwarfed

An Aristocracy of Health
based on

Biologic Living

Rules for "Right Living"

BY

J. H. KELLOGG, M. D., LL. D.

John Harvey
Fellow, the American
College of Surgeons and
of the American Asso-
ciation for the Advance-
ment of Science.

1935

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I've spun along the road so fast
That scarce a flower, as I passed,
Have I had time to pluck, or smell,
Or even to admire well.

My backward road looks blurred, confused,
In some spots blank, in some misused;
I'd like to walk it o'er again,
I might go somewhat slower; then
I might go faster, for you know
I never could bear going slow.

"T'was billig and the slythy toves
Did gyre and gymble on the waby.
All mymsie were the borogroves,
And the some roths outgraby.

"Beware the jobberwoxy, my son,
The jaws that grip the claws that scratch;
Beware the jumjum bird; shun
The gruesome baldersnatch."

I've spun along the road so fast
That scarce a flower, as I passed,
Have I had time to pluck, or smell,
Or even to admire well.

My backward road looks blurred, confused,
In some spots blank, in some misused;
I'd like to walk it o'er again,
I might go somewhat slower; then
I might go faster, for you know
I never ~~did like~~ could bear going slow.

I'm certain I'm not fifty-one;
My race of life is just begun.
No matter how the years are told,
I'm never going to be old.

"T'was billig and the slythy toves
Did gyre and gymble on the waby.
All mymsie were the borogroves,
And the some roths outgraby.

"Beware the jobberwoxy, my son,
The jaws that grip the claws that scratch;
Beware the jumjum bird; shun
The gruesome baldersnatch."

3-29-35

HELPS TO BIOLOGIC LIVING

The human body is the most intricate, delicately constructed and finely balanced machine in existence. Its scientific care is a fine art. At no place in the world has the subject of physiologic living been so long and so closely studied as at the Battle Creek Sanitarium which ~~has~~ had in fact for more than half a century been virtually a research laboratory in which the quest for health promoting modes of living and helps thereto have been a major objective. More than a million dollars has been expended in this effort. The result has been many new and highly important discoveries, some of which have made the name of Battle Creek known throughout the civilized world, and have made a little town the world center of the breakfast food industry. Not only new foods but new methods of preparing foods for use, ("a new cookery") has been created, which provides a bill of fare wholly free from harmful qualities but at the same time even more attractive and satisfying than the unwholesome viands which it displaces.

Methods of treatment and health training have been devised whereby many thousands of persons regarded as hopelessly ill have been restored to health and usefulness, and their lives greatly prolonged

Extra Reader

If the reader has become convinced of the truth of the teachings of this booklet and desires to earn the rich rewards for physiologic living by following them, he should begin at once a serious study of the subject by the aid of dependable books and other literature and should provide himself with the needful appliances, accessories and other helps whereby he may be enabled to make a successful venture in "high living" of a sort which insures greatly increased efficiency, comfort, real joy of living, and a notable increase in longevity.

If you are interested, and will address the Health Extension Department of the Battle Creek Sanitarium, you will receive the information you desire.

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In conclusion the author desires to say that his purpose in preparing this booklet has been to spread information which might aid those who desire to know the truth about right living and help them to qualify for membership in the coming Aristocracy of Health which the world awaits as the only means of saving the human race from degeneracy and final extinction.

The author will be pleased to hear from any reader who is interested in the principles and methods set forth in this booklet and to answer inquiries.

John Harvey Kellogg M.D.
Medical Director of the
Battle Creek Sanitarium
Battle Creek, Michigan
U. S. A.

Mental Hygiene

(62.) Do not worry. Worry (over) wastes energy, destroys confidence, deposits, ~~destroys~~ corrodes emotional stability, ~~destroys~~ impairs digestion, creates complexes, and ~~destroys~~ ruins health. 4/63. Concentrate on your problems. Study them, do your best to solve them, and then cast them all about them. "Cast thy burden upon the Lord, and he shall sustain thee." (Ps. 55:22) It is natural to pray and it is natural to worry. There is a scientific basis for prayer. Every creature that is led by a universal instinct to appeal for help when in trouble.

Kiick, concentrate, study-
but do not worry.

If food did not exist, there would be no hunger. If there were no water, there would be no thirst. If there were no source of help for a creature in trouble, there would be no universal instinct to appeal for help in a cry of distress.

~~Mental Hygiene~~

~~Do not worry.~~ Think.
~~Concentrate.~~ Study. But
~~do not worry.~~ Pray. Every
creature that has a voice,
uses it to its maker for help
when in trouble. ~~Every~~
~~cry of distress is~~
It is as natural to pray
as to breathe. The Psalmist
intelligence must ever be
reminded with
the heart beating and to
energize all the vital
machinery. ~~Prayer is a~~

36

Prayer is a
means by which available
help may be facilitated.

64.

65.

66.

67.

50. Do not become self-centered. Avoid thinking or talking about ailments or other unpleasant things. Cultivate altruistic ideals and wholesome and optimistic thoughts.

51. Exercise self-control and restraint in all things. Work uses energy moderately; the passions and emotions enormously.

52. Take a vacation when you dream about your work.

63. At least two or three times every day, concentrate the thought upon your personal & mutual spiritual welfare and make a mental note of the new ideas that come to you when meditating or praying, or after. Especially note the first thoughts on awakening after a refreshing sleep. (over)

BY Hover

He abounds more while we sleep.

(a)

If done in a reverential and appealing attitude of mind, mere incantation of the mind is real prayer. Ecstatic prayer is the most intense concentration.

Food Accessories

Food accessories are non-medicinal substances which aid body functions although not actually appropriated as are foods. Among the most useful food accessories are the following:

Agar, sometimes called vegetable gelatine because of its resemblance to gelatine, an animal substance, although it is wholly unlike animal gelatine, which in its composition is identical with glue. Agar is pure cellulose. It is indigestible, but is useful as bulkage because it is insoluble in the digestive juices and hence indigestible and swells greatly when in contact with water. It is obtained from seaweed.

Psyllium, a seed obtained from several members of the plantain (Plantago) family, a highly useful form of bulkage.

Kaba, prepared from a highly hygroscopic gum from the Orient. It is insoluble in water, but swells enormously when moistened. Much used as a constituent of laxative remedies in combination with cascara sagrada and other harmful drugs which excite bowel action by irritation. Kaba is an effective preparation of the gum without the irritant drug.

Yeast and Yeast Extracts.--Brewer's yeast is remarkably rich in the B family of vitamins which are essential to growth and health maintenance, especially of the nerves and the digestive organs, but which are lacking in many common foods such as white bread, polished rice, sugar, lard, corn meal and others of our many denatured foods. Vitamin G is also present in brewer's yeast, giving it great value as a remedy for pellagra. Another highly valuable property of yeast extract is its remarkably agreeable flavor which is like that of choice mushrooms and the famous soy sauce of Japan, and superior to the best meat extracts which are wholly lacking in vitamins and resemble urine in their composition. Yeast extracts are

Wheat Bran in all forms is useful as bulkage. It is rarely contraindicated. May be used advantageously in most cases of chronic colitis; not in cases complicated by acute colitis, active ulcer of the stomach or duodenum, acute infection of the duodenum.

prepared from purified brewer's yeast which is 10 to 20 times as potent in vitamins as is the ordinary bread yeast of the groceries.

Since meats are mostly used for their flavors, yeast extract is almost essential for a meatless dietary, since by its use broths, soups and sauces may be prepared which more than fully replace in flavor similar meat preparations, and with added wholesomeness and food values which meat extracts wholly lack.

How to Talk on Food
(See article in ff.
or reference
How to change the Substitute
How to
Cook.

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34

How to Take an Enema

Use an enema can or a rubber bag. The quantity of water used should be 2 quarts or less, rarely more. The temperature should be 105°F to 115°F; average 110°F. Cool or cold water is not necessary. ~~The position should be horizontal.~~ The fountain should hang 2½ to 3 feet above the couch, about as pictured. The patient lies on the left side. Lie on the right side during injection. If cramps occur or if water does not return after injection, roll on right side for 2 minutes. Then turn on the back for 2 minutes, and on the left side for 2 minutes on the right side. Then evacuate.

Repeat the enema until
sure that the colon is
empty. Proof of the emptying
of the colon may be ob-
tained by (after) the
last two capsules are
given which will color
the stool red. As successive
doses are taken, the red color
decreases and finally disap-
pears, regularity ~~test to be past~~ of the residues. ~~of the~~
pearance of the

Hellebrina is best taken at bedtime. This avoids interference with the natural movements which occur after meals. Should the bowels be constipated by the free use of hypnologic means to encourage bowel action, carefully avoiding laxative drugs.

When necessary the
enema may be used for
a indefinite period
without injury. Provided
that care is taken to avoid
using so large a quantity
of water at one time as
to overdistend the bowel
and also provided that
the ~~necessary~~ dietetic
measures, where
necessary. Bowel move-
ments are systematically
employed, the enema

being used not as a substitute for normal bowel movements, but as a supplement to secure complete elimination of the colon. In many cases of chronic constipation the colon is so badly crippled that the daily use of the enema is required to secure complete evacuation & relieve

necessary to secure com-
plete suppression of
internal putréfaction.

42-C

To - Examine the Omento-
mical fibers and thus
Suppress Putrefaction in
the Colon there should
normally be no putrefaction in the
interior of the body. The
food residues provided by the
colon should have little
odor. When the body is
in health the products
are not offensive
it is because certain bacteria
present in the normal
bowel contents
quickly [illegible]

~~a~~ enfeebled ~~or~~ possibly
lost, so that ~~the~~ nutri-
tive and disease and
poison producing germs
have become dominant.
To restore a proper
condition of health it is
necessary to do several
things. Each of which
is a distinct
reduced links in a chain.
1. Cease to eat putrescent or
putrescible foods, such as
meats of all sorts (fish, fish and
fowl). & bad eggs, even eggs abandoned
be at least temporarily discarded
HM

2. Increase the activity of the bowels so as to promote the bowels should be evacuated every day. Use Enema if necessary. The bowels should move freely after each meal. The colon should be carefully emptied every day. Use laxatives. Eat freely of fruits and green vegetables, especially ripe fruits, raisins, buckwheat, oatmeal, bran in all forms and non-medicinal ~~food~~ food accessories, lactose, molasses, agar, psyllium, etc.

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3. Take at each meal
one to four level tablespoonfuls
of lactose or lacto-dextrin to
speed the protective growth
4. If the above measures are
not necessary in clearing
the blood as shown by clearing
of the corpse and the disap-
pearance of a bad breath and
foul odor of the stools.
take at each meal a glass full
(8 ounces) of a good acidoph-
ilus culture.

If the patient is constipated
add to the culture glass and mix
about ½ teaspoonful of glycerine
Keep it refrigerated.

1. We have excellent success in treating cases of nicotin poisoning. Our methods consist, first, in giving the patient a diet which relieves him of the appetite for tobacoo.

Second, in the use of electric light baths and other eliminative procedures by which the nicotin is eliminated.

Third, by the employment of tonic measures to build up the general health so as to repair the damage which has been done by the nicotin to the nerves,heart, and other organs, and to put the patient above the necessity of using tobcco or any other drug for the purpose of relieving nervousness or other discomforts.

Fourth, in special cases it becomes necessary to employ diathermy and other means for combating the splanchnic sclerosis which is one of the specific effects of the tobaco habit. We use no drug measures and no drug antidotes, as they are all a delusion. We employ only such measures as will do the patient good and no possible harm.

2. We have no provision whatever in our establishment for smokers. We have had no case under our care which we thought could be in any way benefited by continuing the use of tobacco in any form. If --- should come here as a patient, we should first of all do our best to persuade---- that tobacco was not only of no benefit to ----but a damage and induce ---- to renounce it at once. I have never seen any shock or injury from the discontinuance of the use of tobacco by patients under our care. Our patients do not find it very difficult to give up tobacco while under the treatment and regimen which we administer here.

TOBACCO AND NICOTINE.

If you (or thepatient) desires to relinguish the tobacco habit we shall certainly be very glad to render him (you) every possible assistance, but, of course, it would be necessary to have his (your) cooperation. We know of no means by which the habit can be entirely broken contrary to the patient's will.

Under our environment and the diet which we give our patients, we find little difficulty in mastering the tobacco habit. In general, the desire for tobacco disappears within a few days.

OBSTETRICAL.

For more than forty years we have maintained an obstetrical ward and have had a large number of cases who have come to us during the last months of pregnancy to be prepared for the event. The essential thing, we find, is to give the patient an antitoxic dietary and a highly laxative dietary. We manage the dietary in these cases in such a way as to secure three bowel movements a day and make careful examination of the stools to make sure that the flora is brought asnearly as possible to a normal condition. When able to carry out our plans in this way, we are able to avoid many of the post partum dangers. Rigorous attention to these matters is especially necessary in cases in which the patient on previous occasions, has had albumimuria or puerperal convulsions. We find it a distinct advantage to withhold meats of all kinds and to give the patient eggs very sparingly. We make the principal part of the diet consists of fruits and fresh vegetables, avoiding the too free use of cereals. The patient should partake largely of such fresh things as lettuce, cucumbers and fresh fruits of all kinds. Wheat bran is given freely and, if necessary, agar agar and paraffin in some form.

GALLSTONES.

1. We are prepared to deal with gallstones in a radical and thoroughgoing manner. The only real relief from this trouble is afforded by a surgical operation. Recent developments with reference to this subject show it to be most important that such cases should receive prompt and thoroughgoing attention. If these cases are neglected, the trouble is very liable to result seriously. Weare prepared to give our patients the very best possible opportunities of a surgical nature. We find the special preparation and after care which our patients receive, a most important factor in promoting rapid and complete recovery after operation.

GALL-BLADDER.

2. We are certainly prepared to give patients every possible advantage by the application of the new method of non-surgical treatment in gall-bladder cases, and we cangive (you) many other advantages as well. We find that this treatment, when carried out in connection with our method of changing the intestinal flora, our antitoxic diet, and other methods which combat the original causes of disease of the gall-bladder, is much more successful than when employed in the usual partial way which is directed exclusively to the simple drainage of the gall-bladder which in itself does not influence theoriginal causes of the disease.

NURSES.

Your letter of ----received.

1. (I) have referred your inquiry to our Superintendent of Nurses, Mrs. M. S. Foy, and asked her to send you full information with reference to the courses offered in our Nurses' Training School. (I) trust you will hear from her promptly.

2. Your letter of ---received.

I have referred your inquiry to our Superintendent of Nurses, Mrs. M. S.Foy, and asked her to send you full information with reference to the courses offered in our Nurses' Training School. also with reference to possibilities of paying your way by employment.

3. Mrs. Foy: Enclosed find a letter from ---of ---who wants to take the Nurses' Training Course but wants to work her way through. Please write her fully.

4. Mrs. Foy: Enclosed find a letter from---who is interested in taking the Nurses' Training Course. Please write (her or him) fully with reference to opportunities here.

5. Mrs. Foy: Please send full information about our Nurses' Training Course to --------

1. Your letter of ----received.

We have referred your inquiry to our Dean of the Normal School of Physical Education, Dr. Linda Roth, and asked her to send you full information with reference to the course offered in our training school. We trust you will hear from her promptly.

2. You letter of ----received.

We have referred your inquiry to our Dean of the Normal School of Physical Education, Dr. Linda Roth, and asked her to send you full information with reference to the courses in our training school, also with reference to possibilities of paying your way by employment.

3. Dr. Linda Roth:-

Enclosed find a letter from ---of --- who wants to take the Physical Training course but wants to work her way through. Please write her fully.

4. Dr. Linda Roth:

Enclosed find a letter from --- who is interested in taking the Physical Training course. Please write --fully with reference to opportunities here.

5. Dr. Linda Roth:

Please send full information about our Physical Training course to ------.

MR.JUDD.

1. Enclosed find a letter from --- who wants information with reference to special rates. Please write ---fully.

2. Enclosed find a letter from ----who wants special concessions and some employment to help pay expenses for treatment here. Please write ----fully as to minimum rates and accommodations, also as to the possibility of obtaining employment.

3. Enclosed find a letter from ---who wants employment to pay for treatment. Please write ---fully.

4. Enclosed find a letter from ----who wants detailed information with reference to expense. Please write ---fully.

5. Please write full details with reference to the expense of treatment here to ----

6. Enclosed find a letter from ---who wants some special information with reference to minimum rates. Please write --fully.

EXAMINATION.

Dear Doctor:

I have yours of ----

I understand that you desire to have your patient come here giving her, yourself, a prescription for her treatment, that is enter as a boarder in the institution and then pay for such treatment as your prescription calls for without examination or direction from our physicians. Of course, it is entirely possible to do this, although our experience is that patients do very much better if they can have the benefit of the daily guidance and suggestions of a physician familiar with our regimen and methods of treatment.

The rates for board and treatment would be the same as announced in our rate card, a copy of which I enclose. It would be understood, however, that the patient would be guided wholly by your prescriptions and would not expect supervision or advice from our physicians, as none of our physicians would feel it proper to give advice or make prescriptions without making a thoroughgoing examination of the patient, and if such an examination is made, a charge would have to be made for it unless the patient is a poor patient, unable to pay for examination. In such cases we make examinations free. Of course, the patient is then put on the charity list and receives examination free and treatment at our dispensary which we maintain for this purpose.

I will be glad to answer any further inquiries you have to make.

I remain, dear Doctor,

Very sincerely yours,

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NAUHEIM BATHS.

We employ Nauheim baths but do not apply them here just as they do at Nauheim. At Nauheim great crowds are treated, and baths areused in very much of a routine way. That is, you buy a course of baths just as you might go to the grocer's and buy a bushel of potatoes or a dozen eggs. With us, the baths are carefully adapted to each individual case and are employed in connection with other measures which are adapted to the case. Patients who require rest, receive rest while taking the baths and as long after as may be indicated.

A careful X-ray examination is made of the heart before beginning treatment and another examination is made after treatment so as to show just what effect has been obtained.

MEDICAL EDUCATION.

Yours of --------received.

The American Medical Missionary College which formerly was associated with this institution, some years ago was affiliated with the Medical Department of the University of Illinois so that at the present time we have no means of furnishing a medical education to those who may desire it. On this account we are unable to give you the opportunity you desire.

Regretting that we cannot write you favorably, we remain

Sincerely yours,

RACE BETTERMENT FOUNDATION.

Dear Sir:

Yours ---inquiring for information with reference to the Race Betterment Foundation received. I have referred your letter to the Secretary and asked him to write you fully. I trust you will receive the information promptly and find it interesting.

Sincerely yours,

.

M. W. Wentworth: Enclosed find a letter from --inquiring for particulars with reference to the Race Betterment Foundation. Please see that full information is sent (him or her) promptly.

J. H. K.

DUODENALULCER.

We are constantly treating cases of duodenal ulcer and with a very considerable degree of success. Not all cases are curable by treatment alone. Some require operation. I have operated upon a considerable number of cases and they have all done well. In one way or another practically every case is curable. Perhaps one case in ten require operation.

Our methods of treatment without operationis essentially as follows: The patient is put to bed. After one or two days offasting he is given smallquantities of food at frequent intervals. We find the best food for the purpose is barley or oatmeal gruel strained and given cold. The dish containing the gruel is kept in a bowl of broken ice so as to keep it thoroughly cool. This is given a tablespoonful every two hours at first, then two or three tablespoonfuls. After a few days the amount is increased and cream is added to the gruel. Sometimes frozen cream is given. The amount is increased to two or three ounces every three hours after four or five days and then is more rapidly increased. Care is taken to avoid meats, meat broths, meat juices and large quantities of fluids. In some cases we find it advantageous to administer from a teaspoonful to a tablespoonful of olive oil giving the olive oil before feeding. This inhabits the formation of acid by the stomach. The patient is given water by enema at least half a pint every two hours to be retained till absorbed. These directions are rather crude and not intended to be sufficient for the conduct of a case but merely to give you a general idea of the methods which we employ.

Nobody suffering from this disease should undertake to manage his own case.