The Art of Living

THE NEW WAY

THE ART OF LIVING

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INTRODUCTION

Life is a beautiful possibility, and we must strive to live long and well, in health and happiness. If we would accomplish this we must learn how to live ; then live it. The specific object for which this book has been written is the Teaching of Health, so that it may prove a source of strength to the thousands of individuals who may be more or less invalided, as well as a beacon light to those who might run on the shoals of ill-health without due warning. In Teaching Health it contributes to the general fund of knowledge, aiding as well in the betterment and happiness of humanity in the world at large.

In compiling a book of this character, the sources of information which must be consulted are necessarily various. The standard works of Physiology and Chemistry, containing as they do the experiments and knowledge of the hundreds and thousands of scientific investigators throughout the world, are obviously valuable books of consultation. Of the individual scientific experimenters, Mr. Horace Fletcher's work on "Mastication" is a classic, and too well known to require any further comment.

Probably some of the most extensive, elaborate and painstaking experiments made at any Institution in this or any other country, are made at the Battle Creek Sanitarium, over which Dr. J. H. Kellogg has the honor of presiding. The experiments carried on at this Sanitarium in the many phases of Dietetics, are simply monumental.

Scientific and technical terms, which are bound to occur in a work of this kind, have been made as plain as possible.

With these explanations "The Art of Living" is launched upon the world with the hope that it may help, in some measure, to make life beautiful and sublime to those who read it.

D. S. S.

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NATURAL MAN.

"Know then thyself, presume not God to scan,
The proper study of mankind is man."
—POPE.

IN the traditions of all nations there constantly occurs the idea of a lost paradise where man once lived free from disease in perfect happiness and freedom. The historians of all ancient nations from Herodotus downwards represent the people as looking backward to a "golden" age, when animals were not slain for food and all was perfect happiness and peace.

Golden Age

Several centuries before the time of Christ, we know that Buddha, Pythagoras, Socrates, Plutarch, and many other of the ancient reformers taught the doctrines of the non-use of flesh as an article of food. Hesiod, eight centuries before Christ, pictures the "golden" age in which flesh foods were unknown. The non-use of flesh food as an article of diet is not a new question by any means, in fact it is as old as the hills themselves. When one considers that considerably more than one-half of the world's inhabitants of to-day are not flesh eaters, that is, are vegetarians, using the word in its broadest sense, the condition which led to it must have been the outcome and creation of centuries.

By the term vegetarian is meant one who does not use flesh as a food, replacing meat by nuts, fruits, cereals, and vegetables.

The Japanese, the Chinese, the Buddhists of India, with millions of others of the East, have been vegetarians for a period of between three to four thousand years, at least, probably were always so. Why the people of the East should be vegetarians, even those living in the colder countries, while we of the West

should be just as pronounced meat-eaters is an interesting question.

Fruit Age

Man's strong resemblance to the anthropoid apes which subsist almost exclusively on fruits and nuts places him in the frugivorous class. In fact all the great anatomists, Sir Charles Bell, Dr. Richard Owen, Dr. William P. Carpenter, Baron Cuvier, and many others, have shown that not only is man adapted by anatomical structure to a diet of fruit and nuts, but that the meat-eaters' violation of this law has been the undoubted source of endless suffering and disease. This fact which had been already recognized by the ancient sages Plato, Socrates, Pythagoras, Plutarch, and others, has already been fully confirmed by the great universal law of evolution which Lamarck, Darwin, and Haeckel have scientically established, and which has thrown much light upon the origin of life and its development on our planet.

"It is also evident that the food of all animals was originally derived from the vegetable kingdom, which is the storehouse of all nutrition, as the animal organism cannot directly assimilate the elements of the soil, and some naturalists even hold that no animals were originally carnivorous, but that the evolution of this class of animals was brought about by scarcity of proper plant-food in a later geological period, and that still later, probably for the same reason, man was forced by fierce hunger to subsist on flesh-food."

Man Naturally

"It is very probable that the so-called glacial period or age of ice, which, according to geologists, occured some twenty or thirty thousand years ago, and subjected organic life to altogether new conditions, has also caused man's deviation from his original and natural diet, after he had subsisted on the products of fruit trees during many thousands of generations."

"The consumption of flesh-foods for thousands of

years may indeed have given to man certain carnivorous characteristics, yet his anatomical structure and physiological functions remained unchanged, which clearly shows that nature had not destined him to a flesh-eating animal, and that sooner or later he had to return to the products of the soil.

It is very probable therefore that the use of flesh-foods originated during long periods of famine in the glacial era.

Plato, who wrote in the fourth century before Christ, in his famous dialogue "The Republic," represents Socrates as describing a model city, and prescribing for its inhabitants a dietary consisting simply of fruits, grains, nuts, and vegetables.

Replying to an objecter who thought the fare too simple, Socrates brings forward arguments, tracing the origin of both war and disease, and all human ills growing out of gigantic evils, to the use of flesh food.

A Vegetarian

The bill of fare which the Bible assigns man is exactly that which science allots him according to his physiological and anatomical structure — a diet of fruit, grasses, herbs, and vegetables. "And God said, Behold, I have given you every herb bearing seed, which is upon the face of all the earth, and every tree in which is the fruit of a tree yielding seed, to you it shall be for meat. And to every beast of the earth, and to every fowl of the air, and to everything that creepeth upon the earth, wherein there is life, I have given every green herb for meat." Gen. 1 : 29, 30.

The word meat evidently means sustenance or substance. It is impossible to improve on this, man's original bill of fare, which was one of fruits and seeds, essentially vegetarian.

We read in Genesis 1 : 26 : "And God said, Let us make man to our own image and likeness; and let him have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over

all the earth, and over every creeping thing that creepeth upon the earth."

While man was given dominion over all the animal world, it was not in the sense that he has seen fit to use it. There is or should be such a thing as the "brotherhood of being," and we are, or should be, the guardians of animals. We have no right to cause them suffering and terror merely for the gratification of the palate, or to make an added luxury to our own lives.

Thinking Man

Thinking, reasoning man is not naturally carnivorous. The teeth, the stomach, the structure of the alimentary canal, and the entire organism, all show beyond a reasonable doubt that man is not to be classed either in his conscious and moral make-up or his foods, with wolves, jackals, hyenas, lions, and tigers.

Not a Beast

Vegetarianism has been practiced and taught from time to time since the days of Adam. On the dispensation of time before the flood no meats were eaten, and men lived to be hundreds of years old. After the flood, when Noah came out of the ark, he was told that every moving living thing should be meat for him (Gen. 9 : 3). But notice what God told him the result would be, in the following words: "But flesh with the life thereof, which is the blood thereof, shall ye not eat. And surely your blood of your lives will I require: at the hand of every beast will I require it" (Gen. 9 : 5). The lives of mankind have been required and given from that day to this, excepting Enoch and Elijah. The children of Israel under Moses may be cited as an example of what followed their lusting for flesh. God sent manna as food until they murmured and grumbled. Then a strong wind blew a great number of quails to them. This was what they desired, but note thousands died

in one day while the flesh was yet between their teeth" (Numbers 11 : 32).

The law of Moses permitted the eating of clean meats. But in the commandments this same law of life will be found.

Vegetarianism is undoubtedly the natural diet of man. Can anyone imagine a cleaner and sweeter diet than nuts, fruits, cereals, and vegetables. Meat unquestionably tends to fill the blood with elements that cannot readily be eliminated by the depurating organs. Meat produces unnatural heat in the system, inflames the passions and appetites, ultimately leading to the nervous debility which affects so many meat eaters. Why then is meat eaten? The reason why the old evils continue, and why the old errors are handed down from generation to generation is because we have been ourselves educated in the old traditions, are working under the same conditions, and are surrounded by the same influences as our ancestors.

In the Buddhist scriptures are these words: "You, the Buddha's sons, should not voluntarily eat flesh food of any kind. If you eat it, it destroys all the spiritual seeds of great compassion. All living beings seeing you eat flesh, walk away with contempt. For this reason all the Bodhisatovas are not allowed to live on any flesh food. In view of this we, Buddhists, abstain from flesh eating."

The Zend Avesta says: "Surely hell fire and repentance are in store for those who for their pleasure and gratification cause the dumb creatures to suffer pain."

Annie Besant says: "I would not take for myself, needlessly, the life of any sentient creature that lives around me, and everyone who eats flesh has part in that brutalisation; everyone who uses what they provide is guilty of this degradation of his fellow men. For this reason, fundamentally, I am a vegetarian."

THE MOUTH-TREATMENT OF FOOD: MASTICATION OR CHEWING.

"Food well chewed is half digested."

MASTICATION (chewing of food) is an art which has become well-nigh extinct among civilized people. In the rush and excitement of the age, people with the "rush-hurry" habit think they haven't time to do any such thing as masticate food, but bolt their meals like sharks, afterwards swallowing nauseous doses of medicines, "after dinner" pills, liqueurs, etc., in the effort to compel the stomach to do the grinding which belongs to the mouth. They forget the stomach has no teeth.

Digestion Begins

Attrition or the grinding of food is the province specifically of the teeth—hence digestion *begins* in the mouth. Every book of physiology mentions the necessity and importance of thorough mastication, but the highly important character, the absolute necessity for "grinding" of the food in the mouth and the thorough mixing of the saliva with all food, liquid or solid, is the result of largely conducted scientific experiments of the twentieth century. Thorough and complete insalivation of both solid and liquid foods is the key-note to digestion.

In the Mouth

Mouth-treatment of food, mastication or chewing has to be learned by the adult as well as the child. It's a new order of things. The reader may, at the outset, accept this as an axiom, one from which there is no departure, that food must be prepared for digestion in the mouth. If not properly prepared there, everything regarding digestion and the perfect assimilation

of food will be deranged. Food bolted at a "white hot" pace acts as a poison. It must go through certain digestive processes in regular order, otherwise it cannot and will not be assimilated by the blood, as Nature intended it should be. Food so eaten (bolted) ferments, putrefies or rots to some degree in some part of the alimentary tract, and this destructive fermentation contributes towards making impure blood, which produces the one main, general *Disease*, to which all local diseases or symptoms are traceable. This mal-assimilation of food may show itself in any one of a hundred different forms of disease, in Skin and Blood Diseases, to wit: Rheumatism, Salt-rheum, Gout, Asthma, Bronchitis, Chronic Invalidism, General Weakness, Premature Old Age, Decline and Decay of the Vital Powers, all the result of a "poisoned" system from erroneous habits of eating; it may be of proper food or improper food, but in both cases improperly eaten.

How to Chew

Thorough mastication of food cannot be done with soft foods. For this reason hard foods must be used and for those whose teeth are not of the best, or who have tender gums or few teeth, the food may be allowed to lie with advantage a few seconds in the mouth before commencing to chew. Tough and dry foods are those which compel mastication.

Mastication promotes the flow of saliva—saliva digests starch and sugar and probably other compounds. Food thoroughly insalivated is half digested. Let it be understood clearly that with thorough insalivation few, if any, foods are indigestible, even new potatoes succumbing.

Mastication acts reflexly upon the stomach, promoting the flow of gastric juice and thus preparing the stomach for the entrance of food into it. The excessive *thirst* of chronic dyspepsia will disappear, almost as if by magic, where mastication be complete.

The instinct to masticate manifests itself all over the world. Babies suck their thumb, fingers, or even any hard substance they can lay hold of. Inefficient mastication is a result of the modern system of feeding children who are kept on a liquid, or semi-liquid diet — pappy foods — so that so little opportunity of exercising the *masticatory instinct* is given, that it soon dies out. This is the beginning of the "bolting" of food which usually remains through life. The masticatory habit should be acquired in childhood by giving children hard, coarse, and dry foods instead of the soft bread, butter, sugar, "sopped" and pultaceous foods. "If we masticate, or thoroughly chew, food with "vigorous jaw action—a grinding process—everything "that we take into the mouth, liquid as well as solid, "until the nutritive part of it disappears into the "stomach through compulsory or involuntary swal- "lowing, and remove from the mouth all fibrous, in- "soluble and tasteless residue, we will take into the "body only that which is good for it." Sip and taste milk and all other liquids that have taste, as the wine tasters do; a sip, a teaspoonful or two of water, thoroughly rinsed around in the mouth, and then spat out or swallowed as the dictates demand, will give one greater pleasure than a whole glassfull gulped down. Thorough insalivation of liquids becomes a pleasure, just as much as thorough mastication of solid food.

Insalivation

Sipping develops the sense of taste. Drinking or gulping down fluid eludes it. On the Continent coffee and tea are always sipped little by little. In America the majority of people drink or gulp down their tea, coffee or water in two or three gulps. An American gulps down the entire contents of a cup of coffee before the European would have sipped the first teaspoonful.

One result of the thorough mastication of food is that there is no necessity for taking medicine of any kind—the whole machinery of medicine disappears.

There is no occasion for fountain syringes, "internal baths," pile cures, nor the hundred and one other medical devices which are brought into use as a result of our improper living. In short, man is clean and wholesome, internally and externally.

No Necessity

Learn to chew. Learn to sip. Practise them. Once acquired nothing will induce you to bolt food again, either liquid or solid. If your time for eating is limited, don't try to eat more than your time will allow you. You cannot masticate twenty minutes' food in five minutes' time. One will get more nourishment out of food properly eaten in three minutes, than out of five times that amount improperly eaten. Never pack your stomach like a steamer trunk. The tissues of the stomach are just as delicate as those of the eye. No one would think of putting pepper, vinegar, and spices in an eye without experiencing pain and plenty of it. The same applies to the stomach; in its way it rebels quite as much as the eye.

Insufficient mastication produces craving, a craving for drink, whether water or liquors. The thirst of chronic dyspeptics is for a simple fluid, as tea, coffee, or water. The individual, however, who uses liquor, craves for a "bracer," the stomach being overloaded with food, made worse by improper mastication. The stomach aims to rid itself of the load, doing its best by writhing and twisting to tear the undigested morsels to pieces and pass them along.

For Medicine

Mastication will soon be reduced to an exact branch of the science of health.

Complete mastication prepares the food mechanically and chemically in the mouth; increases the degree of pleasure in eating; prolongs that pleasure; limits the quantity of food without the necessity of practicing self-denial; educates the sense of taste to

discriminate between wholesome and unwholesome foods, and finally to select the proper foods.

By complete mastication, hunger is satisfied with one-half or even less than half the food usually eaten, and thus it prevents "over-eating," which is the soil in which nearly all diseases have their root. It promotes the secretion and admixture of saliva with the foods, and thus makes a chemical change in many foods which is absolutely essential to perfect digestion and assimilation. By breaking up solid food to minuteness, it relieves the stomach of the avoidable and enervating task of mechanically disintegrating the food, and thus contributes largely toward the chemical disintegration necessary to digestion.

Chewing

Every voluntary chew intended to reach the point where the swallowing is an involuntary act of the muscles of deglutition, saves unnecessary involuntary or peristaltic muscular action of the stomach and intestines. Our sense of taste cannot be relied upon to determine the quantity of food we should eat, unless we masticate it completely, and unless our sense of taste is normal, in which case it will not only select the right foods, but will reject the unwholesome ones.

The simple chewing of food of itself is sufficient to cause an abundant outflow of gastric juice. The more chewing, the more secretion. The less chewing, the less secretion; so that chew more and eat less is the needful thing. There is necessity also for long and thorough chewing of the food. The longer the food is held in the mouth, the greater the impression made on the nerves of taste. Through these nerves the appetite centre is stimulated, and from this centre are sent out to the stomach powerful nervous impulses by which the glands are excited to activity whereby powerful appetite juice is produced. When food is swallowed quickly, its various flavours are very little

Prevents Over-eating

appreciated, and the excitation produced must be very small; hence the amount of juice will be very small in the mouth, whereas if the food is retained in the mouth and masticated until every particle of sapid substance is extracted from it, the greatest amount of good, possible, will be derived from it, and the largest amount of juice produced. When food is eaten in this way, an abundance of gastric juice will be produced for its digestion, whereas when food is eaten in the ordinary hasty manner, the taste is swallowed with it, the palate is stimulated only to a moderate extent, very little appetite juice is produced, and digestion fails in consequence.

Chew More

The stomach muscles which operate the glands that secrete the gastric juice are involuntary muscles over which we have no direct control, and consequently we cannot produce gastric juice *at will* by introducing food into the stomach, as we can saliva in the mouth by chewing food. The secretion of gastric juice is dependent upon involuntary muscular power of the stomach and real hunger. It will be seen that *by using the powerful voluntary muscles of the jaws we can save the involuntary muscles of the stomach.*

While contrary to the commonly accepted idea, conversation is liable to seriously interfere with the proper mastication of food, and distract the attention from the pleasure of eating, which should be all absorbing for the time. The Hindoo Sages of antiquity considered eating a kind of sacrament, to be engaged in abstemiously and silently. The Pythagorean sect ate in profound silence. Shakers never speak at the table, unless in receiving or passing food. In any case, whether in hilarious mood or Quaker-like silence, the all essential thing is thorough and complete mastication of the food. When eating, one's entire attention should be concentrated on his food, the all absorbing pleasure

Eat Less

of eating, of gratifying the sense of taste, should command the entire attention during a meal. This is the first and foremost thing. When an individual is a rapid eater, conversation in some instances acts as a "brake" on him, if so, all the better. An individual should have his mind on his food before him and not on business affairs in his office. Until business is finished or business cares can be thrown aside entirely, one should not eat. Many a man eats his noon-day meal when his brain is at a "white hot" heat. A brain full of ideas and a stomach full of food do not go well together; one or the other should be empty.

Full Stomach

If the food is bolted, if the sense of taste is continually outraged, its power for discerning the limits of appetite becomes dulled and the sensitive guide is destroyed which indicates the time when the appetite should have been satisfied. A feeling of fulness in the stomach means an over satisfied appetite—in no sense is it a correct guide. Correct habits of diet alone, will restore all individuals—the "wrecks"—and there are thousands of them, broken down by alcoholic and other excesses, suffering from skin, intestinal and liver diseases. These can be cured of the craving for drink, and put in possession of natural manhood and vitality without the use of medicines, only with attention to mastication and diet, all within three months. We have yet to realize the wonderful possibilities involved in restoring degraded humanity by natural processes of living—this applies particularly to the dyspeptic and alcoholic "wrecks."

Empty Brain

For those who have never learned to "chew" food, the sooner this is begun the better. The learner is advised to begin with any *dry* food. Some of the best articles for this purpose are stale or dry bread, crackers or salted wafers, in both cases lightly buttered, English walnuts, dried raisins, discarding the

seeds. These foods are not too hard, for a beginner, as a commencement. The ideal article, however, to begin with is "zweiback"; zweiback, a German word meaning twice baked, equivalent in a way to our toast. This may be made at home or can be had by having your baker make it. It is best made from whole wheat bread, first cutting the bread into slices and drying it in an oven; this can be toasted or baked through and through. When properly made it is crisp and hard, of a golden yellowish or brownish color, and as an article of diet is unsurpassed. Whatever food be used, it should be chewed until it is in a fluid or semi-fluid condition. This will mean about seventy movements of the jaws, before "zweiback" is ready to be swallowed. Probably fifty chews for stale bread, fifty to seventy-five chews for nuts, at least thirty chews for meat. This practise at munching may seem like child's play, but it will be found time well spent. With a little practice one will frequently chew with pleasure many articles of food one hundred or more times in order to become perfect in the art of mastication. The more we chew the less we eat. When one acquires the habit of chewing, there will be no necessity for counting the chews. The sensation of taste will be so highly developed that there will be no disposition to swallow the food until it is reduced to a pulp, thoroughly insalivated. No one should have any difficulty about learning to chew food, especially when it is considered that gum chewing with most persons is an art, purposeless though it be. Like everything else having merit, the chewing of food, because of its importance, has been reduced almost to a fad, resulting in the formation of "munching" parties and societies, whose object apparently has been to reduce mastication to a fine art.

In order to acquire the lost art of chewing, or the masticatory instinct, it will be found that it will be but a short time before one finds out that there is

under the new order of things an added zest and pleasure to eating. When you are enabled to chew all foods to a fluid, or semi-fluid, consistency, and as you are just about to swallow, if you are able to return the bolus of food to the mouth again just to give it an extra chew or two, you may consider you are entitled to the thirty-third degree, and a diploma as a perfect masticationist. This degree of perfection can be attained by anyone with a little practise. In short, if one wants to learn to masticate, let him chew all food as one chews gum, to get all the good out of it possible, swallowing being, for the time, secondary. As an evidence of the highly important nature of thorough mastication, the following may be of interest to the reader. Twenty years ago in writing on this same subject I wrote these words: "If the dyspeptic will bear in mind that the satisfaction of eating lies in the taste of food, and that this sensation is in the mouth and not in the stomach, he will chew his food longer, and with more satisfaction and benefit than ever before." Yet in the face of these words, attention to which would have led to perfect digestion, I was groping in the dark for at least fifteen years, experimenting with all kinds of foods, meats, no meats, milk diet, mixed diet, vegetable diet, anything but no diet, as well as medicines, but all to no avail.

The point I wish to emphasize in this connection is this: If one who is supposed to have a knowledge of matters of this kind has failed to grasp the importance of thorough mastication, or follow it to a definite conclusion, much less will the ordinary individual be impressed with its significance unless the various pitfalls are pointed out to him.

In order that mastication be thorough, more time will be required than is usually taken at meals. At least twenty to forty minutes will be required to masticate dry food; say thirty minutes as an average be required. Many a man will spend two or three, or

more, hours at a theatre or concert, and think nothing of the time lost, yet he thinks himself unable to spend a few minutes extra on eating his food, as Nature intended he should, with plenty of leisure. Good digestion is the most powerful factor for health in a man's life, and the only way to have good digestion is to eat properly. Irrespective of the character of food, raw, cooked, or health foods, meat, nuts, fruits, or vegetables, plain, mixed, or complex diet, remember the secret of good digestion, first, last, and always, is *Complete Mastication.*

The Digestive Action of Saliva.

Saliva has long been recognized as one of the principal factors in the process of digestion on account of its action upon the stomach. It was also known that in common with other secretions of the mucous membrane, it possessed decided germicidal attributes, but the isolation of the particular element possessing this bactericidal quality has hitherto defied the chemists. Lately, however, Edinger has discovered that this active principle is potassium rhodanate, and highly fatal to bacilli, but is harmless to the individual. The germicidal properties of saliva as exhibited during recent experiments were remarkable, for in a solution of three parts to the thousand the bacilli of cholera morbus were destroyed in a minute, while the diphtheria bacillus was destroyed in the same time by a solution of three times that strength. The provision made by nature for the protection of the human organism by generating within it the means of destroying these foes to physical well being is beautiful to contemplate.

Saliva

Kills Germs

The saliva is the first digestive juice to come in contact with the food. Seemingly so simple in composition, yet it has been until recently one of the least

known of the secretions of the body. There are three forms of saliva, all of which combined gives to saliva its wonderful digestive properties. Ptyalin, the active principle of saliva, has the power of converting starch into dextrin and maltose. Not only this but it is also effective in digesting *raw starch*, the digestion of which by the saliva, until quite recently was considered impossible. Thorough and prolonged mastication, however, conquers the digestion of starchy foods. Vegetable diastase, a principle existing in grains, also acts upon raw starch. These facts have an important bearing upon the hygiene of digestion.

Digests Food

The action of saliva begins in the mouth, and continues while the food substances are retained in the mouth, and may proceed for thirty to forty minutes after the food is swallowed into the stomach, or until a considerable quantity of acid gastric juice is formed. The saliva being a naturally alkaline fluid, its activity is checked by the presence of acid substances; hence the digestive action of the saliva in the stomach ceases as soon as the gastric juice is secreted in sufficient quantity to render the saliva acid.

The amount of saliva formed depends upon the character of food. Dry and highly flavored foods cause the salivary glands to pour out an abundance of saliva, whereas moist and liquid foods excite the activity of the salivary glands very slightly or not at all.

To insure an abundant outflow of saliva it is then highly important that food containing starch shall be eaten dry, and that it shall be thoroughly chewed, being retained in the mouth for a sufficient length of time to secure the secretion and the admixture of a sufficient amount of saliva to do the work required of this important digestive fluid. If the mastication continues long enough, some portion of the starch is converted into sugar while it is still in the mouth.

It is important that the food should be retained in the mouth for a sufficient length of time to make the proper impression upon the nerves of taste, so that the entire digestive apparatus shall be thoroughly prepared to carry the food substances through the successive steps of the digestive process. Food should remain in the mouth, being constantly chewed, until reduced to a fluid that will mix readily with the gastric juice and other digestive fluids. The stomach is not capable of grinding and reducing the food. Mouth digestion is the first of a series of changes which constitute the digestive process. If the first of the series of changes is performed in an imperfect manner, all the succeeding changes are likewise more or less defective; that is, stomach digestion cannot be well performed unless mouth digestion has been well done.

Increases Saliva

The use of dry diet in increasing the flow of saliva is very marked. This is an experiment which anyone may try for himself. In doing so you will be surprised to notice how the dry toast or dry bread will make the saliva, literally, flow. While if the toast or bread be first sopped and then chewed, one cannot fail to notice the absence of any marked secretion of the saliva. Nature is not only economical, but even stingy. She is not extravagant if she can help it. When the food is already moist, saliva is not needed to moisten it, and the impression of dryness not being made in the mouth, the salivary glands are not stimulated to pour out the fluid that is necessary not only to moisten it, but to digest the food.

It will be specially noticed then that *dry* diet stimulates the salivary glands to powerful secretion, and that this effect is immediately nullified the moment fluid in any shape, water, milk, tea, coffee, or cocoa, is introduced with the food. It is for this reason that drinking at mealtime is so objectionable and should not be indulged in.

THE SCIENCE OF BREATH—BREATHING.

"Breath is Life."

LIFE is absolutely dependent upon the act of breathing: "Breath is Life." To breathe is to live, and without breath there is no life. Every living thing breathes, not only the higher animals, but even the lower forms of animal life must breathe to live, and plant life is likewise dependent upon the air for continued existence. Life is but a series of breaths. Breathing is unquestionably the most important of all the functions of the body, all other functions depending upon it. Not only is man dependent upon Breath for life, but he is largely dependent upon correct habits of breathing for continued vitality and freedom from disease. Primarily we live on air, for one can go without water, or food, for days or weeks, but not without air for more than a few minutes. Air, although not generally so regarded, is really a food and of a highly important character. This is a fact which is rarely recognized. In a gross way the composition of air we breathe is one, of four parts of nitrogen, and one part of oxygen, by measure. In breathing we abstract these principles from the air far more readily than we can abstract them from food. The amount of proteid or nitrogenous food we require can be reduced to a minimum, our supply being largely procurable from the atmosphere, through deep breathing. The more air one breathes the less food one desires. Deep breathing as a fine art has to be taught. The majority of people are half alive, for they breathe just about enough to sustain life—effortless and lifeless. For this reason we should breathe pure air, and

Air is Food

in the greatest possible quantity. The significance of breathing, deep breathing, must be apparent to every individual. Pure cold air is one of the things of which we cannot get too much. It is the greatest tonic in the world. Shallow breathing is as much a peculiarity of man as is overeating. The natural conditions should be—much breathing, little eating, instead of the reverse—little breathing, much eating.

The diaphragm is a large, thin, flat, muscular septum or partition muscle, separating the chest cavity from the abdomen. In natural breathing the diaphragm squeezes or presses down upon the abdominal contents, stomach, spleen, liver, small intestines, etc., pressing out their contents as one might squeeze a sponge. The pressing or kneading movements of the diaphragm upon the stomach, liver, and small intestines is of the greatest importance, stimulating these organs to increased activity, and hence beneficial in a great many ways.

The benefits of breathing, deep, vigorous breathing, must be obvious to every individual, yet the percentage of those who breathe correctly is very small. Of the different types of breathing, costal, abdominal and diaphragmatic, the latter is the natural and essential method. Diaphragmatic breathing massages or kneads the internal organs, and when systematically carried out is one of the most powerful influences for increasing physical and mental vitality.

Many Systems and Practises have been devised to teach the science of breathing, the most important in this respect being that taught and practised by the Hindu or Yogi Science.

The underlying principle of breathing of any kind is full and complete chest expansion, with partial or complete, rapid, or slow, exhalation. The position may be standing, sitting, or lying down, and the exercises may be varied by rocking, or side-to-side movements of the trunk, raising the body on the toes,

or anyone of a number of other exercises as the fancy may suggest. It is needless to point out that deep, full breathing is an impossibility with women wearing corsets, or other tight-fitting clothing.

As a rule houses are built without the slightest idea of ventilation principle, and are really closed boxes. We cannot live in them under such conditions and retain health. It is not to be wondered at that individuals living in illy-ventilated and overheated houses, breathing and re-breathing impure and foul air, are rendered extremely susceptible to disease, particularly of the lungs. Impure air must undoubtedly be an important factor in the production of consumption and many other of the mal-assimilation diseases.

As far as is consistent with comfort, our houses should be wide open at all times to the influences of pure and fresh air, the most invigorating and essential of all health foods, the most powerful tonic in the world. The windows of our sleeping apartments, both in winter and summer, should always be open, for without pure air one can no more retain good health than live without eating. Draughts of cold air will not hurt anyone. The dangers of draughts like those of the night air, exist purely in the imagination; idle, groundless, and absurd as these ideas are. A simple method of ventilating rooms without undue exposure is to raise the bottom sash several inches high, filling the space at the bottom with a suitable sized board. This will allow an indirect and constant current of air, without allowing any entrance of rain or snow into the room. *If you would have good health, breathe freely and deeply of pure air*, always, regularly; specially so as a routine practise for a few minutes—morning, noon, and night.

Open Windows

Breathing Exercises.

1. THE COMPLETE BREATH. Stand or sit erect, breathe through the nostrils, inhale steadily, first filling the lower part of the lungs, which is accomplished by bringing into play the diaphragm, exerting as it does a gentle pressure on the abdominal organs, pushing forward the front walls of the abdomen. Then fill the middle part of the lungs, pushing out the lower ribs, breast-bone and chest. Then fill the higher portion of the lungs, thus lifting the chest. This procedure entirely inflates to its utmost the chest cavity and breathing system. Retain the breath a few seconds; exhale quite slowly. Practise of this kind is more beneficial if performed, at first, before a mirror.

2. Inhale a full, deep, Complete Breath; in a second or two try to inhale a little more air, and yet again in another second or so. When chest is completely filled with air, press the hands upon the abdomen, manipulating it with gentle pressure, or the abdomen may be drawn in by the (abdominal) muscular effort alone, still retaining the breath. Now gently exhale a part of the air, a little at a time, pressure being kept up upon the abdomen until the chest cavity is exhausted of air as far as possible.

3. (1) Stand erect; inhale a Complete Breath and retain the same. (2) Extend the arms straight in front of you, letting them be somewhat limp and relaxed, with only sufficient nerve force to hold them out. (3) Slowly draw the hands back toward the shoulders, gradually contracting the muscles and putting force into them, so that when they reach the shoulders the fists will be so tightly clenched that a tremulous motion is felt, (4) then keep the muscles tense, push the fists slowly out, and then draw them back rapidly (still tense) several times. (5) Exhale vigorously through the mouth. These are but a few of the more important Vibratory Exercises.

WATER DRINKING.

"A cup of water to quench my feverish lips."

IN Japan the belief is general that a liberal internal and external use of water is an infallible protection against disease. The system of gymnastics, called jiu-jitsu, includes the drinking of at least a gallon of water a day. During the ascendency of the Samaurai, the supposed value of this free use of water in maintaining great physical superiority was kept a secret from the common people.

The practice of water-drinking is one that is both *under-done* and *over-done*. In general it may be stated that the free use of water as a drink is of the highest importance, and an absolute necessity for the best interests of health. The sense of thirst should be, to a normal person, a sufficient guide as to the amount of water necessary for the requirements of the system. This, however, is not always the case, probably as a result of our unnatural methods of eating and drinking together, so that the sense of thirst becomes more or less perverted, or only comes into play in a haphazard sort of way.

Overdrinking

Some people drink too much, others drink too little, while very few individuals have any intelligent idea of when and how much to drink. Unquestionably every person should drink *freely* of pure water. For obvious reasons, we should not drink at meal times; none at all is best, but under no circumstances should it exceed half a pint. The drinking of fluid of any kind at meal times is not only absolutely unnecessary, but positively harmful in many instances, the necessary amount of gastric fluid for the digestion of food being readily supplied by the stomach. For this precise

purpose the stomach will have been watered some hours previously. For a lesson we have but to turn to the animals grazing in the fields beside a water course; it is not a munch of hay, then a drink of water, but grass continuously; and of water, "not a drop." Just as we can overeat, so we can overdrink, and for this reason it is well to have some system, or special periods, for drinking. Water should never be taken when the stomach is engaged in the act of digestion, and already full, or half full, of food; such procedure only embarrassing and overweighting the stomach. Not only this, but whenever water be taken it should never be drunk in too large quantities, one half glassful or at the utmost, a glassful at a time being quite sufficient. If the weather be warm, and the person has been perspiring freely, a second glass might be taken within five or ten minutes. Ice water should never be taken under any circumstances, unless first warmed in the mouth before swallowing.

The sense of thirst can be trained in drinking precisely as the sense of taste can be educated, or better to say re-educated, after it has been perverted. For this purpose it is well to have stated times for drinking. Water is absorbed much more quickly by the system when the stomach is empty, not only this but its flushing effects are far more efficacious when taken in this manner than in any other way. Hence a glass of water taken, on rising, the first thing in the morning, another glassful two or three hours after breakfast and dinner, make three stated times for regular drinking, this in no way interfering with meals or digestion. The quantity of water to be drunk during a day will depend largely upon the season of the year, the occupation of an individual and other un-named circumstances. In general it may be said that a quantity varying from two to four pints a day is an average daily quantity of water for an individual. It is well to drink all the water that

the system will tolerate with comfort. More water is required in summer than in winter. Unquestionably individuals with dilated stomachs, dilated hearts, and Bright's kidney disease, have been made uncomfortable to a degree, in fact, in many instances they have been advised to drink largely to excess, insomuch that many of them have had their lives made miserable, so thoroughly "waterlogged" have they become with overdrinking. All the fluid taken into the body has to be passed through the arteries and the heart before it can leave the body, hence an excess of fluid may, and does, overtax the heart and kidneys.

Quality

Distilled water is undoubtedly the safest water to drink; next to this comes water which has been boiled for fifteen or twenty minutes. Filtered water cannot be depended upon, the filter itself in many instances being a hot bed of germs. Too much care cannot be exercised in having a supply of pure water. Safety lies in *boiling* or *distilling* it. Water may be used at a temperature ranging from hot 60 to 70° F., or it may be taken hot or moderately cool. Nursing infants, particularly, cry for water, and it should be given to them, freely, in many instances, in place of milk. Where ice water is used, under no circumstances should ordinary ice be put into the water, otherwise the water may become contaminated with sewage or other poisonous material. Lemon juice, lime juice, or any other acid fruit juices, are valuable as water purifiers.

Mineral waters have no special advantages over plain, pure water. Pure water may be easily medicated by the addition of a little common salt, with, or without, the addition of some sulphate and phosphate of soda. The better class of mineral waters is represented by Vichy and Seltzer.

As in Eating, so in Drinking, let it be in moderation.

Pure, cool water, is man's natural drink.

THE CHEMISTRY OF FOOD.

FOODS may be divided into four classes: 1. The *Nitrogenous*, also called *Albuminates*, or *Proteids* (albumen being taken as the typical member of the group); 2. *Starches* and *Sugar*; 3. *Fats*; 4. *Water* and the various mineral substances termed *Salts*. The *Albuminates, Albumens*, or *Proteids*, it may be explained, are highly complex compounds of Nitrogen 17%, Carbon 52%, Oxygen 22%, Hydrogen 7%, Sulphur 2%. Phosphorous, a trace; and are the most important substances that occur in animal and vegetable organisms, none of the phenomena of life occuring without their presence. *Without them life would cease.* The function, principally of the albumins, is to repair the wear and tear of tissues, hence they are called *muscle builders.* Albumen or proteid material is found chiefly in nuts, meat, eggs, milk, cream, cheese, and legumes, such as peas, beans, and lentils, and to a lesser extent in the grains The *Carbo-hydrates* contain precisely the same chemical elements, carbon, hydrogen, and oxygen, as the fats, only in a less concentrated form.

The *Starches* and *Sugars* may be taken as types of carbo-hydrates. They exist in cereals or grains, fruits, and vegetables.

Fats furnish heat and energy to the body, and consist of Carbon 79%, Hydrogen 11%, Oxygen 10%. Nuts, containing as they do from 50 to 60% of emulsified fats, fat which is miscible with water, furnish *force* in a way unapproached by any other food. Fats occur in most of the proteid foods.

Water, composed of hydrogen and oxygen, forms about 65% of the weight of the human body, and is an essential constituent of our food. Indeed, *there is no vital action possible without water.*

The *Mineral Salts*, which are indispensable for nutritive processes, are found in greatest quantities and purest state in fruits and fresh vegetables.

PROTEIDS COMPOSITION

	Water	Proteids	Fat	Carbo Hydrates	Mineral Matter	Food Value per pound in Calories
Nuts { Peanuts	3.	33.	50.	12.	2.	2750
Nuts { English Walnuts	2.	28.	56.	12.	2.	3100
Meat—Beefsteak (lean)	72.	21.	6.	—	1.	550
,, (mod. fat)	54.	16.5	16.	—	1.	975
Peas (dried)	9.5	24.6	1.	62.	2 9	1665
Beans (dried)	12.6	22.5	1.8	59.6	3.5	1620
Lentils (dried)	11.6	26.	1.	59.	2.9	1620
Eggs	65.5	13.1	9.3	—	1.	635
Milk	87.	3.3	4.	5.	.7	310
Cream Cheese	34.2	25.9	33.7	2.4	3.8	1885
"Grains"—Wheat, etc.	13.5	13.	1.7	68	1.8	1650

Few persons without previous consideration would be likely to consider that the various food elements, meat, nuts, eggs, peas, etc., would have any marked points of similarity, yet this is just exactly what we find to be the case. Chemistry teaches us that the differences in foods are not so much differences in material of which they are composed, as it is differences in the arrangement of their material. The albumins or proteids are the same wherever we find them, whether it be in the animal or vegetable kingdom. The practical import of this is that nuts, peas, beans, meats, eggs, milk, cheese, are all exactly alike, in so far as their albumen or proteid material is concerned. And it will have been noticed that the carbo-hydrates are like the fats in their composition, so that when resolved down to its simplest form, food, in its essentials, is a matter of very few elements.

Each of the four elements, Albumins or Proteids, Carbo-hydrates, Fats, and Salts, contributes a definite part to the growth and repair of the body; and each undergoes in the body a special set of changes before it becomes a part of that body, to be burned up and used in the production of heat and work. It is interesting to notice that while the normal physiological conditions are maintained, there is exactly

the same amount of new material absorbed and assimulated as there is of effete matter, the products of the nitrogressive tissue changes, removed by the organs of excretion. When the body is in this state of physiological equilibrium or natural balance, the proteids, containing the nitrogen of the blood, are excreted in the form of urea and carbonic acid within twenty-four hours. While of all the carbon taken in the food, about 90% is excreted in the form of carbonic acid by the lungs and skin, and about 10% in the urinary excreta and faeces. The hydrogen is eliminated chiefly in the form of carbonic acid and water. The soluble salts are mostly discharged in the urine, some pass off in the perspiration. The sulphur which is contained in albumen is, in part, excreted in the form of urinary sulphates, and in part, in the faeces, and a small proportion by the skin.

Normal

We have seen what takes place with food when taken into the body under normal or natural conditions — a perfect condition of health. Under abnormal conditions, however, we have quite a different condition of affairs. An excess of food of any kind results in the mal-assimulation or perversion of food.

Uric Acid

An excess of albuminous foods, as occurs in the overeating of meats, nuts, eggs, etc., owing to the inability of the system to oxidise or properly burn them out, results in the deposition of uric acid within the tissues of the body. Uric acid diminishes the alkalinity of the blood, hence lessens resistance to disease; not only this, but it produces serious mischief and disease of the blood vessels, producing hardening of the arteries. In addition to this it is one cause of calculi or stone in the kidney or liver. Uric acid irritates the nerves and tissues, producing rheumatism, as seen in the various forms of sciatica, neuritis, neuralgia, lumbago, and gout; and owing to its action on the arteries it often is responsible for paralysis, apoplexy, etc.

It is interesting to notice that uric acid, the "acid in the blood," when obtained by the chemist, in a state of purity, is a white, fluffy, crystalline solid, without odor and taste, and difficult of solution in water, 1–15,000, which explains its ready deposition from the blood, seen in uric acid as calculi or stones, in the liver or kidneys, or again it may be in the cartilages of the joints. The *excessive* use of albuminous foods of whatever character, meat, eggs, nuts, peas, beans, cheese, etc., may give rise to this excessive formation of uric acid, leading to the development of the uric-acid diathesis or constitution, with its accompanying train of ills, sick headache, neuralgia, rheumatism, gout, nervousness, nervous prostration in its many forms, neurasthenia, and a host of other ill-defined symptoms, the true cause of which in many cases is but little suspected.

Food Perversion.

The decomposition, or after-digestion products of an *excess* of albuminous, nitrogenous, or proteid foods, all one and the same thing, end then in the formation of uric acid.

It is also interesting to notice that an excess of fats likewise produces harmful effects, ending in the production of oxybutyric acid, acetone bodies, and other degradation products more or less allied to the fatty acids of rancid butter.

Likewise an excess of carbo-hydrates, as occurs from the too free use of starches, may end in the deposition of fat within the tissues, striking evidences, of which, are to be observed, on every hand, in all fat people.

Two eminent German physiologists, Bureau and Schur, have demonstrated that in man the liver destroys only about one-half of the uric acid circulating in the blood, whether derived from external sources

as a meat diet, or generated within the body by ordinary tissue changes.

When it is considered that under the usual and ordinary conditions the body is actively and fully engaged in disposing of the urea and uric acid, regularly and normally produced by a proper diet, no one need expect to be free from uric acid poisoning who takes into his system foods containing these compounds already formed, practically making a double quantity of uric acid.

Speaking generally, meat may be said to contain uric acid to the extent of from 5 to 15 grains to the pound, and their viscera (liver, kidneys, etc.) from 6 to 12 grains to the pound, and these quantities are introduced into the bodies of those who swallow them. Then the alkaloids of tea, coffee, and cocoa are, as is well known, xanthines, and these, for disease purposes, are equivalent to uric acid; while several vegetable substances contain considerable quantities of xanthines, some of them probably as much as meat. Thus their administration produces just the same effects as the administration of uric acid, into which xanthin is easily converted.

One other fact which we have to bear carefully in mind is that introduced uric acid interferes with the solubility, and so with the excretion of the uric acid that is formed in the body. Every one forms uric acid every day in about the relation of 35 grains of urea and one grain of uric acid for each ten pounds of body weight.

A person's liver and kidneys may be able to destroy and eliminate the uric acid produced in his own body, while not at all prepared to deal with ten or twenty times this quantity.

Uric Acid

Uric acid is known to play a very important role in the production of disease. Many eminent English and French physicians have shown that uric acid is responsible for

the greater number of diseases with which humanity is afflicted. This is undoubtedly true, hence the importance of a thorough understanding of the conditions which bring about the formation of uric acid. The body is always producing uric acid and must of necessity do so. This arises from the fact that we must have nitrogenous food, otherwise we could not exist. The ingestion or taking in of such food into the body results always in the production of urea. Uric acid is a compound of urea, and is often regarded as imperfectly oxidized urea. When nitrogenous food is perfectly oxidised, or burned, within the body, it is carried off through the kidneys, but an excess cannot be burned for the reason that the supply of oxygen is insufficient, hence uric acid is left in the blood, as a result of this deoxidation, or lack of burning out, process. So we perceive that uric acid is an excrementitious substance, resulting from the metabolism or ingestion of nitrogenous food. The principal nitrogenous foods, also known under the names of albumens or proteids, are nuts, peas, beans, meat, eggs, milk, cheese, and the various grains to a lesser extent. An increase of uric acid results first of all from an *excess of diet*, containing more or less nitrogenous food, whether of animal or vegetable origin ; secondly from disturbed digestion as well as generally insufficient nutrition. Moreover, it is found to be increased in all febrile conditions, and especially in affections of the respiratory organs and disturbances of the circulation. Uric acid appears constantly in the blood in gout and rheumatism. It has further been found in the spleen, kidneys, lung tissue, heart, pancreas, brain and liver. If uric acid is taken into the body it is decomposed normally into carbonic acid and urea, but yields also oxalic acid, a powerful poison, whenever the process of oxidation has undergone a retardation in any way. The uric acid diathesis or constitution is a common accompaniment of most chronic

diseases, an evidence of the mal-assimilation of food. Food especially has a decided and powerful influence on the quantity of uric acid excreted, so has violent bodily exercise, as wheeling or athletic games, fatiguing work, a night of revelry, etc. More uric acid is passed with a purely animal diet than with a mixed diet; and more with a mixed diet than with a vegetable diet; least of all is passed during complete abstinence from food.

Overeating

One of the most prolific causes of uric acid formation in the body, and one which has been overlooked on account of the greater prominence being given to the other sources of this compound, is that resulting from disturbed or perverted digestion, produced from overeating and overdrinking—surfeiting.

Produces Uric Acid

This uric acid formation may follow as a result purely from the excess of food in general, or from the excess of one particular kind of food—the nitrogenous, otherwise known as the albumens or proteids. Nature builds up the body with whatever products are furnished her, building up and tearing down within the body quite as well as she does outside of the body. The imperfect oxidation of food, especially of nitrogenous food, is an exceedingly intricate problem for physiologists to work out. Attention has been called in another chapter to what takes place in the imperfect oxidation of sugar, starch and salts of the vegetable acids, in which they are, under certain conditions, transformed into oxalates and oxalic acid; that is, made to act as poison. In other words food, harmless in itself, is made to become poisonous through *conditions of excess.*

If one wishes to be free of uric acid, the most important matter of all is to eat food in moderation and never to excess; secondly to eat those foods which either do not contain uric acid at all, or from which

uric acid cannot be made. The foods which answer to these requirements are the fruits, cereals, and some vegetables. The foods which should be used sparingly at all times are the nitrogenous or proteid; these are the foods which are more likely to become dangerous under conditions of excess, than foods of any other kind.

The human body may be aptly compared to a furnace. If the draught of air be free, the fuel dry, and its quality and quantity properly adapted, the resulting combustion is almost ashless and the fire is perfection itself. So with the body when fed with the right quantity and kind of food, properly aerated and exercised, the result is a man without disease—the perfect man. Life has been well compared to a flame, a consuming fire. The flame a consummation of the vital and chemical processes occurring within the body, resulting in a genial glow of warmth, which quickens and vitalizes every nerve and fibre of the body.

"Life is a pure flame, and we live by an invisible sun within us."

CEREAL DIETETICS.

"The golden secret of the sheathed seed—with bent head drooping."

THE **Cereals** or **Grains.**—The seeds of the cereals are, of all the products of the vegetable kingdom, those best adapted for the food of the human race, and we accordingly find them almost universally spread over the surface of the globe. They contain a large quantity of nutritious substances condensed into a small space, and they are, therefore, convenient both for storage and transportation, and being dry they can be preserved for a long period without deterioration.

They are rich in nitrogenous substances, the various grains containing from 5 to 14 per cent; rich also in starch and cellulose, and they contain small and varying amounts of gum, sugar, and fat.

They also contain a considerable proportion of mineral substances, chiefly in the form of phosphates of lime, magnesia, potash and soda, together with small amounts of iron and silica.

The seeds of the cereals, before being used for human food, are usually ground into meal. This process has for its object not only the reduction of the hard seeds to powder, but also the separation and removal of the outer indigestible tunic, composed of woody cellulose, by which the seed is enclosed. That portion of the seed, however, which is richest in gluten lies directly beneath the outer coat of cellulose: it is therefore practically impossible completely to remove this outer coat without at the same time removing a portion of the highly nutritious gluten-containing layers.

Oats, it will be noticed, are especially rich in fatty and mineral substances, and also in indigestible cellulose. Rice is seen to be rich in starch, but defective

in nitrogenous and, indeed, in all the other solid constituents.

Of all the various cereal grains commonly used as food, wheat is the most largely consumed; wheat presenting much nutriment in small bulk, and contains within itself all the elements necessary to sustain the body, in almost perfect proportions. The proportion of nitrogenous substances contained in it is large, as much as 14 to 15 per cent. in the hard wheats of Italy and Sicily. These consist of soluble albumen and gluten. Wheat contains an abundance of carbohydrates, from 60 to 90 per cent., consisting chiefly of starch, dextrin, and sugar. It is rich in phosphates, especially in potassium and magnesium phosphate.

In order to produce a "superfine" flour, modern milling methods have deprived wheat of considerable of its food value, discarding the outer coats of the grain which contain certain elements necessary to properly nourish the bones and the teeth. From a health standpoint whole wheat flour is the one to use always, and in preference to impoverished (superfine) white flours. The ancients used unbolted meal, wholly. Unleavened bread, the original of all "health foods," was made from the properly cleaned grain, then ground, mixed with a little water, and baked over an open fire, on a flat stone. Bread of this character is truly *the staff of life.* The hoe-cakes made by the negro woman of the South cannot be surpassed as a high-grade health food; they are made by grinding corn into a meal, mixing it with water and a little salt, and baking upon a board before an open fire. Unleavened bread made from the entire wheat possesses all the nutritive constituents required by the human body, and is one of the very best balanced foods for man.

It is only after the most thorough mastication that the starch of raw grains can be digested by the

saliva, and under ordinary circumstances, more or less of the raw starch would escape into the stomach without complete digestion, hence it cannot be digested in the stomach without preparation of some kind. However, a process which obviates all this is that of cooking, which performs a preliminary digestion. Starch, in undergoing digestion, passes through several stages. First it is converted into dextrin, of which there are at least three forms, dependent upon the degree of temperature used in their production; fourth the dextrin compounds are converted into maltose; and fifth the maltose into levulose, or fruit sugar. We attempt to imitate this process in the making of toast. Baking, or the proper kind of "toasting," with a temperature of 300 to 320° F. will carry starch digestion almost to the point of maltose, so that in this condition, when it comes in contact with the saliva, it is readily digested, by it, in the mouth and the stomach.

The idea of cooking oatmeal, cracked wheat, etc., is to convert the raw starch of the grain into a soluble form, so that the saliva will be able to act upon it; but in the ordinary process of cooking cereals, the degree of heat employed and the length of time are quite insufficient to produce this effect.

The use of imperfectly cooked cereals is without doubt responsible for a great share of the prevailing dyspepsia among civilized people. Oatmeal porridge, cracked wheat, and similar preparations are not the most wholesome foods, and can be digested only by very sound stomachs. When milk or cream and sugar are added, there is a combination well calculated to create a superb dyspepsia.

Dry Diet

Cereals must be cooked dry in order to be thoroughly cooked. It is often necessary that they be first cooked moist, and afterwards subjected to dry cooking. Dry cooking, or toasting, is essential to

complete heat digestion. When prepared in this way cereals are well adapted to the human stomach, are easily digested, and in combination with fruits and nuts constitute an ideal dietary.

Cereals must not only be cooked dry in order to be promptly digested, but they must also be eaten dry. Experiments have shown that one ounce of dry, well-cooked cereal food, as "zweiback," or toast, well masticated, produces at least two ounces of saliva; whereas porridge, gruel, and other moist foods cause the secretion of only a very small quantity of saliva, less than one-fourth the amount produced by the same food in a dry state.

The use of a dry diet is a necessity with those who have weak digestive powers, and it is one which should be rigidly adhered to by those who wish to retain them.

Rice is a valuable food when mixed with other alimentary substances, richer in fats and albuminates. As it is, rice is too poor in nitrogenous, fatty, and mineral substances to be a suitable food by itself, and for this reason it should be used in connection with nuts, lentils, peas, etc. Its starch is in a form suitable for digestion by those persons having an irritable intestinal mucous membrane. "Popped," or puffed, rice with nut-butter makes a most digestible, wholesome and nutritious article of diet — a complete food combination. Rice should be *steamed*, and not boiled, when cooked by itself.

CEREALS COMPOSITION

	Water	Proteids (Nitrogen)	Fat	Starch, Sugar, Gum, etc.	Fibre	Ash	Fuel Value in Calories
Wheat...	13.5	12.5	1.7	68.	2.7	1.8	1650
Rye.....	15.25	11.5	1.7	68.	2.	1.8	1600
Barley...	13.8	11.	2.1	65.5	4.8	2.6	1600
Oats.....	12.7	11.75	6.04	55.4	10.8	3.	1800
Corn.....	14.	10.	4.75	66.8	2.8	1.7	1635
Rice.....	13.2	7.8	0.70	76.40	0.78	1.1.	1650

	Water	Proteids	Fat	Mineral Matter	Food Value per lb. in Calories
Rump of Beef, flesh alone.	74.	22.	2.2	1.5	550
Beef, moderately fat	72.	21.	5.	1.5	650
Beef, very fat	55.	17.	17.	1.	1000
Veal, lean	79.	20.	1.	1.	500
Mutton, moderately fat	76.	18	8.	1.3	750
Pork, lean	73.	20	7.	1.2	1600
Pork, fat	47	15	38.	1.1	3000
Venison	75.	19.	1.5	1.	500
Chicken, fat	70	24.	3.	—	1000
Partridge	72.	25.5	1.5	—	
Turkey, fat	56.	20.5	20.	1.	
Salmon	75	15.	6.5	—	200-450
Herring, fresh	81.	10.	7.5	—	
Sole	86	12.	0.3	—	
White Fish	70.	22.	6.	1.5	
Clams	86.	8.5	3.	2.5	100-200
Crabs	77.	16.5	3.2	3.	
Lobster (flesh)	77.	19.	1.	2.	
			Extractives		
Oysters	90.	5.	0.4	2.5	

Miscellaneous Food Products

	Water	Proteids	Fat	Starch (Carbo-Hydrates)	Non-Nitrogenous Material	Fuel Value
Bread, Graham	38.	9.5	1.4	53.4	48.	1090
Bread, Wholewheat	38.5	8.7	1.6	64.	45.	1120
White Bread*	37.	5.3	0.8	48.	41.	910
Graham Crackers	—	10.	13.6	70	—	1810
Whole Wheat Wafers	—	9.8	13.5	70	—	1800
Zweiback	1%	13.6	2.	70.	—	1480
Corn, "popped"	10.3	9.6	1.5	79.	—	1700
Cornmeal	12.5	9.2	2.	75.4	1.	1635
Oatmeal	16.	14.	6.	62.	2.2	1800
Whole Wheat	10.	14.	2.2	72.	1.8	1650
White Flour	14.	9.2	1.	75.	0.5	1635
Farina	11.	11.	—	77.	0.3	—
Hominy	11.8	8.3	—	78.	0.2	—
Macaroni	10.2	13.5	—	75	1.3	—
Sugar	1-2	—	—	96-98	—	—
Vermicelli	11	11.	—	74.	4.	Mineral
Gelatin	13.6	84.2	—	—	—	2.1
Honey	18.2	0.4	—	81.2	—	0.2
Molasses	20-30	2.5	—	50-70	—	3.

Arrowroot, Sago, and Tapioca are practically pure Starches.

*White Bread has about ⅓ the nutritive value of the whole-wheat article.

MEAT DIETETICS.

"Though we eat little flesh and drink no wine, yet let's be merry."

PROBABLY but very few of the readers of this little pamphlet have given any or but little thought about what their food contains, how it nourishes them, whether the food taken by them is rightly fitted to the demands of their body or otherwise. Fifty years ago nobody knew what our foods were composed of, and how the different nutritive ingredients of food served their purposes in nutrition, and even in this day the majority of people are woefully ignorant on this highly important subject.

There was a time in our history when meat was thought to be the "mainstay" of the race, in fact, that mankind could not possibly exist without meat or serious detriment to the health would follow. In recent years scientific experimental researches into the characters and compositions of the different kinds of foods have very much modified the current views of diet.

If we look into the question without bias, casting aside all pre-conceived ideas, we will learn some very interesting facts. Flesh foods, though commonly regarded as essential for the attainment of physical and mental vigor, have been proven distinctly inferior in nutritive value to many plant foods. Modern science as well as practical experience have dethroned flesh and its strong-man idea from its hitherto position of supposed superiority. If meat be taken from perfectly healthy animals and under the most favorable conditions, it is contaminated by the effete and poisonous matters (urea, uric acid, creatin, creatinin, leukomain, etc.) which result from the chemical changes of nutrition, and which are constantly gener-

ated in the various organs and tissues of the body. After the death of the animal a certain amount of these poisons naturally remains in the body. Beef, perhaps the most extensively consumed and most nutritious of all animal foods, has a composition varying considerable, especially in regard to the fat.

In round numbers it may be said that it contains from 6 to 20 per cent. of fat, from 60 to 75 per cent. of water, and about 1 per cent. of mineral matter.

By reference to the accompanying table, it will be observed that lean meat really contains about one-fourth as many food units as cereals and nuts. In short, the value of beef as a source of energy is only from one-seventh to one-fourth that of the best foods of purely vegetable origin.

	Water	Proteids	Fat	Carbo-hydrate	Mineral	Fuel Value in Calories
Beefsteak, lean...	72	22	6	0	1	550
,, fat....	54	16	16	0	1	975
Nuts.....	4	20-25	50-60	—	1	3000-3300
Wheat.....	10	14	2	72	1.5	1600-1800

The relative calorific or food value of lean meat, as in beef, compared with other food stuffs is as follows:—

Beef (lean)...	550	Potatoes.....	450	Nuts....	2800-3600
Wheat.....	1700	Peas.....	1620	Beans.....	1620
Corn.....	1620	Rice.....	1650	Eggs.....	635
Bread.....	1100	Milk.....	340		

The comparison shews meat to be considerably inferior in food value to many other of the foodstuffs.

The vegetable kingdom is unquestionably the original source of all the energy manifested by animals. Muscular energy is the result of the oxidation of glycogen, which is derived from the saccharine and farinaceous elements of the food. It must be evident that whatever strength is imparted to animals by the products of the vegetable kingdom can be equally

imparted to the human organism without having to be taken in any round about way through animals.

Meat like Nuts

As has been stated under "Chemistry of Food," the various proteid substances exist principally in nuts, peas, beans, and lentils, meats, eggs and milk. Carbon, hydrogen, oxygen, nitrogen and sulphur are the same the world over, whether we find them in animal or vegetable matter. Proteids, containing as they do the above elements, cannot differ wherever they are found, whether in the animal or the vegetable kingdom. Obviously then, meat possessing less albumin and fat than nuts, peas, beans, etc., notwithstanding all that has been claimed for it, has a food value much below these vegetable products.

Nuts, peas, and in fact all the other proteids belonging to the vegetable kingdom are exactly like meat. The substance or solid portion of meat is called *fibrin*. The gluten of the various "grains" is identical with the fibrin of meat, while the albumen contained in vegetables is likewise practically identical with animal albumen. The principle called casein, found both in the animal and vegetable kingdom, also belongs to the same class—proteids. However foods may differ in appearance, yet they have a much greater degree of similarity than we would ordinarily suppose to be the case.

All Food Alike

The composition of the fats, albumen and salts, derived from the animal kingdom, is practically the same as that of the corresponding elements obtained from the vegetable kingdom.

It cannot be otherwise unless chemistry be at fault. Up to a certain point meat, nuts, and all the other proteid compounds are exactly alike.

But meat differs from nuts and the other proteids in one very important respect in that it contains urea, uric acid, creatin, creatinin, leukomain, etc. With

every piece of meat, therefore, we must of necessity take into our system urea, uric acid, and the several other undesirable poisonous compounds which overtax our excretory organs, especially the liver and kidneys.

Meat is not alone in containing uric acid. Certain food stuffs of vegetable origin also contain uric acid, as well as xanthin (an allied compound).

Speaking generally it may be said the muscles of animals (meat) contain uric acid to the extent of from 5 to 15 grains to the pound, sweetbreads 60 grains per pound, while the liver and kidneys contain from 6 to 15 grains to the pound, and these quantities are introduced into the bodies of individuals who swallow food containing them. Tea, coffee, and cocoa also contain these uric acid or xanthin compounds, while several other vegetable substances such as peas, beans, and lentils, mushrooms, asparagus, etc., contain considerable quantities of uric acid, or xanthin compounds, which are removed but a degree from uric acid itself. It is interesting to notice that while fresh eggs do not contain uric acid as such, yet immediately the process of incubation commences, uric acid at once appears, evidently formed out of the xanthin compounds already existing in the eggs.

Meat vs. Nuts

The great difference between meat and the other food elements furnished by the vegetable kingdom in the form of nuts, fruits, and cereals, is that the latter are in a state of absolute purity. There is no admixture of poisonous or deleterious substances, and it is exceedingly rare that any of the regular vegetable food products through decay, or otherwise, ever become dangerous for use as food, the very opposite of which is true of flesh foods. This is a matter of the highest importance, and is a point wherein nuts and other products of the vegetable kingdom are far and away superior to meats. This one thing of itself recommends nuts in preference to meats. You can readily

prove the truth of this for yourself by placing a piece of beef-steak, venison, or mutton in a jar, keeping it in a warm place for a day or two; and a potato or an apple kept under similar conditions. The one will be "bad," loathesome and repulsive; the other, at the worst, will be scarcely at all offensive, possibly a little "musty." On the surface, about all the difference there would seem to be between the two processes is that of the odor. But on a little investigation it will be found that the meat is undergoing the putrefactive process. It is known that meat begins to undergo these putrefactive changes immediately on the cessation of the life of the animal.

Decomposition of either animal or vegetable substances never occurs spontaneously, but is brought about by the agency of microscopic organisms, microbes, in a complex series of processes. In the putrefaction of meat, no less than eight kinds of organic life, differing in form, activity and chemical results, succeed each other in an order which is rarely reversed before decomposition is complete, the processes being analagous to those in the decomposition of vegetable matter — alcoholic fermentation, where the alcoholic plant is succeeded by the acetic acid plant.

Even if meat be kept in a refrigerator and under the best possible conditions, the putrescent condition must always exist, if not in one degree then in another, and, in whatever stage, it is only held in abeyance, certain to progress whenever conditions of warmth or atmospheric exposure are allowed.

Meat-Poisons Meat may contain dangerous putrescent compounds, ptomaines and toxins, and yet neither taste nor smell will give any warning of their presence.

The common practise of keeping flesh until it is tender is simply waiting for decomposition to advance to such a stage that the muscular tissues have lost

their natural tenacity ; that is, until they are softened by the process of decay.

The so-called maturing of beef is simply reducing it to a state of putrefaction.

Game, such as rabbits, partridges, and other small animals is generally sent to market without being "drawn." As a result of this, decomposition sets in earlier, and progresses much more rapidly than when the animal is dressed. The extent to which decomposition has advanced is generally indicated by its "gamey" flavor and discoloration of the meat.

Fish and oysters, when dead, decompose much more readily than do the bodies of other animals. On this account a large proportion of cases of poisoning from the use of animal food is directly traceable to the eating of fish and shell-fish. The poisonous effects resulting from the eating of oysters and canned meats, in which decay has begun, are sometimes that the most alarming and fatal symptoms occur, and frequently death follows in a few hours in spite of the most efficient medical aid.

The so-called "ripe," or seasoned, game—duck, snipe, plover, partridges, etc.—as well as much of the codfish, finnan-haddock, and many other products of fish cannot be recommended as a fit dietary for human beings.

The ptomaines and toxins of putrescent bodies are so intensely poisonous that even the smallest doses are fatal to small animals. It must be remembered that these ptomaines are deadly poisons, similar in their action to strychnine, morphine, nicotine, and other powerful alkaloidal poisons.

The idea that these poisons may be destroyed by cooking is wholly erroneous. Cooking will destroy the germs that produce the poisons, provided it is continued for a sufficient length of time and at a sufficiently high temperature, but *the poisons themselves are not destroyed by cooking.*

The appalling frequency with which appendicitis occurs in our midst is also undoubtedly largely the result of the excess of flesh foods, and particularly of fish, shell-fish, and cheese. A famous French physician, who has made a study of the subject for some years, gives it as his opinion that nearly all cases of appendicitis are traceable to the use of meat as a food. I, myself, have had repeated and unusual opportunities for attending and observing many cases of acute appendicitis. In all these instances overeating of food in general has always been the cause of attack, and meat having constituted the larger portion of the meal, naturally and probably rightly comes in for the blame. The system, becoming overtaxed with food, is unable to pass the food along the colon. As a result of the germs which are always swarming in the colon, decomposition of the food products takes place, with subsequent inflammation of the surrounding parts, and the absorption of toxin or other poisonous products producing the attack of appendicitis.

Appendicitis

It is a well-known fact that those persons who do not use flesh foods as a diet are immune from cancer. Cancer is unknown amongst vegetarians. Doctors have been, for years, sedulously looking for the microbe of cancer, but with all the thorough and painstaking experiments carried on at Yale, Cambridge, and other Universities where cancer Commissions have been investigating the cause of cancer, up to the present no microbe has been found.

Cancer

Several French physicians have announced the theory that the use of pork is the cause of cancer. Championierre, of Paris, has recently stated that his observations have convinced him that the use of meat as a regular food is one of the most probable causes of cancer. Dr. Williams, an English physician, says in regard to cancer: "Many indications point to the gluttonous consumption of meat, which is such a

characteristic feature of this age, as likely to be especially harmful in this respect. When excessive quantities of such highly stimulating forms of nutriment are ingested by persons whose cellular metabolism is defective, it seems probable that there may thus be excited in those parts of the body where vital processes are still active, such excessive and disorderly cellular proliferation as may eventuate in cancer. No doubt other factors co-operate, and among these, I should be especially inclined to name deficient exercise and probably, also, deficiency in fresh vegetable food."

The *excessive* use of flesh food must have a decided influence in opening the way for cancer. Everything points to it as a causative factor in this dreaded and incurable disease. If a dietary of meat be the cause of cancer, there never will be found a microbe.

Dr. Haig, an English physician, whose connection with some of the largest hospitals in London has given him exceptional opportunities for studying such subjects, and who for twenty years has been engaged in a series of elaborate and painstaking researches as to the effects of flesh foods upon the human body, has definitely declared himself in opposition to flesh eating. Whether we are prepared to accept all his views on the subject, or not, there can be no question whatever but that the excessive use of meat is productive of an untold amount of disease and misery ; it is also responsible for enormously reducing the longevity of the race. The list of diseases or ailments which are given as a result of flesh-eating is very extensive, over one hundred, and we condense the list, giving but the most important ones: Bright's disease, gout, rheumatism, epilepsy, nervousness, asthma, sleeplessness, gravel, neuralgia, sciatica, bronchitis, diseases of the liver, blood, blood vessels, skin diseases, general catarrh, pneumonia, and inflammation of all the fibrous tissues of the body.

Meat has been charged up with a great many diseases, practically all the uric acid diseases. The elucidation of this question is not an easy thing, the various factors being inter-related, inter-twined and inter-dependent upon each other, so, that it is almost impossible to sift the wheat from the chaff. The question individuals are asking themselves is, shall we eat meat? In the main it may be said that meat, in itself, is no more productive of uric acid formation than would occur with the *excessive* use of any other nitrogenous food. The *excessive* use of any nitrogenous food, nuts, peas, beans, meat, eggs, animal or vegetable, brings about precisely the same condition—uric acid formation—as is produced by the excessive use of meat. It's a question not of meat but of the *excess of meat* that is the factor.

There are many nitrogenous foods, which, if used in the same excessive proportion as meat, would produce far more uric acid than meat.

There are several other factors in the production and causation of uric acid besides the excessive use of nitrogenous foods, which will be mentioned under the article on Uric Acid.

National Vice

The excessive use of meat is almost a national vice, and as such meat is charged up, rightly or wrongly, with the majority of the diseases resulting from uric-acid formation; a condition resulting from the use of meat *in excess*, rather than from the use of meat itself *in moderation*.

Excess of food, or overeating, in its general aspects, undoubtedly contributes to produce the same results as does the excessive use of meat or other nitrogenous foods. Meat, clean meat, if there be such a thing, *used in moderation*, is no more likely to produce harmful effects, as an article of food, than any other nitrogenous element, but in this connection, while trying to make the best out of a bad case, for meat, it

will be borne in mind that few persons rarely use meat in moderation, the tendency being to increase from moderation to excess. Not only this, such a thing as clean meat is a rarity, and we are allowing for a condition of things which rarely exists. Washed meats are certainly more wholesome than meat as it ordinarily exists. It must be remembered in this connection, however, that nitrogenous food of every description, animal or vegetable, must be used in great moderation, otherwise uric-acid poisoning results.

There are some factors in the discussion of flesh-eating to which we cannot shut our eyes, and they are as follows :—

Flesh foods unless washed always contain poisons, not only this we cannot always be certain of their being wholesome, because *meats may be putrescent and yet give no odor or other sign whereby we might be warned of such danger.* These two facts of themselves should make us seriously consider the risks we run in eating meats. We have no means of knowing whether animals are diseased, or otherwise, before being put on the market for sale. We do know that tuberculosis, trichinæ, hog cholera, tapeworm, and a great many other diseases are prevalent amongst animals all the time, and that these diseases cannot help but escape inspection, and must be a source of danger to those who eat meat.

Meat Unclean

In my opinion, the objections to meat are not to be founded upon its being an uric acid producer, but rather to the fact that even the best of meat is *unclean*, held only in abeyance from putrescence by refrigeratory methods, and liable at any time to become a nidus or focus for ptomaines and their toxins. An unclean thing cannot be said to be fit to eat. Secondly meat, from a dietetic standpoint, is much inferior in food value to many other food stuffs (reference to some of the food tables indicating the exact propor-

tions). Lastly there is a feature to meat eating which should commend itself to every right thinking individual and that is—the humanitarian view of it.

As already pointed out, Socrates traced the origin of both war and disease, and all the human ills growing out of these gigantic evils to the use of flesh food. The slaughter of animals is certainly something awful to contemplate, unworthy of any nation which calls itself Christian. When one considers the question of Meat Dietetics it should be along the lines, not "Shall We Eat Meat?" but rather "Why Do We Eat Meat?"

In view of these and other facts I cannot recommend meat as an article of diet under any circumstances, notwithstanding that I feel quite free to state that, theoretically, *clean meats in moderation* might be eaten for a lifetime without producing any harmful effects, yet I believe this to be an impossibility, practically. Everyone should be able to judge for himself, with the facts before him, as to the advisability of using meat as an article of diet, or otherwise. Whether an individual does, or does not, eat meat is a matter which concerns himself, and each one has to work out his own salvation in this as in other matters. It seems that, only, when a man gets sick almost unto death can any impression be made upon him in his habits of living. Even when the arguments are unanswerable as to why an individual should or should not follow a certain plan calculated for his own benefit, yet either from force of habit or unwillingness, he will still obstinately and persistently hang on to his "flesh-pots," whether it be meat eating, overeating, or dietetic errors of any other sort; a corroboration of

> "A man confirmed against his will,
> Is of the same opinion still."

Undoubtedly overeating is the greatest factor in the causation of disease with which we have to do.

In practically every instance of overeating, it usually means the excessive use of meat. My own opinion, judging from personal experience and observation, is that *overeating, far and away, overshadows all other factors in the cause and production of disease* — the overeating of meat — it so happens to be in America.

There are many phases of the use of flesh foods as a diet which have purposely been omitted, a consideration of which should lead anyone to the legitimate conclusion *that meat is wholly unfit for the human body as an article of food.*

The relative merits of a meat or non-meat diet never had a more powerful illustration than in the great Russo-Japanese War in the early part of the 20th century—1903 to 1905—the history of which shows that the meat-eating and vodkha-drinking Russians were defeated by the rice-eating, vegetarian, abstemious Japanese, in a series of the most sanguinary battles which the world has ever witnessed. Whether by land or sea, the Japanese, literally, wiped the Russian armies and navy off the face of the earth.

Unquestionably the habits of living of the Japs had much to do with their success. What is true of a race is true of its individuals. There is a moral in this, and that is the cultivation of good habits of livin should be the pride of every individual who would be successful in life.

MILK DIETETICS.

MILK is commonly regarded as one of the most wholesome and perfect of foods. This is true only in a limited sense, in so far as it applies to the young or new born mammal, for which it is exactly adapted. At this particular time and in this particular sense, milk may truly be regarded as one of the most wholesome and digestible of foods. But it will be noticed that only the infant's digestive apparatus is adapted for the proper digestion of milk. Milk is the *natural* food of the infant, but not of the adult. In fact, milk may be said to be the *un-natural* food of the adult, thousands of human beings being wholly unable to use cow's milk without producing serious stomach and intestinal disturbances as evidenced by biliousness, sick headache, flatulence, and a diversity of other disturbances which disappear on cessation of the use of milk.

Long use and custom have placed milk as an article of diet on a much higher plane than it is entitled to occupy. Milk is, notoriously, a germ fluid, literally teeming with germs. It is the climax in this respect. As a matter of fact, milk is one of the most filthy articles which is served upon our tables. It is difficult to procure it clean, and equally as difficult to keep it so.

Anyone who has had to do with cows must be aware of certain glaring facts. The conditions connected with the collection of milk cannot always be ideal, in the majority of cases they are not even clean. Milk always partakes of the nature of the food used by, and even of, the animal itself, from which it is obtained. Cows suffer from diseases the same as humanity, indigestion, enteritis, tuberculosis, etc. For these and other reasons, obviously, milk cannot be considered an ideal food.

Milk is not an essential food by any means, hundreds and thousands of persons entirely dispensing with it as an article of diet, without missing it. Thousands of children die annually as a result of the use of milk, and yet this same thing will keep on until people get to know with what to feed themselves. It seems a strange thing that the feeding of infants by artificial methods should be confined to milk, especially unstable during the summer season, liable to undergo fermentative changes, and certain to prove under such conditions a serious menace to the life of any child. Cow's milk may well be replaced at such times—the danger period—by the milk of the various nuts, brazil, almond, filbert, etc., also by fruit juices which are sterilized and absolutely safe; anything, or even nothing, is better than milk under such unhealthy conditions. Sterilized water is always of value.

Milk contains proteids in the form of casein as well as some other nitrogenous substances in small quantity: albumen and whey proteids.

2. *Oil* or *fat* in the form of cream or butter.

3. A form of sugar, namely, lactose or milk-sugar.

4. Water, holding in solution various *mineral constituents* or salts, chiefly chlorides, phosphate and sulphate of magnesium, calcium, potassium, sodium, and iron.

As an article of food milk is best sterilized as outlined elsewhere. Milk becomes a jelly-like mass almost as soon as it is taken into the stomach. For this reason milk should be taken slowly, in sips, thoroughly insalivated and preferably diluted with water, to which a little salt has been added, all, to make it more absorbable.

Nut-milks are practically the same as cows' milk in composition. They are more easily digested, equally as nourishing, and have the advantage of being clean and free from germs, or contamination of any other kind.

No elaborate apparatus is necessary for sterilizing milk or cream, but where this has to be repeated frequently, and especially for purposes of feeding infants in the hot summer months, it is desirable to have a special sterilizing apparatus for constant use. Ordinarily all that is necessary is that the milk or cream be subjected to a temperature of 160° to 170° F., or somewhat below the boiling point of water, for fifteen to thirty minutes, so that a slight scum is produced. The milk or cream should then be quickly cooled on ice and securely bottled.

Buttermilk is the milk left after the manufacture of butter, and as such is more easily digested than ordinary milk. It is an acid or sour tasting fluid in which the casein or cheese of the milk exists in a finely divided coagulated state. Buttermilk has been largely advocated by German physicians in feeble states of the digestive organs. If used, buttermilk should be fresh.

Koumiss, Kefyr, Galazyme, are fermented milks, more or less like buttermilk.

The **Nut-Milks** as mentioned under "Nut Dietetics," made from nuts or nut-butter, are far preferable to buttermilk or any of the other sour milks. Milk, cream, and butter can well be replaced by nuts in all essentials.

The milk made from almonds or Brazil nuts contain all the elements of nutrition of cow's milk, and can be taken by individuals who cannot take cow's milk or cream. The fat or butter of nuts is miscible with water, hence its ready assimilation by the human stomach.

Butter. Fresh butter is usually considered one of the most easily digested forms of fatty matter, and it is on this account a very valuable food. When rancid, or when its fatty acids have been set free from exposure to heat, as in cooking, it is badly tolerated by the stomach. Butter, like milk, is liable to be

contaminated with germs. For this reason *sterilized* butter, made from sterilized cream, is a much cleaner and more wholesome preparation than the ordinary butter. The nut-butters, made from the various nuts, peanuts, brazils, etc., are a perfect substitute for the ordinary butter made from the milk of the cow, besides this they are invariably clean.

Cream varies somewhat in composition. Cream should always be sweet and clean, and to this end may be sterilized.

Cheese is generally considered an exceedingly valuable, nutritive, and economical food. It contains twice as much nitrogenous substances as meat. Cheeses vary considerably in composition, from the rich Stilton, down through Dutch, Cheshire, Roquefort, to the poorer cheeses.

Ripe Cheese

Cheese is popularly regarded as a food difficult of digestion, but this has doubtless been much exaggerated. Unquestionably cheese is a very rich food and must not be used in excess, and should be used fresh, if at all. Usually consumed at the end of a meal, when the stomach is already filled with food, good digestion of it could hardly be expected. There is one very important point to be remembered by those who eat cheese: Cheese undergoes what is termed the *ripening* process. This ripening or fermentative process may go on to actual putrefaction, and even poisonous ptomaines may be developed.

Vegetable organisms of mould may also appear in cheese as well as the *cheese mite* or *skipper*. Skippers are the larvae, or maggots, of a species of fly, which deposits its eggs in the cheese where they find a home until they are matured. The skippers, or cheese maggots, are certainly not so dangerous to life as the ptomaines and toxins. Cheese is a questionable article of diet. Fresh cheese in moderate quantity might be permissible under certain circumstances;

but old cheese, never, unless one cares little whether he runs the risk of an attack of appendicitis, enteritis, or ptomaine poisoning.

In general it may be said that cheese as an article of food is best left alone by the majority of individuals.

MILK PRODUCTS

	Water	Proteids Nitrogenous	Fat	Mineral	Fuel Value
Butter	11.0	1.0	85.0	3.0	3400
Buttermilk	91.0	3.0	0.7	.7	160
Cheese, American	31.6	28.8	36.2	3.4	
,, Cheshire	37.1	26.9	31.6	4.4	
,, Dutch	35.2	37.1	17.7	10.0	
,, Limburger	42.1	23.0	29.8	5.1	1900-2000
,, Neuchatel	50.0	18.7	28.9	2.4	
,, Roquefort	34.5	26.5	30	5.	
,, Swiss	31.4	27.6	36.2	4.8	
Cream	**66.**	**2.7**	**26.7**	**0.8**	1070
Koumiss	89.2	3.7	3.6	0.4	280
Kefyr	90.	3.8	2.	0.4	265
Milk	87.4	3.75	3.6	0.7	310

MILK DIETETICS. INFANT FEEDING.

"Oh, Milk and Water!
Ye happy mixture of more happy days!"
—Byron.

THE feeding of infants is a matter of supreme importance, yet one which is little understood, strange as it may appear. It is the first thing with which every mother should familiarize herself. Once this is mastered all else is comparatively plain sailing. Where possible every mother should nurse her own baby, and where circumstances prevent it, the best substitute is undoubtedly a wet nurse. No mother should nurse her child who is suffering from disease of any kind, or whose health is below par, or where the supply of milk is poor and scanty, or when pregnant. A mother suffering from indigestion, irritability, nervousness, or any one of a dozen other minor ailments is likely to have always a fretful or crying child. Nor is the hysteric milk of an overworked society bride calculated to produce an athletic baby. Hence the health of a nursing mother is a matter of prime importance, and one deserving of the greatest consideration for both mother and child's welfare. "Like mother, like child."

Immunity

Mothers generally do not seem to be conversant with the fact that breast milk conveys through its serum a certain immunity to disease, so that it is a rarity for the breast-fed infant to take an infectious disease. It is therefore easy to see that nature is very kind and will repay the mother not only by nourishing her baby, but by protecting it from the attacks of disease.

Let the mothers of to-day realize more fully their duty toward the babies entrusted to their care, and the problem of infant feeding will be largely solved.

First, last, and always, the mother's milk, if the mother be healthy, is the food to give the child. Artificial food can never quite replace Nature's supply.

A point never to be forgotten by the nursing mother is that her own health directly influences that of her suckling infant. For this reason women of emotional temperament should exercise great control of themselves during the nursing period. Anger, grief, and worry in the mother are distincty reflected in their injurious effects upon the infant.

The mother, when nursing, should be careful of her own diet, and should avoid anything that is indigestible or that disagrees with her. Immoderate tea-drinking on the part of the mother is always a cause of "wind colic" in the child. Late hours and heated rooms, worry and other mental influences will injuriously effect the milk. A constipated mother means a constipated child, and treatment should be directed to the mother rather than to the child. Fresh air, sunshine, a good nutritious diet of brown bread, zweiback, eggs, nuts, fruits, cereals, and if meat be included in the dietary, let it be chicken or turkey; all, combined with a calm and even life, will place the mother in a proper position to nourish her off-spring, and rear healthy children.

Most people live on two or three meals a day; many mothers think babies should have twenty or thirty meals a day. No wonder babies have indigestion and wind colic, don't thrive well, keeping everybody awake during the night hours.

An infant's stomach is very small, and can contain only a small quantity of food at a time. One portion of milk must be digested before another is given, thus allowing the stomach to get a little rest. If it becomes over crowded the contents are rejected and the child vomits; or, if the food is not disposed of in this way, the stomach becomes distended, the food lies undigested and the bowels become disordered. A new

born baby, unless very delicate, does not require to be fed oftener than every two hours. As it gets older the time should be extended to two and a half, and then to three hours or longer. As few meals as possible should be the rule. *Over feeding must be avoided*, for the oftener the baby gets the bottle or breast, the oftener it cries for it, owing to the fact that the child is uncomfortable and in pain from indigestion; not that it is hungry, though it may appear quite ravenous. Over-fed babies often times seem almost starved to death. It is the quantity assimilated that nourishes the child, and not the quantity swallowed. Children are notoriously, in fact atrociously, over-fed, proof of which is afforded when it is remembered that one-fifth of the children born, die before the age of one year, and one-half of them die before the age of five years. Truly a slaughter of the innocents!

Another of the very apparent results of overfeeding is to be seen in the eruptions, boils, pimples, scald head, etc., so commonly observed in children. This is the plainest possible evidence of overfeeding. Contrast the skin of the young of animals, sleek and without a pimple; while the young child in many instances is literally a mass of pimples and sores.

The rule should be, let the infant take almost as much as it can at one time, then let a proper interval elapse before another draught is given. It is surprising how knowing babies become if fed every half hour or so, and it is almost impossible to break them off the habit; while on the other hand, if the child is fed every two hours it will become, after a short time, quite contented to wait the accustomed time, say every two hours, and during the night every three hours for the first two or three months of its life; after that feed it every three hours in the day, and every four hours at night. A few teaspoonfuls of boiled water, cooled, should be given to an infant several times a day. A child often cries from thirst instead of hunger.

A little trouble on the part of the mother will often suffice and quiet the child, and so tide it over until its proper feeding time. Never give a new-born child castor oil or butter and sugar or other material as a purgative. The mother's first milk will do all that is required.

Bringing up by hand

"Bringing up children by hand" is always fraught with more or less peril to the infant and it demands the closest and most anxious consideration. Cow's milk is the nearest approach to that of the mother's, but cow's milk is only intended for calves, with their four-stomach apparatus, and cannot be used for infants without modification of some kind, in order to make it more nearly approach the mother's milk.

Milk in itself is a perfect and *complete* food, upon which *the young* of all mammalian animals, for a time, during their babyhood are fed, and which is proved to contain all that is necessary for supporting and maintaining the growth, development, and activity of the animal body in its highest form. While milk is usually considered a perfect food *it is more essentially adapted for the newborn mammal*, adults not requiring it at all, or if so it must be modified to suit their requirements.

Only the infant's digestive apparatus is adapted for the proper digestion of milk. This will be the more readily understood when it is known that its alimentary canal is almost a straight tube, quite different from that of the adult. Not only this but the salivary and other glands in an infant are in a more or less undeveloped state.

In earlier infant life there is comparatively little gastric juice secreted by the stomach, which is simply a little bulb in the tube. When milk enters the stomach of an infant it goes easily into the stomach and down into the intestines where it can be digested.

In the stomach of the adult, whose shape may be said to be bag-like, situated crosswise of the body, milk forms large tough curds, undergoing what is called rennet digestion, converting the milk into a cheese-like mass; in fact it is nothing more or less than cheese diluted.

In approximate figures

	Fat	Sugar	Proteids	Water
Cow's milk contains.....	4	4	4	87
High average Breast Milk contains	4	7	2	87

or the same amount of fat, more sugar, and half as much proteids as is contained in cow's milk.

The natural food supply of the infant — mother's milk — forms very small, soft curds, which are easily broken up and digested, differing entirely in this respect from cow's milk, which owing to its containing a large amount of casein, forms curds which are tough, and only adapted to the four-stomach apparatus of the calf. In order that cow's milk may approximate the human, it must be so treated that it shall contain one-half its usual amount of proteids, and its sugar increased to almost double. In readjusting these proportions it is found practicable to remove all the fat, dilute the proteids, and then put back the fats in proper proportion, adding the necessary amount of sugar. This is performed by removing the fat, or butter, from fresh new milk by a centrifuge, or churn-separator. This, the proper modification of milk, is carried out in the laboratories of large cities on a large scale. Practically the same results are obtainable at home, as will be described.

In order that milk shall be clean the following essentials must be observed. The cows should be kept in clean stables, well groomed; teats and udders washed before milking; the milker's clothing to be clean; milk pails to be scoured, steamed, and sterilized as far as possible. The perils in the life of milk are in the first ten minutes of the milking. Milk as soon

as drawn should be filtered through surgical cotton into clean glass, closely covered, air tight jars, then put on ice or in a cool place.

Milk Absorbs Poisons

Milk not only absorbs bacterial poisons from the air, but it also undergoes other changes, invalidating it for the purpose of human consumption. This is a very important point and one never to be lost sight of.

Milk must always be clean and pure, otherwise it is certain to become a dangerous food to infants. In the warmer weather particularly, to be absolutely sure of good milk it is safest to sterilize it. Sterilizing is quite a different thing to boiling, as will be explained. Sterilizing undoubtedly impoverishes and entirely changes the character of milk. It seems to be trying to make the best of a bad condition of affairs. Nothwithstanding that milk has been known from time immemorial, yet it is but very recently that its constituents have become thoroughly recognized.

It is well known that milk changes rapidly on exposure to the air; germs enter it from the atmosphere and warmth favors their development. The object of sterilisation is to destroy any morbific germs that are likely to gain access to milk. Besides the lactic acid or "souring ferment," the following microbes may get into milk: *the bacillus of the green diarrhoea* of infants; *a bacterium*, which is abundant and especially virulent, *sets up infectious diarrhoea; the filamentous germ of infantile cholera; the bacillus of typhoid fever*, from dilution with impure water, or from the milk of an animal suffering with the disease; and finally *the bacillus of tubercle* is a possibility.

In addition to its other constituents—casein, fat, sugar, salts, etc.—milk consists of a multitude of *cells* suspended in serum. The cells are fat cells which form the cream; the remaining cells are nucleated, and of the nature of white blood corpuscles. The

serum consists of water, in which are dissolved milk, sugar, and serum albumin, with various salts, and chief of all, casein or cheese. The cells, with the exception of the fat corpuscles, *are all living cells*, and they retain their vitality for a considerable time after the milk is drawn from the mammary gland.

Sterilizing

Milk kept a few days may be perfectly sweet—that is, unsoured—but it has a different taste and appearance and shows a tendency to separate into serum and the more solid portions, which tend to sink to the bottom of the vessel. This change in taste and emulsification is due to the death of the white blood corpuscle-like bodies contained in the milk.

There is reason for supposing that when fresh milk is ingested, the living cells are at once absorbed without any process of digestion, and enter the blood stream, and are utilised in building up the tissues. The casein, or cheese, of the milk is digested in the usual way by the gastric juice.

The chemical result of boiling milk is *to kill all the living cells*, and to coagulate all the albuminoid constituents. Milk after boiling is thicker than it was before.

The physical results are that all the constituents of the milk must be digested before it can be absorbed into the system; *therefore there is a distinct loss of utility in the milk, because the living cells of fresh milk do not enter into the circulation direct as living protoplasm, and build up the tissues direct, as they would do in fresh unboiled milk.*

Impoverishes Milk

Infants do better on unboiled than on boiled cow's milk, provided it be sterile. For nutritive value, unquestionably, milk is best drawn by clean hands, from clean and healthy animals, into sterilized bottles, and it need not be further treated, except under special conditions. Milk must be specially

clean and pure for infants in hot weather; this ideal is more or less difficult to attain, so that to be absolutely sure of this, it is safest to sterilize it by raising the temperature to 160° or 170° F., and keeping it at this point for twenty to thirty minutes.

Milk Sterilizing

One of the simplest and best means for sterilizing milk is with an apparatus more or less like the accompanying figure. This sterilizer consists of a tin can 6 inches deep, 6 inches broad at the top, 5 inches broad at the bottom, and rests on three low studs, or feet. It is provided with a nickel-plated top, soldered in just above the bottom, and it has two stout handles attached at each side. The lid fits on to an inner rim, so as to ensure that the outer surfaces of the lid and can are fresh; over this juncture an india rubber band (R) is slipped to ensure against the entrance of air. In the centre of the lid is a funnel-shaped aperture ¾ inches in diameter. The "stirrer" is a rectangular piece of tin bent into the form of a ship's screw, with a long tinned wire handle, which rests below in a depression in the bottom of the can, and projects above through the aperture. It is used as follows: the quantity of food, which may be a mixture of cream, milk, milk sugar and water, or even milk diluted, or undiluted, with water, required for twenty-four hours, usually three or four pints or less, is poured into it, and the lid pressed on with the stirrer in position. The sterilizer is then put into a pot, one quarter full of hot water. It is kept in this pot of boiling water for about twenty minutes with occasional agitation. The sterilizer is then removed, the broad rubber band is slipped over the junction of lid and can, and pure clean absorbent

CATHCART STERILIZER.

cotton packed around the projecting end of the stirrer to prevent the entrance of germs, as the milk is withdrawn from time to time from the sterilizer (a temperature of 160° to 170° F. is the ideal one for sterilizing). The temperature of the hot water bath as above described is about 206° F. This could be attained by using water somewhat short of boiling water.

The sterilizer requires to be put in a cool place. Before each feeding the mixture is agitated by the stirrer, and the quantity required drawn off into the feeding bottle, in which it is warmed by placing it in hot water. The sterilizer may be used for milk, cream, or for the modified-milk mixture, and is capable of holding about four pints. A sterilizer capable of holding about a quart is sufficiently large for a small family. For home made purposes, where no sterilizing apparatus is at hand, an extemporaneous sterilizer can easily be made from good stout bottles, or jars.

Modified Cow's Milk

After sterilising the milk the next step is to separate the milk and cream, and then re-combine them in the same proportions as are found in human milk. The top of the milk, or cream, may be taken off after it has stood for ten or twelve hours in the refrigerator, or other cool place. Average cream contains ten per cent. fat. Assuming this as an average, the following formulas for milk modification for artificial infant feeding are recommended :—

For feeding infants, *one week old*, first week : sterilized cream, two ounces; or four tablespoonsful ; fat-free or skimmed milk, the same amount ; lime-water, one ounce, or two tablespoonsful ; water, fifteen ounces ; seven even teaspoonsful, or seven drams, of milk sugar. Dissolve the sugar of milk in the fifteen ounces of sterilized or clean water. Mix the milk,

cream, and water with the sugar of milk. Divide half of this mixture into ten bottles, two tablespoonsful in each, equivalent to one ounce, thus making the ten meals required for a day till the baby is a week old, feeding once in two hours during the day, and once in the night between 9 p.m. and 5 a.m.

When *four weeks old* the baby's stomach will hold twice as much food, or two ounces for a feeding. The whole twenty ounces of food should then be divided into the ten bottles, putting two ounces, or four tablespoonsful, into each bottle. It may be made somewhat richer in solids and with less water; as cream, four ounces; limewater, two tablespoonsful; clean or sterilized water, thirteen and one-half ounces; sugar of milk, seven teaspoonsfùl, or drams.

For the *six months old* baby, eight ounces, or sixteen tablespoonsful of cream; no milk; lime-water, two tablespoonsful; water, eleven ounces; sugar, seven teaspoonsful, or drams.

At *eight* or *nine months old*, eight ounce meals may be taken.

The infant may now be fed once in three hours during the day, and not at all at night. The number of meals to be six; each meal to consist of six ounces, or twelve tablespoonsful, which should be put up as before into separate bottles.

There should be a gradual increase in the amount of cream and milk, and lessening of the amount of water with an increase of the size of meals.

After mixing the cream, milk, sugar, and water together, sterilize for thirty minutes in a boiler with false, perforated bottom, or a sterilizer.

A simple way to remember the amount of food necessary for feeding of an infant is to give approximately the same amount of food in ounces as the infant is months old; that is one ounce feeding for the first month; two ounce feeding for the second month, three ounce feeding for the third month, and so on.

In order that this milk modification process may be perfectly plain, simplified, it means that cow's milk can be made to correspond in general with human milk, by taking: Cream, sterilized, 8 ounces; lime water, 1 ounce; sugar of milk, ¾-ounce; water boiled or sterilized, 11 ounces; making 20 ounces, in all, when mixed. Let it be sterilized, kept cool and air tight and divided into suitable doses as required. The entire amount for the day may be sterilized as in the Cathcart sterilizer, or a separate and distinct bottle may be used for each feeding. In this case put from six to ten bottles on a perforated or false bottom of a boiler, fill boiler up to neck of the bottles with cold water, and have the heat to 170° F. Keep at this point half an hour, each bottle being stoppered with absorbent cotton; cool at once, and cover with glass covers or stoppers. Keep on ice until used. For feeding the baby, heat the food to 100° F., by setting the bottle in warm water, take out stopper, and put on an aseptic or clean nipple without tube attachment, either glass or rubber. Hold the baby while it nurses, taking the bottle away and allowing it to rest between times. When it has had sufficient, take away the bottle and empty it at once. Wash both bottle and nipple with cold, sterilized water, then with boiling water. Lay the bottle away in sterilized water, in which there is a teaspoonful of soda to the pint. Keep the nipple in sterilized water in some glass vessel and turn the nipple inside out. Before using again rinse it in hot sterile water.

It is best to add the lime water, which should always be fresh, a teaspoonful or two to a meal, just before feeding. All the other materials should be sterilized together.

When the food can be kept on ice, a day's food can be prepared and sterilized at once, and kept in original bottles, each containing enough for a meal,

until fed to the baby. Every handling of the milk means risk from germ infection.

These formulas need modification to meet special needs. Some will need more water, weaker food; some more fat and others less; and some more or less proteids.

Cholera infantum is an acute milk poisoning—infected milk. The only hope of saving an infant so attacked is to stop the use of all milk or milk food at once. Sterilized water, fruit juices, barley water for food, hot water enemas and an active cathartic to cleanse out the alimentary system, consisting say of calomel 1-10 grain every hour for 6 to 10 doses, followed by a sweeping dose of castor oil, and repeated in 2 or 3 days if necessary.

Weaning Weaning takes place naturally at the age of eight to ten months. If the mother is not strong it is advisable to wean the child early. Weaning should never be done suddenly, but should be extended over a period of four, six, or even eight weeks. A baby should be taught early in life to suck water daily from a bottle, this will save much trouble when the weaning process is commenced. At first the bottle-food is to be given but once a day in place of the breast, a little later twice a day, and so on until the breast milk is entirely replaced.

The food between the ages of nine and twelve months is essentially sterilized milk, at about the age of one year whole wheat bread (preferably stale) and milk, or milk with crushed zweiback or browned rice and cream, corn flour or oatmeal gruel made thin, to which sterilized milk or cream may be added, are all ideal baby foods. Fruit juices and sterilized water are also included in the list.

The mastication period should begin early in the life of the infant, and must be inculcated by giving it hard and dry foods to chew. The sooner the child is off sloppy foods the better. This will allow the

division of food into fluids and solids as in adult use, so that fruit juices and water may be given as drink separate from the usual food, without producing digestive disturbances. A child requires few foods. From birth to one year of age milk and water are practically all that is necessary, although it is customary and advisable at about the age of ten months to add starchy foods to the milk in the form of gruels or porridges. These with milk and bread, zweiback, browned rice, malted nuts and nut-milks, usually suffice until two years of age. Raw fresh, or soft poached eggs, beaten up with milk are sometimes given to infants one year old, but this is rather early, besides it must be remembered that eggs are very badly tolerated by some children ; for this reason eggs are better omitted as food until about three years of age. A child should never be given meat; broths can always be, under all circumstances, replaced to advantage by nut-milks. *Baked* potatoes, slightly buttered with nut-butter, also bread and butter, may be given to a child at about a year and a half to two years of age. Between two and three years of age is the foundation period for laying correct dietetic habits in the child. At about three years of age the child's diet approaches that of the adult. At five years of age, or thereabouts, a child may be put on full adult diet.

The essential points in feeding children is never to overfeed them at any one time. Don't feed them too often ; give them stale bread or soft zweiback to stimulate the masticatory instinct, and don't forget to give them water to drink. Selected fruits, peaches, pears, grapes, stewed prunes, without sugar, may be given children at about two years of age. Practically milk is the diet of the first year of an infant ; bread and milk, including the cereals, for the second year : after this the adult diet more or less modified.

No candies, cakes, or other such articles should

be given children. No food whatever allowed between meals, the asking for such by the child is usually a matter of habit. In such cases give the child a glass of water, or fruit juice.

Infant Feeding is a comprehensive subject and cannot be well condensed into a few pages. The foregoing abstract taken from my little work "How's the Baby?", will give a general idea of what to do in Infant Feeding.

It may be remarked there is considerable difference between the activity of the glandular apparatus of the infant and of the adult; this applies also to the ferments, the infant possessing certain milk digestive ferments, which are absent in the adult man. It is for this reason that the adult, in many instances, is unable to take milk without producing acid fermentation, flatulence, or other gastric disturbances.

Milk, both in the adult as well as in the infant, can be tolerated, where it does not usually agree with one, by taking it plain and hot, nothing else to be taken with it, not even biscuit or bread, the first thing in the morning, an hour before the usual breakfast. The milk should be hot but not boiled; one or two tablespoonsful of lime water may be added to it. The secret of the assimilation of milk by the adult being that it must be taken without admixture of any kind, other than water. In this way the living cells are absorbed by the stomach, and the digestion of the milk is much more rapid and thorough than in any other way.

PROPORTIONED BILLS OF FARE

THE following schematic or proportioned Bills of Fare include raw diet in its purity, and raw diet modified, both with and without animal foods. There are those who take an extreme attitude, refusing milk, butter, cheese or eggs—that is any product of animal life. There are others who have a more diversified diet. There are endless combinations. Those given here are exceedingly plain and can readily be extended to suit the individual taste. Each list of the appended bills of fare is sufficient for one meal; two of such meals are sufficient for each day.

The proportion of flesh-meats, nuts or other proteids to the whole meal should be about one-tenth, cereals and fruits constituting the remaining nine-tenths.

The quantity of dry food ordinarily required for an individual at each meal is about one-half to three-quarters of a pound, proportioned as follows:—

Carbohydrates, 10-ozs.; Fats, ¾-oz.; Proteids, 1½-oz.

1.	ozs.
Brazil Nuts, shelled	1
Raisins	4
Cracked Wheat	2
Pears (in season)	4

2.	
Shelled Almonds	1
Dates	4
Cracked Wheat	2
Peaches (in season)	8

3.	
Peanuts, cooked	2
Apples	8
Unleavened Bread. Butter.	4

4.	ozs.
Shelled Walnuts	2
Raisins	4
Unfermented Whole Wheat Bread, with Butter	6
Peaches (in season)	4

5.	
Shelled Pecans	2
Unfermented Whole Wheat Bread, with Butter	4
Grapes (in season)	8

6.	
Shelled Hickory Nuts	2
Cracked Wheat	2
Dried Figs	3
Strawberries (in season)	½-lb.

(*Continued on page 94.*)

DIETETICS OF EGGS

"As an egg is full of meat."

EGGS may be regarded as a *complete* or almost complete food, resembling nuts in their composition. Eggs are a perfect substitute for meat, and are, seemingly, not so inclined to the production of impurities as meat, notwithstanding that they contain xanthin compounds, which are more or less allied to uric acid. The food value of eggs is great; their digestibility in the raw or natural state is almost perfect. When perfectly fresh they do not contain uric acid, and of all the animal foods eggs are undoubtedly the best. Eggs begin a slow process of deterioration, probably within one or two days after being laid, and for this reason eggs administered to invalids should always be fresh, not more than two or three days old.

An average egg weighs $1\frac{1}{2}$ ounces, contains one ounce of white and $\frac{1}{2}$-ounce of yolk; the white of egg is about six-sevenths water, one-seventh albumin; while the yolk contains one-sixth of albumen, one-third fat, and one-half water. Eggs contain sulphur, sodium, iron, lime, and phosphoric acid in quantities. Some persons seem unable to take eggs in any form without being unpleasantly affected. This must be from taking them in excess, or in connection with other forms of proteid or albuminous foods. It must be remembered that eggs are a highly concentrated albuminous food, and hence when used, one, or at most two eggs are quite a sufficient number to take at one time. Not only this but they require thorough insalivation and mastication. Eggs should be used sparingly when taken in connection with any of the other proteid foods, and are best used in connection with cereals and fruits; or fruits and some of the green vegetables. One can easily make a breakfast, or luncheon, on one

or two eggs thoroughly beaten up, and to which a pinch of salt and a little lemon juice be added; a delightful and nourishing fluid-meal is thus made.

The well-known *lait de poule* is made by beating up the yolk of egg in hot water, adding orange flower water, or sometimes a little rum or cognac flavour, with or without sugar. Egg-nogg is made by whipping or beating an egg very lightly, to which is added half a pint or more of sterilized milk, flavored with nutmeg or other aromatic to suit. All these semi-fluid egg preparations should be slowly and thoroughly insalivated before swallowing, and under no circumstances should they be gulped down.

Eggs are best preserved or kept, by packing *fresh* eggs only, and always placed upon their small ends in dry whole oats or slaked lime and bran, in a cool dry place where the temperature is regular; and not moved more than necessary. Eggs are easily affected by extremes of heat and cold. A fresh egg is a live young animal in embryo; a stale, decayed or dead egg is poisonous and unfit for food, decomposition having set in. As an article of diet, fresh eggs, always, should be used or none at all.

Eggs are most digestible in their raw or natural state, best well beaten up or whipped; soft poached eggs are next in the order of digestibility, while fried eggs, omelets and hard boiled eggs are usually extremely difficult of digestion. Hard boiled eggs, if first finely divided and then eaten with some dry article of food, zweiback, salted wafers or stale bread, become fairly digestible as a result of the thorough mastication. In this way they are permissible. The yolk of egg is deemed unsuitable in the uric acid diathesis, Bright's or other kidney diseases.

FRUITS

	Water	Fruit Sugar	Proteids	Fruit Acid	Pectose (Jelly)	Salts	Fibre Waste	Fuel Value per lb. in Calories
Apple	85.	8.	0.5	0.84	5.	0.5	1.2	230
Apple (dried)	28.	43.5	1.25	3.5	18.	1.5	5.	700
Apricot	81.	4.5	0.5	1.2	6.5	0.8	—	375
Banana	77.	20.	1.5	—	—	0.8	1.	380
Blackberry	86.	4.	0.5	0.2	1.4	0.4	2.5	260
Cherry	80.	10.	0.7	1.	1.8	0.7	0.2	375
Cherry (dried)	50.	31.	2.	1.5	3.	1.5	1.	1050
Currant	85.	6.5	0.5	2.2	1.	0.7	—	240
Cranberry	90.	1.5	0.1	2.3	0.2	0.2	1.5	110
Date (stoneless)	38.	57.	3.	—	0.2	0.8	—	1140
Fig (fresh)	79.	18.	1.5	—	0.5	0.5	—	375
Fig (dried)	31.	50.	4.	1.25	2.	1.	5.	1400
Grape	78.	14.	0.6	0.8	0.2	0.5	4.	360
Lemon	89.	2.	1.	7.5	—	0.5	—	275
Musk Melon	90.	8.	0.5	—	—	—	2.	150
Water Melon	92.	7.	1.	—	—	—	—	135
Orange	87.	4.5	0.8	2.5	—	0.5	—	225
Peach	80.	4.5	0.7	1.	7.	0.7	—	225
Pear	83.	8.2	0.4	0.2	3.3	0.3	2.7	325
Pineapple	89.	8.9	0.4	—	0.2	0.2	0.4	200
Plum	85.	3.6	0.4	1.5	4.6	0.7	—	285
Prune (dried)	29.	65.	2.5	2.5	13.	1.5	—	1170
Raisin	32.	55.	2.5	—	0.7	0.5	4.5	1200
Raspberry	86.	4.	0.4	1.4	0.7	0.5	—	240
Strawberry	88.	6.	1.	1.	0.5	0.8	1.5	180

	Water	Carbo-Hydrates	Proteids	Fat		Mineral Matter		
Olive	67.	3.4	2.5	22.7	—	4.4	7.	810

A calory represents the amount of heat which would raise the temperature of 1 kilogram of water (about 2.2 lbs.), 1° Celsius, or, what is nearly the same, of one pound of water, 4° Fahrenheit; just as hard and soft wood, or coal, have a different heating power, so do the different foods.

FRUIT DIETETICS

"The juicy, golden fruit
"lies, in a soft profusion scattered round."

RIPE and wholesome fruits form a delicious and valuable addition to our diet. Though possessing a low nutritive value, they possess principles of great value, consisting of fruit-sugar, absolutely pure water, organic acids and peptogenic substances. In fact fruits are predigested foods, all ready for immediate absorption by the system, and without digestion.

There are a great many erroneous ideas prevailing in the mind of the public regarding the dietetic use of fruits. It is frequently remarked that fruits are provocative of bowel disorders, that they are liable to produce digestive or other disturbances, or do not agree with certain people for some other unknown or fancied cause. This idea is entirely incorrect, and is the exact opposite of the facts. Many individuals lose sight of the fact that fruit, like any other kind of food, should be thoroughly masticated. As a rule it is bolted or half-bolted, eaten in too large a quantity, between meals, or at other periods when the stomach is already full of half digested food, or it is mixed with improper combinations of food. As a matter of fact an exclusive diet of ripe fruit is one of the very best for chronic bowel disorders that can possibly be prescribed. I believe it may be stated as a general truth that ripe fruits agree with all individuals; very acid fruits being a possible exception with some few individuals.

Fruits, then, when taken by themselves are among the most easily digested and wholesome of all foods; but when mixed with vegetables, fat meats, milk, cream, sugar, and the various messes with which they are generally combined, undoubtedly the conditions

arising from their use seems to add fuel to the flame, "the consuming fire that is the chronic dyspeptic's internal purgatory." Fruit of itself is not responsible for this condition. Coming, as fruit does, so seasonably and withal so appetizing, unquestionably there is much surfeiting or overeating of it.

Fruit Soups

And it is just here that mastication plays such an important part. There is a great tendency to bolt or eat fruit too rapidly.

Fruits, more particularly those containing large quantities of acid, require to be thoroughly masticated so that the alkaline saliva shall neutralize the acid of the fruit, in order that it will readily be accepted by the stomach. This applies particularly to apples, an exceedingly valuable fruit whose disagreement with many individuals arises from a lack of thorough mastication. When fruit does not seem to agree with the stomach, one should try eating fruit alone without any other food whatever, for a single meal or day. This is preferable to fasting.

The acids of fruits are of infinite value as a means of purifying the alimentary canal. Germs can not thrive in fruit juice.

In typhoid or other low forms of fever, fruit juices or fruit soups are especially indicated, assuaging thirst and destroying germs. Fruit preparations so administered, as above mentioned, entirely supplant the unwholesome, and decidedly dangerous and useless beef tea.

Fruits are especially rich in that choicest of all sugars, levulose, or fruit-sugar, which represents starch in a state of complete digestion, and ready for instant absorption and use by the body. It is this quality that renders fruits and fruit-juices so refreshing to a person greatly fatigued. Fruits are invaluable for the fruit-sugar, the acids, and the water they contain.

Fruit is good at all times, irrespective of the adage that fruit is gold for breakfast, silver for dinner,

and lead for supper. If some food must be taken at night, let it be a little ripe fruit, a baked apple, or stewed raisins, without cream or sugar, in preference to anything else.

Fresh fruits are, on the whole, preferable in most instances. The juices of fresh fruits are more effective than those of cooked fruits in destroying germs, or preventing their development in the stomach. To be wholesome, fresh fruits should be perfectly ripe, otherwise they are apt to set up gastro-intestinal irritation, often of a very severe type. Fruits which are not quite ripe, and which have firm flesh, are improved by cooking. Peaches, grapes, and berries are most wholesome raw. The digestibility of apples, pears, plums, cherries, and dried figs is improved by cooking. Fresh figs are very easily digested.

Cooked fruits should have but little, if any, cane sugar added to them, otherwise they produce stomach disturbances. Of the dried fruits those specially recommended are raisins, currants, prunes, dates, and figs.

Tropical Fruits

Many of the tropical fruits, notably the banana and the pineapple, as they arrive in the northern markets of the United States and Canada, are not only unwholesome but, positively, most indigestible in character. As they exist in their native condition, both of these fruits are extremely luscious and digestible, but for export shipment they are picked green and immature. On this account there is little comparison between these fruits as ripened artificially and naturally. Anyone who has ever hand-picked and eaten the pineapple or banana appreciates these marked differences, so great that one would hardly recognize them as the same fruits.

The **banana**, containing 20 to 25% of fruit-sugar, proteids, and other extractive material, is one of the most nourishing of all the fresh fruits, almost equaling

the dried fruits, such as the date, fig, prune and the raisin. A pound of bananas contain almost as much nutriment as a pound of lean meat. When well and properly ripe the banana may be eaten by the most delicate invalid. Banana flour, which is now a regular article of sale, is a highly nutritious food, and a gruel or soup made from it is tolerated, when the ordinary farinaceous or starchy preparations would be rejected, by a weak stomach. Bananas, in their native state, are one thing; but as we frequently find them, they are half-green, over-ripe or otherwise unfit to eat. For this reason, and in order to overcome many of the objections attendant upon their use, bananas are best baked, the same as apples.

The **pineapple** should be ripe before being used for food. A really ripe pineapple is seldom seen outside of the sections where it grows. When a pineapple is ripe the "eyes" can be removed by pinching them between the fingers. The juice—strictly *the juice*—of the pineapple is one of the choicest of fruit juices, possessing decided peptogenic or digestive properties. The fibrous or woody portion of the pineapple is the most indigestible substance with which I am familiar. For obvious reasons our native fruits, the peach, pear, grape, sweet apple, etc., are far superior to the tropical fruits, as we find them.

The **apple** should always be eaten ripe and peeled, and may be either raw, steamed, or baked. If eaten raw, apples must be thoroughly masticated to a pulp, otherwise undigested pieces will be regurgitated, and there will be fermentation and other disagreeable conditions develop in the stomach. With thorough mastication and insalivation of apples to a semi-fluid consistence or pulp, they will be found to agree with individuals in whom, heretofore, stomach disturbances have resulted, from their use.

Ripe sweet apples are the most easily and quickly digested raw food substance which exists. Sour apples

especially, require very thorough mastication. In some individuals suffering with chronic stomach trouble, sour apples may be replaced to advantage by other fruits, or they may be toned down by an admixture of sweet apples or even with the raisin. Baked sweet apples are usually well tolerated by delicate stomachs. Apples require to be peeled and cored.

The *unfermented juice* of the apple makes a valuable drink and one highly recommended. In its use it should be well insalivated, especially by those who are inclined to have acidity of the stomach. The juice is cooling and acts as a slight laxative.

Apples when cooked without much sugar and of good quality are easy of digestion, cooling, and slightly laxative.

The **date** is a highly nutritious fruit, and forms an important food for the Arabs; the best dates, only, should be used, and not those made sugary with molasses or glucose.

Figs both in the green and dry state contain much sugar, and also a rather large proportion of nitrogenous matter, so that they are more nutritious than most fruits: in large quantities they are apt to prove aperient.

The **grape** is a very important fruit, on account of its richness in sugar, both in the fresh and dried form (raisins). It is very digestible when fully ripe, and most acceptable to invalids. The seeds in some of these fruits are very hard, and where one has sensitive teeth or gums, there is an inclination to bolt or half masticate the fruit. This of itself provokes intestinal trouble.

Peaches and **nectarines** are particularly delicate flavoured, and they are well suited to the gouty and diabetic.

Oranges, the juice only to be used, are especially valuable for invalids; when ripe and well selected

they are pleasant and refreshing, and well adapted for allaying thirst in feverish conditions. The skin and indigestible white fibre should always be discarded.

Plums should be avoided in the unripe and overripe states, and they are more apt than other fruits to prove indigestible and irritating and to cause diarrhoea. Dried plums (prunes) are often judiciously added to the daily dietary to remedy habitual constipation.

The **strawberry** is very wholesome when taken in moderation. It is considered to be a useful food for the gouty on account of its richness in alkaline salts.

Fruit should be eaten at all meals, a daily part of every individual's diet. Some fruits, notably raspberries, strawberries and blackberries, have a reputation for disagreeing with some individuals. This is more likely to be a result of imperfect mastication or of other conditions, attention to which will show the idea is not well founded. Fruits should always be eaten in their natural condition, that is, without the addition of cane sugar, or certainly with the minutest quantity it is possible to dispense with.

Owing to their extreme lusciousness, the tendency in the use of fruits is to swallow them rather hurriedly. The flavor and aroma are entirely lost by so doing. For this reason, if you would appreciate and enjoy fruits to their fullest value, see to it that they are thoroughly masticated and insalivated before swallowing.

The *juice*, not the fruit, of sweet grapes, sweet apples and other sweet fruits may be used freely for infants, replacing, to advantage in many instances, milk, beef tea, etc.

Fruits taken in excess, or when unripe, or overripe, are apt to set up gastro-intestinal irritation, often of a severe form.

Nuts, in combination with fruits, constitute a perfect dietary, the fat of the nuts and the sugar of

the fruits supplying all the need for energy and heat-producing substances.

Fruit-Cures

Unquestionably an exclusive diet for a period of three to seven days and upwards has a marked and distinct effect upon the metabolism or tissue change of the human body. The "grape cure" has become famous throughout the world, diseases of all kinds having been cured, or relieved, by the use of grapes, as an exclusive diet, used for a period of four to six weeks. One of the very best means of reducing flesh is through the use of an exclusive fruit diet, which produces a rapid loss of flesh without discomfort. Fruit fills the stomach and stays the craving for food, yet it furnishes very little nutritive material. In these reduction cures, one, or more, of the regular meals of the day may be exclusively of fruit. Where an exclusive fruit diet is followed, fruit may be taken three or four times a day, owing to its ready and rapid absorption by the system.

Fruit-Cures are used with marked success in chronic kidney or Bright's disease, liver diseases, rheumatic and gouty ailments, chronic constipation, and many other diseased conditions. The free acids of fruits are especially valuable in assisting the digestive process, and where there is a tendency to a bilious or gouty diathesis.

Juicy fruits are best eaten at the end of a meal, otherwise they interfere with the mastication of the other food stuffs, inviting a tendency to wash down the food, in the same manner as is performed by water, tea or other fluids.

It must be noticed that fruits and coarse vegetables are not a good combination, and should not be eaten together. Fruits may be eaten at any time during the meal: before, during, or after, but not between meals.

No other article of diet is of such pronounced value in the treatment of constipation as fruits. For

this purpose fruit must be eatenfreely, preferably in the form of a *fruit breakfast*, best taken without admixture of any other food. Stewed prunes, sour apples, blueberries, peaches and tamarinds are the fruits best adapted for this purpose. It is needless to say that grape seeds do not produce appendicitis; so that the seeds of grapes may be swallowed with impunity with the fruit in so far as appendicitis is concerned. This must not be construed as countenancing the swallowing of grape seeds; quite the reverse. Grape seeds and all other material which cannot be reduced to the state of a liquid or semi-liquid condition by mastication are best discarded as so much refuse or rubbish, of which the system has to dispose. This applies to the skin and seeds of fruit, the outer coating and woody fibre of vegetables, and to all other insoluble and waste material, whether it be cereal, fruit, vegetable, or any other product not furnishing nutriment to the body. The seeds of raisins, also, are best rejected, as they cannot be swallowed whole as is the case with grapes, and crushing of the seeds allows their astringent principles entrance into the system, which is not desirable. The less refuse material one swallows, the better it will be. **Constipation**, as has been explained elsewhere, is a common result of overeating. The method of cure is, obviously, not to overeat.

Constipation

NUT DIETETICS.

"And close at hand the basket stood,
With nuts from brown October's wood."

AS with fruits, so with nuts, there are many erroneous ideas and impressions, prevailing, regarding their dietetic usefulness.

For four or five thousand years the choicest, most healthful and most nutritious article of food that was assigned by the Creator for man's diet, has been but little used by the civilized portion of the world.

This non-use of nuts is all the more surprising when it is considered that they are the most nutritious and the most valuable of all the natural foods, taking *first place* in this respect. Nuts, fruits and cereals form a perfect and ideal combination of foods; leaving both meat and vegetables entirely out of the bill of fare.

Nuts are the vegetable counterpart of flesh-meats, and are meat in the proper sense of the word, the original meat referred to in Gen. 1: 29: "To you they shall be for meat."

A gross error exists in the minds of the public regarding the *digestibility* of nuts. This has probably arisen from two causes: First, that nuts are nearly always eaten under improper conditions: as a dessert at the end of a meal when quite sufficient food of this character has already been taken in the form of meat, eggs, peas, beans, and cheese, thus adding a double quantity, or excess, of proteid or albuminous food for the system to dispose of; or they are eaten as tid-bits between meals. In either case, if indigestion follows (which it almost invariably does) the nuts get the credit; secondly, nuts are usually insufficiently masticated. As a matter of fact nuts are *easily digestible* when properly eaten.

All nuts are digestible. Nuts of all kinds, almonds, filberts, hickory nuts, English walnuts, Brazils and pecans, by simple preparation may be made exceedingly digestible and acceptable.

In order that nuts may be thoroughly masticated, it is essential they be eaten at *the beginning of a meal*, replacing meat entirely, or in part. The mastication of nuts must be thorough, so that they are reduced to a smooth creamy pulp before swallowing. Where the teeth are at fault and one is unable to do the necessary grinding for himself, nuts may be used in the form of any of the nut-butters, which are simply nuts freed from skins, then crushed or ground into a paste by means of a mill. Unless nuts are thoroughly masticated, a large part of their nutritive properties is lost, passing through the system unabsorbed. One or two ounces of nuts are quite a sufficient quantity at each meal. The peanut, which belongs to the pea and bean family, and the chestnut, must be cooked because of the large amount of raw starch they contain.

Nuts are a complete and most wholesome substitute for meat of all descriptions, presenting the choicest and most concentrated nutriment of all food substances. They are a natural source of fat, affording it in great abundance and in a most assimable form. In nuts, fats are presented in an emulsified form, that is, as in cream. It is for this reason that nut-fat is so readily absorbed by the system. Cream and milk can be made from nuts, forming an exceedingly agreeable and wholesome food, agreeing perfectly with persons who cannot take cow's milk or cream to advantage.

Nuts contain on an average about 60 per cent. of fat, 25 per cent. of proteids, and about 12 per cent. of carbo-hydrates, thus having more than double the fuel-value or energy-power of meat. Protein and fat are the two most essential food substances for building fat and blood. Meat also supplies these principles, and it is for this reason that it occupies so high a place with

the populace, as a food ; *but nuts supply these elements in far greater abundance and in a more nourishing form, than meats.* Nuts may be deemed the vegetable counterpart of meat. Besides, nuts have this advantage over meat, they need no further special preparation. A walnut or an almond, if thoroughly masticated, is converted in the mouth into a creamy substance, not unlike in taste and consistency to the cream of milk. Considering that meat is three-fourths water, it will be noticed that nuts, pound for pound, are about one-fourth the price of meat.

The shells and skins of nuts should be removed. The almonds should be blanched and dried, or very slightly roasted. Shelled peanuts may be bought from fruit vendors, and gently roasted at home, as occasion requires. The roasting must be very gentle. Too much heat decomposes the fat in nuts the same as it does the free fat of meats, converting it into fatty acids, which are irritating, thus destroying their food properties. Of the various nuts the English walnut, the almond, filbert and the peanut are the most serviceable.

The **peanut** is, strictly speaking, a legume, after the manner of the pea and bean, and not of the nut family. Its composition is nearer that of nuts than legumes, containing as it does about 50% or one-half its weight in emulsified fat, besides 33% of nitrogenous or muscle making food.

Peanuts, when cooked, steamed and dried, or very slightly browned in an oven, are an exceedingly wholesome and palatable food, easily procurable and above all decidedly inexpensive.

PEANUT BUTTER. The first step is to lightly brown, but not roast, the peanuts; being careful not to overbrown or scorch them. This can be done in the ordinary stove oven. If the raw peanuts be obtained shelled, much time and labour will be saved, in their shelling. As soon as they are roasted and

cool, place the nuts between two coarse towels, or in a coarse bag, or with the bare hands alone, rub them gently and blow off the brown skins. Lightly dust salt over the nuts, and grind at once in a nut mill. Pack the butter into sealed jars, or cans, cover well and keep in a cool place. To be used plain or diluted with water.

Peanuts may be cooked by boiling them in water, first blanching them, then baking them in a slow oven for several hours until almost dry, when the nuts can be run through a fine sieve. This makes a coarser grained butter than that made with the nut-mill.

Almond Butter. Blanch the shelled almonds by covering them with boiling water for two or three minutes, then remove the skins with the fingers. Gently dry the nuts in baking pans in an oven until quite crisp, but not brown in color. Then run them through a loosely adjusted mill or a sausage grinder, and place them on a cloth, stretched over the stove until perfectly dry, then grind in a tightly adjusted nut-butter mill. This preparation, almond cream, or butter, freshly prepared, is a delicious substitute for cow's milk and does not produce gastric disturbances of any kind.

Brazil Nut Butter. The brown skin of the shelled nuts should be removed with a sharp knife, the nuts then cut into pieces, a little salt added if desired, ground in a nut mill, packed in jars and kept in a cool place.

Chestnuts contain a very large percentage of starch, 75%, which requires exceptionally thorough mastication, or cooking, in order that the raw starch may be digested. They may be boiled and then finished by gentle roasting.

The **Cocoanut.** This tropical product, like the banana and pineapple, as it exists in its native state is one thing, and as it is found here, it is quite another

food. In the tropics, in the *green* stage, the nut provides a cool, effervescing drink, while the nut meat is a most tender and palatable food suitable for a little child, and may be eaten with a spoon, so jelly-like in consistence is its meat. In the matured state it is little used as an article of food, except that the natives make lolo or milk from it.

Raw cocoanut is difficult of digestion under ordinary circumstances, and at once it may be said the best and most useful thing to do with it is to make cocoanut milk or cream, which is an excellent substitute for butter. This is performed as follows :—

Break the nut, take out the meat, pare off the outer skin as thinly as possible, as most of the oil is next to the skin, and put the nut meat through an ordinary fine grater or vegetable shredder. Pour boiling water over the grated cocoanut, two parts of water to one of the nut ; let it stand half an hour or so, till cool ; strain through a fine cloth and let stand for several hours until the cream rises.

To make Cocoanut Butter the process is the same as the foregoing, the quantity of water being one cupful of hot water for three cocoanuts, the straining of the milk and the wrinking of the gratings being accompanied with pressure, finishing with a cream rich in proteids. Wring or squeeze out all the milk possible, then empty the cloth into a stew pan, pour boiling water, work well with the hands again, and squeeze through the cloth a second time. Pour the product so obtained into a flat enamel dish, gently heat it on a stove to a simmer ; when it has slightly thickened, remove the dish and cool it quickly. No oil will separate if the milk is heated quickly and not too long, a little salt may be added. Packed in a close vessel and kept cool, the butter will be found a valuable food, and a perfect substitute for dairy butter.

The water or milk usually found in the cocoanut

may be used for diluting the cocoanut milk, or added to a soup or other dish.

Malted Brazil Nuts.—The Brazil nuts may be blanched first by heating gently in the oven, when the skins will rub off, or the skins may be scraped off with a knife; then grind the nuts to a meal. To 1½ cups of ground nut-meal add ½-cup of malted grain or brewer's malt, mix well and dry. When thoroughly dry, grind to a meal and put in closely covered jars. A little salt may be added.

The Almond, Walnut, Pecan, in fact most all of the other nuts may be malted in the same manner as the Brazil Nut.

Nut-Milks—Almond, Brazil, Pecan, etc.—may be made by using one tablespoonful of any of the nut-butters, or an equal amount of nuts, grated with a nut-meg grater; first making a paste with boiling water, adding a pinch of salt and more water to make half or one pint of nut-milk. Almonds require blanching.

The combinations which may be made of nuts in their various forms, either alone or with vegetables, fruits, and cereals, in the form of salads and other nut make-ups are sufficient to form a volume on Nut Cookery. For such books the reader is referred to the bookseller.

NUTS' COMPOSITION

	Water	Pro-teids	Fat	Carbo-hydrate	Mineral Matter	Fuel val. per lb in Calories
Almonds	4.8	21.	54.9	17.3	2.	3030
Brazil Nuts	5.	17.	67.	7.	4.	3329
Butter Nuts	4.5	28.	61.	3.4	3.	3371
Chestnuts, dried	6.	10.7	7.	74.	2.2	1875
Cocoanuts	14.	6.	51.	28.	1.7	2986
Filberts	3.7	15.6	65.	13.	2.4	3432
Hickory Nuts	3.7	15.4	67.4	11.4	2.1	3500
Peanuts, raw	5.	32.6	47.3	12.6	2.6	2735
Pecans	3.	11.	71.	13.3	1.5	3633
Pine Nuts, Pignollas	3.4	14.6	62.	17.3	2.8	3364
Pistachios	4.2	22.3	54.	16.	3.2	2800
Walnuts, English	2.5	27.6	56.3	11.7	2.	3105

VEGETABLE DIETETICS

A GLANCE at the annexed table shows a considerable similarity existing between green vegetables and fruits; vegetables containing a very large amount of water, often 90 per cent. or more, a small quantity of important inorganic salts, and lastly a varying amount, 1 to 4 per cent., of nitrogenous substances.

Vegetables also contain a variety of non-nitrogenous substances, including cellulose, chlorophyll (the green coloring matter), small quantities of sugar, gum, pectine, fat, and vegetable acids. Many also contain essential oils or other flavoring matters, imparting to them certain tastes and flavors, which may be agreeable or otherwise.

There exists in the minds of the public, as well as in the minds of many of the medical profession, an idea that the indigestible residue, left by all green vegetables, affords a useful and wholesome stimulus to intestinal contraction, and promotes regular action of the bowels. This is an exploded idea. Experiments have demonstrated that food, properly masticated, is in itself quite a sufficient and natural stimulus without the aid of mechanical irritation through the use of coarse and insoluble material—equivalent to so much rubbish.

The value of vegetables is very much over-rated. They possess but little nutritive matter, and frequently contain considerable highly *indigestible cellulose* or woody fibre, making them very indigestible to many individuals.

The only vegetables which possess any value for *nutritive* purposes are the Irish and sweet potato, peas, beans, lentils, and corn. These are vegetables of undoubted value: there are many others which are wholly unfit for human consumption. To this latter class belong the cruciferous, or cabbage tribe, which is remarkable for the number of edible plants it con-

VEGETABLES' COMPOSITION

	Water	Proteids (Nitrogen)	Extractives, Sugar, Starch, Fat, etc.	Fibre Waste	Mineral Matter	Fuel Value
Asparagus	93.	2.	3.5	1.	.5	125
Beans (French)	88.	3.	7.5	1.	.5	200
Beans (dried)	12.5	22.5	57.	4.5	3.5	1620
Beans, Lima	10.5	18.	67.5	0	4.	1500
Beets	87.	1.5	10.	.5	1.	350
Cabbage	90.	2.	5.	2.	1.	145
Carrots	88.	1.	9.	1.	1.	300
Cauliflower	90.5	2.5	5.	1.	1.	130
Celery	84.	1.5	12.5	1.5	1.	175
Cucumbers	95.4	1.	2.6	1.	.5	75
Egg Plant	93.	1.2	4.6	.8	.5	110
Lentils	8.4	26.	60.	—	6.	1620
Lettuce	94.	1.5	2.5	1.	1.	85
Mushrooms	90.	2.5	6.	.5	1.	100
Onions	86.	1.7	11.	1.	.5	325
Parsnips	83.	1.5	11.5	2.5	1.5	350
Peas (dried)	9.5	24.5	58.5	4.5	3.	1665
Peas (green)	75.	7.	15.5	1.5	1.	250
Potatoes (raw)	78.5	2.2	18.	.5	1.	350
Potatoes (sweet)	69.	1.8	27.	1.	1.	450
Pumpkins	93.	1.	4.	1.	.5	90
Radish	92.	1.	5.	1.	1.	110
Rhubarb	94.	1.	3.	1.	1.	85
Sauer Kraut	89.	2.	4.	—	5.	100
Spinach	92.	2.	3.	1.	2.	160
Sprouts	86.	5.	6.6	1.5	1.	180
Squash	88.	1.5	8.5	1.	1.	90
Tomatoes	94.	1.	4.	0.5	0.5	90
Turnips	90.	1.	7.	1.	1.	200

The calorific value of green vegetables, as of fruits, must be a variable quantity, depending upon the time of collection. In some instances the values are approximate.

tains: white and red cabbage, greens, savoys, broccoli, etc. They contain a large proportion of sulphur, and tend to occasion flatulence. The *food value* of cabbage, lettuce, spinach, celery, greens, etc., *is very small*, notwithstanding that a number of them are reputed to possess wonderful properties, of one sort or another.

The digestibility of vegetables will depend largely upon the manner of their preparation—raw, steamed, or long boiled. If vegetables be cooked with water in the usual way, the inorganic salts are dissolved and thrown away, thus depriving them of their most valuable elements. Many of them are best used in the form of salads.

Asparagus is a popular and delicate vegetable, containing uric acid, or its xanthin equivalent, to the extent of 1 to 2 grains per pound. A quantity not likely to be of any considerable moment.

Beetroot is a most valuable vegetable, boiled or baked preferably.

Cabbage in the raw state is much more easily digested than when cooked.

Carrots when young form a useful and wholesome food, and are, at Vichy, regularly served at breakfast to the invalids, who are taking a course of the waters.

Celery is esteemed for its agreeable aromatic flavor, and is eaten both raw and cooked: in the latter form it is wholesome and digestible.

Corn, green corn, in the milk stage, is more easily digested than is ripened corn. If corn be put through a strainer or colander, and deprived of its outer coat, it is made more acceptable and digestible. Green corn carefully roasted is also a popular and desirable form.

Cucumbers, eaten raw, are liable to cause gastric disturbances in persons of feeble digestion.

Lettuce, endive, watercress, mustard and cress, are salad vegetables, and are generally eaten raw.

They are cooling, wholesome. The digestibility of lettuce is *uncertain*, usually it requires sound and vigorous digestive organs. Lettuce is best used in the form of a salad with an equal quantity of lemon juice and olive oil and salt to taste.

Parsnips are more or less like carrots.

Turnips belong to the cabbage tribe. They have a tendency to cause flatulence.

Potatoes are remarkable for the large percentage of starch they contain—20 per cent. This starch has the advantage of being very digestible. Potatoes are best boiled in their skins, and steaming is one of the best methods of cooking them. Baked potatoes is one of the most commendable forms of preparing. In whatever manner they be prepared they should always be "mealy" or "floury," and never close and watery, otherwise an easily digestible food is made a very indigestible one. Fried potatoes are very indigestible, owing to their being cooked in fat. Potatoes sliced and slightly toasted are very digestible. Potatoes should never be eaten alone but with some other form of food. The sweet potato, containing 16% starch, and sugar 10%, becomes mealy when boiled, and is a wholesome and useful food, but too sweet to eat alone as a vegetable.

The Pulses. — The ripe seeds of many of the Leguminosae, such as beans, peas, and lentils, surpass all other farinaceous seeds in the large amount of nitrogenous substances they contain. This occurs chiefly in the form of vegetable casein or legumin; but they also contain, in addition, a little albumen and other proteids, together with much starch. By their richness in albuminates they greatly excel the cereals in actual nutritive constituents. Lentils, for example, contain about double the amount of nitrogenous substances that ordinary wheat does. These leguminous seeds are therefore the best suited by their composition *to replace animal food.*

Peas and beans contain much sulphur and phosphorus, in combination with legumin. In combination with rice they form the staple food of many Indian races. Eaten with animal fat (bacon and beans) they constitute a highly nourishing food, especially useful under conditions of heavy manual labor.

Beans, peas, and lentils contain a very large percentage of nitrogenous or muscle-making elements, in a far greater degree and purer form than lean meat, to which they are superior in every way. Peas contain in their hulls, 2 to 3% of uric acid; beans contain also in their hulls, 4 to 5% of uric acid. The use of these vegetables in the *hull-less* form removes this compound. They are the most valuable of the proteid foods. Lentils have of late years become a very popular food, and are now largely imported from Egypt.

The lentil is the most nutritious of all the pulses, and contains the largest proportion of nitrogenous substances. It has the further advantage of being remarkably rich in iron—its ash containing as much as 2% of the oxide—and also in phosphate of lime; it has a further advantage, especially over peas, in the absence of sulphur, thus avoiding the objectionable tendency of flatulence which occurs with the use of peas and beans, unless these are used in the hull-less form, which obviates the difficulty.

Raw **onions** are wholesome and slightly laxative. While onions have a high nutritive value, many individuals cannot use them, repeating eructations making their use unpleasant.

The **tomato** is really a fruit, consisting of about 95% of water, and 5% of acids, of which citric, malic, and oxalic acids are a part, the latter in such a small quantity as to be negligible. Gouty subjects are sometimes advised to refrain from eating tomatoes on this account. There is no occasion for the advice. Properly prepared tomatoes are refreshing and

appetising. There is an idea abroad that tomatoes are responsible for cancers. This is too silly for serious consideration. Tomatoes never cause cancer. Excessive use of meat is also given as a cause of cancer. Probably this is one of the true causes of cancer, yet not the only one. Undoubtedly *the excessive use of food-stuffs in general*, or *the excessive use of any one particular food-stuff*, extended over a period of years, is the cause of cancer, just as it may be productive of diseases other than cancer.

Mushrooms have the property of causing toxic symptoms, in certain persons, in the form of severe gastro-intestinal disturbance. Mushrooms contain uric acid or its xanthin compound. If used in moderation this is probably not a serious factor, but caution must always be used in knowing that *true* mushrooms are used. This uncertainty makes it a question as to the advisability of using them at all.

Undoubtedly many individuals, especially those suffering with weak and dilated stomachs, do not tolerate vegetables at all well. *All coarse vegetables are certainly indigestible.* Individuals differ as to the manner in which they are affected by vegetables. In many instances vegetables, owing to their soft and sapid nature, are bolted or insufficiently masticated, which in itself produces disturbance. Thorough mastication of them is an essential, otherwise digestive disturbances are certain to follow their use. The structure of coarse vegetables is such that they do not go well with fruits, and this is a common combination of diet for many individuals. In such instances practically all vegetables, excepting potatoes and peas, should be excluded from the dietary; in other cases it may be the exclusion of such as lettuce, corn, cabbage, etc., will be required.

My experience is that many of the ideas advanced about vegetables are diametrically opposed to the actual facts as we find in practice. There are com-

paratively few of them which can be recommended from a health stand-point. *In many instances they alone are a source of serious digestive disturbance.*

Vegetables and fruits are not a good food combination. This may arise from a combination of circumstances, chief of which is that the digestive action of the two classes of food is so different in character. Either of these foods used separately might agree with an individual, and yet disagree when taken together. Fruits are much more quickly digested than are vegetables, and it is partly to the slower digestion of vegetables, that the difficulty arises, the whole food contents of the stomach having to wait, as it were, until the vegetables are digested, before the stomach can pass the food along. This delay is likely to cause fermentation of the other foods, and hence disturbance of all the other food products undergoing digestion.

Undoubtedly the majority of vegetables might be wholly eliminated from the bill of fare of human beings without serious loss as food products. Their only value in many instances is that they afford variety in our food ; they may well be replaced with fruits.

PROPORTIONED BILLS OF FARE—continued from page 64

RAW DIET MODIFIED.

1.
Fruit Juice.
Strawberries. Oranges.
Fruit Salad.
Hoe Cakes. Zwieback.
Butter or Nut Butter.
Eggs Natural or Poached.
Rice, Tapioca or Sago Pudding.

2.
Fruit Juice.
Peaches, Pears or Grapes.
Vegetable Salad.
Eggs Natural or Poached.
Unfermented Whole Wheat Bread. Zwieback.
Butter, or Nut Butter.
Rice Pudding.

3. Soup—Vegetable or Nut.
Fruit in Season, or
Raisins, Prunes, or Dates.
Vegetable Salad.
Nuts or Eggs.
Whole Wheat Bread, Butter.
Rice Pudding with Fruit Jelly.

4.
Tomato Soup
(thickened with Oatmeal)
Vegetable or Fruit Salad.
Baked Apples. Stewed Prunes.
Nuts or Eggs.
Bread and Butter. Zwieback.
Fruit Jelly.

5.

	ozs.
Apples	4
Peaches	2
Green Peas (stewed)	4
Bread and Butter	4

6.

Baked Beans	2
Tomatoes, raw	2
Baked Potatoes	4
Whole Wheat Bread and Butter	2
Fruit in Season	4

7.
Raw Egg, one.
Brazil Nuts, one or two ounces.
Tomato Raw, one.
Zwieback or Whole Wheat Bread, 4 ozs., with Butter.
Fruit in Season, or dried.
Figs, Dates, Raisins, or Prunes, 2 ozs.

8. Spinach, Asparagus,
Lettuce, or Celery.
Boiled Potato.
Nuts or Eggs.
Fruits in Season.
Bread and Butter, a bit of Cheese

Simplicity should be the underlying principle of a dietary. **Variety** is absolutely essential in order that our food may be appetizing. Without variety even a perfect food or combination of foods soon becomes distasteful through its monotony. Variety is the spice of appetite, and is to be obtained by distributing it through the two or three daily meals of each day or series of days, rather than by always having a great variety at any one time.

SUGAR DIETETICS

"A surfeit of the sweeter things
The deepest loathing to the stomach brings."

THE candy habit and the general use of sweets, which is so prevalent in America, is unquestionably responsible in a very large measure, for the universal dyspepsia and indigestion which exists on this continent.

The most common form of indigestion, in this country is that known as farinaceous indigestion, or the indigestion of starch. In this disease the stomach and intestines fail to promptly convert the starch—taken chiefly in the form of white bread, fresh biscuits, cakes, porridge, mushes, soups, sweet pastries, etc.—into levulose, or fruit sugar—the final product of starch digestion. The delay or failure of starch digestion results in fermentation and the formation of acetic acid, lactic acid, and various other substances which irritate the mucous membrane of the stomach and intestines, producing gastric catarrh, intestinal catarrh, catarrh of the liver, jaundice, gallstones, and finally that increasingly common malady so dreaded because so seldom curable, diabetes, which generally terminates at an early day in death from tuberculosis or Bright's disease.

The Sweet Tooth

The love for sweets seems to be universal among civilized people, but in no country in the world is sugar eaten in such prodigious quantities as in the United States. "Bon-Bons," taffy, sweet desserts, preserves, sweet pickles, sweet cakes, and sweets of a dozen other descriptions now figure very largely in the daily bill of fare. In fact with some individuals it is nothing but sweets, sweets, all the time—both at and between meals. The usual accompaniments of

porridge, oatmeal, cracked wheat or any other of the breakfast foods are milk, cream or butter, and nearly always with a liberal allowance of sugar. Altogether this makes a difficult mass for the stomach to dispose of, and the condition of the food in the stomach is an ideal one for producing *flatulence* and heart burn—a genuine old-fashioned sour stomach. A little bit of chemistry may be interesting in this connection. The ideal conditions for producing vinegar or acetic acid are starch or sugar, a proper quantity of fluid, a ferment, and the right temperature. These are precisely the conditions under which sugar or starch ordinarly is taken into the human stomach, with the result of fermentations and eructations of gas, distention of the stomach, bilious attacks of vomiting and regurgitations of sour liquids. A great many individuals, as a result of taking at their usual breakfast an excess of sugar or starchy food, start out every morning with a stomach containing a miniature vinegar making equipment. There's just one thing for the stomach to do—make vinegar—and it does it. Under these conditions physicians everywhere are recognizing the pernicious effects of this great consumption of sweets, and the evils arising from it, but all the efforts of doctors and diet reformers have thus far been unavailing to lessen the evil.

"Sugar Appetite"

The increased consumption of Sugar is probably a result of the development of the sugar appetite, which like any other appetite, for instance, the liquor appetite, grows by gratification. Candies are now put up in so many appetizing ways that they are almost irresistible. Once the "Sugar Appetite" gets control of an individual, it is no easy thing to break up the habit.

The appetite for sugar is a natural one, and it may be said also that the evils arising from the use of sugar are not due to its sweetness, but rather to its *excessive* use, in a concentrated form, and its inter-

ference with physiological processes. The fact that the starch of cereals is, in the process of digestion, converted into sugar, has led many persons to suppose that by the eating of cane-sugar they afford an advantage to the digestive organs, by lightening their labour. This is, however, entirely a mistake, the facts being the very opposite. Cane sugar, like starch, must be digested before it can be converted into levulose, the sugar resulting from the digestion of starch in the stomach and intestines.

The Craving for Sweets Natural

A beautiful problem in chemistry is the building up or oxidation of starch. As a laboratory experiment we can take ordinary starch, and by means of heat and oxidation by chemicals we can convert it first into dextrin or dextrin compounds, thence into maltose, thence into sucrose or cane sugar (candy), thence into glucose, alcohol, and vinegar or acetic acid, respectively. Sometimes one may appreciate in preserved fruits or confections which are just "turning" three features at one and the same time: the sweet of the cane sugar, the vinous, wine or alcoholic fermentation, and lastly the acetous or vinegar fermentation. Vinegar is the final outcome of the "turning" process. It is interesting to notice that the counterpart of this laboratory experiment (the oxidation of starch) is duplicated by the saliva and the intestinal secretions, aided by the epithelial cells. Though the sugar formed from starch by the action of the saliva is maltose (malt sugar), that found in the blood is levulose, which is formed from the maltose by the intestinal juice or secretions, aided by the action of the epithelial cells through which it passes. Cane sugar (candy) and milk sugar are also converted into levulose before absorption into the human system. Under normal conditions it will be noticed that the oxidation of starch in the body stops at levulose or fruit sugar,

any process beyond this being abnormal and productive of mischief.

Perhaps the most interesting and remarkable of all the sugars is levulose, or fruit sugar. This is found in all sweet fruits; in some, especially grapes, it is associated with a certain proportion of dextrose, also called grape sugar or natural glucose. Honey, a natural sweet, contains large quantities of levulose, with some dextrose or grape sugar. Levulose is the sweetest of all the sugars, and is of special interest from the fact that it is the form in which sugar is naturally found in the blood. Starch, in the process of human digestion, is converted into maltose, which is, during absorption, rapidly transformed into levulose. Levulose and glucose are removed but a step from each other.

Cane Sugar is not a Natural Food

Cane sugar is not a food, but a food element, a fact which should always be borne in mind. In its natural state it is well diluted, and is never found in the concentrated form in which we are accustomed to use it. This is a matter of very great importance, for physiologists have demonstrated the interesting fact that ptyalin, the active principle of the saliva, acting as a starch ferment, in order to continue its work of converting the starch into sugar, is effective only when the sugar resulting from the action of the ptyalin is absorbed as rapidly as formed, otherwise the action of the ptyalin ceases. It thus appears that when sugar is taken with starchy foods, its effect is to interfere with their digestion, as it will at once render the mixture so highly saccharine that the ptyalin will not act upon the sugar as efficiently as it would otherwise do. Cane sugar can not be absorbed as such, but must be digested. It is converted by the action of the intestinal juice into malt sugar, which prepares it for absorption; but this action does not take place until

after it enters the intestine, consequently cane sugar is neither absorbed nor digested in the stomach; and so long as the food substances remain in the stomach, it is also present, interfering with starch digestion. Further interference with digestion is occasioned by the fermentation of the sugar, which, under the influence of the germs which are always present in the stomach, may ferment, although it does not digest; and the fermentation thus started may extend to other of the food substances, vitiating the products of digestion, and interfering with the whole digestive process.

Starch Indigestion

Sugar, like fats, when separated from its natural association with other food elements, and used in a concentrated form is capable of producing highly injurious effects. These effects are much more far-reaching than is commonly supposed. They include not only irritation of the stomach, but disturbances of the liver, kidneys, and various nutritive disorders, the effects of which are in the highest degree far-reaching and damaging. Many diseases of mal-assimilation as outlined elsewhere are directly traceable to the use of sugar alone.

The Evil Effects of Cane Sugar

While a description of the disposition of sugar in the human system is exceedingly interesting as well as instructive, yet to follow this out would take us outside of the limits and intention of this work; conciseness therefore requires that we touch only on the main and more important points. Briefly the main disturbances, evil effects, and diseases connected with the excessive use of sugar are Catarrh of the Stomach. In its concentrated form, sugar gives rise to an excessive formation of mucus in the stomach. The irritation of the mucous membrane by the products resulting from the fermentation of sugar is also provocative of catarrh. The free use of sugar is unquestion-

ably one of the most common causes of gastric catarrh. In fact some of the worst cases of this disease are from this source. The irritation produced by a concentrated solution of sugar is at first transient, but when often repeated a chronic condition of catarrh is established.

Experimentation has proven that cane sugar has a decided inhibitory or retarding effect upon digestion, the addition of one fourth of an ounce of sugar to three ounces of meat, interfering decidedly with digestion to the extent that the quantity of digestion in a given time is only three fourths that of normal digestion. Glucose, which is only cane sugar or candy, oxidised one degree higher, is a chemically prepared sugar, made from corn. It occurs largely in candies, syrups, particularly in the kind known as golden yellow ; it is also used largely as an adulterant of honey.

Cane Sugar Retards Digestion

The sugars to which the stomach is naturally adapted are, first and foremost, fruit sugar or levulose, the sweet element of fruits, also found in honey ; milk sugar or the sugar which is nominally found in milk ; malt sugar, which is produced by the action of saliva upon starchy foods. Fruit sugar in the form of sweet fruits, raisins, currants, dates, figs, prunes, and malt sugar, as far as possible, should be used as a substitute for cane sugar.

In the commercial world maltose occurs as an extract of malt, being made from malted grains, chiefly barley. And it is for this reason a most valuable substitute for ordinary sugar, possessing both sweetness and nutriment, and yet an almost more important point is that it does not readily undergo fermentation in the alimentary canal, and hence can be eaten by some persons who find inconvenience in the digestion of fruits because of their tendency to produce sour stomachs. Maltose as an article of food, free of malt flavour, can now be readily procured at a very reasonable price from most grocers.

A condition commonly known as torpid liver, or the bilious temperament, is very generally present in persons who consume sugar in large quantities. The condition is characterized by general disturbance of all the functions of the liver; this means interference with the bile-making process; with the sugar-making and regulating function of the liver; with the poison-destroying function of the liver, that is the protection of the body against poisoning or auto-intoxication.

(1) *Interference with the Bile-making Process.* In many instances the bile, instead of being excreted in the natural way, is retained in part in the system, thus producing bile absorption and poisoning. This condition is not indicated by jaundice, but by a muddy complexion, dullness of the white portion of the eye, specks before the eyes, bad taste in the mouth, heavily coated tongue, and when extreme, by light or clay-colored stools, or fæcal discharges, and a very dark color of the urine. Sometimes, however, infective jaundice results from catarrh of the biliary passages, and when the catarrh or inflammation is severe enough to cause closure of a biliary passage, of considerable size, a sufficient amount of bile will be absorbed into the system to make the skin and white of the eye saffron or yellow colored, the patient is said to have the jaundice. Then there is the jaundice produced by gall-stones. In this form of disease the occurrence of jaundice is sudden, and is accompanied by severe pain, or colic, due to the passage of a gallstone. When the stone has passed from the gall duct, the bile flows again, and the jaundice disappears. Infectious jaundice is often accompanied by a dull pain beneath the ribs of the right side in the region of the liver. It is also characterized by chills occurring daily or regularly, accompanied by fever. These chills often continue

Bile Poisoning

Jaundice

Gall Stones

for a long period and are usually attributed to malaria. The excessive use of sugar is a very common cause of this disease, and always aggravated by it.

(2) *Sugar-Making and Regulating Function.*—One of the most curious functions of the liver is its sugar-making and regulating function. All the sugar and starch taken as food after digestion and absorption, are carried to the liver by the portal vein. Only a very small portion is allowed to pass through the liver, the greater part being stored up in the liver cells by conversion into a form of starch known as glycogen or animal starch. This glycogen is subsequently, in the intervals between meals, slowly digested by means of a ferment derived from the blood corpuscles, and thus converted into sugar again. By this arrangement the sugar is thrown out of the body regularly and in small amounts, instead of being thrown into the blood in great quantities as rapidly as it is digested. This regulation of the supply of sugar is of great importance, for the reason that sugar is chiefly used in the body for the production of force and heat, the demand for which is more or less regular, as in the case of the furnace or locomotive.

Diabetes

When sugar is used in large quantities, as is likely to be the case when it is taken in its free form, so great a quantity is sometimes carried to the liver that it is unable to retain as large a portion as is necessary, and more than the usual amount escapes into the blood. The blood normally contains only two or three parts of sugar in one thousand parts of blood. When the amount of sugar is more than three parts in one thousand, the kidneys whose function it is to regulate the condition of the blood, separate the excess of sugar, throw it out of the body in the urine, so as to protect the blood corpuscles and other delicate issues of the body from the injurious effects certain to follow an excess of sugar in the blood. When sugar is thus habitually present

in the urine, the patient is said to be suffering from *diabetes*. It is a well-recognized fact that although diabetes may be a disease of the pancreas, or even have disordered nerve centres as a cause, yet it is more frequently produced by an excessive use of sugar, or saccharine substances, than by any other cause. The liver apparently becomes exhausted in its effort to retain the excessive amount of sugar taken in, and lets a portion pass through into the blood.

(3) *The destruction of ptomaines and poisons of animal or vegetable origin, and the prevention of auto-intoxication or self-poisoning*, is the specific province of the liver—in other words the function of the liver is life-saving in character. These are very important and interesting functions of the liver. When a man takes alcohol, nicotine, morphine, strychnine, or in fact any other poison, a part of them is taken into the liver, which destroys what it can of the poisonous substance, allowing only a portion to escape into the body. Poisons are constantly produced in the alimentary canal which the healthy liver is able to destroy, wholly or in part, thus protecting the body against their injurious effects. When the liver becomes disabled as the result of excessive consumption of sugar, so that it is no longer able to perform these important and delicate functions efficiently, systemic poisoning appears as the result of the accumulations of the tissue poisons and the absorption of those formed in the alimentary canal by decomposition of the food under the action of germs. This poison is increased when the liver is in a state of disease. When the bile becomes vitiated or diminished in quantity, its antiseptic power is lacking, and the intestinal contents, specially those of the colon, undergo decomposition to an unusual extent by throwing into the blood great quantities of intensely poisonous substances. Bilious

Sugar Biliousness

Liver Destroys Poisons

ness is a true auto-intoxication or self-poisoning process, which accounts for the disgust for food, nausea, vomiting, constipation, depression of spirits, high colored scanty urine, with weight and soreness in the region of the liver, jaundice or muddy skin.

Persons with disabled livers are much more subject to injury from alcohol, tobacco, and other poisons which may be taken into the body, than are those who are in a normal state. For this reason, meat, cheese, oysters, and other foods especially likely to contain poisonous substances, or to encourage their development within the body, may be injurious in such cases.

(4) *Excessive Fat Production.*—All the sugar used as food must be utilized in the body in one of three ways,—for heat production, for force production, or for the production of fat. When a larger amount of sugar is taken than can be utilized in connection with the other elements of food in heat or force production, if not eliminated by the kidneys as sugar, it may be deposited as fat; thus the use of sugar tends to obesity. Fat accumulates about the heart, overburdening this organ so that it cannot perform its functions properly. The general accumulation of fat throughout the body imposes a burden upon the muscles which may be so exhausting as to seriously interfere with a person's usefulness, and it is not an uncommon thing to find very fleshy persons weighing fifty per cent more than they should, or even twice their natural weight. There is no substance more capable of producing a rapid accumulation of fat than is sugar. It should be noted that sugar of commerce is physiologically different from the sugar element as it naturally exists in sweet fruits. Sugar is the concentrated juice of the sugar cane; hence many times stronger than when in its natural condition. The addition of sugar to starchy foods, as

Obesity

Sugar Makes Fat

cakes and other sweet pastries, and to grains, is not only wholly unnecessary, but physiologically inexcusable, since starch itself is by the process of digestion converted into sugar; so that, in adding sugar to starch or starchy foods, we are practically adding sugar to sugar, the sugar not only making a double dose, but at the same time interfering with the digestion of the starchy foods. The less sugar taken in its free state, the better for digestion.

Eat Fruit Sugar

Sugar is a most wholesome article of food, but not so ordinary cane or granulated sugar. Sugar in the form of sweet fruits is harmless. Diabetics can use apples and most other fruits freely without injury as they are able to appropriate natural sugars found in these substances, whereas they can not take even a small quantity of cane sugar or even a very small quantity of starch without showing a decided increase in the amount of sugar daily discharged through the kidneys. This important fact, well-known to physicians, has great significance, for it indicates that we should look for our gratification of sweets to sweet fruits rather than to candies, bon-bons, etc.

Not Candy

One who has formed an appetite for sugar might think considerable self-denial would be involved in giving up the use of sugar, but the gratification of the sweet tooth without the attendant miseries which are sure to follow this sugar indulgence may be splendidly attained by eating raisins, currants, figs, prunes, and dates. There is also "Meltose," prepared from malted barley, which answers this purpose to good advantage.

It may seem rather humiliating to one who has always used sugar to be compelled to forego its use, but better do this than suffer its evil effects. An offset to sugar is raisins—the older the better; containing in this condition more fruit sugar than when fresh. One can readily make a meal solely from raisins

THE RAW FOOD QUESTION.

A DIETETIC theory, of which we hear a great deal, is the "raw food" theory. From a theoretical standpoint it is easy to reason that the natural food of man is that of nuts, fruits, grains, and vegetables—a "raw" diet. The claim is made that the natural foods of man are the unchanged products of nature—fruits, nuts, seeds, and grains, the green leaves that grow in the sunlight, and possibly milk, cream, and eggs. The strongest argument of the "raw food" advocates is that certain important elements of natural foods (the salts) are so altered by heat as to be quite useless to the body. The claim is made that cooked food is deficient in these elements, and that a body fed wholely, or largely, upon cooked foods must suffer from malnutrition. This argument is perfectly logical and holds good.

We should always bear in mind that we can never improve on Nature, and that everything we can relish in its natural and raw state is best adapted for the nourishment of our body. While the most delicious products of the soil, the fruits, do not possess the high nutritive value of the more concentrated foods, they are nevertheless indispensable for maintaining health and vitality.

"More than other products of the soil, fruits enjoy "a free and uninterrupted exchange of the influences "of light, heat, and air, by which the electrical forces "of the sun are transmitted. Vital energy is thus "stored up in the fruits in a higher degree, and while "we cannot grasp or determine this subtle power by "chemical analysis, we can feel its enlivening effects "through our whole system."

Jacques Loeb, in his recent physiological searches, likewise comes to the conclusion that the energy of food stuffs, and the motion of the heart, are not only

due to the production of heat, but also to the chemical energy in electrically charged molecules. "Evidently," he says, "the chief role of food is not to be digested "and 'burned' in the muscles and organs, as present- "day physiology assumes, but to supply electrical "'ions.' The heat developed is a by-product. The "chief action is the production of electricity. The "body is in some sort a dynamo. Food, then, is of "value according to the amount and kind of elec- "tricity it affords."

This electrical vitality we can only enjoy in uncooked fruits, nuts, and grains, as they come from the hand of nature, prepared by the rays of the heavenly light, filled with life and vigor, unblemished by the hand of man. Raw food must therefore be declared as the ideal diet of man, and the unperverted appetite demands nothing else.

Scientific investigations have shown that cooking effects a radical change in the chemical composition of all food materials. The albuminous matter, for instance, is coagulated by boiling and thus rendered indigestible; the starchy foods, on the other hand, become too pappy and soft, and the system is overloaded with matter which causes an excess of unhealthy and fatty deposits in the tissues.

Some enthusiasts on raw diet seem to think that all the ills to which human flesh is heir to, can be cured by a raw, or natural, diet. Raw food in its place cannot be excelled nor even equalled, yet there are many questions of a dietary character that are not solved either by the use of raw food, vegetarianism, predigested foods, or many other of the so-called health-getting methods.

It is interesting to note that the chief vegetable albumin, gluten, is rendered very much more easily digestible by cooking, whereas animal proteids in the form of eggs and meat are rendered less digestible. In other words, if man would use grains, he should

see that they are thoroughly cooked, and if flesh foods, he ought to take them raw for digestibility's sake.

Here are some raw food theories :—

"All disease is the result of disobedience of "Nature's laws. It is a crime against Nature to eat "the food she provides in any other condition than "that in which she provides them. Nature does not "err."

"No one can improve upon Nature, yet that's "what man attempts to do when he subjects his food "to the heat of the fire, destroying its vitality and "changing its chemical constituents. The products "of mother earth, given us for sustenance, are un-"cooked save by the heat of the sun—the source of "all energy."

"The sun is productive of life. Fire is destructive "of life."

"Cooking destroys the life cells in food—the cells "which make and sustain life in man. Cook a seed "thoroughly and see whether it will sprout when "planted; or graft a dead cutting to a live limb and "see whether it will grow, or whether it will help the "growth of the live branch. All live vegetation is "capable of either reproducing its own kind, or of "furnishing life or vitality to other organized living "things; take away its life and it can do neither. "Life cannot come from death."

"The man who eats cooked food subsists upon "the few cells which escape destruction by fire. He "is obliged, therefore, to take large quantities of food "to secure the required amount of nourishment. He "is surfeited with material which his system cannot "appropriate—dead matter which must be gotten rid "of. The system cannot expel this waste material "fast enough, and much of it ferments or decays in "the stomach or intestines, furnishing food for the "germs and bacilli which daily enter the system."

"The raw food diet prolongs life. Uric acid is

"now recognized as one of the chief causes of old age. "This poison is present to a greater or less extent in "all persons who eat devitalized food, and the accu- "mulation increases with the age of such persons. "Another cause of sensibility is the presence of an "oversupply of earthy salts, or mineral matter, in the "blood and bones, this is also being produced by the "eating of emasculated, or lifeless, food. These foreign "substances ossify the bones and obstruct the blood- "vessels, interfering with the exercise of vital func- "tions, and diminishing the vitality more and more."

"By natural dieting these calcareous deposits, "uric acid and other poisons, are absorbed, or dis- "solved and eliminated, and their further accumu- "lation prevented; thus juvenility is retained and "'old age' warded off."

The more one looks into the merits of raw food, the more one becomes convinced of its merits. Can anyone imagine a more beautiful or cleanly diet than nuts in the shape of blanched almonds, English walnuts, Brazil nuts or pecans; add to this some "zwei- back" lightly buttered, then include some of the luscious fruits and you have a diet fit for the gods—nuts, fruits, and cereals.

The combinations of raw diet are endless. Those given on pages 69 and 94 are sufficient to give one an intelligent idea of uncooked foods wholly so or in part. For further information the reader is referred to published works on the subject.

OVEREATING

"It is difficult to speak to the belly, because it has no ears."
—PLUTARCH.

OVEREATING or gluttony is one of the greatest sins perpetrated against the human body. The habit of overeating is almost universal, and if there is one thing more than another, the truth of which we will not admit, even to ourselves, it is that we eat too much—we overeat. I think I am well within the mark in making the statement that nine out of every ten persons habitually overeat. The most refreshing thing imaginable is that everyone of the nine will instantly rise up in arms and positively deny the charge, which, however, stands as an indisputable fact. When one considers that the capacity of the human stomach approximates in size one pint or less, no special logic or argument will be required to convince any ordinary individual that it is simply a miracle how the little stomach tolerates the enormous amounts of food stuffs which it does, often amounting to one, two, or even three quarts of material. If as we have stated, the habit of overeating is almost universal, there must be a reason for it. Quite true there is, and a good one too. One which goes a long way back, in fact to the very root of the evil. It is a matter of education or non-education—ignorance would probably be a better term for it. No sooner is a child born into this world than the "overfeeding" process begins. The mother in her excessive anxiety for the welfare of the child, fears the child will die unless fed every few minutes; and it may be said with truth that between the overfeeding (or "stuffing") and bad feeding of children, it is a wonder that so many of them get safely through childhood as do. Parents are entirely ignorant of or pay but

Bad Habits

little attention to what or how to feed their children. Consciously or unconsciously they encourage them to eat largely, the commonly accepted idea being that unless one eats largely the bodily powers fail. Children are quick to absorb the atmosphere, or draw certain inferences, where ideas of large and frequent feeding are inculcated by the parents. Ordinarily any boy can eat well, but if you want to see one eat extraordinarily, in fact to gorge himself, encourage him just a little, and you will be rewarded in seeing him stow away the whole of a regular bill of fare, in addition to many other things too numerous to mention. When he has finished he will look up for an approving smile and, of course, everyone says in so many words: "Good boy."

Fortunately Nature is very flexible with children, tolerating in them what she severely chastises in the adult. As a result of all this, children grow up absolutely ignorant of what or how they should eat; not only this but they acquire "bad habits" of eating, which are almost impossible to overcome in after life. When one considers that a properly fed child will never have a day's sickness, nor cause the parents the slightest anxiety, it is a matter of surprise that so little attention is given to the subject. Contrast a healthy, happy child with the "wind-colicky" kind, and the terror of night walking all thrown in. Sick children make home unhappy. While the cares and anxieties, worry and fretting incidental to sickness are frequently the starting point in the mother of what ultimately leads to a broken down constitution—a nervous wreck.

Bad Habits Of Childhood

Intemperate indulgence in alcoholic liquors is a world wide evil, but is as nothing in comparison with intemperance in eating. The connection between these two forms of intemperance has escaped general attention, but it is a matter of common knowledge

amongst those who study questions of this character, that overeating is largely responsible for the evils of alcoholic intemperance—in short it is the *direct* cause in the majority of cases. The stomach becomes overloaded with food; the mass or "mess" neither digests nor moves. The stomach rebels and manifests its rebellion by an uncomfortable writhing. Rightly interpreted it means the stomach is desirous of getting rid of its load—overload—up or down; "Only let me free," says the stomach. Individuals given to this sort of thing—surfeiting—are unable, seemingly, to correctly interpret their feelings under conditions as above described. One who is at all given to even moderate drinking is certain at this time to try an alcoholic liquor which temporarily seems to afford relief. It whips up the blood in the stomach to increased activity, producing an engorgement or more active circulation in the fluids of the stomach. Overeating produces the sensation of a "craving" or *false* thirst for drink. This is noticable more particularly in those suffering from chronic dyspepsia. Where meat is an article of diet the relationship between overeating and alcoholic intemperance is doubly accentuated, for the reason that meat is more particularly digested in the stomach, differing from most other foods in this respect. Meat is termed *heavy* of digestion on this account.

Intemperance — food intemperance — begins at home. It is here that self-control, the best of temperance, productive of good for all time to come, should be taught and enforced.

Physical Sins

Herbert Spencer, a philosopher with prophetic earnestness, writes: "Few seem conscious that there is such a thing as physical morality. Men's habitual words and actions imply the idea that they are at liberty to treat their bodies as they please. Disorder entailed by disobedience to Nature's dictates, they regard simply as

grievances; not as effects of a conduct more or less flagitious. Though the evil consequences inflicted on their dependents and on future generations are often as great as those caused by crime, yet they do not think themselves in any degree criminal. It is true that in the case of drunkenness the viciousness of a bodily transgression is recognized; but none appear to infer that if this bodily transgression is vicious, so too is every bodily transgression. The fact is that all breaches of the laws of health are physical sins."

"Just because we do not place life on a physical basis this should appeal to us; we are all the more bound to accept it, because life has a moral basis."

"Mental vigor and spiritual insight are not got through despising the physical side of life."

Purity of mind is quite incompatible with gluttonous habits of eating. The Bible inculcates the same principle, although most Christians fail to recognize such or to carry it out in practice.

We must recognize that religion includes the body, and that the laws governing the healthful performance of the bodily functions are as much the laws of God, as are those governing the soul.

Christ, by his forty days' fast in the wilderness, taught us a most important lesson regarding the subjection of the appetites: not only this but during his entire life He taught and practised the principles of simplicity regarding the habits of living. John the Baptist with his frugal fare of wild honey and locusts, the Apostle Paul, as well as all the other Apostles, lived up to the motto: "Moderation in all things."

The religion of the soul and the religion of the body are inseparably associated. The ministry in general has failed to recognize the significance of this. Men need "to be born again" from a physical as well as from a moral standpoint.

The practise is now, and has been for centuries, to preach only one-half of the Truth. To be a suc-

cessful and powerful preacher now-a-days, one must preach more than one side of the Bible, and the preacher should combine the qualities and possess the knowledge of both preacher and doctor, thus enabling him to understand and teach the laws of the body, as well as to preach the religion of the soul. Physical and moral sins are indissolubly associated, and should be so recognized and taught.

Simplicity in habits of eating, and the avoidance of all stimulating foods, are, with the exception of religion, the most powerful of all aids to purity of life. Good living is a religion in itself. Many a man is trying to do by prayer what can be acquired far more easily and naturally by correct habits of living. Men fail to see this, yet it is so simple that "the way-faring man, though a fool, cannot err therein."

The "good health" idea is one from which we cannot get away, and while we are inclined to dismiss these thoughts from our minds, with a shrug of the shoulders, yet the only way any individual can feel, think, and act naturally, is to be possessed of good health, health both of body and mind. Good digestion makes a man feel saintly, at peace with God, his fellow man, and himself. The only way to get and keep good health is to observe the laws governing it, which follow from correct habits of living.

The Perils Of Overeating

Overeating acts harmfully in a great many ways. While the columns of the various physical culture and health magazines are teeming with information about the relative merits of a vegetable, fruit and nut diet as against meat, and while volumes upon volumes have been written upon the value of dozens of other things—physical culture, deep breathing, exercise, etc.—all these are secondary in comparison with the question of overeating; the greatest point of all is lost sight of, probably even more important than the character of the

food taken into the system, that is, the *quantity* of the food and the manner in which the food is to be eaten. Too much stress cannot be laid upon these points. If there be one thing more than another deserving of serious attention it is this: that any *excess* of food, even if the food be perfectly adapted to the wants of the system, results in but one thing: auto-intoxication or self-poisoning. Putting it in another way poisoned blood or mal-assimilation results from an excess of food. Let us further follow up the evil effects of overeating. Primarily it distends the walls of the stomach, lessening its muscular power and finally ending in weakening the organ beyond recovery, producing what is known as a dilated stomach, which must of necessity always remain a weak stomach. The object of food—the nourishment of the body—is entirely defeated in that the original character of the food is wholly changed, so that instead of a beautifully clean assimilable milk-like fluid, *chyme*, there is formed a fermenting, *rotten*, and decaying mass, the absorption of which can have but one effect, *poison*, ending in many instances in the life of the individual by sudden outbursts of *appendicitis* or enteritis. This circulation of poisoned blood in the human body causing continual irritation and inflammation of the delicate cells of the lungs, the kidneys, the liver, or any other of the organs of the body, can have but one ending in the long run—*disease*—it may be Brights' disease of the kidneys, cancer of the liver, tuberculosis of the lungs (consumption), diabetes, pneumonia, rheumatism, or premature senile decay. All diseases are practically alike, however different they may appear. Diseases seemingly so unlike as gout and pneumonia are supposed to have the same common cause. Aside from surgery and midwifery the practice of medicine for the most part revolves about the stomach. While

Excess of Harmless Food

Is Poison

there are hundreds of diseases, they differ in name only according to the organ of the body affected. They have a common centre or origin—the stomach: and a common cause—overeating. This being so, it behoves every thinking man to give a little serious attention to the question of eating, or overeating. To make even the beginning of an attempt to show more of the why and wherefore of the harmful effects of overeating in the case of disease would involve the writing of a book itself, giving a description of nearly every disease in existence.

The Dangers of Overeating

Overeating is fraught with greater peril than the mass of the public commonly suppose, and to impress this fact upon the public mind is an almost superhuman task. Food taken into the system under abnormal conditions is very much changed in character. To more than touch upon this subject would take us into the depths of chemistry to such an extent that it would be beyond the comprehension of the ordinary reader. Briefly, however, some of the results of overeating may be explained in the following: Calculi or stones are deposits within the body which may form within the urinary passages (kidneys, ureters, bladder, or urethra), occurring as renal or kidney calculi; from the bile within the gall bladder, bile ducts, etc., as gall stones; from the appendix arises the calculi or concretion giving rise to the idea of grape seeds in the appendix, the calculi in some instances producing the effect of appendicitis or appendicitis colic. Primarily all these calculi or stones, whether of bile, urine or other fluids are deposited from the blood, overloaded with the products of ingestion or indigestion.

Overeating Produces Calculi

There are several forms of calculi, all of which

have a more or less common cause of origin. As showing the importance of diet, the following is interesting:—

Oxalic acid and calcic oxalate form a constituent of many articles of diet in the vegetable kingdom (wood, sorrel, common sorrel, the familiar fruit known by the name of love apples), and of many medicinal agents, rhubarb, gentian, saponaria, etc. Oxalic acid gains entrance into the body in this way, and is separated again by the urine either wholly or in part as calcic oxalate.

Oxalic acid is frequently formed as a secondary product by the decomposition of animal, vegetable, or mineral substances. Thus it is formed by the oxidation of uric acid, kreatinin, leucin, occuring in meat products, etc.; by the imperfect oxidation of sugar, starch, and salts of the vegetable acids, whereby these, instead of being wholly transformed into carbonates, become in part oxalates which contain less oxygen. It is, moreover, probable that oxalates may be formed from carbonates and bicarbonates, when a part of their oxygen is removed from them by a process of reduction. These facts in a measure explain why oxalic acid, which in itself it will be remembered is a most deadly poison, may be formed in the human system under favorable circumstances; thus after taking carbonated drinks (champagne, seltzer water,) in disturbances of the respiration where the supply of oxygen is diminished, after eating sugar in excessive amount.

Overeating Produces Appendicitis

The most complete and perfect laboratory in the world is the human body. Experimental researches conclusively prove: That every normal, healthy individual generates enough poisons in the body every few hours from the natural waste products of food to cause death, if retained in the blood and tissues. That the amount of poison manufactured daily so nearly

equals the capacity of the poison destroying organs (the liver and lymph glands), and the poison eliminating organs (kidneys, lungs, skin, and bowels), that serious symptoms, much suffering, many diseases, and death result. If any one of the organs named ceases to act for twenty-four to thirty-six hours, death results in many instances in a few hours.

The liver excretes enough poison every few hours sufficient to cause death if it were all suddenly introduced into the circulation at one time. Since the organs of a normal healthy person are engaged to the limit in order to prevent the poisoning of the body—a very delicate equilibrium or balance to be maintained, it will be noticed—it is apparent that a very serious condition of affairs must inevitably result when every organ and function of the body is below par and called upon to perform extraordinary work. The margin between health and sickness is therefore very narrow at all times, and when the habits of living are grossly irregular, and the organs above mentioned are rendered inactive from any cause, the margin disappears and disease of some kind results. Normally the ptomaines or any other poisons of the body are arrested by the liver and destroyed, or excreted in the bile. In this way they are absolutely harmless. If the liver is sluggish in its action or unable to arrest and excrete them, they pass into the systemic circulation and cause a great many diseases and distressing symptoms. Fatal cases of ptomaine poisoning are only too frequent.

Fear of Proteids

About the only thing we have to fear in foods is excessive use of proteids. The human economy requires a small daily quantity of proteid material amounting to about one ounce for each day. Without this proteid matter life cannot exist for any length of time. Heretofore scientists have maintained or considered as a minimum quantity four or five times

greater than the above to be about the normal requirement for the body.

The products of proteid metabolism or its tissue changes are extremely poisonous. Any excess of them taken into the body means the formation of uric acid and the ptomaine compounds xanthin, adenin, granin, etc. It is the accumulation of these poisons in the body that makes a man feel tired, exhausted, and fatigued, "fatigue poison," when he has not worked; that makes him nervous and irritable, and gives him a devitalized constitution. An excess of starch, sugar, and fat may be stored up in the body in the form of fat, so that the forms of food, it will be noticed, which are best adapted for man are the cereals and fruits.

The study of the conditions and of the manner in which these ptomaines arise is one of comparatively recent date, and even at the present time there are many obscure points about them which remain to be cleared up by physiologists. We know however for a certainty that the nitrogenous elements of certain animal foods, particularly meat, fish, eggs, milk, cream, and cheese, under certain conditions are liable to form ptomaines. Many of these ptomaines are deadly poisons, being similar in their action to strychnine, morphine, atropin, nicotine, and other alkaloidal poisons. These ptomaines are decaying nitrogenous animal principles, and may include the putrid albumenoids or proteids of the human body itself.

In as much as these may occur in life, poisoning the blood during the progress of disease, especially disease associated with the development of micro-organisms or microbes, they have great interest; one of these of a curaroid (arrow poison) character seems to play a part in the process of digestion. Another a ptomain from putrid flesh meat, another from putrid fish products, while another termed Tyrotoxicon is the name given to a ptomaine isolated from poisonous cheese, milk, and cream. The above poisons in the

human system are responsible for many of the so-called appendicitis attacks, the intense diarrhœas, vomitings and general prostration.

Overeating Produces Ptomaines

The condition under which ptomaines form is when the proteid foods are used in excess as occurs in overeating. This process probably takes place in the colon, and results as an inability upon the part of the system to expel the rotting and fermenting mass, and is associated in some way with the development of microbes. The retention within the system of a decomposing mass of food gives rise to many poisonous symptoms, which of necessity must occur with the development of ptomaines. Just what the decomposition products of nuts, peas, beans, lentils, and other of the vegetable proteids would give rise to is at present a matter of experiment, but reasoning from analogy their decomposition products would probably be of the same character as the decomposition products of the animal proteids. Anyone who has ever "surfeited" on nuts cannot have failed to notice that the one characteristic of their being taken in excess is what is termed the "rotten fermentation." In addition to this there are the subjective symptoms of eructations and nausea; vomiting and diarrhœa may also follow. The all-importance of this question "Overeating" will appeal to the reader after reading the above explanation.

Now if the system of an individual living a strictly natural life, with food properly adapted to his wants, and in exactly the right quantity, with pure air and no adverse mental conditions interfering, is constantly manufacturing poisons to the limit of his excretory powers, it will readily be understood if there be one cause more than another likely to cause a disturbance of this balance it will be something taken in excess, an extra amount of food: in short, overeating. As has been explained, the function of food

in overeating is perverted, the proteids being converted into mal-assimilation or poisonous products: ptomaines being produced. Overeating of the other food products, fruits, vegetables, and cereals, is also accompanied by mal-assimilation products, but they are of a much less poisonous character than the decomposition products of the proteids.

The proteid foods, the principal but not the only ones being meats, eggs, nuts, milk, cream, cheese, peas, beans, and lentils should never be taken in excess at any time. Not only this, but at no time should food of any other character be taken in excess of the requirements of the body.

Food Should Never Be taken In excess

Nature builds up and tears down within the body according to her requirements, in her nutritive processes—oxidising or deoxidising as the case may be—always doing her best for the economy. The outcome of our disregard and violation of her laws can end in but the one general word, *Disease*, which differs from health only in the fact that in health the body is doing its work under favorable conditions. In disease the work of the body is being carried forward under unfavorable conditions.

The practical lesson to be learned from all these examples of perverted nutrition is that if food which in itself is entirely harmless, becomes under certain conditions when taken into the system, a poison, or in any other way acts detrimentally to the system, it behooves us to pay attention to the conditions under which this arises—that is overeating. Unquestionably overeating and drinking is the most dangerous factor in our lives.

"One-fourth of what we eat keeps us: the other three-fourths keep the doctors." Doctors know this to be the case. It has been well said that

"Gluttony kills more than the sword."

MEAL PLAN

"I sing the sweets I know, the charms I feel,
My morning incense, and my evening meal."

IT has become an almost universal custom in civilised life to appropriate certain fixed times in the day for taking food. Not only does this practice appear to be well suited to our physical organisation, and therefore most consistent with health, but it is obviously a necessary condition of life as it exists at the present day.

One Meal Plan

During the zenith of Roman and Grecian civilization it was an established rule that no man should eat until he had leisure to digest, that is at the end of the day's work. For several hundred years the one meal plan was the established rule among the civilized nations living along the shores of the Mediterranean. Dinner in the form of a mid-day lunch was unknown, and for breakfast a bunch of grapes, a fig, or a crust of bread were sufficient to stay the stomach.

The evening feast was a kind of domestic festival, the reward of the day's toil : music and amusement of various descriptions following.

The one meal plan was adapted to the conditions existing years ago, but an abstemiousness of this character would now be considered by the average American one of starvation. Just as the foregoing would be an extreme in one way, so the methods in vogue amongst Germans and English of to-day may be considered just as extreme in the opposite direction.

Whatever plan may be outlined as the one adapted for an individual, it must of necessity be adapted to meet certain demands and circumstances over which he has no control. One's habits in eating must be determined largely by his occupation.

For brain workers and those following sedentary occupations, one meal a day is not such a hardship as it might appear. It is the one certain way to get up an appetite amongst those who complain of a lack in this respect. The one meal a day plan would not do for those engaging in heavy manual work.

Two Meal Plan

The two meal a day plan is the prevailing custom of the world, and no matter what a man's occupation may be, two meals a day will furnish him with all the nourishment necessary for his occupation.

We can eat but twice a day and eat naturally: that is to give the stomach rest after digesting the food.

The Continental system consists of two meals a day. The first meal is usually taken between 11 a.m. and noon, and corresponds to an early dinner. This is a substantial but not a heavy meal, and frequently consists of some white fish, or cutlets, or a made dish of some kind, then an omelette and some fruit or cheese. Wine and water are usually drunk with the meal. The only food taken before this meal is a cup of café au-lait (coffee), or chocolate, with a roll or a little bread and butter, which is served in one's bedroom on first getting up. The second meal or dinner, proper, is taken when the day's work is over, usually between 6 and 7 p.m. This is a substantial meal of soup, fish, one or two meat dishes, sweets, and dessert: black coffee follows. Nothing more in the way of solid food is taken. This system is remarkable in that it is adopted by all classes of the community on the Continent: whereas in Great Britain the time of taking food is almost a class distinction.

Three Meal Plan

The belief so universally held that we must eat three meals each day to maintain health is unquestionably one of the principal causes that lead to many serious illnesses and disease. The force

of habit is very strong in us, and when one has been accustomed from childhood up to eat three meals a day, it seems almost an impossibility to break up the habit. The habits of childhood become the habits of manhood.

Four meals a day is a common plan both in England and Germany. This practise must result in gorging. Even the three meal plan does not give the stomach nor the system time to eliminate the products of food disintegration excepting in hard manual work with long hours. For brain workers undoubtedly two meals a day are quite sufficient. A farmer or manual worker of any other character, from the nature of his occupation, requires more food and at more frequent intervals than if he were occupied as a bookkeeper; its the occupation and not the individual which is the factor in the case.

Two Meal Plan

The two-meal plan may be carried out satisfactorily in two different ways. There should be at least seven hours from the beginning of one meal to the beginning of the next, and in many instances this time may be extended to eight, or even nine, hours. At least four hours should elapse between eating the last meal of the day and going to bed.

Supposing the two-meal plan of eating is one which commends itself to an individual, he may find it a matter of considerable inconvenience to carry this out in practise. The hours for dining in this country are usually those based on the three-meal plan of eating, so that in order that the two-meal plan shall be successfully carried out, it will require some arrangements adapted to meet the circumstances. The two-meal plan may be carried out satisfactorily in two different ways. If one is living with a family where three daily meals are served, this is easily arranged by making the first meal of the day as breakfast. If a little exercise can be taken before breakfast all the

better. Persons requiring to take exercise before breakfast are usually dyspeptic or overfed.

Plan "A."—The breakfast should be of a substantial character. Replace the mid-day meal by a glass or two of water, a bowl of soup or some fruit juice, but no solid food. For supper you will have an appetite not to be despised.

Plan "B."—The second method is the no-breakfast plan, the principal of which is that the first meal be eaten five to six hours after rising, and the second meal follows this at an approximate interval of probably the same length of time; this is practically the French system of dining, somewhat modified.

"No-Breakfast"

One objection to the no-breakfast plan is that a rather hearty meal is needed when one's time and energy are usually needed for occupation rather than digestion.

This objection may in a way be overcome by having a moderate or light lunch at noon, reserving the evening for a more hearty and substantial meal.

With the business and professional man as well as with most every other man who labours, a substantial early breakfast is the method which accords best with all, the organism being properly furnished to begin the work of the day.

The professional or business man may dispense with luncheon to advantage, excepting, to make the mid-day luncheon of drinking, without eating. This may be one or two glasses of water, tea, coffee, chocolate or other fluid.

Plan "A," or the breakfast plan, has a great deal to commend itself, in that it allows sufficient interval between the last meal of the day and the hour of sleep. It also allows, when necessary, the taking of a little fruit, fruit juice, or a light collation before retiring, when this in no way interferes with sleep.

Any plan which may be outlined must of necessity be subject to considerable change, depending upon individual circumstances, and particularly the occupation. If I were to outline a plan it would be along these lines: Two prime meals a day separated from each other by at least seven, better, eight hours. Three times, solely, for drinking.

I have tried all plans and pursue Plan "A" in the winter, which is as follows: In the morning, seven o'clock, the juice, only, of an orange followed in a few minutes by a cup of hot water to which a pinch of salt is added. One hour after this, that is about eight o'clock, a regular and substantial breakfast follows. At twelve o'clock a glass of fluid; at four or five o'clock a regular dinner; at nine o'clock a glass of fluid. The fluid is usually hot water, but is sometimes varied for fruit juice, or a teaspoonful, or two, of malted nuts taken in a teacupful of hot water. An extemporaneous malted milk can be quickly made by grating one or two Brazil nuts into a teacup, adding a little hot water sufficient to form a paste, stirring well and filling the cup with hot water. Add a pinch of salt and you have a delicious and nourishing off-hand drink, specially appetizing before going to bed.

In the summer season I follow Plan "B" or the "no breakfast" plan, the meals taken at eleven in the morning and six or seven in the evening.

While I usually follow the two-meal plan as first given, Plan "A," because of its greater convenience from a business point of view, yet if I were to follow my natural inclination the modified no-breakfast plan, or French system, of two meals a day would be my preference, with regular times for drinking, three times a day. This would mean drinking in the morning immediately upon rising, a moderate luncheon at noon or earlier, with a more substantial meal in the evening. Drinking at four in the afternoon and nine in the evening.

Those persons who live on fruits exclusively should eat three or four times a day. In many instances an individual's occupation is such that no stereotyped plan will answer. In these cases it will require planning to cover the difficulties. It is just in such cases that natural or raw diet helps one out beautifully. No waiting at restaurants, no fire, no cooking. Everything ready at a minute's notice.

It is possible for many persons to take a clear soup in small quantity, say 4 to 8 ounces, at the very beginning of a meal, which is readily absorbed by those of vigorous digestion, and the same may be said of a glass of water, though not of milk; or to drink say half a glass of water, tea, or coffee, at the end of a meal with no apparent derangement of the digestion, but the safest way is for the dyspeptic to dispense with them. Just as we have a time for eating, so is it advisable, though not strictly necessary, to have a time for drinking. To this end those who adopt the two-meal plan a day, may also adopt, with advantage, the plan of drinking say three times a day. Food simplicity is of paramount importance. In this way are avoided fermentations and other digestive disturbances, usually incidental to those cases where the food is a mixture of two or three different classes of food, as, for example, bread and butter, meat, vegetables, fruits, pastry, etc.

Dyspeptics cannot digest several articles at the same time, because the enfeebled stomach is unable to make gastric juice suited to the mixed foods.

There may be no difficulty whatever in the digestion of a single, simple article of food, if the article selected is adapted to the patient's condition; that is, a patient might not be able to digest bread, meat and milk, but might be able, without difficulty, to digest bread or milk. A stomach may, by careful training, be rendered capable of digesting at first single, simple articles, and later simple combinations.

BATHING — BATHS

"Like a nymph in the bath."

THE ruins of the ancient Roman and Grecian baths, truly magnificent buildings scattered throughout Europe, tell us bathing was a national virtue amongst those peoples. This is in dire contrast to present day conditions, in which neither public baths nor public bathing is more than a side issue. The masses of the people are not educated up to the value of bathing beyond the "swimming" idea. It is almost as difficult to get the average individual to take a bath, with any degree of system or regularity, as it would be to induce him to take a dose of castor oil.

The traditional value of bathing existing amongst the Ancient Romans and Greeks has however descended to the Englishman, who would no more think of dispensing with his morning "tubbing" than he would think of going without his breakfast, each of which is a sacred duty and of paramount importance to him.

The functions of the skin are as a rule but little understood, and as a result of this the skin is much neglected in its care. Yet a healthy skin is absolutely necessary to every individual, otherwise ill-health conditions are certain to arise. The skin must be kept clean, active, and healthy, either by natural or artificial methods, if not in one way then in another. During the hot summer months the functions of the skin are generally active, so that the skin naturally cleanses itself. In the colder weather, however, the skin is comparatively inactive, and it is at this time more particularly that it requires to be, systematically, kept clean by washing, scrubbing, rubbing, or sweating, one or all of the methods.

Baths may have for their object the simple cleansing of the body, or they may be intended for the

cure of disease. The appliances for bathing may be simplicity itself, or on the other hand they may be so elaborate as to be almost bewildering.

The whole process of bathing may be resolved into a scrubbing or rubbing of the skin from head to foot, using anything having a rough surface to facilitate friction, the temperature of the water to be as cool as can comfortably be borne, the length of time for the bath to be varied according to circumstances, finally ending up by drying the body, so that at the conclusion of the bath the reaction is perfect and without tire or distress to the bather. At a very small cost, a sponge, one or two hand-scrubs, a flesh brush, a *loofah*, a species of seaweed fibre, all procurable at any drug store, including some coarse towels, and one has a very full and inexpensive bath equipment.

Under proper conditions bathing is one of the greatest adjuncts to health getting which we possess. Hydrotherapy, or the therapeutic or medical use of water, is probably the most powerful curative agent we have, far in excess of any drug medication. Like anything else possessing merit, bathing and baths have been overdone—abused—to such an extent that strong prejudices have arisen against the use of what is most essential to every human being—bathing. Undoubtedly great harm has been done to many persons through ignorance or abuse of baths.

Under proper conditions baths never do harm but always good to those who use them intelligently; Obviously an invalid requires entirely different bath treatment from an athlete: and the same applies to all grades of individuals between these two classes. The two principle factors to be considered in the use of baths are the temperature of the water and the length of time for the bath, both of which are subject to variation. Judgment and common sense must be used in these as in other matters.

A healthy skin is warm, slightly moist, reddens

quickly when rubbed or frictioned, perspires readily under exercise, and is clean and free from eruptions of every kind. Under applications of cold water, with rubbing, the skin reddens perceptibly and readily, and may remain so for some little time after.

Baths should never be taken immediately after meals, certainly not until three or four hours afterwards. Prolonged sea bathing is decidedly injurious, for the reason that the heat of the body is absorbed by the cold water, and depression and exhaustion result. If taken in moderation the effect should be exhilarating and beneficial, instead of the opposite. Cold water in moderation is a stimulant tonic. Hot water, briefly applied, acts also as a stimulant, but applied for a further period of time, its effect is sedative or relaxing.

Many individuals have a fear or dread of cold water. This is overcome by commencing the bath with tepid water, finally ending up with a cold dash. With vigorous friction, using the ordinary hand brush, flesh brush or loofah, extremely cold water can well be borne, the reaction ending in a brilliant glow of the skin. In all cases a bath of any description must be ended up with a cold application, however brief, otherwise the pores of the skin are left open and a sedative or relaxing effect is likely to be produced by the continuance of perspiration beyond the intended time. To obtain the tonic effects of water it must be used cold, and for this purpose the best time to take a cold bath is just after getting out of bed in the morning, or after exercise, when one is warm. A cold bath should never be taken when one is chilled ; this is the time for a hot bath.

Morning Bath

The proverbial cold morning bath is one of the most powerful of all known tonics. It should be taken immediately on rising. The temperature of the water should be as cold as can comfortably be borne. A minute or two, or even less than this, is sufficient time

for cold water applications, which should always be followed by vigorous rubbing with a coarse towel, or brush, until a strong reaction is produced. This may take from five to fifteen minutes, especially where the circulation is sluggish. Daily cold bathing is one of the very best preventives for those who catch cold readily, not only this, but as a nerve tonic nothing else equals the effect of cold bathing. The baths must be short, say one half minute, best taken in a warm room, followed by vigorous rubbing and exercise, so that the reaction be prompt. A valuable aid to excite friction is the flesh brush and the loofah, both of which may be used either moist or dry. The benefits of cold baths are not confined to the skin alone. All the organs of the body are excited to increased activity. Special mention must be made of the really wonderful and transforming effects which cold applications have in their effect upon the Nervous System in Nervousness, Nervous Prostration or Neurasthenia.

The daily scrub bath, aided by the dry-friction bath, far exceed the curative effects of any drugs in the treatment of nervous conditions.

Scrub Bath The scrub bath should form part of one's daily toilet. It may be performed by scrubbing the entire body with brushes or coarse towels, using hot water to begin with, finally ending up with a cold dash, sponge, or shower, followed by vigorous rubbing or exercise until complete reaction ensues, the skin being in a healthy glow. Cold water can be used in place of hot by those who are accustomed to bathing. For those who have a dread of water, a substitute for bathing is provided by taking a dry or friction-bath. This may be used at any time, once, twice, or even three times a day, and is not followed by any feeling of depression.

For a friction bath a flesh brush is desirable, but coarse towels, loofahs, or other friction-producers,

answer. The entire body from head to foot should be thoroughly rubbed, a procedure which should take from five to ten minutes. Many persons take a bath as a routine matter, while others do so only under compulsion. The dry or friction-bath is one which takes but little time, is less inconvenient than the usual method, and for those persons who have a fear or dread of water, it is one that should recommend itself as a hygienic measure of the greatest importance. The friction-bath is particularly adapted to individuals who suffer from poor circulation, cold hands, cold feet —those who dread the winters.

Friction Bath

Baths may be varied to suit the fancy.

A hot scrub bath one day, or a series of days in succession, a sweating bath once or twice a week, the friction-bath morning and evening, or in the evening alone before going to bed ; all summed up, however, in the necessity of every individual thoroughly exercising the skin at least once every day.

The buoyancy, vigor, vim, vitality and exhilaration produced by a hot scrub bath, followed by a cold shower with subsequent rubbing and drying, can only be appreciated by those who have experienced it. One feels as if he could "run like a deer."

Cold, applied either as cold air, cold water, or in any other manner, has a wonderful stimulating effect upon the entire organism. When applied to the skin its effect is to produce marked contractility of the vessels, and this, through a chain of physiological circumstances, awakens every organ of the body. This stimulating effect is especially marked on the Nervous System, hence the value of sea-bathing, cold air baths, etc.

Cold Bathing

One not accustomed to cold bathing, especially if in indifferent health, should begin carefully. Better have the water a trifle warm than too cold, 75° F. or thereabouts, and let the bath be brief, not to exceed

one-half minute. There should be good reaction after vigorous rubbing and exercise. The bath should not be followed by languor, headache, or tire. The feet especially must be rubbed till reaction in them is good. It may be necessary to put them in hot water or alternately in hot and cold water, and follow this with brisk friction, using coarse towels, hand scrubs, or fibre brushes to facilitate warmth. In some instances, instead of the general immersion of the body, a towel dipped in tepid or cool water is wrung out of cold water and applied to the body, or the cold mitten friction is employed, in which a rough cloth, mohair, canvas or fibre mitten is used for the purpose of friction. Each part of the body may be bathed separately and then dried: the chest first, then the feet, legs, arms, or vice-versa.

Natural Bath

No one need forego the luxury of a bath on account of its expense. Water is the only requisite, and a pair of willing hands. Aside from this an ordinary basin, or tub, is the only other article required. One of the simplest and one of the most natural baths is the natural bath. In this bath the water should be of a temperature most agreeable to the user, is splashed or rubbed on the body with the hands alone, on either the whole or part of the body. The body is dried solely with the hands with vigorous friction, rubbing and slapping. The time required for this is likely to be about twenty minutes. When ended and properly performed, the body is all in a glow from the friction and exercise.

Night Bath

The cleansing or night bath is preferably taken just before retiring. In its nature it is intended to be that of a sedative—provocative of sleep. For this reason it should be a hot bath, finally ending up with a cold sponge, then vigorous rubbing until thoroughly dry.

The cold morning bath acts as a stimulant fitting

us for day's work, while the hot bath of the evening is relaxing or soothing in its character, and is especially indicated in cases of sleeplessness.

Sweating by a Hot Compress or Hot Pack.—To induce a profuse sweat is one of the most rapid, effective and valuable methods extant for breaking up what is termed a heavy cold.

The sweating process may be produced by a vapor bath, or in the absence of this an extemporaneous or home-made method like the following answers: The patient is best put in bed in a room comfortably warm, stripped and wrapped up from head to foot in cloths wrung out of moderately hot water. The cloths should be wrung out as dry as possible, and put quickly on the patient, not allowing them to get cold. These cloths may be in the form of strips about ten inches wide, and made several feet long, of cotton, cheese-cloth, wincey or other goods. In an emergency ordinary white sheets answer, or a number of towels. The hot cloths are covered with rubber tissue, oiled silk or mackintosh; in the absence of these with some thick cloth material. Outside of this flannel wraps must be used to keep in the heat. Hot drinks of lemonade and ginger may be given the patient. The length of time for the use of the compress or hot pack varies according to circumstances, and must be sufficiently long to fill the blood vessels of the skin, and produce profuse perspiration. This may take from one-half to one hour, or more, and may need repetition. The sweating process may be assisted by putting hot water bottles or hot bricks in the bed. As soon as the sweating process is finished, the patient should be sponged with tepid water, thoroughly dried with towels and brisk friction, then put to bed. There is no danger in taking cold after this, provided the patient is not exposed to outdoors sooner than eight to ten hours after the treatment. A hot compress or hot pack like the above acts practically like a poultice to the whole body.

EXERCISE — CLOTHING

SYSTEMATIZED Exercise or Physical Culture is essentially necessary to every individual who follows an indoor occupation. A system is to be advocated which develops the muscles generally, in contra-distinction to developing one set of muscles to the exclusion of another. Such exercise may be obtained without apparatus of any kind; or by using dumb-bells, clubs, "exercisers," etc.

Unfortunately physical culture has been carried to excess, so that much harm has been done by indiscriminate and excessive muscular development.

The simpler the exercises the better, just enough to be natural. No one wants to be a Hercules or a Samson. Excessive development of the muscles can only be kept up by an un-natural method. As soon as the un-natural exercising ceases, the muscles return to their original condition. In some instances they even deteriorate.

In many instances exercises require to be "individualized." Different classes of individuals require different kinds of exercise. In a general way it may be said for the brain-worker and office man, no exercise surpasses walking. In addition to this deep breathing exercises should be practised at the same time.

Walking, however, lacks interest to many individuals. It is for this reason that golf is so popular, one gets walking with the additional interest of the game. Probably no form of exercise surpasses **bicycling** in its results. It is particularly adapted for brain-workers and those who sometimes feel almost too weak for exercise. The weight of the body is borne by the wheel, the larger muscles of the body are put into play, so that the circulation of the blood is made active, the exhilaration of motion and the rapidity of the change of scene, all combine to make

wheeling *par excellence* the ideal exercise when taken in moderation. Wheeling gives the greatest amount of exercise with the least possible exertion, hence its great value. After a spin of a few miles, followed up with a sponge or shower bath and a brisk rub, one will have an appetite not to be despised. Of the games, **tennis** is one of the best as an exercise.

Exercises have an important bearing in relation to baths. After exercising actively, and while the skin is warm and moist, a bath is specially enjoyable. The reaction is complete, quick, and thorough.

Books upon physical culture are to be found in abundance at all book stores.

Clothing The clothing of the human body is analagous in a way to the warming of a house: a question of how to keep the proper degree of heat within. Hence the kind of clothing we wear has a very important relation to health. Woolen goods hold moisture for a long time. Linen also absorbs moisture to an equal degree, but it dries doubly as rapidly as wool, and in doing this it exposes an individual wearing it to a too rapid cooling off. For this reason the proper combination to be worn is linen, or cotton, next to the body, with an outer woolen garment next it. Two or three thin garments are frequently warmer than one thick one.

Loosely woven garments are preferable to close and heavy fabrics, allowing ventilation of the body by the air-currents enclosed between the garments. Air, acting as a non-conductor of heat, makes several thin garments warmer than one thick one. Careful attention to the proper arrangement of the underclothing results in a great degree of comfort and warmth, without the unusual and often inconvenient accompaniment of heavy outer clothing in the way of great-coats, furs, etc. Linen may be worn by individuals possessing the most sensitive of skins, and at all seasons of the year.

Underclothing which has been worn during the day should never be worn at night.

At night the day underclothing should be turned and aerated.

Two suits of underclothing, wearing each suit every other day, should be worn by those who perspire freely.

The color of the clothing is also a matter of importance. White and other light colors are preferable to dark, contact of light with the skin is essential for its health.

Dark colored goods absorb the heat rays, yet on the other hand they protect from the chemical or actinic rays of the sun. Hence, in the tropics, the most complete and perfect protection from the sun's rays is afforded by wearing white garments lined with some dark colored fabric.

Light, especially concentrated light, has a wonderfully stimulating and energizing effect upon the skin. It is for this reason that "light" baths have gained such a pronounced reputation for their curative effects.

Woolen goods give one a feeling of warmth, and under circumstances where there might be but little, if any perspiration of the body, flannel may be worn next to the skin, with linen next and outside the flannel, the reverse of the usual manner of wearing linen and flannel. Comfort is the factor which determines the amount of underclothing to be worn. The amount and kind of underclothing to be worn has frequently to be adapted to the weather conditions, irrespective of the particular season of the year. A hot day less, a cold day more underclothing. Heavy linen, or a double suit of linen, may entirely replace woolen underclothing.

A RATIONAL VIEW OF EATING

"They are as sick that surfeit with too much,
As they that starve with nothing."

A GREAT many people have the idea that to eat a good deal of food is certain to be rewarded by good health and enhanced physical vigor. Under certain conditions this may be so, but on the other hand it must be remembered that any food taken in excess of the actual requirements of the body is a source of weakness instead of a source of strength. There must obviously be a limit to the needs of the body, and when the supply exceeds this limit it must be removed or disposed of in some way ; nervous force, which might be better employed to more advantageous purposes, being consumed in the removal of this excess of material from the system. This is especially true of nitrogenous material, hydrocarbons being burnt off in respiration with far greater facility.

Unquestionably the quantity of food, and not the kind of food consumed is the most important factor in the question of eating. This presupposes that food is consumed in the right manner. To repeat this : first it is the quantity of food consumed, secondly the manner of its consumption, and lastly the kind of food.

Physiologists say that the Japanese present the most perfect physique of any race in the world. Most of the diseases common to the Western World are unknown among the subjects of the Mikado, and this happy condition they themselves attribute to the fact that they eat sparingly, and only of plain, nourishing food.

There is no doubt but that the human body can be maintained in full vigor and activity upon a much smaller amount of food than is usually consumed, and the question which concerns each individual is the amount of food which suits his special requirements.

The occupation to a very great extent influences the character, and to a certain extent the quantity of the various food elements. Evidently one who works hard at manual labor all day will require far more of the muscle and energy-making foods than will a brain worker. It is well known that laborers eat and can digest far more than the brain worker, and in consideration of the fact that a manual worker keeps in active use the three-fourths of his body represented by his muscular system, while the brain worker uses only that small portion represented by his brains.

It has been estimated that an average man at moderately active labor, requires enough food-material to make up about 2,000 to 2,400 calories or heat units. The demands naturally change in different occupations, climates, or individuals. Most people believe that increased muscular and mental activity requires a correspondingly enlarged amount of tissue building food; this is true in so far as physical activity is concerned. A person engaged in hard muscular labor requires from 25 to 30 per cent. more food than one whose occupation is chiefly mental.

One of the most advanced physiologists of our time, Voit, of Munich, has found, however, by careful investigations carried on for a number of years, that even at the most strenuous work the body consumes not any more proteid than when at rest; that heat and energy are almost exclusively created by the combustion of fats and carbo-hydrates; that 15-30 grams (about one ounce) proteid daily are sufficient for the average man, while about the same amount of mineral matter is needed in the form of organic salts.

All progressive physicians admit that a large number of diseases is due to the excessive amount of proteid we take in our nourishment, resulting in the formation of an excessive amount of urea and uric acid, which are deposited in the joints and tissues, causing rheumatic or gouty affections, or it may be

deposited in the form of calculi, or stones, in the kidneys or liver.

As a result of recent scientific investigations, it has been fully proven by practical experiments on soldiers and others, that an amount of food about one-half less than given by most authorities, is quite sufficient to supply the requirements of the body. The ordinary business, or professional, man can live upon a quantity of food represented approximately by :

Carbohydrates, 8 ozs.
Proteids, 1 to 1½ oz.
Fats (Nut Fat), 2 ozs. (or Butter Fat, 1¼ oz.)
} daily quantity

Making the daily amount of total weight of dry food stuff about 11 to 12 ounces.

This means that from 16 to 20 ounces of dry food, daily, is considered, in general, to be about the proper amount necessary for the human economy. Taking the mean of these quantities it follows that about one pound of dry food is the daily quantity for an average individual to consume. From 1½ to 3 pints of water should be the quantity of fluid taken daily.

Long chewing satisfies the appetite, with less food, so that to chew more and eat less is a good motto for most of us.

The experience of Louis Cornaro, who lived to be 103 years of age, or thereabouts, of which the last sixty years or more was upon less than twelve ounces of dry food daily, is conclusive evidence of the possibility of maintaining life and vigor on a much smaller amount of food than has generally been believed to be necessary. The amount of proteid material eaten has always been in excess of the actual demands of the system. Whatever form this material be taken—in meat, eggs, nuts, or other—it should be used in *very small quantity*, the bulk of the food being in the form of carbohydrates, particularly including fruits.

The athletes of Ancient Greece were trained entirely on a fruitarian diet. The boatmen of the

Constantinople who live on bread, cherries, figs, dates and other fruits, have a wonderful muscular development. The children of the desert exist for a long time upon a handful of dates a day, and travelers speak of raisins and parched corn as a common fare.

The Mystic Adepts who are strong physically, mentally, and who are never sick, and live to great ages, all the time doing a tremendous amount of work, never eat flesh-food. They live on plant-foods exclusively.

It is often asserted, that, while a vegetarian diet would be good in tropical and subtropical countries it would be entirely insufficient in the colder climates. This, however, is an entirely mistaken view. Not only can our body derive a far greater amount of heat and energy from plant-foods, such as Nuts and Cereals, but they are also more conductive to health.

In this connection it may be interesting to give the dietary of a Trappist monk. His meals vary in number and time with the various seasons of the year. In summer, when his out-of-door work is of course the hardest, rising at two in the morning (as he does all the year round), he takes his first meal, which you may call, as you please, either breakfast or dinner, at half-past eleven; partaking at four of a light collation, consisting as a rule of a little dry bread and water, though other articles of diet, such as fruit or vegetables, may occasionally be added, at the opinion of the abbot. From September 14th until Ash Wednesday he takes his first and only meal of the day at half-past two in the afternoon, when he has been up for twelve hours and a half. During Lent his fast is still more rigorous, his one meal being postponed until half-past four, when he has been up singing in his office, working, studying, and praying for fourteen hours and a half. And yet we in the world, when indeed we fast at all and do not find a pretext for exemption, grumble at having to wait for our break-

fast from seven or eight until twelve. On this fare the Trappist is the very picture of health, living to eighty years and upwards.

Very few people have acquired the habit of abstemiousness. Most of us are the victims of the force habit. Those who eat three meals a day cannot miss one meal without suffering much distress or discomfort.

Contrast with this the Arab who eats but a handful of dates once a day, or if not convenient, he eats only every other day. The Tartar travels all day but eats only at the end of the day. The Indian or hunter when shooting or trapping, if he finds nothing, will go for three or four days, practically without food, only taking up a notch in his belt to fill the vacancy of an empty stomach. With plenty of water to drink it is surprising upon how little solid food one can subsist.

Just as our clothing requires change with the seasons of the year, from furs and flannels to linen and cotton, in the same manner our foods require to be changed according to the temperature of our environment or surroundings. Foods range in heat producing properties from 100 calories or heat-units to the pound, up to nearly 4,000. Most individuals notice that on approach of hot weather, a change occurs in our desires and appetites for foods, differing entirely from those used during the colder weather, heat producing foods being replaced by fruits and other foods of a lower heat power.

If one desires to be cool in hot weather it can only be accomplished by eating those foods which do not possess great heating power. This means one must eat the foods having a low heat power, fresh fruits, green vegetables of the more digestible kind, some cereals, with very few nuts, eggs, or other proteids.

The accompanying table shows in a gross way the relative heat producing properties of the more generally used foods. From the appended table, or from other

tables scattered throughout this book, anyone can easily arrange, or "individualize," a diet adapted to his particular wants.

Nuts	.....an average	2300-3400	heat-units	to the lb.
Cereals	,,	1200-1600	,,	,,
Potatoes	,,	350- 400	,,	,,
Fruits, fresh	,,	100- 350	,,	,,
Fruits, dried	,,	1000-1400	,,	,,
Vegetables	,,	100- 450	,,	,,
Flesh-Meats	,,	500-1000	,,	,,
Pork	,,	1600-3000	,,	,,
Fish	,,	200- 450	,,	,,
Fowl	,,	1000	,,	,,
Eggs	,,	650	,,	,,
Butter	,,	3400	,,	,,

Foods should be selected giving off from 200 to 1,200 heat calories to the pound, in a climate where the temperature ranges from 50 to 95 degrees F. A combination of fruits, cereals, and vegetables answers this requirement. An individual who eats largely of the heat producing class of foods, nuts, fats, etc., during the hot summer months, must expect to feel almost burned up—red-hot in fact. During the hot weather one meal should be made almost entirely of fruits each day. As a rule a single fruit is best, two fruits being quite a sufficient number; to these may be added some simple cereal as a Graham or whole wheat wafer. Unselected mixtures of fruit are not desirable. Just as a single odor in a perfume is perfect, so a single fruit when eaten alone is delightful. A mixture spoils the combination in odors, likewise the aroma of fruits is spoiled in the same way.

Permissible combinations in fruits are :—

Grapes, Peaches.	Pears, Melons.	Oranges, Pineapples.	Cantaloupe, Grapes.

A water melon is best enjoyed as a *fruit dinner*, eaten entirely alone. If the juice be thoroughly insalivated, and the insoluble pulpy material discarded, the melon will not "repeat," if eaten in moderation.

If humanity at large could be made to realize the truth of the assertion, that *nine-tenths of disease is the result of errors of diet*, of which over-eating in some form or another is the chief factor, a wonderful advance would be made in the education of the race. This is a truth which the people should realize, and profit thereby. While medical science has thousands of names for diseases, yet practically all disease is alike; poisonous principles being thrown into the blood from the ingestion or indigestion of the food we eat. Herein lies the secret of disease. There are several hundred organs and tissues in the body, each one of, which, when affected, gives a name to a disease, but while the names of disease are different, yet the cause which produces them is always the same—Overeating—and always ending in Auto-intoxication, Self-poisoning, Mal-Assimilation, premature Old Age or Disease; call them what you will. The conditions which produce Bright's disease will also produce gout, rheumatism, cancer or appendicitis.

Why one person should suffer with rheumatism, another with tuberculosis, and a third with Bright's disease, can only be answered on the ground that these are some of Nature's manifestations of her wonderful diversity of form. Disease, practically all disease, is a legitimate outcome of the results of overeating, and as such these hundreds of ailments are nothing more or less than manifestations of blood poison on specific organs or tissues of the body, it may be either boils or eruptions outwardly, or inflammation of any of the organs inwardly. In the aggregate it is *one cause, one disease.*

Germs—Microbes

In this connection the question may arise as to the influence of germs or microbes in disease. *Germs or Microbes of whatever character are utterly powerless to injure a thoroughly healthy man.* If this were not so we would all die from germ diseases.

For, we live in an atmosphere of germs, breathing tuberculosis, diphtheria, scarlet fever, measles, etc. It is only when the body becomes reduced or brought down from its high plane of vigor and vitality to a low level that it succumbs or is at all influenced by Microbes or Germs.

If tubercle germs are injected into the skin of a healthy man he will not suffer in the least, and undoubtedly, as has been experimentally performed, a thoroughly healthy individual can swallow various germs and suffer no ill effects.

In many instances, it is a question whether germs are not a result of disease rather than the cause. It is not so much the germs themselves, which are so poisonous as it is their toxins or excreta.

There are many points about diseases yet remaining to be solved. We know that in many instances the bacilli of diphtheria may be found in the mouth of an individual, absolutely harmless to him. This may go on for an unlimited period, or again these bacilli may suddenly take an active or malignant form from causes which seem to be as yet not wholly understood. Unquestionably the body of a healthy man has the power to destroy any or all germs or microbes. This only emphasizes the importance of every individual cultivating habits of good living, thus putting him in a position of absolute safety or immunity. By a well regulated natural life we can keep our bodies in such a condition that they are resistive to disease of any kind.

The dangers of over-eating have been fully discussed in another chapter, the recognition and observance of which, forms the very foundation of the Keystone of Health. No language can be sufficiently strong to emphasize this, the predominate feature of Dietetic Errors. Why an individual should want to eat two or three pounds of food daily when one-third of this would be nearer the proper quantity for his

requirements is one of those things unanswerable by reason ; unless it be a result of force of habit.

We are the creatures of habit, which has been aptly defined as "the facility which comes from the frequent repetition of an action." Nothing in life is stronger than habit, nothing is harder to overcome.

In a Web

Just as the excessive quantity in eating becomes a habit so does the manner of eating become also largely a habit ; the long-continued practice of eating hurriedly, drinking at meal time without properly masticating the food, eventually establishing a habit, prenicious in its consequences, and only overcome by a system of considerable will-power and self control.

Notwithstanding that hundreds and thousands of men and women are fully satisfied they eat too much, yet they are utterly unable to loosen or free themselves from this habit of overeating. They are bound hand and foot, enmeshed in a web as it were, just as much as in the victim of *intemperance* in Alcohol, Tobacco, Morphine, Cocaine, etc.

If one wishes to realize what is meant by force of habit, let him try to abstain from the use of tea, coffee, cocoa or any other *stimulating* fluids and notice what a struggle it is to overcome their use.

Unquestionably the majority of people in this country never feel satisfied unless the stomach *feels full.* This is an inheritance of Childhood's habits and always means the system is filled beyond the natural requirements. The stomach can be trained so that in one case an individual is only happy when the stomach is *full,* just as in another, one-half the quantity will afford ample comfort and satisfaction. Force of habit comes in here very strongly. The majority of people, from birth, have always eaten till their stomachs become distended and so overloaded as to be wholly unable to churn the food. A full stomach is never a satisfied one ; while a satisfied stomach is never a full one.

As an instance of what training will accomplish for the the stomach, it may be said that when once the stomach of an individual becomes accustomed to recognize its normal or natural quantity, any excess of food instantly produces the full feeling of discomfort, and is a signal for immediate cessation of eating and drinking.

The predominance of over-eating as a factor of disease has escaped general attention. To follow this out to a logical conclusion would take us into the realms of medicine far beyond the scope and intention of this work. It is sufficient to say in this connection, however, that *nine-tenths of disease results solely from dietetic errors*, of which over-eating is the main one. We are likely to lose sight of these factors—Overeating and Overdrinking.

So much more attention is being paid to what we eat rather than to *how much* we eat. Chemistry teaches us that all food is alike, practically. So that notwithstanding all else that has been written upon the subject and looked at from any standpoint, it is really a question of not so much of what we eat, as it is of *how much we eat* and *how we eat*.

The underlying or foundation principle of correct eating lies first in moderation, whatever food may be selected ; an excess of harmless food being productive of far more harm than the moderate use of any harmful food—if we may so speak of food. It is a question wholly of *Excess*, excess of anything ; Meat, Eggs, Nuts, Fruits, Cereals, Water, Sugar ; excess of one or all.

The idea of eating entertained by the ancient Greeks was expressed in the form of abstemiousness or moderation : not to over-feed the body so that "their bodies should sit as light as possible about their souls." This idea still stands as the classic one, an adherence to which will give one more mental and physical power than can possibly be obtained in any other way.

We fail to recognize this idea, because it's a little out of the ordinary way of thinking, nevertheless, if you think it out, it is quite true, *the body literally sits upon the soul*, otherwise hearty eating would not make one feel heavy.

The results of excess when summed up are: *an excess* of albuminous, nitrogenous, or proteid material is productive of uric acid, and may under certain conditions, also, be productive of ptomaine poisoning resulting from the action of microbes or germs in the intestinal tract. *An excess* of fat is productive of acetone bodies, fatty acids, and other irritating substances; *an excess* of the carbohydrates is productive of the deposition of fat itself in the tissues of the body.

If one wishes to be free of disease, then, he must eat and drink in moderation of the right kind of food and in the right manner. Attention has been called to the fact that food even when properly adapted to the requirements of the system, becomes harmful under conditions of excess, acting as a poison. This applies to the excessive use of foods of one particular kind, as the excessive use of meat or sugar, or it may mean the excessive use of food in its totality.

Sidney Smith evidently appreciated the meaning of excess, when he humorously remarked that according to his own computation, between the age of seven and seventy he had consumed in eating and drinking about forty-four wagon loads more than was good for him.

If we were trained from childhood to eat as little instead of as much as possible, we would likely attain, nothwithstanding our excesses and eccentricities as adults, the happy condition of eating to live instead of living to eat.

Let me again remind you that **Nine-tenths of disease is the legitimate outcome of overeating.**

FOOD COMBINATIONS

Seemingly simple, yet the subject of food combinations is one worthy of the serious attention and study of every individual. Few persons recognize the importance of the subject, otherwise there would be greater simplicity in diet than we find existing at the present day. Most persons realize that certain foods do not go well together, for instance lemonade with milk, but this is only an instance of one of dozens of food incompatibilities. Every animal but man keeps to one diet; but woman has provided man with so much variety in this respect that he finds it almost an impossibility to keep within reasonable range of any ideal whatever—in so far as simplicity in the use of food is concerned. Nothing short of six to ten dishes seems to satisfy him, now, in this respect. Foods have different degrees of digestibility; all of them are digested in the mouth, to some extent at least, others in the stomach, still others in the intestines while again others may be digested in several different portions of the digestive tract. Flesh meats are digested in the stomach, fats and cane sugar in the intestines. Bearing these facts in mind, then, it will be readily perceived that a mixture of half a dozen different kinds of food, whose composition and digestibility are so widely different, are not calculated to result in anything but an unnatural condition of affairs in the stomach or other digestive organs. It is a principle practically amounting to a Law of Digestion that those foods should be eaten together which digest together. As previously referred to, the coarser vegetables and fruits are not a good combination. To more fully explain this idea of the incompatibility of food, let us suppose we have a diet of peaches and lettuce. Alone, the peaches are ready for almost immediate digestion and assimilation within a period of one-half to an hour at the utmost. The intro-

duction of the lettuce puts an entirely different phase on the digestibility of the mixture of the two foods. Until the lettuce is digested, probably a matter of two or three hours, the digested products of the peach have to remain in the stomach, awaiting the slower digestion of the lettuce. The delay of any digested product, or in fact of any undigested product, in the system beyond a certain time, is bound to end in fermentation, decomposition, putrefaction, or marked food perversion of some kind, inducing in the stomach pronounced digestive disturbances. These disturbances are largely the result of germs, ferments, or microbes. If the digested products of each food were passed out of the stomach, separately, this perversion of food might be obviated. We know, however, that the pyloric orifice or lower end of the stomach does not open for the discharge of food until all the food products in it have been reduced or churned to a uniform mass, all prepared and ready to be passed along together for intestinal digestion. If two foods of different degrees of digestibility and assimilation are likely to produce disturbances, the conditions will be doubly accentuated where several different foods form the diet. Vegetables, owing to their woody structure, are particularly slow of digestion with some individuals. It is for this reason that, whether they be taken with fruits, or in fact with almost any other food combinations, they produce gastric disturbances. A purely vegetable dinner is more likely to prove digestible, than where the dinner be composed of several other foods in addition. Nuts, cereals, and fruits form a perfect food combination, all the better if it be one food, only, of each class. The addition of vegetables, to the foregoing, spoils the combination, with the possible exception of raw tomatoes and baked beets, or any of the digestible vegetables not possessing woody fibre. Vegetables approaching fruits in structure are not likely to be incompatible with other foods.

DIETETIC PITFALLS

"Ill digestion makes unquiet meals."

DYSPEPTICS must learn that dyspepsia is cured, not by medicines, but only by following a certain specified line of diet.

The first essential is to learn and practice thorough mastication of the food, the quantity of which should always be moderate. Never hurry in eating and never eat when worried, tired or fatigued. If one is hurried in eating, it would be well to wait until a favorable opportunity presents itself. Better go without food entirely than eat hurriedly. If the teeth are imperfect the food should be selected and always be cut into small pieces. Zweiback, being a partially digested food, if slightly moistened, may be used by those who have bad teeth. The nut-butters and fruits will also be appropriate for the same class of persons, usually the aged. Women should avoid lacing. Compression of any of the internal organs paralyses to a greater or lesser degree the digestive functions.

Solids and liquids must be taken at separate times. Dry food induces thorough insalivation and is particularly indicated in cases of dilation of the stomach, in which there is always more or less want of tone and contractile power in its muscular coat, owing to defective innervation or long continued gastric catarrh.

For those whose digestive powers are weak, the food should always be taken in the *dry form*, and this means the exclusion of the miscellaneous compounds of fluid or semi-fluid foods, cereals of any kind so prepared, mushes with milk, cream, sugar, the syrups of preserved fruits, custards, or in fact fluids of any other kind. The moment one begins to mix and use any of these fluid or semi-fluid mixtures, the secretion of saliva practically ceases, as has been pointed out elsewhere. Dry foods alone excite the salivary glands

to secretion. Moist food fails to do this more than to a very limited extent.

Foods taken without fluid of any kind, either immediately before, during, or immediately after meals, and with thorough mastication, is the **salvation of most dyspeptics.**

Flesh meats, digested as they are solely or nearly altogether in the stomach, are heavy of digestion, and **cannot, under any circumstances, be recommended for dyspeptics.**

Spices, hot sauces, vinegar, pickles, and all other irritating compounds used as appetizers should never be taken. Hunger is the best known appetizer, besides it is natural.

Experiments by Shafer, Pavlow and others seem to indicate that each class of food excites the secretion of a particular kind of gastric juice, exactly adapted to the digestion of the particular food in question.

The gastric juice produced by different food substances varies greatly in both quality and quantity. Milk produces the least active digestive fluid. Flesh-meats produce a strongly acid digestive fluid. Bread produces during a long period a moderately acid but powerfully digestive gastric juice. Represented numerically, the digestive value of the juice produced by the substances named, according to Pavlow, stands as follows: milk, 11; meat, 16; bread, 44.

Following along these lines it is found that farinaceous, or starchy foods, and proteid foods should not be taken at the same meal; in other words, the same character of food only should be introduced into the stomach at the same meal. For instance: bread and butter might be taken at breakfast, but no meat, fish or eggs. Luncheon might consist of eggs, fish or meat, but no bread, potatoes or other starchy food. Supper might consist of the same kind of food as at luncheon or at breakfast. Introducing the same kind of food into the stomach at each meal insures the completion of digestion.

THE NATURE OF DISEASE

DISEASE is a condition about which the ordinary individual usually knows nothing, leaving it all to the doctors. This is a decided mistake. Every individual owes it to himself to make himself as familiar with the proper care of his body as it is possible for him to accomplish. This does not mean that every man should be a doctor. It does mean, however, that every child should be taught to know, in a general way, at school, that the care of the body is one of the utmost importance. For this reason practical physiology, practical hygiene and dietetics should be taught children. There should be such a thing as the Teaching of Health.

It is strange that the only subject which everybody admits ought to be taught to every child in the public schools is the only subject that has never been taught—namely, how to keep well. The normal functions of the organs of the body, and the simple methods of keeping them in healthful action, is the one thing that no educated human being is excusable for not knowing. The prevention of disease and of disorder ought to be among the first lessons in every scheme of education.

Most American children reach maturity without parental instruction, and are absolutely ignorant in the most elementary matters of health. Children are taught everything from calisthenics up to Greek and Latin, but nothing of "the one thing needful." Instruction in the laws of health should be compulsory. These laws are not taught in the lay or medical schools, neither are they preached from the pulpit or press, and in general it may be said that there are comparatively few individuals who are competent to teach such laws, which are to be found only in one un-printed book—the book of Nature. Unfortunately

the secrets of this book in many instances are learned only in the school of experience. However if we search chemistry and physiology we shall be amply rewarded by discovering the most beautiful truths—truths hidden from the masses of humanity, yet wide open, however, to those who are seeking knowledge. If there be any more important study for the welfare of the human race than the study of health, it remains to be told. Physicians have not the time for teaching health, it would be time wasted. Their time is too much taken up in prescribing for ill-health conditions.

Humanity, as it now exists, does not want to be told how to live. The cry is for a bottle of medicine, and not for unsolicited advice. One of the objects of this book—in fact the main object—is the teaching of health; something which will aid in the betterment and happiness of humanity. There is nothing uncanny or unknowable about disease. Doctors know all about it. All other individuals should have an intelligent idea of it as well. A general knowledge upon the causation and prevention of disease, on the part of every ordinary individual, would be for the material welfare and benefit of the race at large.

The ancient Greeks, as well as other peoples of ancient times, regarded disease as a devil, demon, or evil spirit, which had gotten into a man, and must be driven out or cast out. In modern times, however, we recognize disease as an inability upon the part of the body to carry on its work under unfavorable conditions. If we look to the animal kingdom we will notice, practically, an entire absence of disease. In view of the fact that animals are overworked, starved or half-starved, mal-treated, abused, neglected and subjected to all manner of hardships, it is an interesting fact that disease is rare amongst them. They usually die a natural death, and of old age. This is in marked contrast with man's life, who, notwithstanding all his boasted knowledge and learning,

lives out but one-half to two-thirds his natural term of life.

There is a lesson to be learned in all this, and that is man's violation of the laws of health is responsible for sickness, sin, and premature death. The regrettable feature of this is that if man were taught these laws of health in childhood, the larger part of all disease would be prevented. Ignorance of the law does not save man from disease. Surely someone must shoulder the responsibility of wilful neglect in the teaching of these Laws of Health, whereby millions of humanity are doomed to a life of misery and suffering, yet all preventable.

An understanding or knowledge of disease is so simple that even a child can learn all about it. As has been explained in another chapter—there is but one disease. It has a thousand names. The names, theories, and many other issues may be left to the physician to learn and speculate about. Disease is the same wherever we find it. A result of the violation of the laws of nature. **Nine-tenths of disease is the legitimate outcome of excesses in eating and drinking**. The remaining tenth is the result of accidental and incidental conditions over which we have no control, and for which we are not responsible. The human body is a factory of poisons. Under conditions of excess in eating, these poisons fill the blood and produce disease. The body always does its best to keep itself in perfect balance, disease being simply an overbalancing of the condition known as health. What a different world this would be if nine-tenths of the disease now existing were swept out of existence. This earth would be a very Paradise indeed, and such a condition of affairs would really exist if man only lived in compliance with the knowledge which is his for the seeking and doing.

So long as the people can be kept in ignorance of disease, in general, so long as the press through the

agency of newspapers, magazines, and various other publications give space to advertisements which are gotten up with the specific idea and intention of creating imaginary disease, just so long will an unhealthy and unwholesome condition exist in the minds of hundreds and thousands of individuals who may be unfortunate to become victims to reading these misleading and lying advertisements. In giving publication to many of these advertisements, the press is a partner to fraud. The object of these advertisements is to make the people imagine they have dangerous diseases, that is, they aim to play upon the credulity of the public with the intention of exciting fear—fear of disease. The next thing the patient imagines he must buy the medicines to cure what is an imaginary ailment.

Let it be distinctly understood that medicines never cure disease, with one or two possible exceptions, in which case a poison in the blood is combatted with another poison as an antidote. Medicines relieve or remove disease conditions, but do not cure them. The cure of disease consists first in the removal of the cause, which may necessitate the removal of an individual from unhygienic surroundings, a change of occupation or environment; secondly by the upbuilding of the body with the only natural agencies in existence: **pure food, pure air, and pure water. These are the only agencies which make pure blood.** Many individuals make immense fortunes by propagating the falsehood that medicines—their medicines—cure disease. The only agent that cures disease is pure blood. Pure blood is not made with medicines of any kind, but only by pure air, pure food and pure water.

In general it may be said that medicines act just as so much poison when taken into the human body. Even physicians have been deluded into believing in the curative action of drugs. Medicines of a certain

kind may remove the cause which produces disease, and in doing this the disease is said to be cured. For instance, an inflammatory condition of the bowels may be relieved by an active cathartic, whose action is to rid the system of a putrefying mass of food, the presence of which would cause disease of the character mentioned. With the removal of the cause the body heals itself. Unquestionably there are medicines which are a boon to humanity, and without which we could not well dispense, but the systematic drugging of the body with the so-called blood medicines, having the idea of building up the body, is a weak attempt to do what Nature does to perfection, when pure air, food and water are supplied her. Medicines are not tolerated by the system as most people seem to think. Nature tears them up and throws them off as foreign matter. No better instance of this can be furnished than by showing the manner in which pepsine is handled by the body. Outside of the body, pepsine is a splendid digestive agent, as evidenced in its dissolving egg albumin. However, when pepsine is introduced into the human body, it is not recognized as a digestive agent, but only as so much albuminous material, and is broken up in the same manner as is all other food matter.

The same remark applies to pancreatin, another digestive agent, which has been administered for digestive troubles Nature makes her own gastric juice out of the blood, and never from any artificial gastric aids, as pepsine and pancreatin.

Barrelfuls of pepsine and pancreatin have been administered to individuals suffering with dyspepsia. They are still suffering. Anent dyspepsia, it may be remarked, in passing, that in every instance it is entirely curable, and without drugs of any kind. Mankind is still laboring under the delusion, which is perpetuated in one way or another through the public press, that medicines cure. This is false. The healing

power is to be found in the blood, and not from the uses of any medicines. If man would only live, eat and drink, as he should, there would be absolutely no indication for medicines. However, if one transgresses in eating, of the ways of relief, **fasting,** or **purging** by medicines, the latter is the quicker and more expeditious way. If there is one class of medicines more commendable than another it is the laxatives. They have the distinction of being harmless, effective and rapid in their action.

Structural or organic disease of any kind, such as tuberculosis, commonly known as consumption, cancer, Bright's disease, leprosy, etc., cannot be cured by any medicines. The only thing that can be done is to upbuild the body by the natural medicines, pure air, food and water, so that assisted Nature may be enabled to stop the progress of the disease. There are medicines of undoubted value, but they never cure disease. They remove conditions, while Nature heals and cures.

The white corpuscles of pure blood are capable of performing miracles in protecting the body against disease and injury. This has been most beautifully shown and explained by Metchnikoff. The white cells have been called "The effective policemen of the blood."

In the blood there is a power which continually heals and renews the body, creating new tissue and replacing that which has been destroyed. It is the blood which heals. The importance of the blood is to be found time and again expressed in the old Bible in the words "The life of the flesh is in the blood." Lev. 17 : 11. "The blood is the life," etc.

The wonderful healing and creating power of the blood is frequently lost sight of. In the healing of wounds in man, we see what takes place as an every day occurrence, but this is, none the less, some of Nature's most beautiful handiwork. Without Nature's aid in such matters, doctors, nurses and medicines

would be useless. It is to the animals, however, that we must go if we would know what creative power there is in the blood. In many of the lower animal orders, notably in the crawfish, lobster and lizard families, it is a matter of common observation that lost legs, claws, tails, and even eyes are readily and quickly replaced by Nature's efforts. Man is not thus favored, for some reason. It would be extremely convenient if he could have a lost eye, leg, or arm replaced, as occurs with the crawfish or lobster.

The Fallacy of Drugging.—Of the thousands of medicines which exist, they might all, with a few exceptions, be cast into the sea of oblivion, forever to remain. The remaining ten to twenty medicines, however, are a boon to humanity. Most physicians, after an experience of a number of years, must come to the inevitable conclusion that they must have been hypnotized, in their younger days, into the belief that medicines cure disease. In his early practice the physician is always on the look-out for a medicine which will cure disease of one kind or another. As his experience increases he thinks of medicines as relieving conditions, not as curing diseases.

CORSET DISEASES

It would seem that, on the ground of comfort alone, the wearing of corsets would be a thing of the past. Yet the wearing of corsets is one of the greatest evils with which women directly afflict themselves, and indirectly their offspring. Corsets, cannons, and cooks are said to claim about an equal number of victims. Human nature is a contrariety anyway. A woman will wear a tight fitting corset with, as she says, the greatest comfort, yet a tight fitting collar would not be tolerated a minute. Evidently it is all a question of style. That the wearing of corsets has produced untold misery, suffering and disease, is an

indisputable and well known fact. Constriction of the waist, as takes place in the wearing of corsets, produces strangulation or interference with the circulation of the blood, and is responsible for the following :

1. The normal power of breathing is much restricted, the lungs are compressed, and there must be an insufficiency of air on this account.

2. Is the direct cause of many of the weaknesses and diseases peculiar to women, producing congestions and tumors.

3. Causes serious displacement in the organs of woman.

4. Is one of the principle causes of the agony in child bearing.

5. Is one of the principal causes of premature old age in women.

6. Is the direct cause of general disease of one or more organs below the diaphragm ; this may be tumors of the liver or womb, chronic congestion or catarrh of the liver, kidneys, or womb.

7. Interferes with the circulation of the blood, producing strangulation.

A moment's thought cannot but convince any thinking person that anything that interferes with the circulation of the blood, as happens in the wearing of corsets, extended over a period of years, must be productive of serious disease. We know that gall-stones, haemorrhoids, constipation and many other disease conditions, are a result of the corset curse.

Corsets can be replaced to advantage by many of the modern and sensible health-waists, which have all the advantages, and none of the disadvantages, of corsets.

Old Age. Elie Metchnikoff, the Director of the Pasteur Institute in Paris, in "The Nature of Man," has written very beautifully and interestingly on the theory of Senile Degeneration or Old Age. In it he proves that senile decay, or old age, is mainly due to destruction of the higher, nervous elements of the organism by macrophages, which are cells of a voracious or destructive character. These cells are distributed throughout every part of our bodies, having special functions of their own. They are capable of independent movement, and also of destroying all sorts of solid matters, which has gained for them their name of phagocytes or voracious cells. The phagocytes are divided into small active phagocytes, generally known as macrophages, and larger phagocytes called macrophages, the latter of which play a very important part in bringing about senile decay. It would appear then that one means of fighting against old age would be to strengthen the resistance of the higher elements, and to transform the "wild" population or the bacterial flora of the large intestine into a cultured and harmless population. These are the means by which the life of man may be considerably lengthened. This is to be brought about first and foremost by proper attention to a correct dietary, which must be of the right character and quantity—never in excess. Fruits and fruit juices are inimical to germs of all kinds. For this and many other reasons fruit is a diet especially adapted for the purposes of the prolongation of human life. According to physiological law, the duration of human life should be five times the period necessary to reach full growth—a period amounting to at least 100 years and upwards. The generality of men would live to this age, were they to live in moderation as Nature intended they should.

THE ENSLAVING DRUGS

ALCOHOL, TOBACCO, TEA, COFFEE, MORPHINE, OPIUM

"Whatever thing makes man a slave,
Takes half his worth away."

THE great majority of mankind are slaves to one or more poison habits. These individuals are certainly in the grasp of an octopus whose tentacles rarely relinquish their hold until the victim has paid the penalty with his life. In the Orient it is opium and tea, with us it is the full category from alcohol to opium. The natural vices in America are intemperance in eating, and intemperance in the use of alcoholic liquors. The close association of these two forms of intemperance has been referred to in the chapter on overeating. Of the evil effects of alcohol, one has but to look out upon the world with its prisons, jails and asylums, to read the daily newspapers' category of crime, only to be assured that alcohol creates untold misery, sending millions to premature destruction and death.

As is well known, alcohol is a product of the starch of grains, manufactured by a process of fermentation and subsequent distillation. Alcohol can in no sense be termed a food, nor is at any time necessary for the human economy. It can well be replaced to advantage by the physiological remedies: heat, cold and friction.

Alcohol is to be classed always as a deadly poison. Alcohol is like dynamite—always dangerous—liable to destroy the innocent and unsuspecting user without a moment's warning. The effect of alcohol upon man is to produce disease. A large sized volume might be written upon the subject of alcohol. The point to which we wish to direct attention is that the liquor

habit, as a disease, is undoubtedly curable. The relation of diet to intemperance is of paramount importance. In intemperance in eating, the sense of taste becomes perverted, cravings and gnawings follow from the irritation of the stomach, and alcohol in many instances is a usual recourse. One of the very first indications in the treatment of individuals addicted to the use of alcoholic liquors, or even of any other enslaving drug, is the careful regulation of the diet, which in many instances, alone and of itself, suffices to bring about a cure. An individual addicted to the use of alcoholic liquors is the victim of a disease. This is the rational and common sense way of looking at it. Individuals suffering from alcoholism are fit subjects for treatment and should so be considered. Chronic alcoholism is certainly curable. To this end, in addition to dietary regulations of which one essential is the total abstinence from flesh foods on account of their well known stimulating properties, are to be included hot and cold baths, friction, electricity, etc. A dietary of fruit is especially indicated in the treatment of alcoholism. Drug specification is the last but not the most important factor in these cases.

THE TOBACCO HABIT

Through long years of custom, the Tobacco Habit has become to be looked upon as one po-sessing no serious importance. This is a gross mistake, and the sooner the public become awakened to the fact that tobacco is a virulent poison, taking high rank, and deserving to be classed with such poisons as Strychnine, Arsenic and Morphine, the better it will be for humanity.

Tobacco is a powerful sedative poison, whether smoked, chewed or snuffed, and until the system gets saturated with the poisonous principle—Nicotine—it is both a local and constitutional irritant. The

effects of tobacco are well known, and, as observed in the beginner, give rise to nausea, vomiting, severe retching, and general depression of the nervous system, often ending in alarming and even fatal prostration. No further demonstration of the poisonous effects of tobacco need be given than the foregoing, yet the lesson seems to be lost. The chronic effects of tobacco are that it enfeebles digestion, produces emaciation and general debility, and lays the foundation of serious nervous disorders. The indigestion and dyspepsia of all tobacco-users can properly be attributed to the excessive use of tobacco. Let one stop the tobacco, and all dyspeptic symptoms rapidly disappear.

The nervous phenomena referable to tobacco are many and varied; chief among them is the innervation or lack of nerve power of the heart, with consequent palpitations and other symptoms of heart disorder.

Tobacco Heart is only one of the many manifestations of the pernicious effects of tobacco. Tobacco "blindness" and other diseases of the eye are very frequently a direct result of the excessive use of it. In many cases, a nervous "break-down," attributed to overwork, the excessive use of tobacco has certainly been an important causative agent.

Epilepsy, bronchitis, neuralgia, throat troubles and nervous ailments of many kinds, are justly ascribed to the excessive use of tobacco.

The active principle of tobacco is nicotine, which is a more deadly poison than arsenic, strychnine, or morphine; one drop is sufficient to kill a dog, while small birds are killed by its odor alone. All tobaccos contain nicotine; but the quantity of nicotine in all forms of tobacco is small, or it would instantly kill. The poison, however, does not kill outright. It is only after years of continued use, when the system has become saturated with the poison, that there may be any cause for alarm. A man may smoke for years and have no premonition of danger or sensation that

he is being poisoned, until he is suddenly made aware of the fact by a paralytic stroke, heart failure or Bright's disease.

It is a recognized fact that the use of one narcotic poison, like tobacco, creates a taste for another. This accounts for tobacco exciting a love for alcohol, alcohol for morphine, morphine for cocaine—a ladder of drug habits.

Undoubtedly tobacco should not be used by any individual who regards his health and habits of living of any importance. The cure of the tobacco habit is a matter of diet, the increase of the vital powers, and a certain amount of self-control. Drug specification has also a place.

TEA AND COFFEE HABIT

The question of tea and coffee drinking is one that frequently presents itself for discussion and consideration. Tea and coffee are to be considered as stimulants, making the cup which cheers but does not inebriate. The use of stimulants of any kind is likely to end up in their abuse or immoderate use. For this reason alone, stimulants of any kind are to be looked upon with more or less distrust. The stimulating principle in tea and coffee is caffeine, the bitter principle is tannin or tannic acid, while uric acid exists to a small extent.

The object of the addition of the white of an egg in making coffee, is to throw out of solution or make the tannin insoluble. Milk produces the same effect when added to tea or coffee, in doing this the bitter principle is removed, in a way. Individuals are variously affected by the use of these beverages. Unquestionably, in a great many instances, tea and coffee are positively harmful. There are several reasons for this:—

First, it is a general custom to drink tea and coffee at meal time, and usually to excess.

Secondly, sugar is nearly always used with them also to excess. It is interesting to notice, in passing, that a weak solution of cane sugar, say the strength of five per cent., is of itself sufficient to produce an irritation, or mild catarrh, of the stomach.

Thirdly, there are the drug effects produced by the caffeine and uric acid, whatever they may amount to.

Anyone, or all, of these effects are not calculated to produce any beneficial effects upon the human economy, but rather the direct opposite. The cereal substitutes for coffee, in themselves, are commendable, but there are objections to these the same as to tea, coffee, cocoa and chocolate. These objections, when stated, are more particularly that they lead to, and are responsible for the drinking at meal time, which prevents the digestion of food. Then again the use of sugar with them is another decidedly objectionable feature. Tea and coffee without sugar would possess no charms for a great many individuals; this is just another phase of the "sugar appetite," to which attention has been directed in the chapter on Sugar Dietetics. It is a question whether the two factors of drinking tea and coffee at meals, and the use of sugar with them, are not almost as harmful in their effects as the purely stimulating drug effects. Undoubtedly the supposedly harmful effects of the infinitesimal amounts of uric acid, as naturally introduced into the body in certain articles of food and drink, have been very much over-estimated. The harmful drug in tea and coffee is the caffeine. Its intensely powerful stimulating effects will be understood when it is stated that on this account coffee or its alkaloid, caffeine, is used, as an antidote for opium and morphine poisoning.

Caffeine is a powerful cerebral or brain stimulant, producing a marked degree of wakefulness. This must be so, otherwise coffee would not counteract the

effects of powerful poisons, like opium and morphine. The action of coffee and tea as a nerve irritant is manifested in the marked increase of nervousness, nervous, sick headaches and other allied conditions from which thousands of individuals suffer. Physicians recognize the caffeine headache in those who are excessive users of tea and coffee. Cessation of the use of coffee and tea results in the disappearance of many of the ailments from which tea and coffee drinkers suffer. Weak tea or coffee, in moderation, may not appear to affect the individuals who use them, but the majority of tea and coffee users are those who use these beverages to the extent of several cups a day, usually at meal time, and always strong. There is a tea and coffee drunkenness, just as there is a drunkenness in the use of alcoholic liquors, morphine, cocaine or opium. Under such circumstances serious disturbances of the nervous system are found to follow. The treatment of the tea and coffee drinking habit consists in replacing them by something less harmful. Plain hot water or hot nut-milks fully answer the purpose. The diet should be most digestible, consisting largely of fruits. The nervous system should be toned up by hot and cold baths, friction, etc. Flesh meats are best replaced by nuts, fruits and cereals.

Morphine, Opium, and Cocaine Habits are curable. The treatment consists in a withdrawal or substitution of the drug, careful attention to the diet, the employment of every and all physiological measures which tend to upbuild the body. These are hot and cold baths, massage, electricity, and certain well selected drug specifications. All the drug habits are curable. Unfortunately many of those who advertize to cure the drug habits are wholly incompetent to bring about such results, and the victims are left stranded on the shores of despair.

MENTAL CULTURE

FEAR, WORRY, NERVOUSNESS, CHRISTIAN SCIENCE, MIND CURE

"'Tis the mind that makes the body rich."

THE nervous and mental hygiene, or health, of each individual begins at birth, and ends only with the extinction of life. The hereditarian contends that "the gods visit the sins of the fathers upon the children"; "that we are omnibuses in which all our ancestors ride," and "that the life of each individual is, in some real sense, a continuation of the lives of his ancestors." Much of which is true, but a morbid inheritance is not the crushing and baneful thing that it was once thought. Every individual is free to work out his own salvation, and become what ever circumstances will make of him, or he will make of circumstances. Health is the great heritage for success. The laws of the Spartans, which are worthy of imitation in many respects in this age, sought to give health to each individual. They idolized what was beautiful and useful, and endeavored by the most rigorous means to attain these ends. The sick were not allowed to marry, though the healthy were compelled to do so. Bachelors were publicly denounced after a certain age, and banished from society. Marriage in either sex was not permitted until the age of maturity. The result of this Spartan system of marriage was to produce for five hundred years the strongest and bravest men, and the most beautiful and lovely women the world has ever known. Such a system was the "survival of the fittest." Nervous wrecks would be unknown amongst them. The little that individuals in the present age know about the

care and wants of the body, as a result of lack of teaching, is as nothing in comparison with the yet still less that is known about the *mind wants*, or necessities of the individual. The mental training of children is one that is sadly neglected; as a consequence it is reflected in many unpleasant ways in their after life. Children both inherit and acquire certain mental traits. A dire inheritance is fear.

Fear

Fear is the strongest emotion built into the child during the *pre-natal* period, through the fear or over-anxiety of the mother. The child enters the world surrounded and influenced by the *fear* of this, that, and the other thing; the bugaboo man and similar *fear-devising* ideas—a very *atmosphere of fear*—which terrorize the child. Very many times even its religious training is permeated with a fear of God, the great Life Giver, instead of with the love of God, who careth for all his creatures. Fear is part and parcel of our make-up, for which our religious teachers have been largely responsible. Nothing else could be expected, when the fear of the fearful hereafter and death has been knit into our very fibre and being, as a result of these teachings. Most of us would only be too pleased if we could divest ourselves of the fears which were inculcated in us during childhood years.

During the school period the child lives more or less in dread or fear of the conditions at school, fear of failing in examinations, the lack of success, resulting in disgrace.

Fear is the most destructive emotion of the mind; it paralyses, kills, and destroys. Many people live in perpetual dread of hereditary or contagious disease. No doubt a great many diseases are due to anxiety or fear. Unquestionably contagious diseases are increased through the mental circulation of fear. Patent medicine advertisements are responsible for the imaginary diseases of thousands and tens of thousands of indi-

viduals possessed of a nervous temperament and active imagination. The people are literally scared or feared into taking the medicines. Fear is the imagination let loose—unbridled.

Fear and worry are synonymous terms. If we do not worry we do not fear, and if we do not fear we do not become angry. Worry, fear, and anger are the grossest forms of egotism—self-imaginativeness.

Fear is a form of mental slavery, or bondage in which we have been living for ages. It surrounds man before birth, meets him at the beginning of life, and follows him through life unless he becomes free through Mental Emancipation. If we would be well both in mind and body, we must be free of fear. We must become *emancipated*, and *fearless*.

Fear manifests itself in so many unthought of ways. There are those who are *afeared* to leave the doors unlocked for the night, when possibly there isn't a stranger within miles; others who are *afeared* of thunder of lightning; others *afeared* that a storm will soon blow; others *afeared* of the thousand imaginations of an imaginative mind.

Fear is due to superstition and ignorance. Fear magnifies and creates a thousand imaginary calamities or obstacles, none of which ever come to pass. Fearlessness must be cultivated by every individual.

Fear is born and bred in us as a result of centuries of cultivation. There must have been an object in this, for we know that an individual, imbued with fear, is a slave—a slave to some authority whether it be Church, State, or individual, who exercises this power—Fear. If one would be free and happy he must cultivate *Fearlessness*. We have much to learn from the Japanese in this respect, who have a love of life, but no fear of death. Who believe what "will be—will be." No wonder, as a race, they are possessed of a wonderful degree of culture and self-control.

Such a thing as fear or worry is practically unknown amongst the Japanese.

Fear engenders distrust and despondency, is *the one* demoralizing mental state. Opposed to this is Faith, which gives assurance, confidence and trusting expectancy; is the one restoring and sustaining mental state. These two opposing states, Fear and Faith, are the ones which involve the mental influence on health and disease.

Fear is the one demoralizing agent. It lets down the bars and opens the system to the inroads of disease, inviting the very evil that we dread. It creates *imaginary* evil, and gives to it its fictitious power. It shuts off any healing action in proportion as we are held under by its paralyzing and depressing influences.

Faith is the *antidote to fear*. Faith restores and exalts as much as fear demoralizes and depresses.

In the cultivation of Fearlessness through Mind-Cure or Mind Power, *lies the secret of the cure of worry and nervousness.*

WORRY

"The forehead wears
"Thick rows of wrinkles, prints of worrying cares."

If it were possible for me to teach humanity how not to worry, I think I would have accomplished a work far-reaching and beneficial in its results. Theoretically it is one of the easiest things in the world to quit worrying, practically it is one of the most difficult things of accomplishment, or it appears to be so, at least.

Worry is hydra-headed in character, proceeding from a hundred causes, conditions and influences, some of which exist before birth.

Worry means to be unduly anxious or troubled, to be in a state of solicitude, anxiety, disquietude, or

pain, to make one's self anxious or harassed; to fret from the cares and worries of life. When an animal is "worried" to death, as occurs in the hounding of sheep, by dogs, we have a good illustration of the effect of worry in its meaning—to be suffocated by something stopping the wind-pipe—suffocation by choking. The subject worry is so deep that we can at once plunge into it, and sink out of sight in a few minutes.

The maiority of persons are full of worry, the world is full of worry, in fact we live in a very atmosphere of hurry and worry. If we have not inherited worry we acquire it through unnatural conditions of living—at high pressure. Unquestionably overwork of mind or body, or both, are the prime factors responsible for worry, super-inducing a diseased or unhealthy body. There may be exceptions, but these only go to prove the rule.

In general it may be said that worry is a result of ill-health, dependent upon overwork, bodily or mental, or both, in some form or other. Lack of exercise in the open air, combined with mental concentration along some particular line of business or professional work, I believe is responsible for more of the ills of the present generation than any other recognized cause; ills not only of the nervous system but of the organs of digestion and assimilation. In addition to this are the emotional causes of fright, shock, and grief. The poison of la grippe seems to have a specific influence on the nervous centres, and is highly provocative in inducing depressing effects leading to the worrying habit and nervous exhaustion.

Children undoubtedly inherit or acquire bad mental habits from their parents. Many a father and mother, through their incompatibilities, have influenced the lives of their little ones in a way that cannot but manifest itself harmfully in them in their after life. Just as children learn bad dietetic habits

from their parents, so do they absorb, imitate or acquire their mental habits or traits, be they good or bad. Worrying parents have worrying children.

Worry-Cure

Worry, or the worrying habit, can be cured; undoubtedly so, but only by a systematic method of training of both body and mind. Worry is a habit of the mind, and is as susceptible to training, subjection and control as is any other individual function of the body.

Worry is a most useless employment. Certainly one should not worry over what can be helped or prevented. If it can be prevented, all that remains to be done is for the individual *to do* it, and the trouble is ended. If it cannot be prevented, only harm comes from thinking about it.

The individual must be his own physician. He must realize, with every fibre of his being, the utter, absolute uselessness, the *sin of worry.* He must fully understand that if it were possible for him to spend a thousand years in thinking it out, in worry, it would not change the facts, causes, or conditions, one jot or tittle. One must fully realize and be impressed with all this in his very inmost consciousness before recovery is likely to be an event. When this point is reached, the point where every worrier perceives the absolute senselessness, futility, and foolishness of worrying, *the cure of worry will have begun;* because just as soon as one realizes that worry is doing harm or injury to him, he at once determines to quit worrying. This beginning of the exercise of will power, the starting of the Motor of Determination which has lain dormant so long, is the weapon which kills the venom of worry.

We know that thought, the power of well directed thought is simply marvellous, and always for good; just as we know that badly directed thought is always harmful in its effects. For this reason *we must always think health,* good health, and if we would think good health, *we must always live good health.* The two form

a chain which cannot well be sundered without producing bad results.

Chronic Invalidism

Imaginary diseases are curable by thinking good health; actual diseases are cured by living good health. *All diseases are cured by living and thinking good health.* Man has been defined as "a creature looking before and after." Some worriers are living in the past, others are living in the future. The former class might as well be philosophical, and remember that what has been done cannot be undone, it might have been worse. The others are crossing bridges before they reach them. To cure one's self of worry is not an easy task. It is not to be moved by two or three applications of any quack philosophy.

The cure of worry must be directed to removing the causes which produce it, whatever they may be. If the general health be below par it must be improved by attention to correct habits of living, as emphasized time and again throughout the pages of this booklet. The digestion must be perfect, otherwise the essential conditions for the cure of worry can never be attained. The care of the body must be the first consideration, because a *healthy* body has a powerful tendency in producing a similar condition of mind. It is an absolute impossibility for a healthy mind to exist in an unhealthy or diseased body—though there may have been some few exceptions to this rule.

The products of digestion in an unhealthy person —that is, in one suffering from indigestion—are alone and of themselves sufficiently powerful and poisonous to produce irritation of the nervous centres, inducing Nervous Prostration, Nervousness, and Worry with all its attendant train of disorders. It is for this very important reason that we must live, as well as think, health. If thinking good health of itself would make us well, no one need ever be sick.

To expect one to quit worrying, who is in ill-

health, is like asking the removal of mountains without apparatus. With improvement in bodily health, the functions of the mind are at once stimulated to healthy and natural conditions. It is a comparatively easy matter to cure worry when it is more particularly dependent upon, or proceeds primarily, from a condition of bodily ill-health; but when the factors responsible for it have been shock, fright, death, etc., directly affecting the nerve centers, then the case assumes an entirely different aspect and becomes somewhat more complicated, involving systematic mental training.

In a few words, then, the cure of worry resolves itself into two phases: the living and thinking of health.

First we must *live health*, this is the bodily cure for worry.

Secondly we must *think health*, this is the mental cure for worry.

Both of these conditions, the living and thinking of health, if carried out in a proper manner, are bound to end in but one thing: the gratification of one's highest desire and greatest good, perfect harmony both of body and mind, producing—Health.

To live health means that the digestion must be perfect. Good digestion makes cheerfulness, cheerfulness produces hope. Hope, the most powerful stimulant in the world, makes health and happiness. In addition to the care of the digestive functions, attention must be paid to the functions of the skin, as outlined in the chapter on Baths and Bathing.

Two of the most powerful agencies employed in the cure of nervous conditions, of which worry is a symptom, are fresh air and cold water, both of which should be used to the fullest possible extent. Systematic deep breathing and bathing are fully explained in their respective chapters. Rest, fresh air, change of occupation, or complete cessation from work where

this is the cause, are all indicated in the treatment of those possessed of the worrying habit. Some individuals worry because they have nothing else to do. They should change their occupation at once, and become actively engaged mentally, or bodily, or both.

Worry has its root in fear. Again, over-anxiety is only another form of fear or fearfulness.

It is interesting to note that "worriers" as a rule are the most difficult people in the world to influence. It is almost an impossibility to get them to do anything, to become positive; they are always so *fearful*. You may point out to them the deadly and pernicious effects of worry; that it paralyses, kills and wholly destroys; that it devitalizes, enervates, saps and sucks the very life blood of an individual; that "worriers" have no pleasure themselves, nor, as far as their efforts are concerned, can any one else have any; to all of which they readily assent, and yet one might as well pour water on a duck's back, expecting it to get wet, as to talk to worriers with any expectation of getting them to act for themselves. You may talk to them till you are black and blue in the face, as the common expression goes, ultimately realizing it is just so much time wasted. If these individuals could only see themselves in the same light as the world in general sees them, they would come to the true conclusion that "worriers" are the biggest nuisances in existence. However, worriers are to be pitied in many instances, because some of them are the victims of circumstances over which they have no control.

In many instances Worry is but *a manifestation of ill-health*, and must be so regarded. Worry always means depressed functions of the mind or body, or both. These dual functions are so inter-related to each other that what effects one is bound to effect the other, through sympathy. Many individuals given to the worrying habit have been made so by that dire disease la grippe, whose poisonous effects seem to be

specially directed to, and spent upon, the nervous centres. While thousands, yes, tens of thousands of these individuals are the victims of ignorance or neglect of the ordinary laws governing health. The "nervous wrecks," which are scattered and stranded along the shores of ill-health, are such because of our artificial, rush-hurry, high-tension, get-rich-quick methods of living.

Marital Incompatibilities, much as we like to shut our eyes to the fact, are largely responsible for the worrying habit, in many instances. Even under the most auspicious circumstances, married life has its cares and responsibilities, for which young people are almost wholly unprepared. It is for this reason there are so many "misfit" families.

Imagine, if you can, a high-spirited young woman who is unfortunate enough to become the wife of a man who is a victim of the alcohol habit. Add to this the curse of a besotted and unsympathetic husband, the sickness of children with its fears and anxieties, the neglect and poverty of home—are these not sufficient in themselves to drag down and degrade any woman of spirit, in short, to induce the worrying condition? A woman so placed requires confidence, faith, hope, prayer, will power: even these in many instances seemingly require to be supplemented by dynamite. These are the circumstances where women require will-power of the character of which it is said that a lion tamer would rather face his lions than his wife's temper: manifestations of fear in both instances —lions a-feared of man, man a-feared of wo-man.

The minutest quantity of this kind of temper or will-power, instilled or inoculated into the mind of a worrier, will "ferment" a determination to quit worrying—to get well. This is the essence of the "I will" idea or plan—a positive determination to do something for one's self. This is true mind-cure, or mind-power.

Worry always means hurry, involving as it does an excessive activity of the body or mind, or both—this means overwork, a condition which inevitably results in worry, nervousness and exhaustion. The old adage "make haste slowly" then has a good reason or basis for its existence. If you don't hurry, you won't worry. If you don't hurry you won't overwork. Hurry means high-tension. High-tension is the counterpart of a break-neck speed, which is bound to lead to a "runaway" of the nerves sooner or later. Worry is caused by fear, yet there is nothing to fear in the whole universe. Learn self control and you will conquer worry, fear, anger, and all the other evil passions. Learn to relax both the body and the mind. Mental relaxation or rest is absolutely necessary in the worrying condition. Relaxation of the body is easy in comparison with relaxation of the mind. Mental relaxation or mental rest is an absolute necessity in conditions of worry, nervousness, etc. The minds of these individuals never stop thinking. The individual may relax muscularly but not mentally. If these persons could only stop thinking a few hours each day, what an amount of vitality would be saved. Many persons keep themselves sick by their active imagination. In fact worry is often kept up in just this way: the mind can think health or it can think ill-health, just as the individual wills. When we will good health, we practise mind-cure in its purest form, the basis for which is to be found in religion. Belief in God is the basis of true mind-cure. Belief gives rise to hope, and hope is one of the most powerful stimulants to which the body can be subjected. If a man have nothing to hope for, he must indeed be depressed and spiritless.

Remember that worry kills and devitalizes, and as such do not harbor worrying ideas, which are poisonous. The individual who is always in a hurry does not see half the beautiful things of this world.

There is much unnecessary worry about the salvation of the soul, due to fear and the teaching of being eternally damned. The idea of an avenging and relentless God, as once preached, is enough to create terror in the minds of the young, lasting through life; and even when, as adults, we realize and fully comprehend the Love of God towards all His children is not in accordance with all those terrifying teachings, we can hardly free ourselves of this fear of being everlastingly lost.

If any man needs to have a sound basis of hope and good cheer, it is the sick man or the worried woman. The man or woman who believes in God, and who knows that He cares for each one of us, has a great foundation upon which to base faith and hope.

To tell a nervous woman to stop thinking about herself is about as sensible as to tell the wind to stop blowing, or the sun to stop shining. The proper thing to do is to give her something outside herself to think or be engaged about. Introspection and retrospection are the great bugbears of those who worry. Such individuals must be encouraged to occupy themselves in doing something that will absorb the attention, and wean the mind from dwelling on one's self or troubles, whether these be real or imaginary. The advice of a celebrated English nerve specialist to overwrought and nervous women was to go home and do fancy knitting for half an hour every day; this idea involves a change of thought, which in many circumstances is just what worriers require.

Another excellent plan, covering the same scope, is the practise of systematic deep breathing, which may be practised with advantage in many ways. When one begins to worry, the mind must be diverted in some way. One of the best methods of doing this is to practise deep breathing, keeping the mind or thoughts concentrated upon the exercises, following, in imagination, the passage of the air up and down,

in the filling and emptying of the lungs, just as one rises and falls with the tide when sitting in a boat swaying with the current. Inhale and exhale fully, easily and intently. Banish the idea of worry entirely; if necessary, repeat any phrase or phrases five, ten, twenty, or even one hundred times if need be, which may seem to help you or give you determination. These phrases may be your own making, such as "I shall not fear or worry." "I will be well." "I shall not think, worry," etc. Remember the power to act well is always yours to wield. *Pray without ceasing.*

Most worriers live in the past, the present and the future, all at once.

The worrier recalls the troubles and mistakes of the past, carries the burdens of the present and anticipates the woes of the future. The triple load is overpowering.

Healthy individuals can live but one of these at one time.

"Take no (anxious) thought for the morrow."
"Let the dead (past) bury its dead."

These inspired words in themselves teach the folly and sin of worry.

Always see something beautiful in the weather, whatever it may be. The weather, like the poor, is always with us, and is always beautiful to those who are well. Torrents of rain are quite as beautiful as the sunshine.

The cure for worry then, briefly stated, may be summarized as follows: Removal of and forgetfulness of the cause producing it, living and thinking good health. If there be causes producing it over which one has no control, and yet one which is like a millstone around the neck, the mind should be made up that under no circumstances will the conditions be allowed to continue—they must cease. At such times the services of the physician, preacher or a friend, may be consulted with advantage.

NERVOUSNESS

Nervousness, or nervous exhaustion, the terms are almost interchangeable, is only one of many of the varied forms of worry. Many other sub-divisions of nervousness are manifested in the harmful mental habits of discontent, fault finding, nagging, grumbling, hairsplitting, whining, fretting, fearfulness of affairs not turning out aright, jealousy, fidgetting, self-pity, over-anxiety, "the blues," melancholy, fretting, suspicion, irritability, etc.

A man can worry far longer and harder than he can possibly work, and by keeping himself in a state of nervousness or worry, he thinks himself to be carrying great responsibilities, and doing important work, whereas the worry does nothing but exhaust and devitalize the system of nervous energy.

The emotions use up the nervous system far more than does the intellect. For this reason worry, which is one of the fear emotions, is so expensive to the nervous system. An individual can worry from the time he wakens up in the morning until he goes to bed at night. **He can even have the worry, or nervous state of mind follow him through his sleep,** so that he is restless and fatigued in the morning.

A curious sign of nervous exhaustion is what may be termed "irritable weakness." For example, an individual while working will constantly make unnecessary movements; will see the door ajar, get up and shut it even though this be of no advantage; will see a piece of paper on the floor and will have to get up at once and put it in the basket; or the hands are picking at a watch chain or bracelet. In general the power of control is lessened so that the individual is doing many things which are quite unnecessary. The face especially is over mobile; the eyes and lips are constantly expressing emotional states.

It is worry, not work, that kills. There is nothing under the sun which so enervates or practically uses

one up, sometimes almost to a point of complete collapse, as the very common practise to which so many individuals given to worry become habituated, that is the building of castles in the air, or **brooding.** Give the imagination reins and in a short time one will become nervously bankrupt. This habit of castle building, of planning and speculating, of always anticipating on what one will or will not do, of always building in the future, is one of the worst nerve sapping influences with which I am familiar. These castles are usually built during the hours when one should be asleep. In the morning when sunshine greets us they are all melted away, having disappeared in the mists of imagination. These flights of speculation should be vigorously fought against. When one finds himself indulging in this baneful practise and apparently unable to banish the ideas from the mind, he should seek the fresh air, read a book or **do something else,** that will necessitate a change of thought. This is a very important matter and to which due attention must be paid. Oh, if we could only stop thinking! What a blessing it would be for some of us. The mind or nervous system is like an electric motor which continues to go long after the power which puts it in motion is shut off.

Self-control is attainable by training and is what we must all practise if we would be master of ourselves. The exercise of the mind, whether by prayer or otherwise, is the palladium against worry, depression and its effects.

Nervous prostration and nervous dyspepsia are direct results of self-thought and self-interest; every contagious disease is made possible to us through fear for our personal safety; and our mental condition and spiritual depression are due to fussing over our own unfortunate circumstances. There is more health in self-forgetfulness than in the combined drugs of the earth, and more happiness in self-adjustment than in

realization of all our present wishes. Happiness, which means health ; health, which means holiness, is not fenced off in certain spaces of the earth, to which we must fight or pray to gain admittance. It is all around us, over us, under us, or it is nowhere.

The worrier is a suicide—self-slain by a weakened and cowardly condition of mind which ultimately kills. Nervousness can be absolutely cured, but not at one fell swoop. Practice and persistence are bound to conquer it. On retiring for the night constantly impress your mind with the thought: "There is nothing to fear in the whole universe. I am God's child and He will let no harm come to me. When I awaken I shall be happy and refreshed."

One can truly say concerning nervous pains that one only suffers when he thinks so.

The nervous patient is on the path to recovery as soon as he has the conviction that he is going to be cured; he is cured on the day when be believes himself to be cured.

By all means **let go** talking of your ailments. So long as disease is held in the mind, it is likewise held in the body. We must absolutely **let go of disease** in thought, if we would drop it out of the body. This must be done if one would be well.

Live health, think health, pray health, and you will certainly find it.

CHRISTIAN SCIENCE

Christian Science is another of the newer teachings, which assumes that there is no such thing as disease, reasoning it out so: "What is termed disease does not exist. It is not mind nor matter. Human mind produces what is termed organic disease as certainly as it produces hysteria." That is to say "God is good; disease is evil. God created all things and pronounced them good. A good God can create no evil, hence disease does not and cannot exist." As an offset to this it

may be said that God never created sickness, suffering and disease. They are man's own creation; disease, sin and sickness are synonymous—that is, one and the same thing. They come through his violating the law under which he lives. Sickness is the scar of sin. But so used are we to seeing them, that we come gradually, if not to think of them as natural, then to look upon them as a matter of course.

To say that disease does not exist is as absurd as to say that crime, vice, insanity and immorality do not exist. Let any sane man look out upon the world and view the hundreds and thousands of maimed, crippled, halt and blind of humanity and say that disease does not exist. One might as well say that the sun or moon does not shine, or that we ourselves do not exist, but only *think* we exist, as to say that disease does not exist. We know that these and many other conditions do exist, not as imaginary but as actual evils, all arising out of man's violation of some natural law.

Christian Science teaches that man can supplant God in the exercise of the creative and healing power, which alone belongs to the Creator. Man of himself can do nothing. Let an individual become inflated with the idea that he has powers beyond the ordinary individual, especially healing powers, and it is but a short time before he thinks himself a mighty healer, with powers specially endowed from Heaven. In his pride he would supplant even the Almighty himself. There is a certain class of disease, notably that pertaining to the nervous system, of which worry is only one, and a minor phase in which mental or moral maladies are an essential form of treatment. Hundreds and thousands of individuals, from one cause or another, become chronic invalids. Their diseases are purely imaginary. Physicians know this full well. Yet if a physician were to tell any one of his patients of this class the plain truth, the patient would be mortally offended and seek other medical advice.

The amount of self-pity which the chronic invalid invites upon himself is tremendous. There are multitudes of diseased minds. There are as many, if not more, mental than physical diseases, and these nervo-mental diseases are often cured instantaneously. The mind forces, the power of faith, the all-penetrating power of the will, or will-power, go to prove it.

Imaginary disease can be cured by faith, by belief, by belief in anything; it may be a sugar pellet, or a bottle of colored water as in homeopathy; a bitter and vile-tasting mixture as in the olden days of allopathy; a fetish or charm of any kind, from a horse-chestnut carried in the pocket to a horse-shoe carried around the neck, or put above the door; from a parasitic mind-cure right down through to the good old fashioned religion itself.

Actual or real disease cannot of itself be cured by any form of mind-cure. Real disease is a result of abnormal bodily conditions, whose cause must be removed before any cure or healing power can be effective. Remove the cause and nature will almost immediately restore the individual to a normal condition. The tendency of Nature is to cure even without any mental process or mind-cure. Mind-cure in itself, true mind-cure or the healthy, well-directed, vigorous and intelligent exercise of the mind, is a most powerful influence for the cure of any disease, and one most potent in its influence for good or evil as it may be directed, but the thinking of health must be supplemented by the living of health, where actual disease conditions exist.

It is a law of the mind that "The concentration of attention in one direction inevitably suspends it in another direction."

It is also a law of sensibility that when the attention is diverted from any sensation, as of pleasure or pain, hunger or thirst, the sensation becomes thereby weakened, and when fully diverted, entirely suspended.

Concentration and holding the attention upon any sensation or desire tends, on the other hand, to increase and intensify it. This concentration and **repetition of ideas and thoughts** is the basis of Mind-Cure. In this way vicious habits, enslaving appetites and abnormal desires of every kind are overcome, and a wonderful degree of **Self-Control** over the bodily sensations and functions is acquired. Diverted attention is illustrated in divers ways, but in no way better than when soldiers in the excitement of battle often receive severe and dangerous wounds of which they are entirely unconscious until after the battle is over. For the same reason the sense of fatigue from long and wearisome marches will suddenly disappear on coming in sight of the enemy. This, the diverting of attention, is also probably the true explanation of why it was the martyrs of old, while burning at the stake, were seemingly so fully withdrawn from the sphere of sensation as to be wholly unconscious of physical suffering.

This also explains how Christian Science cures. At the outset the condition is not an actual one, but only an imaginary disease. In trying to grasp the mazy intricacies of Christian Science, the invalid entirely forgets himself and his ailments, and finally ends up from his wanderings in the depths of imagination, impressed with the fact that he never had any disease, he only *thought* he had it; all of which would be quite true.

Undoubtedly thousands of individuals suffering with imaginary diseases, have been cured by Christian Science, Mind-Cures, Magnetic Healing, etc., etc. Let them be cured by all and any means, the more the better; but let the actually sick man suffering from a disease like typhoid fever, or diphtheria, or from consumption, cancer, or other chronic disease, not be deluded by a system which says:—

"You need pay no attention to diet. All you need to do is to believe. Believe that the disorder is

simply a bad idea, a morbid motion. Dismiss from your mind the motion that you are ill, and you will be well."

This is false doctrine, and if followed out deprives the sick one of the only possible chance there is for life. His only chance of recovery consists first in living health, by following a proper dietary, and other hygienic rules; then let him think health as much as he wishes. The body and mind, and the mind and body, are inseparable companions in good health or ill health conditions.

A real disease, let us say for instance, tuberculosis, commonly called consumption, can never be cured by any "healer" on the saying "Think only health and you will be well." If organic disease is curable in this manner by any healer, there is absolutely no reason whatever why he should not be able to resurrect the dead as well; one is just as easy as the other.

The sum and substance of Christian Science, whatever good there is in it, is to be found in the New Testament. Then again much of its so-called Science is no science at all. If one wishes to get pure Christian Science, he has but to turn to the New Testament, where, throughout its pages, he will find some of the soundest reasoning and logic that is to be found anywhere. The greatest exponent of Christian Science was Christ, who was essentially a Healer of both Body and Mind. The teachings of Paul, which are second, only, to those of Christ, if put into practice are far and away ahead of Christian Science, or in fact of any other modern mind-cure doctrines.

The essence of true Christian Science is echoed in James 5: 15:—

"And the prayer of faith shall save the sick, and the Lord shall raise him up." This is only one of hundreds of the most beautiful passages bearing on the subject of faith and hope.

People do not study the New Testament sufficiently

and intelligently well, otherwise they would there find doctrines far more sound and lasting than any of those of the mushroom varieties, which have misled and carried away so many individuals from rational teaching. One writer has put it thus :—

"Christian Science is suggestion plus absurdity; divine healing, suggestion plus faith in God; Dowieism, suggestion plus prayer and holy terror; Weltmerism, suggestion plus imagination; osteopathy, suggestion plus massage; homeopathy, suggestion plus nothing; allopathy, suggestion plus tub-fuls of drugs that either kill or cure: regular or rational medicine, suggestion plus the best common horse-sense available, or suggestion and medicine mixed with the best quality of brains obtainable."

In all instances the quality of brains—the brain power—must be good in order to make any of these mind-cures effective. Without this all mind-cure systems fall to the ground.

MIND-CURES

This is an age of Mind-Cures as well as an age of confusions—the false prophet age, when the inexperienced pupil would supplant the master, stealing his mantle for the influence of its shadow — the parasite living upon the real. This leads up to a consideration of the various cults and fads so much in vogue at the present day, some of which by their speciousness have misled and deceived thousands of individuals. There are many mind-cures which may be condensed into two classes, the true and the false. The false mind-cures are parasites, imitations, seeking the shadow of the true, in order that they may be able to parade under false colors, so that the people may "imagine a vain thing."

The false mind-cures, like all imitations, are based upon the true, taking as much from it as is necessary

for a foundation and the sake of appearance. With a little change in dressing or make-up, and the addition of a few abstruse and abstract names and phrases, a supposedly new system is thrust upon an unsuspecting and gullible public. The false cures, whatever be their names, depend upon the principles involved in the true mind cure for their results, whether they be known as Christian Science, Mental Healing or Prayer Cure.

Chronic invalidism is one of the conditions wherein chronic invalids are sick because they *think* they are sick. Their sickness is purely imaginary.

Unquestionably many of the so-called mind-cures belonging to the mental science, magnetic healing class, have accomplished wonderful results in chronic invalids, simply by diverting the attention of the invalid. In imaginary diseases all that is necessary to do to accomplish a cure is to divert the attention of the individual from himself and his ailment, and he soon gets well from a disease which had no existence —save in his imagination. This is the reason why the so-called mind-cures have, apparently, performed such wonderful cures. Humanity, at large, has a wonderful imagination for imaginary diseases. This is a fact of which the patent medicine man is fully aware. This, which might be called the **mind-cure of the patent medicine man,** with his bottle of colored water, is just as efficacious in many instances as the more philosophical forms of the false mind-cures. The cure is even more lasting in the patent medicine instances, where a picture appears in the newspaper showing the once-near-to-death invalid clothed in his dress suit, the very embodiment and picture of health. Imaginary disease can be removed by any form of mind-cure, by a bottle of patent medicine, by a belief or faith in anything; but not so real disease. Real disease cannot be cured by any of them, but only by a compliance with the laws of health.

What may be, for the sake of simplicity, termed a variety of mind-cure, is **Hypnotism** or **Mesmerism**, in regard to which a great deal of misconception exists, largely owing to the extensive newspaper notoriety given it, which is usually of an inaccurate and misleading character. No individual can be hypnotized against his will. It is only when the individual voluntarily surrenders his will to that of another that he can be hypnotized. This is really auto-hypnotism or self-hypnotism. Under certain conditions almost anybody can be hypnotized. Experiments have been made in France which go to show that about 95 per cent. of people can be hypnotized if they be willing; the susceptibility to suggestion or hypnotism, depending entirely upon the willingness of the subject and the degree of passivity, as well as the power to concentrate the thought or attention on the intended seance or sleep. Without this willingness or co-operation no one can be hypnotized.

In other words the imagination, the same imagination which builds castles in the air, of the individual who wishes to become hypnotized, is excited to activity by the hypnotizer. Just as an individual can imagine disease or health conditions, so one can imagine when he is under hypnotic influence, that he is going to do or think certain things; by surrendering voluntary control of his own will to follow the suggestions of another.

Hypnotism belongs strictly to the field of the sciences, and as such it should never be brought to the level of a circus-and-clown performance, as frequently occurs in the public hypnotic exhibitions and displays.

These displays or exhibitions should be prohibited by law, as dangerous and degrading, not only to the particular individual, but to the public at large as well.

Hypnotism should never be used under any circumstances, excepting by a thoroughly qualified and

conscientious physician, and then only with a definite and specific object in view, with the full concurrence of the patient's friends and relatives. Public exhibitions of hypnotism are one thing, and its use in the hands of an experienced and conscientious physician is quite another.

There are many competent writers who doubt the utility of hypnotism as a curative or therapeutic agent, and think that its results are achieved at the expense of demoralization. My own observations with hypnotism as a therapeutic agent, extending over a period of fifteen years, is that when judiciously used in carefully and well selected cases, it is a most powerful curative agent, and results may be attained by its use which are incapable of achievement by any other known means. This statement refers not only to disease real and false, and disease conditions, but also of the education for the improvement of character and morals.

The basis of the curative powers of hypnotism depend entirely upon the excitation of the powers of imagination.

Suggestion or hypnotism powerfully appeals or excites the imagination, and in one form or another is the influence used by every successful physician in the land. Whether the suggestion be given in the waking or sleeping condition is not of so much material difference as was once thought. Psycho-therapy or true mind-cure as now rationally used by the physician is one of the most powerful influences used for the successful cure of mental diseases. The curative agent is faith in the doctor, with or without his medicine. In France, Charcot, Luys, Bernheim, Liebault and many others, use hypnotism in a purely scientific manner and with marked results. The American temperament is not so easily excited or imaginative as that of the French, so that hypnotism is used with more success in France than in America.

Whatever agent excites the imagination, whether it be a bottle of colored water, a sugar pellet or a little wooden image, it's all the same: it is faith, belief or hope in something.

TRUE MIND CURE

Religious faith should be the best preventive against the maladies of the soul or mind, and the most powerful means of curing them. In the religious state of mind man becomes invulnerable. Feeling himself upheld by his God, he fears neither sickness nor death. Whatever comes he remains unshaken in the midst of disease and suffering. He knows no fear. This was what gave fortitude to saints and martyrs of former times. A Christianity such as they were possessed with gave them moral courage which has been the admiration of the word, and will continue to excite it for all time to come.

Religion is a perfectly natural thing, not only this, but man is naturally religious in the true sense of the term. A man may not feel inclined to subscribe, in his opinions, to all which the so-called orthodox churches teach, and yet be a perfectly righteous man. Individuals of this, and in fact of every other class or creed, should do as Tolstoi, the great Russian philosopher, advises: procure a copy of the New Testament and read it—mark, learn and inwardly digest it, for himself. Certainly "every man can work out his own salvation." We are not made up of a moral and a physical part. Man is a unity—Spirit, Soul, Body—all in one. This moral, intellectual and spiritual life are so interwoven that they cannot be separated. Hence the care of the body is essentially incumbent upon us, otherwise its neglect reacts upon the intellectual and spiritual part of us. This fact is too much lost sight of in the present day teachings. It will be remembered that whenever Christ healed the sick His

injunction was "Go, sin no more"; not to go and pray. Christ knew that a sinless man, or one who is striving for this condition, is always in an attitude of prayer.

Perfect physical health produces perfect mental health, likewise **perfect mental health produces perfect bodily health.** The two are dependent upon each other. The two conditions bring man into harmony with Nature.

To get well without living health is as utterly impossible of accomplishment as it would be for one to stop the revolution of the earth on its axis.

There is much misconception and misapplication of **Prayer.** So many individuals seem to lose sight of its true intent and purpose. Probably ninety-nine out of every one hundred individuals pray for those things which are purely selfish, and if granted would turn the world upside down. Many of the things prayed for are frequently within the power of the individual to acquire, simply by putting forth the effort.

Many individuals tell us their religious belief takes no special form; just what they mean by this is not quite clear, but let such a one be confronted with death and it is wonderful to witness how the most hardened sinner outrivals the veteran saint in the fervency and frequency of his prayers. As a result of early training, religion is knitted into the very fibre and being of every individual, to such an extent that every person believes in religion, in a God in some form or another. Religion is a perfectly natural thing. Natural man is a religious man. Man's perverted state, as we usually perceive it manifested, is not his original or natural condition.

The following, condensed as an abstract or little sermonette, from the writings of one of the most talented authors of the day, is so beautifully and

logically put that we cannot do better than reproduce it in its more prominent essentials :—

"The basis for true mind-cure is to be found in genuine religion, sound common sense religion. The prejudice against religion entertained by so many individuals is largely the result of confusing religion with superstition. Many individuals hold themselves aloof from religious associations and activities, not because they are opposed to their principles, but rather and because they have been educated to look upon religion as something unnatural, sentimental, or theological. This is a grievous mistake, and one which does the individual himself great injustice and injury.

"Men say, What is Nature? To which it may be said, Nature is simply a philosophical name for God, who is the active force in Nature, the "All in all." There is an intelligence at work throughout the universe, and this power (God, or Nature) is ever working in us. The same forces that are working in the growth of trees, in the lightning, in the storm, in the tidal wave, in the hurricane, and in all great processes of Nature, are at work within us. There is as great a miracle in a vast cornfield as in the feeding of the five thousand. The power that expands the little grains of wheat and kernels of corn into leaves, rearing them up in stalks, and manufactures five hundred kernels out of one, is just as mysterious as the power which expended the five loaves to feed five thousand people. It is the same thing. One of these phenomena we call natural, the other a miracle; because we are accustomed to see the one and not the other."

"True prayer is unselfish, and is not an effort to inform God of something which He is not inclined to do, nor to remind him of something which He might neglect, as might be inferred from the way in which many Christian people pray. Prayer is the expression of a recognized need which may be physical, mental or spiritual. One is not prepared to pray, in the true

sense of the word, until he has reached the attitude of mind of one lost in a wilderness, who, when he finally gives himself up as lost, is ready to listen to or accept any suggestion which may be given him by one whom he knows to be familiar with the country, and unhesitatingly and submissively follows instructions. Trouble, perplexity, disease and distress are the means by which man is brought to his knees, by which the wilful human soul is led to submission to the will of the Infinite. Prayer, then, does not change God, but changes man. Prayer does not modify God's plans or purposes, but brings man into harmony therewith, and is an advertisement to man of what God has in store for him. This is the physiological, the scientific as well as the natural basis for faith. We must pray with the spirit and the understanding. We are certain to receive the things for which we sincerely pray, for our desire to pray is put into our hearts by the all-wise Being who knows our needs, and desires to supply them, and adopts this mode of preparing us to receive the things needful for our welfare.

"It may be said then that the act of prayer is the natural method by which man is led to turn toward the Creator, to receive the things for which we sincerely pray. We are certain to receive the things for which we sincerely pray, provided we pray with the spirit and the understanding. When a man believes that God is ever present with him, and that not the smallest hair of his head may fall without God noticing it; when he feels that God's life and power are working within him; when he feels that the same Power cares for him which maintains the sunshine, that keeps the earth turning regularly on its axis, and the planets circling in their orbits; when he believes that this Power is always leading him onward toward that which is truest, most beautiful, sweetest and best; and to that which will bring into our lives the greatest joy, peace, and satisfaction, then, indeed, will he feel that

he has his feet upon a firm foundation; he can lift his head above the doubts and apprehensions of disease, fancied or real, and with David can declare 'Who forgiveth all mine iniquities, Who healeth all my diseases.'"

The majority of those who pray ask that the plans of Providence be made subservient to their ideas, and not that they, as individuals, should be brought into harmony with the Divine Mind. True prayer is, or should be, unselfish, and does not necessarily mean that we should always be begging for purely selfish aims. There are several kinds of prayer, some of which seem to be beyond the view of the average Christian: the prayer of communion, the prayer of meditation, are forms of prayer which soar beyond selfishness.

The very act of prayer, in and of itself, whether we get the things for which we ask or otherwise, has a beneficial effect upon one. Belief in God as expressed in prayer is the true and only lasting perfect Mind-Cure. Thus the exercise of belief, faith and hope, is the salvation for the discouragements, disappointments and worries which happen in the life of every individual.

THE EMOTIONS — MENTAL HABITS

Behind all other factors and all other causes determining health and disease, lies one — the predominant one — the mental thought or attitude; so that what we are mentally and physically is largely the result of our thought habit. For this reason we should control or direct our thoughts always for good.

No better illustration of the relationships which exist between the mind and body, and body and mind, can be furnished than that of the effect of a holiday upon the brain-worker, or the tired, fatigued and over worked office man, who has been confined for a long period of time to his indoor occupation. All ailments, whether indigestion, dyspepsia, headache or of other character, disappear as if by magic, as a result of the cessation of the wear and tear, and the rest given to the mind. The body responds almost immediately to this restful condition of mind, seconded by the bracing and refreshing effects of pure air, sunshine, and the other conditions incidental to outdoor freedom.

The value of a holiday to every person cannot be over estimated, and its place has no adequate substitute.

Strong mental impressions may actuate disease, or they may act by curing disease; we can have just what we think—good health or ill health. We can be happy and contented, or unhappy and discontented, just as we like. It all lies with one's self.

There are certain emotions such as hope, faith, and cheerfulness, which exercise a wonderful as well as powerful influence upon all the bodily functions. Hope, particularly, is one of the most powerful stimulants with which we are acquainted. The cheerful emotions make a perfect condition of health. As an offset to these we have the highly depressing and enervating emotions of fear, anger, worry, or their sub-divisions, which are temporarily paralyzing or killing in their effects.

Killing Emotions.—Fear is not the only emotion that can do us deadly harm. Many a violent paroxysm of rage has caused apoplexy and death. Grief, long-standing jealousy and corroding anxiety are responsible for many cases of **insanity**. Emotion thus kills reason.

Grief is one of the best known and most generally recognized of these killing emotions. There are many instances of individuals having pined away and died in a few weeks because of grief at a death. Instances are not rare of young girls dying from disappointment in love.

Even joy kills when its impact is too sudden. The daily papers frequently relate the news of great good fortune having a fatally exciting effect.

Even if the emotion is not strong enough to kill, its effect may be most injurious. A fit of anger will destroy appetite, check digestion, and unsettle the nerves for hours, or even days. It upsets the whole physical, moral and mental make-up of an individual. Anger in a mother may even poison a nursing child. Extreme anger or fright may produce jaundice, a result of circulatory disturbances.

It will be observed that **Excitement,** which is nothing more nor less than the exercise of the pleasurable emotions, **may become a vice,** and become harmful in its effects when carried to excess. Undue excitement in many individuals produces a condition of unrest and discontent, hence it is to be avoided.

Jealousy will upset the entire system, and is one of the most deadly enemies to health, happiness, and success. Victims of jealousy oftentimes lose their health entirely, and do not regain it until the jealousy is removed, and sometimes become so demoralized mentally that they commit murder, suicide, or become insane. A strong, continual hatred will sometimes not only destroy digestion, assimilation, and peace of mind, but also ruin character.

These bodily effects of the emotions, and many others, are in part due to certain chemical products formed in the body by the emotions, and are analagous in their effects to the venom of poisonous snakes, which is likewise secreted under the influence of fear and anger. A snake has a receptacle or sac in which to store the venom; man has nothing of this kind, so that the venom spreads through all the tissues in spite of efforts to eliminate it.

The emotions of sadness, pain and grief affect the bodily secretions and excretions. It is a matter of common observation that during these depressing emotions the respiration goes on at a slower rate, the circulation is retarded, digestion is impaired, the cheeks become pale, the eyes grow lustreless, and all the other bodily functions are affected to a greater or lesser degree.

The system makes an effort to eliminate the metabolic products of tissue-waste. The effect of the emotions is to be seen, in that, during acute grief, tears are copiously excreted; that, during sudden fear, the bowels are moved and the kidneys are caused to act; that, during prolonged fear, the body is covered with a cold perspiration; and that, during anger, the mouth tastes bitter,—due largely to the increased elimination of sulpho-cyanates. The perspiration during fear is chemically different, and even smells different from that which exudes during a happy mood.

It can be shown in many ways that the elimination of waste products is retarded by sad and painful emotions; not only this, but that the depressing emotions directly augment the amount of these poisons. On the other hand, the pleasurable and happy emotions, during the time they are active, inhibit the poisonous effects of the depressing moods, and cause the bodily cells to create and store up vital energy and nutritive tissue products.

There is a valuable lesson to be learned from all

of this; during sadness and grief an increased effort should be made to accelerate the respiration and perspiration, so as to excrete the poison more rapidly. At such times one should specially seek the open air, and engage in work until free perspiration ensues, and, by bathing, wash away the eliminates of the skin several times daily; and, above all else, use all the expedients known—such as the drama, poetry, and the other fine arts—to produce the happy and pleasurable emotions. Whatever tends to produce, prolong, or intensify the sad emotions is wrong. Happiness creates energy, promotes growth and prolongs life.

Experience shows that moral circumstances are potent for good: pleasing and delightful emotions and serene and joyous impressions will restore the drooping spirits, reanimating and invigorating the whole system; indeed the excitement of hope, with immunity from the wear and tear of habitual harrassing thoughts, plays a part in recovery from disease and depressed conditions, to an extent little appreciated by most individuals. These things were well known to the ancients.

Esculapius, says Galen, supplies us with evident proof that many severe and morbid diseases may be cured simply by impressions made upon the mind; in fact he advised those whose bodies had been overheated by exciting passions to listen to the reading of poetry, to the singing of hymns, or to assist at the representation of a farce. These are the principles which should be employed in the healing of morbid conditions of the mind—illustrating music's power.

The emotions and other feelings give us all there is of enjoyment in life, and their scientific study and rational training constitute an important step in the art of using the mind more skilfully and efficiently. **By proper training, the depressing emotions can be practically eliminated from life, and the good emotions rendered permanently dominant.**

We must live in the happy memory of what was once enjoyed, rather than with useless regrets. Nursing grief month after month, or year after year, as so many do, is a crime against oneself, and against all others with whom one comes in contact. It does no good to anybody. The departed one can not appreciate or take any satisfaction in the perpetual mourning, and everybody who lives near the mourner is depressed and injured by the unnatural conditions. Such mourning is only self-pity, a form of selfishness.

The Imagination, wrongly used, is one of our worst foes, and imagining evil is one of its worst uses. Imaginary trouble destroys health and happiness. Many people live in perpetual unhappiness and discomfort, because they imagine they are being abused, slighted, neglected, and talked about. They think themselves the target for all kinds of evil, the object of envy, jealousy, and ill-will. The fact is, most such ideas are delusions and have no reality whatever. This is a most unfortunate state of mind to get into. It kills happiness, it demoralizes usefulness, it throws the mind out of harmony, and life itself becomes unbearable. Melancholia and suicide not infrequently result from such imaginative brooding over fancied wrongs.

"Sensitive people who think such thoughts make themselves perpetually wretched by surrounding themselves with an atmosphere reeking with pessimism. They always wear black glasses, which make everything around them seem dark and dismal. All the music of their lives is set in the minor key; there is nothing cheerful or bright in their world.

"These people have talked poverty, failure, hard luck, fate, and hard times so long that their entire being is imbued with pessimism. The cheerful qualities of the mind have atrophied from neglect and disuse, while their narrow-minded tendencies have been so overdeveloped that their minds can not regain a normal, healthy, cheerful balance."

"Such persons carry a gloomy, disagreeable, uncomfortable influence with them wherever they go. Nobody likes to converse with them, because they are always telling their stories of hard luck and misfortune. With them times are always hard, money scarce, and everything is "going to the bad." After a while they become cranks, with morbid minds, and people avoid them as far as they possibly can.

"Sometimes a whole household becomes infected by the presence of one morose, discontented member, and its peace is ruined. Such a contrary person is always out of harmony with his environment, has no pleasure himself, and, as far as he is able, prevents others from having any. Such states of mind not only induce disease, but they prevent benefit from ordinary curative processes."

"Many individuals spend much of their time in hunting themselves over for some new ailment, and when they have found it they are extremely happy. Immediately they hang it about their necks, where it becomes an additional millstone to drag them down. Paradoxical as it may seem, **they are never so happy as when they are unhappy.** Nothing does so much to obstruct the work of restoring normal conditions as for the individual to wage continual war with his situation and surroundings, to be out of tune with his environment. Giving medicine or treatment to a person whose mind is in the turmoil of discontent, is like pouring water into heated oil. Irritation and disturbance are the consequences. Healing is the work of divine power, and in the use of divinely appointed means for the recovery of health, it is as necessary to be in harmony with the application of those means, as though the Divine Master were Himself applying the means. A good and wise Providence is seeking to work out for us a noble end; and contentment means being in harmony with what is being done for us, whether agreeable to our feelings or not."

Carping and Criticizing. Then there are those who are always carping and criticizing. If we could only see and think of ourselves as others do, the probabilities are we would forever remain silent. Then again there are those who are always lamenting past experiences and lost opportunities. For one unfortunate experience a "worrier" may have had, others have had ten times as many; and as for lost opportunities, there are hundreds of others ahead of us if we are only hopeful and keensighted enough to take advantage of them.

Cultivate optimism in general, and particularly loving thoughts toward all people you meet, and you will soon find it hard to be angry with any of them. Whatever the killing emotion that you are allowing to destroy, or mar, your happiness and to shorten your life, the remedy can be found within yourself, in your own thinking and acting.

It matters not what may be the cause of the trouble in the anxious mind, the results upon the body are the same. Every function is weakened, and under the continual influence of a depressed state of mind, they degenerate. Especially is this true if any organ of the body is handicapped by weakness from any other cause. The combination of the two influences will soon lead to actual disease.

The greatest barrier in the way of the healing process, especially if the malady be one that is accompanied by severe pain, is the mental depression that is associated with it, and often becomes a factor of the disease. It stands in the way of recovery sometimes, more than do the physical causes, and obliterates from the consciousness of the individual the wonderful healing power of nature, so essential to recovery.

"A most injurious and unpleasant way of looking for trouble is fault-finding, or continual criticism of other persons. Some people are never generous, never magnanimous toward others. They are stingy of their

praise, showing always an unhealthy parsimony in their recognition of merit in others, and critical of their every act."

Man seems to be naturally a fault-finder, jealous if he is not as successful as his neighbor. He should strive to excel, then there would be no need for jealousy.

One cannot afford to go through life looking for trouble, for faults, for failures, or for the crooked, the ugly, and the deformed; nor can we afford to criticise or condemn others, or find fault with their mistakes and shortcomings—fault-finding, indulging in sarcasm and irony, picking flaws in everything and everybody. Looking for things to condemn, instead of to praise, is a very dangerous habit to oneself.

We all like sunshiny, bright, cheerful, hopeful people; nobody likes the grumbler, the fault-finder, the back-biter, or the slanderer. The world likes the man who believes the best and not the worst of people.

"It is just as easy to go through life looking for the good and the beautiful instead of the ugly; for the noble instead of the ignoble; for the bright and cheerful instead of the dark and gloomy; the hopeful instead of the despairing; to see the bright side instead of the dark side. To set your face always toward the sunlight is just as easy as to see always the shadows, and it makes all the difference in one's character between content and discontent, between happiness and misery, and in our life, between prosperity and adversity, between success and failure.

"We must learn to look for the light then. Positively refuse to harbor shadows and blots, and the deformed, the disfigured, the discordant. Hold to those things that give pleasure, that are helpful and inspiring, and we will change our whole way of looking at things.

"A great many people think they would be happy if they were only in different circumstances, when the

fact is that circumstances have little, if anything, to do with one's temperament or disposition to enjoy the world.

"People who have lost their best friends, who have all their lives been apparently unfortunate, who have struggled against odds and have themselves been invalids, yet they have borne up bravely through it all, and have been cheerful, hopeful, and inspiring to all who knew them.

"If one has been in the habit of talking down his business, the times, his friends, and everything in general, let him just reverse the process, talk everything up, and see how soon the changed thought will change the atmosphere about him, and improve conditions.

"The balanced soul is never suspicious, does not expect trouble, and rarely meets with it."—Abstract from J. Lincoln Brooks, in "Success."

Discontent. The amount of unhappiness in the world is simply appalling. Much of it is from sickness or bodily suffering, while another very large part of it is mental in character. Many individuals of the nervous temperament are naturally restless. There are many agencies tending to keep up or excite this spirit of restlessness or discontent. The newspapers by their sensationalism are responsible in a way for much of this. Talk of gold mines and every imaginative individual who reads about them wants to try his luck at once. As a result of this discontent or restlessness we find people everywhere who are dissatisfied with their lot, who think they would be happy if they could only get somewhere else, or into some other vocation. It's the old story of the "green hills far away." The one in Maine wants to live in California, the one in California wants to live in Maine. The man in England wants to come to America, the one who has come to America wants to go back to England.

A clever writer in a prominent periodical hits the nail on the head as follows:—

"They see only the thorns in their own vocations, the roses in those of others. The shop girl would be an actress; the cook would change places with her mistress; the butler with his master. The lawyer would be a doctor; the doctor, a lawyer.

"The farmer bemoans his hard lot, and longs to exchange his life of drudgery for the career of the merchant or the manufacturer. The country boy leans on his plow-handle and looks toward the city with hungry eyes. If he could only be free from the slavery of the farm, stand behind a counter and wear good clothes! Happiness, opportunity, fortune—everything—lies yonder. Around him misery, toil, poverty—nothing desirable. The city youth rails at fate for confining him to the limits of brick walls and the dreary details of merchandise—buying and selling. Oh, if he could only go to sea and travel to distant countries, become a captain in the navy, or skipper or owner of a merchant vessel! Life would be worth something then."

It is the same spirit of restlessness or activity which characterizes man the world over—the spirit of travel, of ambition, of the expectation of doing or becoming something better, of becoming possessed of more power or wealth, which entails in its final results the spirit of discontent.

"How much energy has been lost, how many lives have been spoiled by this fruitless longing for other fields, other opportunities out of reach? What is the use of dreaming of what you would do if you were in somebody else's place? What is the use of trying to reach into your neighbour's pasture when you do not know what bitterness may lie at the root of it, hidden from your sight; when you have never tried to develop or to call out the sweetness and juiciness which reside in your own?

"Do not try to be somebody else. Do not dream of great far-away opportunities; do the best you can where you are. Should a better opportunity present itself to you, seize it at once; but wait in contentment until it presents itself. If you find yourself bound within a narrow sphere by aged parents or crippled, dependent brothers or sisters, or weighed down by a mortgage on the home, do not say "What is the use of wasting my life in this limited environment?" Some of the grandest characters in all history have blossomed and borne magnificent fruit in just such limited fields as you now think yourself in. The potency, the virtue of the opportunity is in the man who can see and use it."

Grumbling and **Nagging** are two of the worst mental habits which can possess one. One writer has said that "a grumbler is enough to drive a man to drink, while a 'nagger' is enough to drive him to commit suicide. A nagger, presumably a woman in this case, ties all your faults around your neck, like a tin can to a dog's tail—the harder you run and the more you howl, the more you get of it." The counterpart of a nagging woman is a "knocking" man.

The mirror of worry shows many a "nagger" and "knocker."

Then again we have those who are always finding fault with the weather. In doing this worriers make themselves ridiculous in the extreme. They set themselves up as authorities on Nature's necessities and demands. Surely the Creator knows these requirements better than any wry-faced worrier.

If a nagger or knocker cannot control the tongue by sheer will-power, there is still the alternative and effectual way of keeping it quiet by taking hold of it with the fingers, if one hand does not suffice, then the two hands are certain to be successful in this respect, and always worthy of a trial upon the unruly member.

Hair Splitting. Exactness, or precision, is an extremely commendable virtue. Education, custom or habit, one or all of them, may have made an individual perfect in this respect. Yet it is this very perfection of exactness, in many instances, which acts as a constant source of irritation or worry, to one given to the worrying habit. This very precision makes one a slave to himself. No better illustration of this can be furnished than in the trivial matter of using a postage stamp. There are thousands of individuals who have never put a postage stamp upside down on a newspaper or letter. They could not bear to see it any other way than just so, right side up and squarely in the corner. It is a good habit but it can be overdone. These same individuals cannot bear to see the slightest speck of dirt, not the slightest article out of its accustomed place, or at variance from the regular custom of any kind. Everything must be in just such and such a position, the perfection of exactness. This sort of thing can be overdone to such an extent that it becomes tiring to everybody. One must learn to relax, become somewhat careless as it were, or less super-sensitive, and be able to shut the eyes to these irritations or disturbances, otherwise unhappiness is made for all. One may well go to the other extreme in this matter of super-sensitiveness, for a time, at least, and regard these affairs as did Ben Johnson, whose habits by the way were none too cleanly, living in an atmosphere of dust, and who regarded dirt "as so much misplaced matter." Sensitive, or we might say super-sensitive, individuals are those who are liable to belong to the nervous or worrying class. Things can not always be left just so exact, proper and correct in every detail, and the sooner one is enabled to make himself oblivious to his surroundings and able to shut his eyes even to the most glaring inconsistencies, the happier he will be. A nervous or worrying individual of necessity, must always be unhappy, because things

are never right from his standpoint. He must try and make himself believe that everything is just right, the weather is always right, everybody and everything is just right. The nervously inclined person himself however is always wrong, always out of tune, never right with himself or anyone else.

Self Control. The cultivation of self control means the exercise of the will power. If we would acquire this will power we must do so by beginning to put it into practice. Those who are given to worrying must begin by neglecting the trifling affairs of life. Trifles do make up a large part of our existence. Yet those who would be happy must learn to rise above trifles, and live in an atmosphere secure from fretting and care. None of us can escape cares, but they need not be of the fretting, consuming, and corroding kind. If little things go wrong, it is much better to accept them without too much disturbance of our mental poise. Life should not be clouded because one has been unable to keep an engagement through inclemency of the weather, or indisposition of health; or because some one else has failed to keep an engagement with us; or because we are late for dinner; or because we miss a train and are an hour later in reaching home. These and other trifling causes of irritation look very small when compared with the great joys and great sorrows of a human life; yet we make a fuss over them, upset the surrounding peace, making ourselves and all those around us very uncomfortable. Let us meet life's trifles with calmness and self-control. There are numbers of ways of acquiring control of one's self. No set plan can be adopted, each individual having to apply the method which fits his own case. A suggestion may be of interest, as a trial, to those who are nervously or fearfully inclined.

We are all careful to safe guard our money and our other valuables. We are also careful to safe guard our lives, and it is probably on this account we lock

the doors of our houses at night to protect ourselves and our valuables, on account of the *fear* we have that someone will take our valuables or threaten our lives. As an experiment the following is worth a trial :—

Instead of putting your watch or other valuables under lock or key, or under the head of the bed, as is so commonly done, leave them exposed or hanging up in the room. In doing this, hope and believe that no individual will become possessed of such an evil idea as to think of stealing from you. In the morning you will awaken to find everything just as you left it. One's fears are oftentimes groundless, yet we find it hard to get rid of, or to free ourselves entirely from, fear. We are so afraid of our fears, which are but vain imaginations.

This simple exercise of faith inspires one with confidence and faith. Faith dissipates fear. Fear or nervousness is unknown among Japanese women. They know nothing of indigestion. They have perfect control of their nervous system and are calm and self-possessed. Perhaps we can trace their placidity and cheerfulness to their simple, wholesome diet.

Self control is purely a matter of practise in repression. If one gets angry easily, he must repress or control himself; if impatient, he must practise patience not only with himself but with others as well, not forgetting the children. One of the most difficult individuals to understand and get along agreeably with is *one's self*. Self is sometimes like a bucking broncho—unruly.

The watchword of the ancient philosophers who were striving to ennoble themselves, was "Know Thyself," and the maxim which was engraved in letters of gold upon the front of the temple of Delphi, was also "Know Thyself," and the words of the Oracle were: "If thou knowest thyself, thou shalt live happily," which are equally true to-day as in the days of yore.

Self-pity is one of the greatest afflictions that can happen to any individual. It begins by a surrender of one's pluck and moral courage in combating the battles of life. It is the giving up of hope, the loss of which is dangerous. Without hope life would not be worth living. In becoming the victims of self-pity we invite disease, mental disease, and its resultant condition of "chronic invalidism." We become cowards in our own estimation.

Adversities and afflictions sometimes come thick and fast, but we must not fear "though the earth be removed and the mountains be carried into the midst of the sea." We must help ourselves.

One form of self-pity or selfishness is shown in those who mourn, nursing grief month after month or year after year. This is a crime against one's self and against all others with whom one comes in contact. It does no good to anybody, either the living or those who have gone before. It is positively harmful to the one who grieves, as well as depressing to one's friends. The attitude to be maintained in such matters should be one of resignation, and is wholly expressed in the words "Thy will be done."

The world presents equal opportunities to every individual. It all lies with one's self; we must trample and crush down obstacles. We must be self-reliant, courageous, energetic, indomnitable. The one who succeeds is the one who works—incessantly.

Seneca has said: "Beware of aggravating your troubles yourself, and of making your position worse by your complaints. Grief is light when opinion does not exaggerate it; and if one encourages one's self by saying 'This is nothing,' or, at least, 'This is slight; let us try to endure it, for it will end,' one makes one's grief slight by reason of believing it such." And further: "One is only unfortunate in proportion as one believes one's self so."

Whining. Someone has said : " Whining is poor business ; it identifies you at once as the under dog, and does not get you any sympathy at all." The man who whines confesses his weakness, his inability to match his environment. He is unable to equal his neighbour, or if so he fails to accomplish it for some reason or another. It is too much for him. He can not command the situation. All he can do is to kick and complain. The habitual whiner never gets anywhere, never accomplishes anything.

The man or woman who uses up vitality in complaining, finding fault with circumstances, kicking against fate, who is always protesting that there is no justice in the world, that merit is not rewarded, that the times are out of joint, and that everything is wrong, is put down, and rightly, as a weakling with a small, narrow mind. Large-minded men and women do not spend their energies whining. If they meet an obstacle they go through it and pass on about their business. They know that all their time and strength must be concentrated on the work of making a life. **The only individuals worthy of sympathy are the sick, the crippled and maimed,** who are handicapped in life's struggles. Even many of these, doubly handicapped, are more successful than many able-bodied, listless men, who are too shiftless to help themselves.

The man who succeeds is the one who works incessantly—works incessantly.

Sometimes it is a difficult thing for a man to be agreeable to or live with himself. Affairs are not always improved when he takes a partner unto himself. As a lack of understanding between the parties, this, in some instances, may lead to differences which are commonly called marital incompatibilities. This infelicity usually occurs in what is called a " misfit " family.

" Misfit " families are not so numerous as some people would have us believe, but they are certainly

to be found more or less frequently. One writer states it thus :—

"They are composed of people who are incompatible in temper and uncongenial in behavior, and who have not enough of either philosophy or religion to get on together without friction and antagonism. If it happen that in our home there is one person who darkens the sky by her cloudy words, or another who disturbs the peace by dynamite explosiveness, and if, in God's Providence, there is no other home to which this peculiar person can go, then she must be accepted and borne with. Never should her frailties and foibles be exposed to the public. Every family should turn the key upon its skeleton, if there be one, and keep its infelicities, small and great, from the knowledge of the neighbors. Nothing is gained by exploiting one's misfortunes, and if there is a basis of love and self-respect, even a misfit family may secure a good measure of contentment as the days go on."

THE POWER OF CHEERFULNESS

Each one is so apt to think that his own conditions, his own trials, troubles, sorrows, disappointments, reverses, or his own struggles, as the case may be, are greater than those of the great mass of mankind, or possibly greater than those of anyone else in the world. We forget that each has his own peculiar trials or troubles to bear, or struggles in habits to overcome, and that his is but the common lot of all the human race. We see and feel keenly our own trials or adverse conditions, but we almost entirely forget those of our neighbors. We may set it down as an indisputable fact that there are thousands upon thousands who would only be too glad to change positions with us if they could.

We have only to put ourselves, in imagination, in our neighbor's place, to get on the other side of the

fence from where we are. A brief experience of it and we are only too glad to return to our own side, pleased that our own trials and troubles are not greater. We must resolutely shut our eyes to all the disagreeable things in this world ; and keep them wide, wide open for all the pleasant and beautiful things. There will be no occasion to worry then. Worry weakens the mind and engenders indecision. Indecision and procrastination are twin brothers, both of which lead to nothingness. Better be firm and decisive, on a stand, even if we make a mistake, rather than vacillate, waver and do nothing.

If any one has troubles he must learn to ignore and to rise above them. If discontented, to do the best possible under the circumstances. Be contented in your discontent until an opportunity presents itself to convince you on trial that all is not gold that glitters, that happiness and contentment are conditions of and within themselves, and not always to be found in places. The world presents equal opportunities for every individual. The one who succeeds is the one who works incessantly.

Be your natural self as far as you can, and do not trouble yourself about what others think or say of you. Do what you think to be right. Endeavor to live your own life, irrespective of others. Be cheerful, "a light heart lives long." Think only healthful thoughts, "as he thinketh in his heart so is he." "It's worry, not work, that kills." So work like a man but don't be worked to death. Avoid excitement. Don't carry the whole world on your shoulders. Don't rush and hurry, the world wasn't made in a day ; so that one can afford to take a little time in doing the trivial things of life. Never despair. "Hope springs eternal in the human breast."

"It is not easy to be cheerful when everything one undertakes seems to go wrong, especially after one has done his very best. When the business enterprise

that looked so promising ends in disaster; when the little dinner party, so carefully planned, fails, or at least is not the success you hoped it would be; when the position for which one has worked and waited so long does not materialize; when your plans—plans which it has taken years of toil and sacrifice to carry to the point of success—are suddenly overturned by some unforseen occurrence—these or any of the thousand and one disappointments, great and small, which come to the most sheltered lives, to the greatest of fortune's favorites, are trials to one's soul. But should one sit down and weep and wail and bemoan his hard luck because things go wrong? The ordinary person gives up, but the extra-ordinary one never gives up; he tramples down and crushes obstacles—otherwise he would not be extraordinary. If you rise superior to your disappointments, whatever they may be, you are adding a hundred per cent. to your power to conquer future difficulties."

Above all be an optimist; keep the heart young; cultivate kindness, cheerfulness and love; with Henry Van Dyke determine to go forward and to be glad of life, because it gives you a chance to love and to play, and to look up at the stars, to be satisfied with your possession, but not contented with yourselves until you have made the best of them; to fear nothing but cowardice, to be governed by your admiration rather than by your disgusts, to covet nothing that is your neighbor's except his kindness of heart and gentleness of manners, to think seldom of your enemies, often of your friends, and every day of God; and to spend as much time as you can with body and spirit in God's out-of-doors. If we follow these little guide posts we will learn that to live is a delight, to breathe a pleasure, to think a luxury, to sleep is soothing rest, and we will find life to be as beautiful as the sunshine—A reflection of Heaven itself.

NEURASTHENIA — NERVOUS EXHAUSTION

Neurasthenia, nervous exhaustion, nervousness, and worry are all of the same cult. When it is remembered that neurasthenia is a condition of nerve tire or exhaustion, and that it may affect any one or more organs of the body, it may well be expected to have a legion of symptoms. So it has. There is nothing organically wrong with these individuals, but they are nearly always weak or tired, perpetually tired, but not sick. That tired feeling about which so much has been said and written, is nothing more nor less than nerve tire. Let the imagination of the nervous individual come into play, and there will be nothing missing from the entire category of disease which the sufferer may not experience, or think he experiences.

The nerves are distributed to over five hundred, odd, muscles alone, as well as to countless other structures. The symptoms of neurasthenia are as numerous as the nerves themselves. They may be palpitation of the heart, general weakness with poor circulation, cold hands and feet, eye disturbances, indigestion, dyspepsia, flashes of heat, mental irritability, lack of concentration and will power, marked defects of sensibility, numbness, tingling, itching and burning of the skin, sleeplessness, catarrh (especially of the nose and throat from irregular circulation), nervous diarrhoea, nervous deafness, nervous dyspepsia, brain fag, dizziness, the "blues," muscular pains simulating rheumatism, sciatica and neuralgia, uterine disorders, headaches, backaches, with the list of ailments but one half told.

The object of directing special attention to nerve-tire symptoms is that sufferers may not be terrorized by certain advertisements—"A wink is as good as a nod to a blind horse."

PETER'S VISION

THIS book is intended to be a presentation of facts, and is not in any sense to be taken as an exploitation of any particular theory or food fad. The diet platform is a very broad one, and there is no more burning dietary question under discussion at the present time than the propriety or impropriety of eating the flesh of animals. This is a question that can be decided upon grounds entirely outside of the Bible. This of itself should be sufficient. However, there are so many who insist upon bringing the Biblical view of flesh eating into the discussion, that it may be well to refer to this phase of it here. On pages 3 and 4 of this book a brief reference is made, in which we find that in Genesis, ninth chapter, man is given permission to eat flesh meat **under certain restrictions.** This would also include permission to eat fish, provided it do not contain blood. The restriction made respecting the use of flesh was that "The blood thereof shall ye not eat." It will be remembered that fish, as commonly eaten, contains blood, strangulation being the cause of death. This objection is overcome by making deep incisions in the fish, then covering the fish with salt, and finally thoroughly washing; otherwise no Christian can eat fish if the Biblical injunction be followed (see Lev. xvii, 10-16). The orthodox Jews of ancient times separated the blood from flesh meats and even from fish, in many instances, before partaking of them. The objections to the use of blood was based upon physiological grounds, the blood of a dead animal being more or less poisonous from effete matter. While it is quite true that the Bible undoubtedly permits the use of flesh-meats, it will be noticed it was entirely in a tentative way, that is, when man was unable to provide himself with his natural food, then he was permitted, but only under stress of circumstances to eat flesh-meats only on con-

dition, however, of the removal of every particle of blood which it might contain. Certainly the Bible **nowhere encourages** the use of flesh-meats. It will be remembered the Jews were a stiff-necked and perverse race, and did not always do as commanded. Their innumerable violations of the dietary laws set down for them would in no wise affect the laws appointed for them, so that we must not be led astray when we read of repeated instances of their flesh-eating, into thinking they were following out the original commands in this respect.

Two questions are repeatedly asked or thought of in this connection: First, was not Peter commanded when the great sheet or sail was let down from Heaven containing all manners and sorts of animals, to "Arise, slay and eat"? Acts 10: 9. Secondly: Did not Christ eat meat?

In reply to the first question it may surprise the reader to be told that this allegorical dream of Peter's has absolutely nothing whatever to do with flesh-eating, or in fact with eating of any other kind. Not only this but if there be any argument whatever, it is distinctly against the use, rather than in favor of, the advocacy of meat eating.

The following abstract from an article by Sidney H. Beard is pertinent and highly interesting:—

It will be noticed that of the creatures let down in the sail, no fish are mentioned; also that Peter declared that he could not eat flesh food because he had never eaten anything defiled or impure. When Peter in narrating the story of his vision to the Jews at Jerusalem, in order to explain to them how he was, by means of it, taught to recognize that Jewish bigotry and exclusiveness were contrary to the Divine Will, he says: "Not so Lord, for nothing common or unclean hath at any time entered into my mouth." Acts 11: 8. We learn from Peters' own emphatic declaration that he had been a life abstainer

from the flesh of animals, and that, consequently, he had not participated in the orthodox observances of the Jews on the occasion of the Passover Feasts. Not only this but we know that Matthew, James (the brother of our Lord) and James the Apostle, never ate animal flesh, and we have the clearest testimony on this point in the writings of the early Christian historians, Hegesippus, Augustine and Clemens. All this goes a long way towards demolishing the assumption of the churches: That the Master would, as a pious Jew, certainly have partaken of the Paschal lamb at the animal feasts. Direct Jewish testimony has affirmed that in those days conscientious objectors to flesh-foods were allowed to observe the Paschal Feast at a table from which the lamb was excluded. In the light of all this it would seem that the aforesaid assumption is broken, and that the flesh of the lamb was not introduced on the night of the supper, seeing that it was held on the "first day of the Feast," when unleavened bread would constitute the appropriate fare.

Peter's Vision was an allegorical dream—intended to teach in like manner as the parables—to teach Peter that just as the animals in the great sheet were not to be called by him common or unclean, neither should he call any man (the Gentiles) defiled or impure. Acts 10: 28.

Peter never wavered in his conviction that blood stained food was defiled and impure, otherwise he would not have been "puzzled" and questioning in spirit. Evidently he did not, at first, see the true import of the dream, but accepted it as literal, and not as an allegorical presentation.

Peter did not at once grasp the significance of the difference between the new and the old dispensations.

We have every reason to believe that not only Peter himself, but all the other intermediate followers of the Master as well abstained from blood stained food.

Not only this but as a grand climax we have also every reason for believing that the Master Himself was a fitting example for them in this respect, in that he would not condescend to pollute his lips with food procured by the taking of the life of an helpless animal.

It is affirmed in the Jewish Talmud that Jesus sojourned for a number of years in Egypt, where doubtless he would meet with many kindred souls amongst the Essenes, with whom His teachings were in closest harmony. The Essenes abstained from flesh food and lived upon the fruits of the earth.

The teachings of Jesus and the spirit of His entire life and message is utterly at variance with wanton butchery, or the defilement of the human temple by food which is only to be obtained by the slaughter of the innocents. It does not seem possible that Jesus, the first born among the sons of God, descended at any time to that level of human degeneracy, which is characterized by cruelty and brutality of the worst possible description. Heathendom can never be Christianized so long as the sacredness of the life of animals is ignored by the Christian Church. Sacredness of animal life is one of the very first principles recognized by the so-called heathen. It is the very last principle recognized by the so-called Christian Church. Until the Christian Church recognizes this very important matter—this religious difference—little progress can be made in humanizing and Christianizing the so-called "heathens" of the Far East. It there be one thing more than another which the Christian Bible teaches, not only explicitly but by implication as well, it is Love, Humanity, Kindness; kindness not only to man, but to all animals as well.

It is not necessary that the Bible should contain an express and prohibitory command against the use of flesh meats. Science tells us, experience tells us, something within us tells us what is right in this and

in many other matters; all we have to do is listen to the voice and follow the leading of the Spirit of Truth, which will surely guide us aright.

Many of the discussions on flesh eating are of the hair-splitting variety, and are merely quibbling side issues in comparison with the great fundamental and underlying physiological principles of the laws governing health, and which every individual can truly interpret for himself. So much for Peter's Vision.

The Ethics of Flesh-Eating

A final word in regard to the ethics of flesh-eating, and we will have done with it. This is a matter which demands the careful attention of every right minded and thinking man.

The killing of animals is ethically wrong, man having primarily no right to destroy the life which he did not give, and which he cannot restore. We admit and put in practise this very principle—the sacredness of life—when we restrain boys from wantonly destroying birds' nests, and prevent them from killing small birds, or other inoffensive and innocent forms of life. Why not let the child be brutal?

One of the first of the doctrines of Buddha is "not to take life." "Sooner," said he, "shall the cleft rock reunite so as to make a whole, than may he who kills any living thing be admitted into our society."

Pythagoras, who lived 600 years before Christ, taught abstinence from all animal food and wine. The gospel of Pythagoras abhorred the shedding of blood, and recommended the use of "food which needs no cooking"—nuts, fruits, honey and the like.

"The Romans were, at this time, so persuaded of the superior goodness of vegetable diet that, besides the private examples of most of their greatest men, they established it by their laws of food.

We find the same preference given to vegetable food by all the ancient Latin writers, who had any understanding of the nature of things, and by Galen and Plutarch, who has showed more particularly perhaps than any one else, the danger of animal diet, in his precepts of health and various discourses on eating flesh.

Certainly the opinion of such authorities must be worthy of our serious attention and thought.

After carefully looking into the matter, and after some years of experience, I am bound to say that under no circumstances is the flesh of animals necessary as an article of food—except starvation. As has been pointed out in another chapter in this book, that in so far as body nourishing, building and sustaining qualities are concerned, there are many other articles of food which are far superior in every respect to flesh meats.

Experience, which is the best teacher, teaches every individual that if flesh eating be dispensed with, and its place be substituted by the other valuable foods, the time will quickly come when one will lose all desire for flesh foods; in fact, no inducement, however strong, can be offered to cause one's return to their use.

Unquestionably the highest mental, physical and spiritual excellence will come to a person only when, among other things, he refrains from a flesh and blood diet. The moment an individual decides to discontinue the use of flesh foods from praiseworthy or other motives, that very moment does he become a better individual. In doing this he respects the rights of animals. This mental attitude engenders in one the spirit of kindliness, than which none greater exists, and elevates a man above the level of the brute or savage state.

Volumes upon volumes have been written upon

this subject, the literature of which is well worth the readers attention and perusal.

Ovid has expressed it thus :

"Let white-robed peace be man's divinity,
Rage and ferocity are of the beast.
Why should man destroy, kill and eat?"

The whole subject—the concrete idea—is beautifully expressed by Cowper in his well known stanza :

"I would not enter on my list of friends,
Though graced with polished manners and fine sense,
Yet wanting in sensibility, the man
Who needlessly sets foot upon a worm."

This is precisely the teaching and philosophy of the Hindus, according to their Scriptures.

FASTING

Fasting is an idea almost as old as the hills. This is to be seen in the Rhamadan or Lenten season of the Mahommedan ; while innumerable instances of it are furnished in the Bible. In the days gone by, purification and sanctification were accomplished by fasting. In modern times, however, the practise of fasting is a comparatively rare procedure, and is thought of almost as a thing of the past, fasting being rather supplanted by feasting. Yet fasting has its uses, even in modern days.

There is no doubt that many people are cured of chronic ailments by the fasting method. Many persons who have suffered severely from minor ailments, have found them disappear after an illness, a temporary illness in which the body has had sufficient time to regain its normal balance or condition of health. The same thing frequently occurs after a sea voyage ; the stomach is so thoroughly shaken up and emptied by retching, that the individual practically puts in a time of compulsory abstemiousness or fasting, and Nature has time to burn up the waste matters of the body.

"The more you feed a sick body, the sicker you make it." Conversely the less the body is fed, the healthier it becomes.

There is really only one benefit from fasting, and that is getting rid of the uric acid cinders, the proteid waste of the body. The majority of people are eating three or four times more proteid material than they need, and the consequence is they cannot utilize it all, and it accumulates in the body as half-burned material or uric-acid cinders.

A man cannot profitably consume more than one ounce, or one and a half ounces, of proteids or nitrogenous food per day, but, ordinarily, from four to six ounces per day are taken: flesh-meats, eggs, nuts, cheese, peas, beans, lentils.

The army ration supplies four or five ounces, which is a great excess; and most health books, physiology and all, say that three or four ounces are necessary to keep a man healthy; these are antiquated ideas.

A vital point in the consideration of this question is that the excessive use of flesh meats, or in fact an excess of any of the other proteid foods, eggs, nuts, or the legumes, results in an excess of uric acid in the blood, producing the condition known as high-tension of the arteries, as a result of the increased action of the heart. Hence we must be *sparing or fasting in the use of the proteid foods,* whether of animal or vegetable origin.

The chapter on Uric Acid called attention to many of the diseases resultant from the circulation of uric acid in the blood. This may be supplemented by the following:—

High-tension of the arterial system, produced by the circulation of uric acid in the blood, is responsible for many well known, as well as for many obscure diseases, and amongst this latter class probably no more obscure diseases exist than those affecting the eyes. Of these, one of the most insidious, progressive,

and incurable of all diseases is that known as glaucoma, in which the eye-ball usually assumes more or less of a stony-hardness, with atrophy or destruction of the optic nerve, ending in absolute and incurable blindness, unless early recognized and scientifically treated; all resultant, probably, from high tension conditions of the arterial system.

It is also assumed in many instances, cataract is likewise a result of similar mal-nutrition processes.

When proteids are used up in the body, or partly used up, the consequence is deadly poisons, of which uric acid is the least harmful. The most poisonous ones are xanthin, hypoxanthin, adenin, granin, and allied products.

It is the accumulation of these fatigue poisons in the body that makes a man feel tired and exhausted when he has not worked; that makes him nervous and irritable, and sometimes results in the commitment of people to lunatic asylums; that produces a general state of chronic biliousness, auto-intoxication, or general mal-assimilation with its general lowered vital resistance to disease, and disorder of the whole system.

The only thing in foods which we need to be really afraid of is the proteids. When a person feels that he needs to fast, all that is necessary is to abstain from proteids. To this end nothing but fruits should be eaten, excluding the highly saccharine kinds, such as bananas, figs, and dates. Use the ordinary juicy fruits, such as apples, pears, berries, oranges, peaches and grapes. Eat, whenever you feel hungry, of this sort of food. Being mostly water it satisfies the craving for food, supplies energy for the muscles, prevents lowering of the vital resistance and weakening of the vital forces. A person should continue such a fruit diet until he finds himself getting clear headed, and with clean tongue. An exclusive fruit diet an entire day of each week is to be commended to all individuals.

There is no advantage in an absolute fast. The proper way to fast is never to overeat. Man is a creature of excess, and does not always diet himself in a philosophical manner so that an occasional fast or a day of abstinence is of marked advantage to him. In the absence of fasting, purgation is a valuable substitute. Entire abstinence from food is better than to be gorging one's self with those foods which are productive of poisons in the body. A fruit diet is a much better way, and one which commends itself to every person. In the fruits we have sugars and acids, practically no proteids; and by quitting proteids, we gain all that is accomplished by an absolute fast.

There is considerable advantage in this plan, because the vital resistance of the body is not lowered, the energy of the body is not depleted. The sugar of fruits is immediately absorbable, and furnishes energy to the body at once, without the digestive process. The acids of fruits are depurative, they are also slightly diuretic, and destroy germs which often accumulate in the stomach in countless millions.

Still further; fruit supplies to the liver the material which it needs in its work of destroying the body poisons.

Absolute fasting may be carried too far, to such an extent that it may end disastrously. This risk is not run when fruit fasting is the method employed.

In connection with the fruit cure, the patient should be treated by other means: exercise, deep breathing, hot and cold baths, all of which accelerate the fires of the body, helping to burn up the cinders.

"The more you feed a sick body, the sicker you make it."

THE SUPERSTITION OF MEDICINE

THE Superstition of Medicine, or the belief that medicines cure disease, is a relic of what may be called a Dark Age, an age extending back almost a thousand years before the birth of Christ. The history of medicine shows that it was closely interwoven with the development of religion; not only this, but that medicine has been intimately mixed up with philosophy and mysticism as well. To delve into the superstition of medicine to any great extent would mean the writing of a book of hundreds of pages, so that the merest idea is here given of it. The history of the Egyptians and Babylonians, and other ancient peoples, tells us of some extremely peculiar beliefs of these peoples, about diseases. The gods were considered directly responsible for the appearance of disease. Marduk, one of the Babylonian gods, was the expeller of all maladies, while Nergal was one of a number of the gods of pestilence. The Egyptians believed that the cat-headed goddess Bubastis dealt out to mothers the blessings of fertility, while amongst the Greeks it was the duty of Aphrodite to attend the entrance of all mortals into this world. She was also responsible for everything that belonged to love, in all its departments; good, bad and indifferent. In view of these facts the priests of the times were also the physicians. Whenever the population groaned under pestilent chastisements, aid and deliverance was sought, in the sanctuary of the gods, from the infallible priest. The priests held the key to the situation—of life and death; they were supposed to be able, always, to secure the assistance of the gods for humanity, harassed by pain and affliction. According to the primeval cult of Zoroaster, all evils,

consequently also all diseases, were derived from the principle of darkness, embodied in the person of Ahriman, and only the sacerdotal caste of the magicians or Magi, who sprang from a special Median tribe, was able to heal them. The essential constituent of every medical treatment consisted in incantations, mysterious exercises, sacred hymns and the repetition of the word "Ormuzd," the name of the highest god, who had the power of healing. One of the generally practised methods of medical science amongst the ancient Greeks was the "temple sleep," in which the patient, after making the obligatory offering, was required to remain a night in the temple, and his dream during that night was the medical advice of the divinity in its most direct form. If the patient did not dream, the priest fixed up one for him—by intercession with the gods. The priesthood at this time claimed for themselves the power of completely controlling Nature, and in the eyes of the people the priest was not only a physician, but also a miraculous being, crowned with the halo of the supernatural, and this was the role he actually assumed in many ancient religions.

In Italy, previous to the beginning of Rome as a power, the priest assumed the position of physician, prophet, interpreter of dreams, raiser of tempests, etc. This was exactly his position among the Celtic tribes of Gaul and Britain, and a similar position was accorded him in the Oriental world, particularly amongst the Medes and Persians. In the process of time certain cunning fellows amongst the laymen, concluding that the profession of the priestly physician and conjuror was a profitable one, took up the work, so that there thus arose a special profession of sorcerers, miracle workers, magicians and medicine men, who claimed to cure all ailments equally as well as the priests had done. Magic art in the treatment of the sick assumed astonishing dimensions under the

Roman emperors. The emperor Hadrian himself and many of his court being treated by physicians who claimed miraculous powers. "Just as the ancients believed that various incomprehensible mystic performances caused certain mysterious powers, absolutely unknown, to exert a curative influence upon certain diseases, so do many modern people believe exactly the same to-day."—*Superstition in Medicine.*

Magic treatment was believed to be especially efficacious if the exorcisms had been written upon paper, gold or precious stones, in which case they were suspended around the neck of the patient. These ancient mystic observances, or their modifications, have also been persisted in to the present day. In antique magic the rope of the hung criminal played a conspicuous part in the **sympathy** treatment, and continues to do so in modern times; just as the medical significance of the crossroad has survived. The mystic influence of the figures 3, 7, 9 and 13 haunts the minds of the masses in this century as it did in the days of antiquity. Here are some samples of the medicine of magicians:—

Remedy against Warts and Corns.—"Lie on your back along a boundary line on the twentieth day of the moon, and extend the hands over the head. With whatever thing you grasp when so doing, rub the warts, and they will disappear immediately."

"Whoever, when he sees a shooting star, and soon afterward pours a little vinegar upon the hinge of a door, is sure to get rid of his corns."

Remedy against Fits.—"The forehead of an ass is tied to the skin of the patient and worn."

Remedy against Headache.—"Tie the rope of a hung criminal around the forehead."

Remedy against Diseases of the Eye.—"If the right eye becomes afflicted with glaucoma, rub it with the right eye of a wolf, and similarly, the left eye with the left eye of the wolf."

Coming down through the ages we find an outcome of the Temple Sleep, as practised in the Hellenic or Ancient Greek civilization, known as Church Sleep, which reached scarcely less popularity than it had enjoyed a thousand years previous in the world of the ancient Greeks. The cures said to have been made by the medical saints were simply miraculous, beyond belief of moderns.

Some saints had a decided inclination for medical specialties. In case severe epidemics were prevalent, it is likely that the churches very often resembled actual hospitals.

So long as the patient was able to be in close proximity to the saint, all was well; but on returning to his home his affliction would re-appear. The difficulties and dangers of traveling in the middle ages made it necessary that some method be invented whereby medical aid by the saints could be administered to these far away cases, more or less as an absent treatment. This was arrived at by the use of relics, which became known as the Cult of Relics, in which it was believed that God endowed the bodies of martyrs who died for the Christian faith, or of saints distinguished by extraordinary piety, with a miraculous power of extraordinary efficacy; not only this, but that all objects which had come in contact with the persons of the saints were wonder-working and possessed of curative power. Gregory of Tours relates some wonderful cures made by the saints and the saint-relics.

Gregory tells us that he, himself, was cured of a tumor of the tongue and lips by merely licking the railing of the tomb of St. Martin, and kissing the curtain of the temple. Gregory must have possessed a wonderful imagination. The healing of the sick through saint-relics was in vogue even as late as the sixteenth century. One of the favorite remedies used by Gregory was the stone-powder taken from the

tombstones of the saints, then put into wine or water, when so prepared it was said to possess an astonishing curative power. Another very efficacious remedy was the charred wick of the wax candles which had burned in church. The pulverized wick was also said to possess wonderful curative powers. The wax which dripped from candles that were placed near the Holy Sepulchre was also credited with wonderful curative powers, more especially when employed as an external remedy. The same remarks apply to the oil from lamps hung in the holy places, which was used principally for anointing.

The water which had been used before Easter to clean the altar of the saints was also considered to be a famous remedy. The Countess Eborin, believing that her hour had come, was quickly removed to the church of St. Martin and thoroughly washed with the water that had been used in washing the altar. And behold! the disease disappeared and the countess lived.

It is also recorded that the grave of the Evangelist John exuded a sort of white manna, which, owing to its wonder-working curative power, was distributed all over the world.

In the early New Testament times there was a belief in supernatural beings—the demons. It would seem that the belief of the first three centuries in demoniac possession was an epidemic contagious disease, which was treated by an exorcist or official caster-out of demons.

The Christian exorcists, in conjuring, only made use of prayer and of the name of Christ; these two factors were considered sufficient to cure the patient of his hallucinations, and they accomplished it. Paul in Colossians 2: 8, calls attention to the danger of the pure and simple teachings of Christ becoming corrupted by the conjurers of demons and magic exorcists. "Beware lest any man spoil you through philosophy

and vain deceit, after the tradition of men, after the rudiments of the world and not after Christ."

It is interesting to notice that what is called madness in the New Testament is generally supposed to be what is now known as epilepsy or fits—the disease of possession or seizure.

The first century Christians believed that God was the best physician, not only of the soul but of the body as well. Accordingly they neglected medical aid and treated all disease only by prayers, by anointing and by laying on of hands. This is the mode of treatment as contained in the epistle of James 5: 14-16:—

"Is any sick among you? Let him call for the elders of the church, and let them pray over him, anointing him with oil in the name of the Lord; and the prayer of faith shall save the sick, and the Lord shall raise him up; and if he hath committed sins, they shall be forgiven him."

"Confess your faults one to another and pray one for another, that ye may be healed. The effectual fervent prayer of a righteous man availeth much." Various accessories and aids were used to increase the therapeutic value of prayer. Thus the Gospel was placed upon the affected part of the body, or clothing of a particularly pious man was spread over the sick one. It appears that the coat of the Apostle Paul was held to possess such healing power. We read in the Acts of the Apostles 19: 12: "So that from his body were brought, unto the sick, handkerchiefs or aprons, and the diseases departed from them." Then again we read of the curative virtue of the shadow of the Apostle Peter. "Insomuch that they brought forth the sick into the streets, and laid them on beds and couches, that at least the shadow of Peter passing by, might overshadow some of them." Acts 5: 15.

During the second century of the Christian era, there appeared Neo-Platonism, a religious philo-

sophical system whose conception of disease was based primarily upon the assumption that the universe is filled with demons and evil spirits, of which there were three ways of gaining the mastery over the demons, to wit: by prayer, in which an individual or healer was enabled instantaneously to restore to health such incurable patients as the blind, deaf and the lame, and even the power of raising the dead was conferred upon the healer, who, however, for these special gifts was compulsorily obliged to abstain from the use of meat, and above all from the society of women. Conjurations and various kinds of mystical mummery were also methods used to dispel the evil demons. Thus to banish disease certain words were employed which were said to be derived from the temple of Artemis in Ephesus, meaning darkness, light, earth, air, sun, truth. Christian Science is a legitimate outcome of this and other pagan religio-philosophical systems.

While on the one hand there were saints—medical saints—who performed miraculous things for the good of the people, on the other hand we have the influence of the devil, the Christian successor of the ancient evil spirits, as exerted upon the medical views of the masses. The devil and his subordinate infernal spirits were considered the "disturbers of peace" in the health of humanity. Disease was their work, or that of the magic arts of evil men. The imagination of mankind during the entire middle ages, as well as a long part of modern times, credited the devil with some of the most wonderful machinations conceivable. The great epidemic of St. Vitus' dance of the fourteenth century was considered to be the work of the Prince of Hell, and to tell even a part of what else was attributed to him would involve the writing of several books. If there was one thing more than another for which his Satanic majesty had a reputation, it was the creating of discord between men and women, and

next to this was his penchant for creating disturbances in the pulpit, as well as in the congregations.

Martin Luther was a strict believer in the doctrine which taught men to hold the devil responsible for the origin of all diseases. He expressed himself as follows: "No disease comes from God, who is good, and does good to everybody, but it is brought on by the devil, who causes and performs all mischief, who interferes with all play and all arts, who brings into existence pestilence, Frenchmen, fever, etc." Then again he said in regard to his health: "I believe my diseases are by no means due to natural causes, but that "Younker Satan" plays his pranks with me by sorcery." Luther was a better authority upon religion than upon disease or medicines.

In the process of time the belief in demons, a variety of medical superstition, finally developed into an epidemic of insanity, into the belief of witches or witchcraft. The witchcraft delusion on the American continent, existing in the latter part of the seventeenth and the beginning of the eighteenth centuries, originated in the hysteria of imaginative children eventually becoming a general popular madness, fostered by the highest educational authority in America, the faculty of Harvard College. Good men and women were jailed, tortured and even executed. In England, witchcraft had even a more formidable history, which need not be further referred to in this connection. Attention is called to witchcraft in this connection, more particularly as an illustration of what the unbridled imagination may lead up to; as has been already referred to in Mental Culture.

Many well authenticated instances have occurred illustrative of the tricks or pranks which an impressionable mind may play upon the body. The cases of paralysis which have been instantaneously cured are of this character. Some years ago a street car collision happened in a certain Canadian city, in which a man

was injured. As a result of the injury he became impressed with the idea that he was paralyzed. The collision and shock were severe, quite enough to make an ordinary individual believe himself done for; and, as happened in this particular instance, this extraordinarily susceptible individual became firmly impressed with the idea that he was actually paralysed. He was cured by one of the Mind-Cures. A shock of any other character would have produced exactly the same result as did Dowieism.

It is easily understood how this could come about. In real paralysis the nervous currents or impulses from the brain to the muscles is unable to flow to the affected parts, because of pressure of some kind, let us say a tumor upon the nerve. In seeming or imaginary paralysis there is nothing of this kind. It is purely from inability, or the result of the individual failing to put forth an effort of the will-power or mind; without the exercise of this power he remains paralysed. In these cases the mind, consciously or unconsciously, inhibits or prevents the nervous currents from traversing the nerves. Any sudden shock as a fire, a runaway horse, an explosion or earthquake, or even the stimulus of hope or belief in a cure, are quite sufficient to bring about a cure, by starting the current, or mind-motor, as it were. Just as the original cause of many of these cases of paralysis results from a shock, so in precisely the same manner they are cured by shock, an illustration of "like cures like."

In a nutshell the d fference between a real and an imaginary paralysis is that the former cannot be cured by any effort which the individual may put forth himself, nor by any exciting agent such as a fire or an explosion; in imaginary or seeming paralysis, a cure may be brought about solely by influences upon the mind of the individual: fire, shock or faith.

The only cure for real paralysis lies in the removal of the cause; if it be the pressure of a tumor,

Nature may remove it; if not, then surgical means only are available.

The difference between a disease and a symptom is something the average man or woman does not even yet know, otherwise we would not hear so much of the cure of incurable diseases by unheard-of or out-of-the-way procedures, or by certain wonderful patent medicines.

Imagination is responsible for probably more than one-half of the existing number of diseases. There are thousands of individuals laboring under the hallucination that they are sick. They think or **imagine** they are sick.

To all intents and purposes an individual who imagines himself sick, might as well imagine himself possessed of a hobgoblin or demon. Hobgoblins and demons and many so-called incurable diseases existed centuries ago, as now, not as matters of fact, but of fiction—fiction of the mind. In short, they were the products of a vivid imagination, and as such were curable by influencing the imagination.

Astrology at one time played a very important part in relation to human affairs. It was claimed that the sun, moon, planets and zodiac regulated not only man's life, either for or against his welfare, but the activities of these bodies were said to commence even at the very conception of his being. Each part of the human body was considered subordinate to a distinct sign of the zodiac. This is the basis for the use of the Sign of the Zodiac as illustrated in all patent medicine almanacs.

Between the thirteenth and seventeenth centuries astrological delusions, or belief in the fate-determining power of the stars and planets, became almost a *furore* especially amongst the crowned heads of Europe. Notably among these were Charles the V., the German Emperor, Alfonso X. of Spain, the German Electors, the rulers of Denmark, etc., etc.

Pliny the historian tells us that Alexander the Great entertained an implicit belief in magic. The erroneous beliefs entertained by supposedly gifted men is readily explained in that they were the product of their own time, and could not be in advance of the thought and sentiment of their day, any more than can we be ahead of our own times in the same respect.

It is interesting to review the many practises and beliefs which gained credence in the days gone by.

The drugs used by the magicians, as remedies, included almost everything under the sun. Many of their extraordinary and abominable medicines were used purely for effect: their filthiness was certain to make an impression of some kind upon their patients. The viler the medicine the more likelihood there was of its expelling or driving out the demon or devil. It will be remembered that disease was supposed to be a demon or an evil spirit which had gotten into a man and must be driven out. This chain of thought carried down through the ages forms a link, and a very strong link, between then and now, and this idea is an inheritance of centuries of superstition and ignorance, and is responsible for the superstitious faith or belief which leads men to swallow millions of gallons of patent medicines, to wear electric belts, magnetic shields and other medical contrivances, the rabbit's foot, horse chestnuts and other amulets or talismans, which are supposed to exercise some special magic influence over disease.

Medical superstition, then, would mean the cure of diseases by supernatural agencies, by exorcisms, by mystic rights and ceremonies, **by medicines,** the viler the more efficacious. Some of the medicines employed by the magician were simply abominable, too filthy for utterance. Without vileness they would be inoperative; lacking in producing the necessary mental effect.

Through the middle ages the various plagues were supposed to be scourges of God for sin.

This is on a par with the belief in the wrath of God. One of the Church Fathers tells us that the reason why so many lepers and cripples were found among Christians was that God, enraged at the luxury of the people, had sent the evil demon of disease to afflict them.

The superstition of medicine has filled the world with fear, and to a large extent created ills it has pretended to cure. In modern times this superstition has been more particularly appropriated and perpetuated by the manufacturers of patent medicines, whose aim is not only to keep the people in gross ignorance, but to terrify them as well. Were it not for this combination of power of wealth and press, it might be possible to stem the tide of superstition by educating the people differently. To bring this about under existing conditions, one might as well attempt to swim up the Falls of Niagara, only to meet with an overwhelming torrent, sweeping him out of existence. Physicians are powerless in the matter, though they would prefer to see the masses educated to realize their superstition; yet they know full well that the idea of the curative power of medicines is inborn, and knit into the very fibre and being of humanity, and will remain so as long as wealth and press continue to broad cast and brazenly trumpet forth what is the greatest myth in existence—the curative power of medicines.

With the disappearance of this myth, mankind would become at once interested in learning the means—the only means—whereby health and longevity of life are produced, that is by an observance of the laws of health. But so long as patent medicines are so beautifully and powerfully exploited as curing incurable diseases, so easy to take, the only thing to do is to war it until the people find out that it is all only a broken reed.

It may be remarked, in passing, that physicians

are here because of the existing condition of affairs, and not from any great pleasure or profit derived from the practise of medicine; many of them now realizing that their time and abilities might have been spent to better advantage in other vocations.

Many villainous attempts have been made to decry the doctor, than whom no more worthy or upright citizen exists; he still stands with honor in his own community, despite these spiteful attacks, and is likely to remain with us until humanity learns how to live.

The Curse of Patent Medicines

Patent medicines are a curse because of two very important reasons. First, in that so long as they are exploited by the power of wealth and press, it is practically an impossibility to get the ear or hearing of the masses, to teach the truth about matters concerning health; Truth being overwhelmed for the time being by Ignorance. Secondly, in that in the use of many of the patent medicines, drugs of a highly poisonous character are needlessly introduced into the system. These poisons may be alcohol, morphine, opium, or cocaine.

If all patent medicines contained nothing more harmful than colored water or sugar of milk, no great harm would ensue from their use, other than deluding the people; but unfortunately many of these medicines are loaded up or down, as you like it, with alcohol; others of them, particularly the cough mixtures, contain morphine or opium in some form or another, while another class of medicines contain cocaine.

Many aged persons take a little cough medicine, just to make them sleep well. In doing this they are ignorant of the risk incurred in their becoming so addicted to the use of the medicine, that they will be unable to stop its use. This is just what occurs in

numberless instances, thousands of wrecks having resulted from the use of the patent medicine cough-cures, containing as they do morphine or opium.

Handling a loaded revolver would be safety itself in comparison with taking any of these remedies; yet the drugging goes merrily on.

If patent medicines have ever exercised any curative power whatever, it has been solely and entirely through the exercise of the imagination, or the faith of the one taking them. This might be called the Mind-Cure of the patent medicine. Any newspaper or periodical publishing the advertisements of many of the patent medicines necessarily fathers them, inferentially at least. A belief in advertisements claiming that Bright's disease, diabetes, tuberculosis or consumption, or cancer, are curable by certain medical nostrums, would take us back to the times when ignorance was rife—in fact it would turn the dial of time three thousand years backwards. Statements of this kind are not only criminal, but an insult to an intelligent or ignorant public, as you like to think of it.

It would be just as reasonable to make the claim for these medicines of their ability to replace lost arms, legs and eyes, as it is to claim the cure of certain diseases by medicines. The man with the wooden leg is as much justified in taking a medicine to replace it, as is the man who takes medicines to cure consumption; one is just as reasonable as the other. Lost legs or arms are just as easily replaced as are any of the other lost or diseased organs of the body—whether they be lost lungs or lost kidneys.

There may be some harmless patent medicines, but in the absence of one being able to differentiate the harmless from the harmful or poisonous ones, their use cannot be recommended under any circumstances.

Exceptions might be made in the case of external

remedies, as liniments, ointments, etc. Home-made remedies of mint or catnip tea are far preferable to any remedy, the composition of which you are not fully familiar with.

The government should protect the people by passing a law prohibiting or restricting the sale of all patent medicines, used internally and containing dangerous remedies; just as exists regarding the sale of arsenic, strychnine, etc. This will be a thing of the milennium!

The point to be emphasized in all that has been said regarding the use of medicines, is that man should endeavor to live the laws of health as far as he possibly can. If guilty of an occasional dietetic or other indulgence, or over-indulgence, let him get back to his natural condition as quickly as possible. There are many simple and harmless medicines, which are as efficacious as any patent medicine in existence. Of these the old-fashioned senna tea, or epsom salts, or the immortal castor oil, happily now made palatable, occupy the front rank, while iron as a food-medicine is a sheet-anchor.

Then there are many other harmless drugs beautifully put up in pill or tablet forms, but these, as all other medicines, should only be taken on extraordinary occasions, and never as a routine practise.

In acute inflammatory conditions of the bowels, simulating appendicitis, no other remedies are so efficacious, at the very beginning of the attack, as a large sized dose of Epsom or Rochelle salts, or a palatable castor oil. These are indicated because of their quick action, a matter of say two or three hours. Other cathartic medicines, pills, tablets, etc., are too slow in action to be of service. Medicines must be regarded as temporary aids to nature. Used in this way they are invaluable and often of life-saving imimportance. What has been said as to the curse of patent medicines lies in the futility of their use in

chronic and incurable diseases, when other means would be of greater benefit. Secondly, in their poisonous constituents which are responsible for drug enslaving habits.

Nature never forgives any violation of her laws. No individual can have from ten to twenty bilious attacks a year, for a series of years, without finally being made to realize the vengefulness of Nature; the same applies to the dyspeptic, and in fact to everyone else who violates natural laws. "It's a long lane that has no turning," and this is never better illustrated than in those who violate natural laws. Retribution is certain to come sooner or later to all such, in the form of chronic incurable disease. For this reason every individual should cultivate health, the possession of which is the greatest asset or wealth in existence. The individual who lives health has no occasion to use patent medicines, nor in fact medicine of any other kind. The wise man realizes that health is the first great wealth, contentment is the second, and wealth—monied wealth—in comparison with the others, is the least and last great wealth.

In this age of enlightenment we know that natural phenomena are a result of natural, not supernatural causes; that disease is a result of the violation of natural law, and is cured or arrested by an observance of this same law, and not by the systematic use of medicines or drugging.

The lesson to be learned from a general consideration of the Superstition of Medicine, is that there are no supernatural agencies whatever influencing health or disease conditions, but that the body makes its own blood continuously out of the air, food and water supplied to it. If the materials are insufficient or defective, the blood will be imperfect—lacking some elements, excessive in other elements, or loaded down with poisonous matters. This, in a nutshell, constitutes disease or health.

THE ART OF LIVING

LIVING TO EAT

"If thou wouldst enjoy a long life, labour to bring thine appetite to reason."

SOME people find a large portion of enjoyment when they can just sit down and enjoy themselves to their fullest extent and capacity, unlimitedly, in eating and drinking, apparently forgetful of the fact that this is not only a perversion of Nature's laws, but is certain to be visited by retribution. Enough is not as good as a feast for such individuals. Nothing short of being full of food, to repletion, gives any satisfaction.

In fact some people eat just like some animals, in that they eat as much and as often as they possibly can. They lose sight of the true purpose of food, the upbuilding of the body and not the gratification of the sense of taste to the extent of gourmandizing.

The sense of taste, combined with the sense of smell, is intended as a guide to enable man to make a proper selection of food. When properly used it also tells him when he has had sufficient to eat. A wholesome appetite, with an unperverted sense of taste, when naturally satisfied, is one of the joys of life. The natural sense of taste becomes blunted by the use of mustard, pepper and other condiments. For this reason they are best dispensed with, or used with extreme moderation.

It is related of Diogenes the Cynic, that, meeting a young man who was going to a feast, he took him up in the street and carried him home to his friends, as one who was running into imminent danger, had not he rescued him.

Evidently Diogenes knew the dangers of excess in eating, if the youth were to have placed before him fowl, fish and flesh; entrees, spices and salads of twenty different herbs; confections and fruits of numberless fruits and flavors; oil, wines and sauces of a hundred different ingredients. Certainly a dangerous mess.

Contrast this with what an eminent physician advised: "Make your whole repast out of one dish, if you indulge in a second, avoid drinking anything strong until you have finished your meal, at the same time abstain from all sauces, or at least such as are not plain and simple." A man could not be well guilty of gluttony if he stuck to these few obvious easy rules.

The underlying idea or foundation principle intended to be expressed throughout this book is the avoidance of excess of whatever character—eating, drinking, thinking or acting.

EATING TO LIVE

"Not to satiate one's self with food is the science of health."

In no period of the world's history has there ever been so deep an interest in the subject of how to live, as at the present. Man has arrived at that stage in his existence when he is beginning to realize that attention to the proper nourishment of his body means health and happiness, and that he can live without disease; disease resulting in all cases from a violation of certain natural laws, the observance of which produces perfect health.

Heretofore much of the food eaten by man has been wholly unadapted to his wants—equivalent to just so much hay and stubble. At least two-thirds of the vegetables, in common use, are only fit for animals with their three or four partition stomachs. No animal but man will partake of an endless variety and mixture of food-stuffs. There are many foods relished by man that the hog and goat refuse to touch. The horse, cow, cat, and dog are most particular in their diet, and in this respect man has much to learn from them. The sense of taste must be more highly developed in man, and consequently, more susceptible to perversion under certain conditions.

Animals are guided in the selection of their foods by the unerring guide—Instinct. Man, long ago, dispensed with the services of this same guide, and is now realizing that it was expensive economy.

The art of living has a platform with a very broad base, and the question of what one's habits of living shall be, will depend very much from what point of the platform the question is viewed. In any case there are certain fundamental principles from which we cannot depart if we would have health and longevity. On the other hand there may be differences of opinion upon certain points, and on such more or less latitude and freedom of thought must be allowed if we would hope to be benefited by a consideration of the various points to be brought to view.

Between the various theories advanced, of malassimilation, auto-intoxication, the poisons of a meat diet, uric-acid poisoning, the perils of white bread, the dangers of sugar, the perils of overeating, of tea and coffee drinking, and many others which are opposite to the commonly accepted ideas, the reader must have reached a point in which he is not considering whether eating in or of itself is not a more or less dangerous procedure. So long as one has a good appetite and lives naturally, there need be no occasion for any individual becoming unduly exercised over matters of diet, provided common sense be used. There are extremes and extremists in diet.

"The first requisite to success in life is to be a good animal." Health, strength and vitality do not come by chance but by obedience to natural laws. Study the laws of health. Select at least a half-dozen principles which you will obey, and hold to them rigidly. Form at least so many correct life habits. No universal rules will apply to all individuals. There must be adaptation to individual physical peculiarities, but a few general life habits are of permanent advantage to all.

The question of diet is one that might be spread over many pages, but after all that has been said and done, the idea which must ultimately prevail in all that pertains to diet is Simplicity — Moderation — Temperance.

Self control in diet is a fine art, to be practised by the dyspeptic and sought after by all, much to be preferred to fine gold and rubies.

Adhere as closely as possible to the 20th Century Code of Health, and you cannot go far astray.

THE ART OF LIVING 100 YEARS

That one may attain the age of one hundred years is no visionary or chimerical statement. According to physiological or natural law, the duration of man's life should be five times the period necessary to reach full growth. We see this law exemplified every day in the brute creation; but a centenarian among men is a rarity. Yet the very fact that there are men living in almost every community who have reached an age between ninety and one hundred years, only goes to prove the more that the natural age of man is one hundred years. Individuals reaching these ages live simply and naturally, as far as they know how.

Humanity educated to know how to live would always live to 100 years of age, barring accidents.

Age is not entirely a question of years. Cazalis long ago originated the oft repeated aphorism: "A man is as old as his arteries." Old arteries are usually hard and brittle, hence are short lived as is their possessor. The man of 75 years of age having elastic arteries is much younger, in comparison, than the man of 40 years of age who has lived the life of a rake.

It has been truly said that man, by his habits of living, kills himself by committing suicide — *slow suicide.* This is, unfortunately, only too true.

Metchnikoff expresses it as his belief that the natural term of life in these days to be about 130 to 140 years. Likewise he also gives it as his opinion that when man has lived out the full term of his natural life, that the instinct—what may be termed the natural instinct—of death asserts itself. On this basis is readily understood man's unwillingness to depart this life at any such premature age as 80 or 90 years.

Undoubtedly the natural duration of life varies, and cannot be expressed by a definite figure. In most cases it ought to be more than one hundred years, and only in rare cases ought it to be much less than that term. It is probable that the Biblical phrase "old and full of days," refers to **the instinct of death,** developed in well-preserved old men who had attained ages of from 140 to 180 years. This Biblical phrase is, evidently, not a common place phrase, because in the case of other celebrities as Jacob, Aaron, Ishmael and Moses, who died at the earlier age of 120 to 140 years, the phrase is not used, the time for the natural instinct of death not having asserted itself.

Men die because, in spite of their boasted reason, the majority have not sufficient judgment to regulate their lives. Very few, indeed, die of old age, as intended by nature. There is nothing in physiology or biology to show why man should not live or continue his existence for ever. Man, the head of the animal kingdom, lives fewer years proportionately than any of the inferior creatures. The reason may be stated in one simple word—*excess.* It may be either physical or mental, but the fact remains that excess is the foe of longevity. Men appear able to regulate everything but their own conduct. It is excessive indulgence of the appetites and passions that hurries the majority of men to the grave long before they have completed the allotted span. With good reason have the sages invariably preached moderation.

An interesting fact has been developed in connection with the study of the causes which produce old age, and that is the medicinal value of fermented milks—soured milk, koumiss, and buttermilk, in that they arrest or destroy the phagocytes or the microbes producing old age conditions. These soured milks are inimical to the microbes of putrefaction, and hence explain why lactic acid is so useful in maladies, diarrhoea, dysentery, etc., associated with putrefaction of the intestinal contents. This also explains the reputed medicinal value of buttermilk, amongst the laity.

As explained in the chapter on Old Age, *fruit juices* and fruits enjoy an equal reputation for destroying the microbes which are inimical to human life. *The diet of old age* should be simple and digestible, consisting of cereals, breads made of whole wheat flour, zweiback, fruits, particularly apples, grapes and pears, and fruit juices. Fresh bread, biscuits and all other indigestible food should never be used.

The question is often asked: What about Health Foods? The basis of all health foods is the same as that of bread—that is, wheat; with possibly a slight admixture of oats or barley. The majority of these foods may be likened to unleavened bread in composition. They are usually made from the grain by baking and special heating apparatus, without the use of yeast processes. They may be malted or unmalted.

The majority of health foods are commendable, and while not so economical as toasted bread, yet they afford considerable variety to our diet, as well as possessing many conveniences to those traveling. Health foods are best eaten in the dry form and not as mushes. Whole wheat bread, when properly toasted as in zweiback, either sliced or ground up, is not excelled by any of the other health foods.

We have already more kinds of food than we know what to do with. It is not a question of this or that particular kind of health food being adapted to

our wants, so much as it is a live question that we learn to chew, and to use the foods we already have.

Strange as it may appear, it is none the less true though it has escaped general attention, that the Bible, essentially a book of morals, also teaches in an emphatic manner the principles of health quite as well. These principles are not laid down or itemized exactly in such and such a specified manner, as is the case in books specially written upon the art of living, but none the less, if one reads between the lines, in addition to what we may well infer from the lives, precepts and sayings of many of those who wrote its pages, notably the sayings of Christ and the writings of Paul, a complete Code of Health may be formulated, worthy of emulation by those who desire to live a life of health, even on its purely physical side, though, as has been repeatedly pointed out, the physical cannot be separated from the mental side of life. Whatever conduces to health of the body must conduce to mentality, equivalent to happiness, and happiness is heaven—earthly heaven at least.

The individual whose stomach is the seat of acidities, burnings, pains, gaseous disturbances and commotions in general, cannot be in any genial frame of mind; in fact he is suffering torture both of mind and body.

We are, in a measure, just what food makes us; happy and contented, or full of strifes, domestic broils, bickerings, ill-tempers, irritations and general unhappiness. For this reason, if none other, it is politic to study and observe the laws regulating health.

A resumé of the ideas and principles involved and expressed within the covers of this book, lead up to the construction of what may be summarized, condensed or crystallized into **a universal health creed,** a close adherence, or even an approach, to which will result in perfect health and happiness to every individual.

THE 20th CENTURY, OR 100 YEAR HEALTH CODE

1. **Breathing should be deep and full.**
2. **Mastication and Insalivation should be slow and thorough. Proteid foods must be sparingly partaken of at all times.**
3. **Drink freely of pure water between meals, and of an amount always consistent with comfort.**
4. **Bathe sufficiently to keep the skin clean and active.**
5. **Exercise freely, regularly and vigorously in the open air.**
6. **Sleep early and moderately long.**
7. **Stimulants avoid, whether alcohol, tobacco, narcotic drugs, or drugs generally.**
8. **Excesses of all kinds avoid: exciting pleasures or generally overdoing things.**
9. **Practise moderation in all things—Temperance and Regularity.**
10. **Cultivate the power of cheerfulness.**
11. **Rest—Mental Rest. Make haste slowly. Don't worry. Practise Deliberation, Concentration, then Rapid Action.**

THE FOLLOWING IS AN ENLARGEMENT OF THE 20TH CENTURY CODE OF HEALTH:

Breathing.

Take special breathing exercises for from five to ten minutes out of doors, or before an open window upon rising, before retiring and during exercise. Ventilate your office or rooms, day and night. Cover well and sleep with windows open, or partly open, even in winter.

Eating.

Eat regularly, lightly, slowly of *plain foods*, using plenty of cereals and fruits. Flesh meats are best replaced with nuts, peas, beans or lentils. Proteid foods must be sparingly partaken of: this includes flesh meats, eggs, nuts, the legumes—peas, beans, lentils—and cheese. *Raw diet*—the natural *uncooked* foods—should form at least one-half to three-fourths of the diet. Use variety in different meals, avoid unwholesome mixtures at the same meal. Stimulants are unnatural and unnecessary. Never force yourself to eat, but wait for an appetite, skipping a meal if necessary. No set diet will fit all cases; food must be adapted to the individual. Age, occupation, season of the year and many other agencies calling for flexibility in diet. The raw foods are magazines of energy in its purest and most potent form, hence most commendable. Eat two moderate meals per day, seven or eight hours apart. If there be anything further desired let it be a little raw fruit before going to bed, as an apple, pear, peach, a bunch of grapes, or whatever else agrees with the individual. With the exception of salt, all condiments, such as pepper, mustard, vinegar and hot sauces, are directly injurious. Pastries and sweets are not only devoid of nutritive value, but by putrefying within the alimentary tube, they become causes of many disorders. Tea, coffee, chocolate, cocoa, alcohol, all are stimulants making powerful reaction against the health and life of an individual. If tea or coffee be used they should be weak and in moderation.

Drinking.

Take one-half pint or more of cool or hot water, as you like, upon rising and retiring.

Bathing.

The best time to bathe is immediately after moderate exercise, before cooling off. The more frequent the bath, the shorter it should be. Rub vigorously after a cool bath, producing a bright glow of the skin, becoming thoroughly alive and active. Use a graded bath, beginning with tepid water, and finishing with a cool dash or spray. See that the feet and legs are thoroughly warm after the bath. Never take a bath within two hours of a full meal or just before such a meal. Remain indoors one quarter of an hour after a bath before going out of doors.

There may be said to be decades as applied to the food of man during his lifetime. There is a food for babyhood, for childhood, for adult life, middle age and old age. These points have been discussed in various chapters of this book, but may further be supplemented by stating that the quantity of proteid food required is probably rather more for the growing individual than for one who has attained full growth; that after fifty years of age the character and the quantity of the food are likely to undergo modifications as to simplicity and lessening of the quantity; that the diet of old age becomes essentially one of simplicity and digestibility.

The last word has been said upon worry, when attention is once more directed to it, in asking the strict observance of No. 11 of the 20th Century Health Code. All else may be scrupulously adhered to, yet if the worrying habit be continued, the benefit to be derived from the practises of such a code will be more or less nullified. As has been explained under Mental Habits, worry manufactures worry poison, this, when absorbed into the blood, kills. This is the precise principle involved in the saying: "Sufficient unto the day is the evil thereof."

There can be no doubt but that human life can be very considerably prolonged by careful attention to certain laws and regulations which are expressed under the accompanying code of health.

The entire eleven articles of the 20th Century Code of Health can be condensed into a B C D or "vest pocket" code, which is worth memorizing as well as putting into practise. It is

BREATHE DEEP
CHEW LONG
DRINK MUCH
EAT LITTLE

The healthy, reasonable man has good habits. He eats at regular hours all the foods on an ordinary table without theories as to their digestibility. One must not have his attention fixed too firmly upon his food, otherwise he will suffer mentally and physically, it being a law of life that the physiologic acts, digestion, circulation, etc., must not be the object of thought. The one who thinks much about his digestion will soon suffer from indigestion; one must not think too much about the body otherwise it will fail him. He goes to bed more or less early; he looks after the cleanliness of his skin without undue anxiety on the subject of cold water; he does not become intoxicated, nor does he do anything that might be hurtful to him. He lives naturally and with unshaken confidence in his powers of resistance.

His mental attitude is just as natural and simple. He must be interested in everything, develop his aptitude, and learn how to enjoy life fully. "A sound mind in a sound body."

He cultivates the power of cheerfulness, so that if he lives to be the age of Methuselah he is perpetually young and happy.

LIFE

"Between two worlds life hovers like a star,
'Twixt night and morn upon the horizon's verge."

FOR ages philosophers and scientists have sought to solve the mystery of life—the world's greatest miracle—but the mystery still remains unsolved. The theories of spontaneous generation of life and all other speculations of a like character have ended where they began, in generalizations and indefinite nothingness. Human knowledge is at sea regarding the origin of life itself. Scientific investigations during the more recent years go to prove that animal and vegetable life are one and the same thing. The same Power that upholds Nature in every leaf, flower, grain, bird, insect and animal, is also working in man. The same great laws that control the sun, moon and stars, also control human life. It is the same mighty Power exhibited throughout the entire universe. The Power that converts the little acorn into the great oak is exactly the same Power that creates and is operative in man. Human life is the miracle of miracles, resulting as it does from the development and growth of two cells, the union of the male and female elements, so infinitesimally minute as to be microscopic in size. Truly no greater miracle can be imagined than the growth and development of man from the primitive cell up to and through the process which makes him the ruler of the universe, subject only to the Creative Power. God the Omnipresent is in every atom of creation seen and unseen. He is in the blade of grass and the towering tree; in the starry heavens above and in the sparrow's fall; in the lightning's flash as in the lullaby; in the air we breathe and the thoughts we think. Even the trees as they grow experience a delight in the process of being, their leaves always upturning towards the light to receive the vitalizing light-life which produces the wonderful transformations necessary for the full development of the plant. Man

cannot separate himself from the Omnipresent God, for if but one atom in the universe exist apart from God, the whole of Creation would disintegrate. There can be but one satisfactory explanation of the marvelous phenomena of life, in all its varied manifestations, and that is, it is an Infinite Intelligence, Nature, or God, working out His purposes.

The explanation of Nature is God. If we would understand or appreciate the infinity and immensity of this Power we must go to astronomy. By the aid of the telescope we view the starry heavens with their vast orbs of light, the sun, the worlds and stars untold. One is simply overwhelmed with the immensity of the starlit heavens. Nature speaks to us in the most majestic and awe-inspiring tones: "The heavens declare the glory of God, and the firmament showeth his handiwork." Ps. xix, 1.

The old division of man's life into three parts—body, soul and spirit—is now largely justified by physiological psychology. Science and Religion are at one in this as in many other respects. The mere body life consists in *existing*, the soul or animal life in *moving* and spending the life force; and the highest, or spirit—intelligent, moral and intellectual life—is what really constitutes *living* to a man.

That wonderful philosopher and writer, Paul, evidently fully understood this when preaching to the Athenians, in his three-fold description of life: "For in Him we live (spirit life) and move (soul or animal life) and have our being (bodily life)."

Many of us have never known life excepting as we have come up with childish ideas. Let us learn to live it now, as men, with ideas in accordance therewith. We must live life as a beautiful possibility. Let us live it long and well, in health, happiness and contentment, and we shall have realized

"What a glorious thing human life is, and how glorious man's destiny."