

GOOD HEALTH

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October, 1905

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Editorial.

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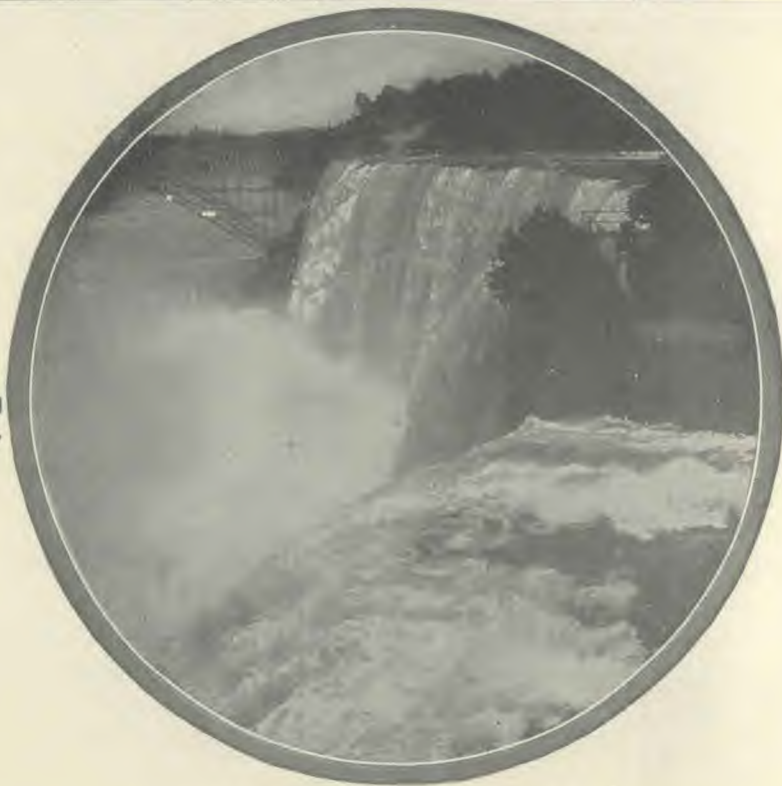
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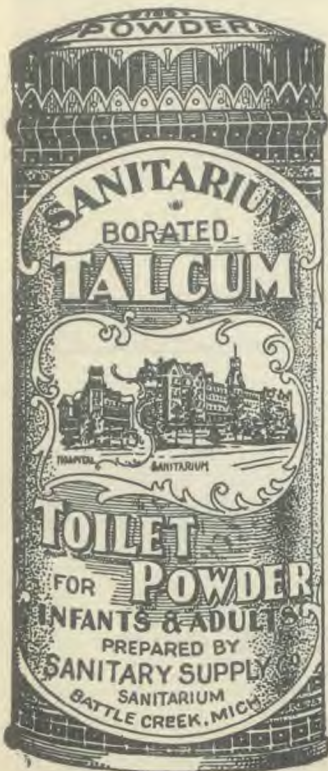
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There is nothing pedantic in the book — no exploitation of fads or fancies — just plain, straightforward talk and practical truths. It tells of a rational life you can live in your own home, whereby you can secure abounding, abiding health. It tells the cause of sickness and weakness. It shows the part that diet plays in making or marring careers.

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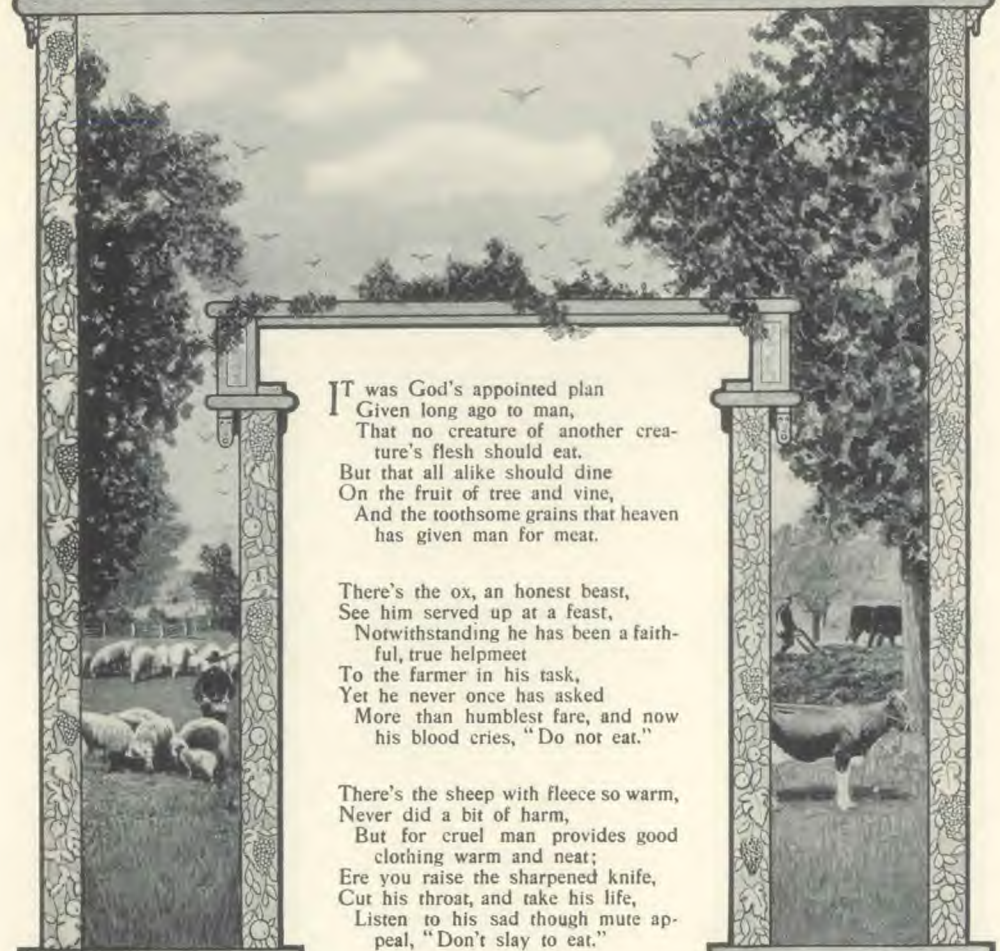
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A Vegetarian Song



IT was God's appointed plan
Given long ago to man,
That no creature of another crea-
ture's flesh should eat.
But that all alike should dine
On the fruit of tree and vine,
And the toothsome grains that heaven
has given man for meat.

There's the ox, an honest beast,
See him served up at a feast,
Notwithstanding he has been a faith-
ful, true helpmeet
To the farmer in his task,
Yet he never once has asked
More than humblest fare, and now
his blood cries, "Do not eat."

There's the sheep with fleece so warm,
Never did a bit of harm,
But for cruel man provides good
clothing warm and neat;
Ere you raise the sharpened knife,
Cut his throat, and take his life,
Listen to his sad though mute ap-
peal, "Don't slay to eat."

Better far it is to be
A vegetarian, don't you see?
As thus we take our daily food di-
rect from Heaven's own hand.
When we eat another's flesh,
We're not taking food that's fresh,
But are living on a diet that is
second hand. J. H. K.

GOOD HEALTH

A Journal of Hygiene

Vol. XL

OCTOBER, 1905

No. 10

IS ALCOHOL A FOOD?

BY J. H. KELLOGG, M. D.

THE question, What is a food? is one which has been discussed perhaps more than any other in physiology. For lack of an authoritative and thoroughly recognized definition of a food, many serious errors have been committed. Food has been defined as being any substance which can repair tissues, or which can be utilized by the body in any way. This definition led to much confusion, because the science of nutrition was not well understood. Many things were supposed to be food which were not utilized by the body.

Some thirty-five years ago Dr. Hammond made a series of experiments by which he thought he demonstrated that tobacco, tea, and coffee are foods, because they were to some degree utilized by the body in such a way as to lessen its expenditures. He claimed by his experiments to have shown that, while living on a spare diet, his weight diminished less rapidly when he used tea and coffee or tobacco than it did when he did not use them. So he maintained that the body utilized tea, coffee, and tobacco, and that in that manner the bodily tissues were in some way economized.

This theory has been maintained for many years, being based largely upon Dr. Hammond's experiments and those of other investigators who had obtained the same results. Hammond showed that the amount of carbonic acid thrown off from the body was diminished in

these cases; also that there was a diminution of the excretions under the influence of alcohol, tea, and coffee. It was claimed that these substances, while not foods, were economizers of food, or "sparing substances,"—that they lessened the activity of the waste processes of the body, and so were actually beneficial.

Twenty years ago the argument was very strongly made by numerous authorities that alcohol was a very important food because it lessened waste. If alcohol lessens vital activity, it is an enemy to the body, and not a friend; for what we desire is normal activity of the body. If alcohol is beneficial to the body, the activity of the body should not be diminished. If these substances lessen the activities of the body, it is doubtless due to the storing of waste substances within the body rather than to an economizing of the vital forces.

Another definition of food which has been strongly urged is that "food is any substance which will oxidize in the body,—any substance which is reparatory of the tissues of the body, or aids in building new tissues, or which may be a source of energy to the body." Professor Atwater takes the ground that any substance which is oxidized in the body is a source of energy. If we accept that definition, we must admit that alcohol is a good food, because it is oxidized within the body.

So, starting out with this definition, Professor Atwater, a few years ago, by calorimeter experiments undertook to prove that alcohol is a food. And if we admit his definition of food, then we must admit that alcohol is a food. But the Professor's premises are wrong. He argues in this way: "Foods are oxidized within the body; hence, any substance which is oxidized within the body is a food." "All foods are oxidized within the body. Alcohol is oxidized within the body. Hence alcohol is a food." Is that logical? Certainly not.

According to this logic one might as well say, "A dog is a four-legged animal; therefore every four-legged animal is a dog." Or, "All birds are bipeds. Man is a biped. Therefore man is a bird."

Professor Atwater showed that alcohol yields energy to the body by its oxidation in the body, and that when a man is at work, there is a less amount of body waste when he takes alcohol than when he works without it. The idea that alcohol is a food because it economizes the burning up of the body tissues by contributing something to the heat of the body, is a very great error. If it is true that alcohol is a food because it is oxidized in the body, the same would be true of strychnin, morphin, and a variety of other things which are swallowed. Anything which could be oxidized in the body would be a food, according to that reasoning. When strychnia is taken into the body it undergoes oxidation. Quinin and other substances, while passing through the body, are oxidized. So the mere fact that a substance is oxidized in the body does not put it into the category of foods.

Now, if alcohol is a food because it contributes to the heat of the body and economizes the burning up of the bodily tissues, the same thing is true of clothes;

for clothes retain the heat of the body and so lessen the amount of consumption of the tissues. Farmers, as a matter of economy, have warm barns for their cattle and horses, to keep them warm and thus lessen the amount of waste. So we are compelled, by this definition of foods, to include barns, clothes, sheds, and many other things which are not so convenient to swallow as alcohol.

Sir William Roberts, of England, once set out to prove alcohol to be a food, by experiments upon the influence of alcohol on digestion. But to his surprise he found that alcohol not only does not aid digestion, but when present in digestible proteids to the proportion of one per cent, the digestive process is very much hindered. So these experiments seemed to fail; but instead of admitting his failure, Professor Roberts claimed to have made a new discovery,—that modern improvements in cookery have rendered our food so digestible that "we are in great danger from an undue acceleration of nutrition," as he put it; that we need something to slow down the digestive process; and that alcohol, by putting the brakes on the wheels of the digestive process, slows down the modern stomach so that it can adapt itself to modern cookery. Of course, his premises are wrong. The probability is that modern cookery, on the whole, lessens the digestibility of foods.

So we see that Professor Atwater's definition of food is not a correct one. In order for a substance to be considered a food, it must be capable of supplying energy to the body at the right time and in the right way. Professor Bunge has pointed out this fact. Alcohol may be oxidized in the stomach, in the liver, or in the blood, and in its passage through the tissues; but we have no evidence that this can be utilized by the body.

Suppose we consider some of the contrasts between alcohol and what we know to be food, as bread, apples, potatoes:—

1. In the first place, when alcohol is used continuously, the body acquires a tolerance for it, so that it takes more and more alcohol to produce the same effect that it had when first taken. This is not true of apples, potatoes, bread, etc. The same quantity of food possesses the same properties and produces the same effects the last time it is taken as the first time. It is not so with alcohol; it acts just as other drugs act.

2. When a person uses alcohol habitually, he soon gets a tremendous craving for it, so that he wants more and more of it, and without it he feels unstrung and unfit for business. One does not crave bread, nor potatoes, nor fruits, nor any particular article of food in this manner. One craves food, but it is not a wild, insane craving that can not be satisfied.

3. When alcohol is withdrawn, one immediately suffers very distressing effects. In this respect alcohol is very decidedly different from a true food. A man may have no food for half a day, or a day, or many days (some have fasted forty days), and yet he may go on with his work as usual without much discomfort. However, when alcohol is suddenly withdrawn from the habitual alcohol user, his nerves are unstrung, and he is utterly unable to work; but after drinking a glass of grog, he is a transformed man, and able to go on with his duties.

4. Alcohol in every dose, no matter how large or how small, lessens muscular power, and renders the muscles weak and unsteady. The man who takes a glass of alcohol or grog thinks he can lift more than he could before he took it, but when he tries, he finds that he can

not. Food increases muscular power within half an hour, whereas alcohol diminishes it immediately.

5. Alcohol lessens the accuracy of brain and nerve activity. The brain is confused. The muscles become unsteady and the brain also; and, though a person can make a voluble speech, it will not be a convincing one.

6. Alcohol diminishes heat and lowers temperature, while food increases temperature. The man who is very cold, takes alcohol, and thinks he is warm enough, but really, heat production is diminished and he is colder than before.

7. Alcohol is very rapidly oxidized in the body, whereas food is very slowly oxidized within the body.

8. Alcohol can not be stored in the body, whereas food substances—sugar, starch, fats, etc.—can be and are stored in the body.

Alcohol promises pleasure; but instead of true pleasure, happiness, and contentment, which come from a life of sobriety and uprightness, it gives a mere transient tickle of the palate, a thrill of the nerves, a momentary exhilaration, a transient oblivion, and after it the bitterness of a ruined life, loss of friends, home, and property, a wrecked body, premature death, disgrace, and misery. Alcohol promises comfort; but instead of the comfort and well-being which come from health, strength, and vigor,—the result of a wholesome life,—alcohol gives simply a temporary benumbing of the sensibilities, certain to be followed by an increase of pain and suffering, and an aggravation of all the miseries which it promises to relieve.

Alcohol is in every way a deceiver. It fulfils none of its promises. It relieves hunger because it destroys the appetite and the power to digest food; but it does not nourish the body. It destroys pain

by paralyzing the nerves; but it does not remove the cause of the pain. It makes the poor man feel for a brief time that he has boundless wealth; but it leaves him poorer than before. If a man is cold, it gives him a sensation of

warmth; but he is actually colder than before. The man who is weak imagines he is strong, while he is actually weaker than before. Assuredly, alcohol is not a food. "Wine is a mocker, strong drink is raging."

PHYSICAL CULTURE IN THE LONDON SCHOOLS

BY HARRIET WRIGHT

London, England

THE interest in physical culture awakened about twenty-five years ago, and gradually increasing throughout the world, has had its effect upon the public schools of England. The school curriculum is so arranged as to give the children of all ages opportunity for physical training and development.

There has recently been considerable agitation in England over the alleged physical deterioration of the British race, and a new League, with eminent physicians and statesmen at its head, has been formed for the express purpose of looking after the physical health and development of the rising generation. This will doubtless result in more time and atten-

tion being given to the subject of physical culture in the schools.

The system of Ling's Swedish movements was introduced into the elementary schools as far back as 1885, the first instructress being Madame Bergman Osterberg, a Swedish lady.

Teachers' classes were soon established, and from these numbers of young ladies have since been graduated as teachers. Great care is taken to make the students understand the action of the various movements upon the different sets of muscles involved. Before being allowed to give instruction, the teachers must have shown proficiency in human physiology and hygiene, and must also



GARLAND DRILL.



GARLAND DRILL

have drilled a squad to the satisfaction of the examiner.

The accompanying pictures will give some idea of the instruction given in physical culture to the girls in the London Council Schools. A syllabus is drawn up by the instructress to suit the girls of all ages, and this is carefully followed out by the teachers. The movements are taken in the following order:—

1. Foot and leg movements.
2. Trunk and neck movements.
3. Arm movements.
4. Balance movements.
5. Shoulder-blade movements.
6. Abdominal movements.
7. Lateral movements.
8. Leaping movements.
9. Marching.
10. Respiratory movements.



BAR-BELL EXERCISES



WAND EXERCISES



BAR-BELL EXERCISES

In each of these sections is a variety of movements, and the teachers are strictly forbidden to indulge in many movements of one section to the neglect of those in the other sections. One movement from each section should be taken at every lesson, thus bringing into action all the important muscles of the body.

The change in the deportment of the pupils after taking a course of physical exercise is remarkable. Even the very young folks begin to feel their feet, and move with amazing grace.

From the least to the greatest, the children in the schools of this great city receive instruction in this healthful recreation. It is a favorite subject with the girls, and three lessons weekly of twenty minutes' duration is the time allotted to the carrying out of one of the most beneficial exercises of the school curriculum.

One of our illustrations shows a group from a junior mixed department giving a display of the "Garland Drill." The precision and accuracy of some of the

movements of the younger children are remarkable, and the beautiful effect of a large number going through the exercises of a complete table, must be seen to be appreciated.

Displays are occasionally given at the Royal Albert Hall, London's largest concert hall, and the scene then is a most charming one. The squad from each school, composed of about forty children, is dressed in a costume of its own designing. After each school has given a display, the total number of children, about two hundred and fifty, unite for Mass Drill. Viewed from a distance the daintily dressed little creatures look like fairies, while at one point, when each squad forms a circle, and the children bend to touch toes, one could imagine them to be rings of roses.

In addition to the Swedish drill, swimming is now taught in many of the schools, and some expert swimmers and divers are developed. Boys' and Girls' Departments send classes of from thirty to forty to the beautiful public swimming



A SWIMMING LESSON

baths that have been established in every district of London, and the children receive instruction in swimming and life-saving. Our illustration gives an idea of one of the public swimming baths. Another illustration shows a group of girls forming a life-saving team, endeavoring to restore a "drowned" companion to life.

The citizens of London are doing all that lies in their power to make the rising generation healthy and happy in their school life.



LIFE-SAVING DRILL

Do not keep the alabaster boxes of your love and tenderness sealed up until your friends are dead. Fill their lives with sweetness. Speak cheering, approving words while their ears can hear them, and while their hearts can be thrilled and made happier by them. The kind things you mean to say when they are gone, say before they go. The flowers you mean to send for their coffins, send to brighten and sweeten their homes before they leave them.

If my friends have alabaster boxes laid away, full of fragrant perfumes of sympathy and affection, which they in-

tend to break over my dead body, I would rather they would bring them out in my weary and troubled hours, and open them, that I may be refreshed and cheered by them while I need them.

I would rather have a plain coffin without a flower, a funeral without a eulogy, than a life without the sweetness of love and sympathy.

Let us learn to anoint our friends beforehand for their burial.

Post-mortem kindness does not cheer the troubled spirit. Flowers on the coffin cast no fragrance backward over life's weary way.—*Sel.*

HOPE, FAITH, AND LOVE

THERE are three lessons I would write —
Three words, as with a burning pen,
In tracings of eternal light,
Upon the hearts of men.

Have Hope! Though clouds environ round,
And gladness hides her face in scorn,
Put off the shadow from thy brow —
No night but hath its morn.

Have Faith! Where'er thy bark is driven —
The calm's disport, the tempest's mirth —
Know this: God rules the hosts of heaven,
The inhabitants of earth.

Have Love! Not love alone for one;
But man, as man, thy brother call;
And scatter, like the circling sun,
Thy charities on all!

Thus grave these lessons on thy soul,—
Hope, Faith, and Love—and thou shalt
find
Strength when life's surges rudest roll,
Light when thou else wert blind.

—Schiller.

THE PATENT MEDICINE EVIL

BY A. J. READ, M. D.

A FEW days ago I met, in a Western State, an old lady, the wife of a clergyman, who was completely broken down in health and a victim of the patent medicine evil. She had enjoyed perfect health until five years ago, when, owing to the use of improper food, she had brought on an attack of indigestion.

The alluring advertisement of a popular patent medicine which claimed to be a cure for indigestion induced her to purchase a trial bottle. The first dose sent a thrill through her system. Imagining the strange effect to be due to some wonderful healing power in the herbs contained in the patent medicine and represented as a special antidote to a long list of diseases, and reading the numerous testimonials on the wrappers of the bottle, she was led to believe that the first dose of this wonder-working remedy had begun its curative process in her system. This dear old Christian lady interpreted the thrill of exhilaration to be an omen for good.

When the first bottle was empty, she bought a second, then a third, and then

numerous other bottles in order to keep up the pleasurable sensation which she had learned to anticipate, and on which she felt that her life was dependent. She soon found that it was necessary to increase the dose in order to obtain the characteristic effect, and as she was advised by the directions on the bottle to increase the dose, she supposed it was the proper course, and went on taking gradually increasing doses, until, at the end of five years, the frequent dollar bottle of the favorite remedy was soon consumed. At the end of this time, as she expressed to the writer, the shelves of her cellar were filled with the empty bottles on the contents of which she had been building up a false constitution, and the victim of this patent medicine habit had not only formed the alcohol habit from the medicine, which contains more than one-fourth alcohol, but she had, by its use, produced in herself chronic catarrh of the stomach and bowels, catarrhal inflammation of the throat and bronchial tubes, a weak heart, and a "gin liver." Her memory had failed,

and her mind, which had always been bright and clear, had become slow and



dull. Her arteries were hardened, and her face was becoming furrowed with deep wrinkles. She had all the markings of a typical toper.

At a Chautauqua assembly where the writer was demonstrating alcoholic analyses of patent medicines with the apparatus shown in the accompanying cut, this good old lady was greatly surprised to find that the popular patent medicine which she, a Christian and a strong advocate of temperance, had been taking, was composed largely of alcohol, and that the wonderfully exhilarating effects which she had experienced had been obtained from this ingredient. It is needless to say that this deluded old saint determined to reform at once, and to do what she could to keep others from falling into the same snare and going through the same struggle that she had entered upon in giving up this disguised intemperance,—the patent medicine

habit.—a struggle which every devotee of alcohol, cocain, morphin, strychnia, and other stimulants has to make. The number of similar victims of various drug habits is very large.

The greater proportion of these victims are the result of the unrestrained use of strong and dangerous drugs administered in the patent medicines, regardless of diagnosis or prescription. It is estimated that there are in the United States alone a million cocain and morphin victims. Such enticing drugs as alcohol, strychnia, arsenic, acetanelid, morphin, and cocain are used without stint; the principal object sought, apparently, being to put into these secret nostrums any substance that will produce a quick and vigorous impression, and induce the user to rely upon the narcotic and exhilarating effect as an evidence of improved health.

The comfort and improvement felt by these patent medicine users is as deceptive as that experienced by the inebriate, who, in a drunken stupor, lies down in the cold gutter with a curbstone for his pillow, imagining that he is reclining on a warm and soft bed. The true results of the delusion in either case are best known to the undertaker and the officer of the morgue.

A popular superstition has led many to suppose that health can be bottled and dispensed at will by the individual who is fortunate enough to find the right herb or drug. Little attention is paid to the therapeutic effects in the administration of these medicines, or to the principles of medical ethics and responsibility to the community at large. The mad rush for gain in these days of wonderful enterprise has gone so far that for the sake of saving a dollar and ninety cents per gallon,—the cost of the alcohol used so lavishly in the majority of bottled

patent medicines,— some large manufacturers are known to use poor grades of whisky and even deodorized wood alcohol in their products.

Only a short time ago there came to our attention a pitiable case of a man in middle life who had recently become absolutely blind, investigations showing that he had paralysis of the optic nerve, probably brought on by the liberal use of some of these wood-alcohol products. There are on record quite a large number of cases of wood-alcohol blindness and deficiency of vision, as well as an increasing list of fatalities.

The liberal use of alcohol in patent medicines by people who for the most part suffer from diseases of such a nature that any physician of whatever persuasion in regard to the utility of alcohol would forbid it, is bad enough; but to administer the deadly poison contained in wood alcohol to these unsuspecting victims seems criminal in the extreme.

Many of the soothing syrups contain one-fourth of a grain of morphin to every two ounces. These are being liberally used to quiet infants, regardless of the fact that their delicate tissues are especially susceptible to the nerve-destroying influence of this disastrous drug, the blight of which is felt throughout life.

Four years ago the writer was called upon to prescribe for a thirteen-year-old girl who was a complete nervous wreck. The nerve control of the muscles was so deteriorated that there was constant twitching of the head, arms, feet, and shoulders, making it very unpleasant both for the patient and all her friends. This girl had been brought through the trying years of infancy by reliance upon soothing syrup. As she grew older, it was found necessary to tone up her system with patent medicines containing

morphin, strychnia, and alcohol. The results were that before she had reached adult life, this child was practically a nervous wreck. Fortunately, three years' rest from school, with an out-of-door life, seemed to work wonders for her. Her life was saved, but she will undoubtedly always carry the painful reminiscences of her parents' indiscretion during the first few years of her existence.

These few practical observations, which might be multiplied, serve to illustrate how the indiscriminate use of drugs as administered through mercantile houses in the form of patent medicines, is both dangerous and harmful.

Professor Krapelin has conducted a series of two thousand experiments on the effects of small amounts of alcohol. In these experiments, tests were made on the ability to add columns of figures, memorize figures, and to read short syllables by quick glances through a slit in a revolving disc. The results show that a very small amount of alcohol was sufficient to materially slow the nerve and mental process, and retard and weaken the perception and judgment.

Beer, which contains only from three to six per cent alcohol, caused a distinct decline in the nerve activity, the effect sometimes lasting twenty-four hours. Yet some of the most highly lauded nerve tonics contain as high as twenty-eight to thirty per cent of alcohol. The *American Therapist* is authority for the statement that "cough mixtures, as a rule, do more harm than good; that nine times out of ten the principal ingredient is opium, which has a special power to arrest the normal secretions of the whole system, so that the body becomes poisoned by the retained secretions of the kidneys, skin, intestines, and air passages."

Dr. T. D. Crothers, in the *Journal of*

the American Medical Association, recently published some records of cases which came under his observation where for a slight cough patients had become addicted to cough remedies. The morphin contained had inhibited the natural secretions, and while the cough had temporarily been apparently relieved, the ultimate effect had been to make the condition much worse, and it was only with great difficulty that the victims could be rescued from the cough-medicine-morphin habit. Yet there are more than one hundred factories in the United States, with an investment of over \$11,000,000, selling at the rate of \$60,000,000 per year of these misapplied remedies.

A man in the Eastern States was taking one of these remedies, a so-called seaweed tonic, which was recommended as a cure for inebriety. Some months after he had given up his whisky and had been relying on his so-called cure for drunkenness, he died in an attack of delirium tremens produced by the "cure."

A certain Extract of Oats which is recommended as a cure for the whisky and morphin habits, contains thirty-five per cent of alcohol, and has one-fourth of a grain of morphin to every ounce. A Sulphur Bitters said to contain no alcohol, has been shown by analysis to have 20 5/10 per cent alcohol, and no sulphur whatever.

The Massachusetts State Board of Health Report of 1896 shows twenty opium cures, each of which contains, upon analysis, enough of the drug to create the opium habit in the users.

Headache remedies rely principally upon antipyrin or cocain, one-fourth of a grain of the latter to a dose. Neither of these remedies cures the real disease which causes the headache, nor has any

selective influence upon the diseased organs which are the cause of the headaches, but they do have, when used habitually, very deleterious and injurious effects upon the nerves, heart, kidneys, and vital organs.

Cures for colds rely largely upon cocain and menthol. The best cure for a cold is to take such measures as will strengthen the weak circulation of the skin and of the digestive organs, which are not helped by the ingredients used in these so-called cures, but are rather depressed and hindered by them.

The American Association for the Study of Inebriety publishes a report of its committee, Dr. N. R. Bradner, chairman. The Doctor, who has had extensive experiences, sums up his report by saying that "insanity, idiocy, and physical ruin have universally followed the sale of these nostrums throughout our land." The iodid of potassium trick is so universally successful and so generally employed that it will bear exposure. Many of the so-called blood purifiers and sarsaparillas contain a large amount of iodid of potassium, a drug which is eliminated by the skin. The irritation which it causes to the digestive organs and to the delicate tissues which it traverses on the way to the pores of the skin, may be judged by the fact that when eliminated through the skin, this poison is so irritating that it causes an extensive eruption. Thus red pimples and blotches which appear in abundant crops after taking the dose are represented by the nostrum vendors as bad blood being purified. So general is the belief, that hundreds of victims of this drug will persist in the use of their favorite "sarsaparilla" or "blood purifier" until experienced druggists, when they see the uncertain gait and the pale, sallow, and pimpled face of certain individuals who make regular

pilgrimages to the patent medicine counter, recognize them at once as "sarsaparilla" devotees. These people are really eliminating iodid of potassium which they have taken in the medicine at one dollar per bottle, and as the result are reaping a harvest of broken-down, deteriorated blood cells where before existed a fairly healthy blood which could have been absolutely restored by fresh air, an abundance of exercise, pure water, and simple, healthful food.

Dr. Chas. Harrington, in the *Journal of the Boston Association of Medical Science*, makes mention of an investigation of twenty-one liquid malts and malt extracts which are taken for the express purpose of purifying the blood and improving the digestion. It was found that not one of these was a true malt, that they manifested no diastatic properties whatever, but were all alcoholic. Some also contained a large per cent of salicylic acid.

THE LIFE WORTH LIVING

BY GEORGE H. ALLEN

Gloucester, England

IN my childhood days I knew little or nothing of happiness. Born an epileptic, I was, up to sixteen years of age, a martyr to this complaint. The medical men who attended me in my various illnesses seemed at a loss as to what ought to be done. Medicine was prescribed in rather large quantities, but all seemed ignorant of the importance of a proper dietary.

At last, in despair, I decided to take the matter of my health into my own hands. I studied various physiological works, and then drew certain deductions, which may be briefly stated under the following heads:—

That to be healthy, I must—

Eat proper food.

Have proper exercise.

Keep the body clean.

Have all the fresh air possible.

At sixteen I set to work in earnest. I dropped several undesirable foods from my list, took regular baths, went in for athletic exercise, but was not at that time a vegetarian, although I was a life-long total abstainer and non-smoker.

Gradually, by strenuous effort, I grew

stronger. Then seven years ago I became a vegetarian.

It may surprise many of those who have known of me only as an athlete to learn that I came to choose this better way of dietary, not from a health standpoint at all, but from a Christian standpoint.

All my life I had been searching for something to make life worth living. Early I learned that were earth life lived for self alone, it was not worth living. Through childhood and early manhood I was conscious of a lack in my life.

One night, as I sat in my chair at home alone, I had such a revelation of Christ within that I shall never forget. I had laughed when any one talked of sudden conversions, but I had such an experience myself. The next morning, when I came to the breakfast table, I saw, instead of my excellent rasher of bacon, the part of a corpse of a pig. From that day I have never eaten fish, flesh, or fowl. To me vegetarianism came as a spiritual awakening.

Some little time before this I had given up active participation in athletic con-

tests, but now the strength which I had been building up by years of steady and persistent effort, was increased sixty per cent by having a spiritual impetus added to it.

Here I should like to impress upon my readers that I do not look upon the development of the physical side of our nature as of any use in itself. If we are merely to make men and women strong animals, our work will be of little use.

I am convinced that every good and perfect thing that we possess comes from our Father. Our bodies, food, and all we have are gifts from him. All things we get from him are blessings from his great heart, and just as we feel thankful to him, and just as we use his gifts, in such measure shall we receive great blessings to ourselves.

Food is a medium by which He is able to transmit his strength to us. This medium must be good and clean if it is to carry God's blessing in all its fulness; therefore I advocate the abandonment of all foods that are produced by slaughter, and cling to those which are given to us in a purer form.

The great point is to follow the light that lighteth our way. If we only quietly ask for such light to be given us, it will

be given in the measure that we are at that time prepared to receive. When any one is convinced that the eating of flesh is wrong, that person is ready for the giving up of its use, and he or she who then fails to do so, must expect to suffer.

Our object in this life should not be to build up strong bodies, to break athletic records, or to make a name, but we should strive to leave a record behind us that will never be erased through the long eternity—a record of strenuous effort toward the Grand Ideal, Jesus of Nazareth.

Our progress may be slow, and our feet may be cut and bleeding by the thorns and stones of life, but if, when we fail, we look once more to the Christ that dwells within us, we shall be lifted up and sent on our way. And so, being thankful for all our Father has given us, we try to return such again better than we received it.

If we have a weak body at the outset, instead of mourning that we have been badly treated, we should strive to do the best we can by making the best use of what we have. We must use it to the best of our ability, and if we do this, we shall build up a character that will be a blessing to those around us.

CONSOLATION

THE day is long, and the day is hard;
We are tired of the march and keeping guard;
Tired of the sense of a fight to be won,
Of days to live through and work to be done;
Tired of ourselves and of being alone.

And all the while, did we only see,
We walk in the Lord's own company;
We fight, but 'tis He who nerves our arm,
He turns the arrows which else might harm,
And out of the storm he brings a calm.

The work which we count so hard to do,
He makes it easy, for He works, too;
The days that are long to live are his,
A bit of his bright eternities,
And close to our need his helping is.

— Susan Coolidge.

THE STAPLE FOOD OF THE ORIENT

THE endurance on long marches; the wonderful activity, bravery, and success of the soldiers of Japan; and their comparative freedom from camp diseases and rapid recovery from wounds, resulting in so many victories over their flesh-fed enemies, who have been defeated and routed in every important engagement, fully confirm the views advanced in an address delivered some time ago before the Vegetarian Society of Philadelphia, by Rev. Henry S. Clubb, from which the following statements are taken:—

“My attention was called to the subject of rice, by observing the great muscular development and strength of the athletes of Japan, who are said to train chiefly, if not entirely, on a diet of rice.

“Wheat here is considered so much richer in flesh-forming elements than rice in the Middle, Western, and Northern States is used only as a dessert, in the form of puddings or blanc-mange,

whereas in the Southern or rice-producing States it is served daily as a vegetable, largely taking the place of potatoes in the daily meals.

“Our investigations have led us to believe that the more general use of rice as an article of daily food, not merely as an occasional dessert, would result in a diminution of dyspepsia and an increase of health, vigor, and vivacity throughout the continent of America.

“The fact that the Japanese are the most artistic, humane, vivacious, and happy people on the face of the earth, and that their chief food is rice, is, on its face, a strong argument in favor of the more extensive use of that cereal.”

“‘The American method of milling rice so as to give it a high polish, loses about ninety per cent of the nitrogenous matter in the grain, as this is contained in the fine polish which is taken off,’ says Mr. Ernst A. Bessey, of the United States Department of Agriculture. ‘In



CHINESE RICE FIELDS

Asia, however, rice is not polished, so that the nitrogenous matter remains on the grain, and as a result the grain is much more nutritious."

Professor Knapp states that "the reason the Japanese are so muscular is that they do not polish their rice. In American mills the outside coating of the rice kernel is rubbed off. The process is as follows: 1st. The outer husk is removed. 2d. The bran, just within the husk, is removed. 3d. The solid kernel is then rubbed, to remove the rough protein surface and to give the kernel a gloss. This is called polishing, and the material removed is called polish, one of the most nutritious substances in all the cereals. Polishing removes about three-fourths of the flavor and about one-fourth the fiber material. In Japan, China, and India polishing is not done except for foreign markets.

"The Japanese army in the advance on Peking outfooted the armies of Russia, Germany, England, France, and America.

"The Japanese soldier is fed on rice, with a ration of beans and fish. He can double-quick for fourteen hours, and repeat it for days. The Japanese or Chinese may be shot through the body, and if no vital part is cut, they scarcely notice the wound."

The reason for the polishing of the rice of commerce, which removes so much of the most nutritious part of the grain, is thus given by the Star Rice Milling Company, of Crowley, La.: "We do not sell rice in the unpolished state, for the simple reason that it is not salable. Rice is an article that is sold entirely on its appearance, although we are candid to say that the unpolished rice contains more nutriment. But the



JAPANESE WOMEN CLEANING RICE

public demands polished rice, and we have to give it to them. Rice is the greatest food in the world."

One hundred pounds of cleaned rice contain 87.7 pounds of nutrients, consisting of 8 pounds protein,—flesh-forming—3 fat, 79 carbohydrates, .4 ash. In comparison with this, one hundred pounds of wheat contain 87.2 pounds of nutrients,—10.8 of protein, 1.1 fat, 74 carbohydrates, .4 ash.

Rice is easily digestible. It is claimed that rice digests in a healthy stomach in one hour, while two hours is the average time required for the digestion of food. This fact should commend it to all persons with weak digestion and to such as do not take vigorous exercise.

Among cereals and grains, rice unquestionably stands first in importance

in regard to the number of persons who consume it, the area devoted to its cultivation, and the amount annually produced thereof in the whole world. It has been stated that rice forms the principal, and, in some cases, the only food of from one-third to one-half of the whole human race.

Food has a controlling influence on the temperament of nations. The restless energy that beef-eating nations possess may become a disease. A diet largely of rice will tend to restore those equable conditions which belong to a well-balanced system. The quiet patience of the Chinese and Japanese is due to rice. Irritable and nervous people should eat rice. The prevalent dyspepsia of Americans can be cured by making rice the staple food.

THE FOOD QUESTION IN THE LIGHT OF INSPIRATION

BY W. S. SADLER

"Whether therefore, ye eat, or drink, or whatsoever ye do, do all to the glory of God." 1 Cor. 10: 31.

SINCE the glory and honor of God are involved in habits of eating and drinking, it is but reasonable to expect that the Bible, that great rule of life, should have something to say concerning the question of man's diet. Inspiration not only recognizes the moral and mental effects of a wrong diet, but the physical as well. "Blessed art thou, O land, when . . . thy princes eat in due season, for strength, and not for drunkenness." (Eccl. 10: 17.) The Creator perfectly understands man's mechanism, and at the beginning of the race ordained for his use the food best suited to bring strength to mind and body.

I. THE FOOD QUESTION IN EDEN

Soon after our first parents were

placed in their beautiful home in paradise park, this instruction concerning food was given: "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 the which is the fruit of a tree yielding seed; to you it shall be for meat." Gen. 1: 29.

Accordingly, it is made very plain that God designed the human race to subsist upon *fruits, grains, and nuts*. These articles certainly constituted the original bill of fare. Thus Adam partook of a bloodless repast; his was a meal without meat, and one that necessitated the slaying of not a single living creature.

It is evident that God designed the race to be nourished without the shedding of blood, or the slaughter of a single inno-

cent subject in all the vast realm over which man was given complete dominion.

2. DIET AFTER THE FALL

"Thorns also and thistles shall it bring forth to thee, and thou shalt eat the herb of the field." Gen. 3:18.

Vegetables (herbs) were excluded from the original bill of fare, and were reserved for the animal world. (See Gen. 1:30.) But the wisdom of God foresaw that the earth would not yield her bounties so willingly in time to come; that fruits, grains, and nuts would doubtless become more and more scarce in some parts of the world, and hence provision was made that the man who was to earn his bread by the sweat of his face might partake of the herb of the field. Fruits and nuts do not now grow as plentifully at all seasons of the year as they did in Eden. And again, as man was assigned to a life of strenuous physical exertion, he would be able to digest and utilize a coarser diet.

Now though man is consigned to a life of hard physical toil, yet we see no permission given to slay animals and eat their flesh. The Creator made no change in man's diet further than to add the green herb to the original bill of fare. Inspiration thus indicates that even the physical toiler does not require the use of flesh to sustain his strength.

3. THE FOOD PROBLEM AFTER THE DELUGE

The next great epoch in the world's history was the flood. At the time Noah left the ark, a great change had come over the face of the once productive earth. Its rich soil was washed away in many places; climatic conditions were much altered; the foods upon which the race had previously subsisted were largely destroyed, and in this emergency God gives man his first permission to eat the flesh of animals. (See Gen. 9:3.)

The very language of this permission is significant. As permission to eat vegetables was granted after the fall, owing to changed conditions and the consequent limited supply of fruits, grains, and nuts, now, for the same reasons, and in like circumstances, permission is given to eat meat: "even as the green herb have I given you all things."

Vegetation had been destroyed by the flood, and the earth would never again produce her fruit as bountifully as before. So for the same reason that herbs were added after the fall, permission to eat flesh is also granted after the flood. However, this permission is not given without condition; and that condition is, "but flesh with the life thereof, which is the blood thereof, shall ye not eat." (Gen. 9:4.) So permission to eat the flesh of animals as an "emergency" diet, carries with it the prohibition of the use of blood. Accordingly, flesh intended for food should be washed. But such a procedure would probably result in rendering the flesh of animals so tasteless and unpalatable that the ordinary individual would hardly care to feast upon it, unless sore pressed by hunger and in the stress of a true "diet emergency."

Before the flood the length of human life was very great, reaching to eight hundred or nine hundred years, while after the flood there appears a sudden shortening of the average length of life, attributable, no doubt, to flesh eating.

4. THE DIVINE PLAN FOR THE CHILDREN OF ISRAEL

"He humbled thee, and suffered thee to hunger, and fed thee with manna." Deut. 8:3.

The food question next comes prominently before us in the Bible at the time the children of Israel were released from Egyptian bondage. This was a time of

general reform. The moral code was given on Sinai, and sanitary and quarantine laws were instituted, and one would naturally expect that if the dietetic habits of the children of Israel were in any way wrong, an effort would be made at this time to correct them. This vast army, as it journeyed through the wilderness, must each day be miraculously fed. So now, almost three thousand years this side of God's announcement of man's diet in Eden, we have an opportunity to discover if God's ideas of diet for the human race have changed. We find they are just the same. An all-wise Creator provides no flesh. He gives them the simple manna, the bread of heaven, angels' food. See Numbers 11: 7, 8; Psalms 78: 24.

5. A DIETETIC LESSON IN THE WILDERNESS

And He said, "If thou wilt diligently harken to the voice of the Lord thy God, and wilt do that which is right in his sight, and wilt give ear to his commandments, and keep all his statutes, I will put none of these diseases upon thee, which I have brought upon the Egyptians: for I am the Lord that healeth thee." Ex. 15: 26.

The children of Israel were told that if they would render obedience to *all* the divine statutes, which must necessarily include the laws of health, none of the diseases so prevalent in Egypt would be visited upon them. But they rebelled against the divine order, refused the non-flesh diet, and clamored for flesh. The flesh was granted, and now let us observe what took place, "The children of Israel also wept again, and said, Who shall give us flesh to eat? We remember the fish, which we did eat freely in Egypt; . . . but now our soul is dried away; there is nothing at all, beside this manna, before our eyes." Num. 11: 4-6.

It was with the children of Israel then

as it is with us to-day. If any one prefers the flesh of animals to the natural fruits and grains of the earth, he may indulge his appetite, but he must accept the liability to disease which necessarily follows.

What were the consequences of this feast of flesh in the wilderness? Let us see: "And there went forth a wind from the Lord, and brought quails from the sea, and let them fall by the camp. . . . And the people stood up all that day, and all that night, and all the next day, and they gathered the quails. . . . And while the flesh was yet between their teeth, ere it was chewed, the wrath of the Lord was kindled against the people, and the Lord smote the people with a very great plague." (Num. 11: 31-33.) The psalmist, in speaking of this occasion, says: "So they did eat, and were well filled: for He gave them their own desire: they were not estranged from their lust. But while their meat was yet in their mouths, the wrath of God came upon them, and slew the fattest of them, and smote down the chosen men of Israel." (Ps. 78: 29-31.) It will be noticed that "He gave them their *own* desire." From verse thirty we see that they "lusted" after the flesh; and the apostle Paul, referring to this, says they lusted "after evil things." See 1 Cor. 10: 5, 6.

6. OLD TESTAMENT PRECAUTIONS AND NEW TESTAMENT CEREMONIALS

If the flesh of animals were a part of the original diet of the race, it is indeed difficult to explain the necessity for so many precautions and prohibitions concerning its use. The eleventh chapter of Leviticus is devoted to a description of animals that are utterly unfit for food. A study of this chapter will suffice to show that those animals which the Israelites were permitted to eat were largely non-carnivorous. They were the clean-

est of the animal creation, and were, undoubtedly, at that time, the healthiest.

The eating of meat in connection with the Old Testament ceremonials is now and then cited in support of meat eating. Those who use this argument lose sight of the typical significance of these ceremonies. When Christ, who was the great antitype of these sacrifices, instituted the New Testament ordinances, he gave his followers a bloodless ceremonial. In the celebration of his last Passover, which was also the institution of the Lord's Supper, he made use only of the unfermented bread and wine. No flesh was used. (See I Cor. 11:23-27.) The Lord's Supper, as instituted by Christ, and handed down by his apostles, is purely a vegetarian régime.

7. NEW TESTAMENT REGULATIONS

It has been thought by some that the prohibition of the use of blood at the time when the "emergency" flesh diet was permitted in the days of Noah was of symbolic or typical significance, and that in the new dispensation this matter was changed. That this is a mistake is clearly shown by the findings of the first general gathering of the apostles at Jerusalem. This item was one of the special matters which received consideration at that conference, and the decision of the apostles, which was confirmed by the Holy Ghost, we find recorded in the fifteenth chapter of Acts. See verse twenty: "But that we write unto them, that they abstain from pollutions of idols, and from fornication, and from things strangled, and from blood." To make the matter, it would seem, doubly sure, we have the following language in verses twenty-eight and twenty-nine: "It seemed good to the Holy Ghost, and to us, to lay upon you no greater burden than these *necessary things*; that ye abstain from meats offered to idols, and from *blood*,

and from *things strangled*, and from fornication." This is essentially the same instruction that was given to Noah in connection with the first divine permission to eat flesh of animals, and, carefully considered, will be found to impose the following rules:—

1. Animals intended for food must be bled at the time of slaughter. They must not be allowed to die of strangulation.

2. The throats of fish must likewise be cut, for a fish dies of strangulation out of water, as a man would die by strangulation if immersed under water. All fish in the common market, it will be clear, are, therefore, unfit for food, according to the Bible rule.

3. The flesh, before being eaten, must be soaked, or washed with running water, to separate the element of blood from it, as was the practise of the ancient Jews.

8. THE DIET QUESTION ON THE RENOVATED EARTH

"And the cow and the bear shall feed; their young ones shall lie down together; and the lion shall eat straw like the ox." (Isa. 11:7.) It is interesting to observe what the Scriptures say concerning man's diet at a time when this earth shall have been purified from material defilement, and its inhabitants shall be cleansed from every moral stain. The lion is to eat straw like an ox. A little child shall lead the once ravenous and carnivorous beasts; the redeemed hosts are to feed liberally upon the "fruit of the tree of life." The prophet refers to their planting vineyards and eating the fruit thereof. Pain and death are banished; and this would imply that slaughter-houses are unknown. In Eden, the heaven-appointed diet consisted of fruits, grains, and nuts; and the scripture very clearly indicates that in Eden restored man will again live upon his original bill of fare.

“NEAR TO NATURE’S HEART”

BY WALTER S. WHITACRE

Now let me wander forth into the fields
Where wall nor roof nor any barrier shields
My ardent senses from the sweets that float
Upon the atmospheric sea. A boat
Of beauty in each tiny cloud I see,
Full-rigged in white and sailing noiselessly,
Now slowly, swiftly now, before the breeze;
The same delicious air that sways the trees,
And cools my brow, and dallies with my hair,
And brushes from my soul the webs of care.
And while those air-ships ride upon the
 breeze
My spirit over field and woodland flees.

Now let me go; the sky is fair and blue,
And every mood of Nature seems to woo
My soul away from scenes of toil, to find
Among her treasures there a sweeter kind
Of pleasure than is found within my doors.
The grassy green that carpets Nature’s floors
Allures my feet to wander in the vales,
To climb the hills and linger in the dales.

The tossing green of boughs above my head
Invites me to the bowers where Zephyrs
 wed
The Wood-nymphs; where I feel the subtle
 charms
Of Nature while she holds me in her arms.

I fain would be as happy and as free
As yon sweet songster in the maple tree;
And while I walk among the trees and
 flowers,
And talk with Nature through the happy
 hours,

No company I need except the fair,
Sweet children of the fields and woods and air.
No roof I need except the broad, blue sky,
Save when the sultry sun is soaring high,
And then the shade beneath some friendly
 tree

Where I may rest, is roof enough for me.
O, let me to the haunts of Nature go
While skies are fair and gentle breezes blow.



CHRISTIE BELLEW'S EXPERIENCE

BY HELEN M. LAKE

(Concluded)

WHEN Christie awoke in the morning, she heard rain dashing against the window. She knew how much added suffering stormy weather meant for her father, and she dressed hurriedly, fearing he might need fomentations; but to her surprise, when she went to his bedside, he was still sleeping quietly, and she tiptoed away to light the fire and prepare breakfast.

A handful of fresh sweet peas brightened the gloom of the morning, and made the round table cheery. Bananas with cream and toasted corn flakes, honey and whole-wheat rolls, made a satisfactory breakfast for herself and Nan. But the father would demand his coffee, and she feared he would rebel altogether if she did not make some concession. So, to his Mocha and Java she added one-third caramel cereal, trusting that by gradually changing the proportions from day to day he would not notice when the beverage became all cereal.

By this time he was awake, and Christie went in to prepare him for breakfast. He had had a wonderful sleep.

"Why, daughter," he remarked with much surprise, "I do not feel much more pain than I did yesterday, and in the face of this storm; and I am hungry, too. I believe I'd like a bit of bacon — Oh, I forgot; no bacon! Well, bring my coffee and any little thing you happen to have."

Christie brought him first a glass of hot lemonade, which he enjoyed, and, after a little, his breakfast.

"Coffee and rolls, sliced oranges, a poached egg, and a dish of something that looks like little shavings. What is it, Christie?"

"Toasted corn flakes, father," said Christie. "Try them; they are delicious."

He had to admit that they were. "And your coffee is even better than usual, daughter. Now if you can only remember exactly how you made this, you'll know how to suit your old father every time."

"Oh, I can remember," Christie declared, delighted with the success of her experiment, and seeing her way clear to the banishing of coffee altogether.

The dinner, that day, was nuttolene, sliced and heated in a drawn butter sauce with a spoonful of lemon juice and a garnish of chopped parsley; a plain boiled potato, almost as white as a snowball; a salad of lettuce and fresh cresses, with a dressing of oil and lemon juice; and a dessert of ripe, sweet cherries and two squares of bromose.

The patient was docile; in fact, was interested, and was candid enough to admit that he enjoyed the meals so carefully, so daintily prepared by his very enthusiastic daughter. The vegetables were cooked with the utmost care, and salads were every-day luxuries, sometimes with a simple mayonnaise dressing, often with oil and lemon juice. Mr. Bellew enjoyed the nut butter made smooth with cream; it was good on Graham wafers, and good by itself. The nuttose was delicious cut in cubes and served with a cream sauce.

One day Christie put his dinner tray before him with an unusual sparkle in her eye. She had seen for a day or two that her father was restless for some of the old-time cookery. He was gaining perceptibly, and feeling the impatience

of convalescence; so to-day she brought him a new dish.

"Ah! some meat at last," he exclaimed, as he looked over the tray. "The month isn't up, daughter; how is this?"

"Say, rather, 'What is this?'" laughed Christie. "Taste it, father."

"Looks like mutton chops without the bone, and tomato sauce;" and he forthwith proceeded to test its delectability. "No, it isn't mutton," he said at last, "but it is just as good. What kind of meat is it, Christie?"

"No meat at all, father; just nuts and bread-crumbs and eggs made into a loaf with milk, seasoned and steamed. Do you know, Nan and I are good, sound converts to the vegetarian diet, and I am so glad you like it."

"It's all very well while a man is in bed, but don't you get hungry exercising as you do?" asked the father.

"Do we look hungry?" asked Christie. "Does Dr. John look hungry or in any way feeble?"

"No," said her father. "If he's a sample of the flesh and blood made from such a diet, he is certainly a credit to the system. You and Nan didn't need improving, but I'm blessed if you haven't improved all the same."

"And I've been going without suppers for ever so long," confessed triumphant Christie. "I know Dr. John takes only two meals a day, and, as he isn't an absolute skeleton, it seemed a safe experiment. Nan has her bowl of bread and milk yet, but I know that I feel better than I did with the old hearty suppers."

"Well, well," protested her father, "I'm not overfond of new notions, but when a man's helpless, he has to submit to his doctor and his nurse." His look belied his tone as he patted the faithful little hand lying near his own. "I can't complain of my cook," he admitted. "I

really do look forward to my meals with all the enjoyment I ever knew. But wait until I'm up again."

Christie shook her finger at him, and went after his grape juice. He seldom asked for tea any more, and his coffee was nearly all cereal.

One morning, when the doctor came, breezy, cheery, assured, the look of him better than medicine for a sick man, he seemed particularly pleased, and said so.

"You're sticking close to orders, Mr. Bellew, that's evident; and you have a superior nurse."

"I'm nearly well," asserted his patient. "Almost no pain, and only this tiresome stiffness."

"That will soon yield, I promise you. All you now need is simple food, good company, and fresh air; laugh, but don't try to grow fat just yet, and you and rheumatism will soon cease to be acquainted."

"Then you'll take all the credit for the cure; but let me tell you, Christie is a valuable ally. She holds me to your orders with an iron grip."

"I won't mind sharing the honors," said the smiling doctor; "so I'll go and consult my *aide*. Good-morning," and he passed out to seek Christie on the porch.

"Isn't he better?" she asked eagerly, as the doctor gave her hand a cordial shake.

"He surely is improving very fast," answered the young man, "and you have made a good beginning. I foresee that he will be docile for a little while longer, but you will need much wisdom and infinite patience and perseverance if you win him to a permanent change. If he goes back to the meat diet when he is once more out and about his business affairs, he will put himself on the old plane of danger from these attacks. I

will have a talk with him, but you will have the real work to do, and I believe you are brave and strong enough to do it,—with his consent, of course.”

“You think he will give it?” questioned Christie, with a somewhat troubled smile.

“No,” answered the young physician, “not in words; possibly not even in his own consciousness. It is yours to win, little by little. You and Nan will set him an example, and sometimes,” he said, smiling, “he may not know exactly what you are putting before him. Many of the nut preparations have much the flavor of certain meats. After a few months of strictly vegetarian living, if he asks for beefsteak, offer it to him; he will be greatly surprised to find that it does not appeal to his taste at all in the old way. Now don't be discouraged. Remember, you have to meet your problems only a day at a time, and never a month in advance,” and with another cordial handshake he drove away, leaving Christie feeling as if she had breathed a whiff of salt sea air.

The dinner that day was cream of celery soup, nuttose cut in thin slices, dipped in egg and bread-crumbs, and baked a delicate brown; on each slice was served a poached egg, with a garnish of chopped parsley; green peas, baked potatoes, a salad of lettuce and sliced tomatoes with a mayonnaise dressing; and for dessert, bananas cut in halves lengthwise, laid in a flat glass dish with a little lemon juice squeezed over them, a liberal sprinkling of malted nuts, and last of all, whipped cream heaped over them. This dish on the little side table,

with a big bowl of smiling pansies, was a cheering spot in the room; the dining-table was gay with nasturtiums, and the salad plates seemed to vie with the centerpiece. Christie's face was good to see, as she went from kitchen to dining-room and back again, for she was to surprise her father to-day; he had been sitting up in his easy chair for several mornings, and to-day he was better than ever. She went into his room to prepare him for his first dinner at the table for many long weeks. She found him looking worried.

“What is it, father?” she asked anxiously.

“Christie,” he said, “is that doctor trying to deceive me? Is there anything about my case more serious than he has admitted to me? I heard you talking a long time——”

“No, no,” interrupted Christie, laughing and kissing him gaily. “He was only telling me how to keep you well and strong, now that you are gaining so fast. You're going to have a little journey to-day; Nan and I are the motors applied to your feet and the back of your chair. Here comes Nan, and the soup is on the table. You'll find your footrest under it,—and here we go.”

It was pleasant to be out with his girls again, and find everything so dainty and bright, and two happy faces welcoming him with such delight; and he asked a blessing that seemed to take in all the cheer about him.

“Christie,” he said a little later, pausing in the enjoyment of his dinner and looking at her intently, “you are growing more like your mother every day.”

THE happiest heart that ever beat
Was in some quiet breast,
That found the common daylight sweet,
And left to Heaven the rest.

—John Vance Cheney.

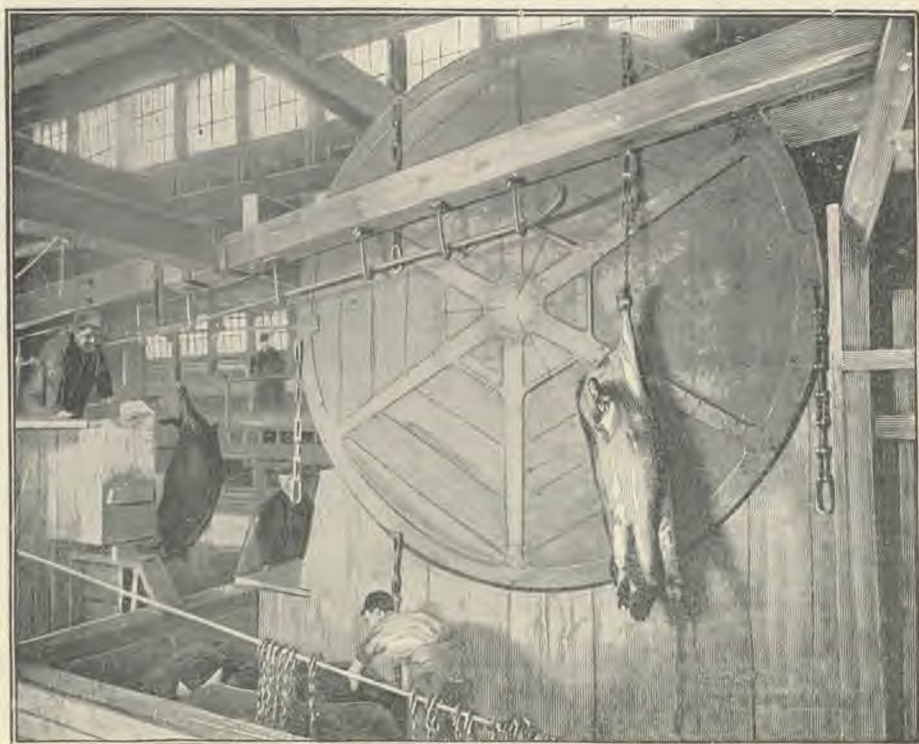
THE "CANNER" COW

A MEMBER of the City Board of Health of Chicago said not long ago that if all the diseased flesh that was brought to the slaughter-houses were condemned, and none of it used for food, the price of beef would be a dollar a pound. This statement may well give the meat eater pause, for, in view of it, how can he be absolutely sure that no diseased flesh finds its way to his table?

A book just published, "The Dark Side of the Beef Trust," is creating wide-spread comment. In it, a practical butcher of forty years' experience in the cattle and meat business, and for many years manager of a cold-storage house for one of the chief packers of the Beef Trust, makes revelations which it would seem can not fail to affect the sale of

meat. We condense a few statements culled from various parts of the book:—

Formerly man cared for the domesticated animals, and when they were overcome by illness or disease, gave remedies and attention that often alleviated suffering and effected cures. Now, under the modern civilization, the Beef Trust says: Send your old, unclean, crippled, or injured animals to us — we will "cure" them, and return to you, in any of the choice products of the great packing-houses you may choose, either prime tenderloins, gilt-edged corned beef, dried beef, canned meats, butterine, mince-meat, extract of beef, fertilizer, or any of the hundred and one preparations we make, and only we can make, that we may elect to send you, at our price.



THE WHEEL OF FATE

A farmer has a bull that has become unfit for breeding on account of injury, age, or failure of service; or an ox that has been worked until his usefulness is over; or a cow that from some distemper or disorder has cast her calf and does not readily regain her health; or a cow that, owing to distemper or infirmity, can not produce her keep from milk or is unprofitable as a breeder; or a cow that from some injury or disorder taints her milk so that it can not be mixed with the milk of the herd; or any neat animal that owing to cancers, consumption, or internal disorders can not assimilate food and becomes poor, scrawny, and feverish, or from age or infirmity can not chew the cud, or has a lumpy jaw, or sores on the back caused by fevers or disorders, or cakes or running sores on the udder. It would be hard work, and it is quite likely anybody but a practical expert would fail, to find any of this class upon the hook or block classed as prime. But they all find their way to the market. The local buyer will take anything that can walk, and if the animal is too feeble to walk, and the owner will haul it to the railway and make delivery alive, the buyer will offer some price.

They may be on the railroad one, two, three, or even four days, without food or water, and are unloaded direct at the slaughter-houses, and killed as unloaded.

And what of their condition when killed? The condition of the poorer classes of cattle—the old, infirm, disordered, crippled, and unclean animals—heightened by fevers brought on and maintained by lack of food and water, is frightful even to contemplate. And the carcasses of these animals are to be made up into food and sent out broadcast over the entire country.

This low grade of cattle make up what has come to be known as the "Canners,"

to-day the most profitable division of the great packing-house industry. Why the most profitable?—Because it makes use of that which prior to the centralization of the slaughtering of the cattle had little or no value.

The Beef Trust, in its pursuit of gold, has not only added a new word to the English language, "Canner," but it has caused to be brought into general use that other word, "ptomain," which nine-tenths of the American people never heard of before the United States Volunteer, the boy soldier, had died in the camp or hospital from what the learned medical profession called ptomain poisoning, the result of eating the putrefied meats put up by the great packing-houses and sold to the United States government for the use of the army and navy.

In one year one buyer, or dealer, picked up and shipped direct to Chicago more than twenty thousand "Canners"—old, crippled, maimed, disordered, neat cattle. There is always a market for a "Canner," and there is always a buyer for a "Canner," and there is always a "Canner" for sale. And when the "Canner" stock is placed on the market and sold, then is when the Beef Trust takes from the purchaser something for which no value whatever is given in return; for the meat product has no sustenance as food, and is withal a menace to health and happiness and often life itself.

"Canners" may be divided into two general classes,—old cattle and unclean cattle. The carcass of the "Canner" is used for the tenderloin, dried beef, corned beef, sausages, canned beef, extract of beef, and mince-meat. Very often the meat is dead, dull, and dark, when it is given a chemical treatment to make its general appearance a trifle

more attractive. The tenderloins are put on the market as such. The hams, cut into suitable pieces for dried beef, are pickled in a brine to which is added a chemical that will give the meat a suitable smoky flavor, dipped in another pickle that will give a good color to the outside and polish to the surface, run through a superheated drying-room that the surface may be dried, and then are ready for wrapping and shipping to market. The meaty parts of the carcass other than the hams are cut into pieces suitable for corned beef to be packed in barrels.

In a barrel of corned beef, two hundred pounds, there are thirty pounds of salt and pickle, a quarter of the balance waste plate pieces from a fat steer, and the balance meat from carcasses that might have been afflicted when alive with all the ills to which neat cattle are heir. This corned meat is manufactured, packed, and put up to sell, and it is sold,

very much of it being disposed of to the government of the United States for the use of the army and navy; to the States for use in prisons and institutions under control of the charities; corporations in charge of eleemosynary institutions; corporations employing gangs of workmen in which the finding is a part of the contract of employment; and, it may be said, to most anybody who is responsible for the food supply of another, and who is not obliged to eat at the same table.

It is as a producer of sausage meats that the "Canner" is an unqualified success. The meat from the head, the trimmings, etc., all go into the sausages. Doped with chemicals, called preservatives, to remove taints and keep them from staleness, the meats are mixed with potato flour to glue them in compact mass, and with the usual seasoning to give the sausage the distinctive flavor of its name, and the proper sized gut or



THE SLAUGHTER OF THE INNOCENTS



RETRIBUTION IN PREPARATION

casing, the sausage is stuffed. When completed it is dipped in a bath prepared by the chemist to give it the proper color, another dip to give it the smoky flavor, and the bologna, or wurst of any name, is ready for the market. People who have maintained that the nose was placed above the mouth to protect the mouth from taking in tainted or unclean food, can not find any glaring fault with the Beef Trust sausages as far as smell is concerned — the chemist has taken care of that.

A quarter of a century ago, in countries that are civilized, it was made a crime to use potato flour in the adulteration of human food. And thousands of tons are imported to this country and used in the manufacture of all kinds of sausages — a penal offense in every country save the United States of America! The sole value of the potato as food is the starch it contains, and this is removed in the countries of the Old World. The absolutely valueless waste or refuse is shipped to the United States. There is nothing genuine about the sausages except the gut casings in which they are stuffed, and even these may be the intestines of an unclean animal.

In the slaughtering department, about the only man who understands the true condition of the animal is the man who takes out the intestines. So in the manufacturing department, the only man who knows what is really going on is the

sausage maker, or the man who sees to the manufacture of the "filling" for the intestines before they make their appearance on the market disguised as food products for the human family. Both these men know their business, and their salaries are in keeping with their knowledge.

After having supplied the tenderloins, the dried beef, the corned beef in barrels, and the sausages, it would seem that there would be little left of the "Canner," hardly enough for the crows and vultures; but there is. The thinner parts of the meat are used for packing in cans and tins. It is in the manufacture of this product that the "Canner" received its name; and if of sufficient importance to furnish a new word to the English language, the manufacture of tinned meats must be quite an adjunct to the packing-house industry. The balance of the carcass is cut suitable for pickling, and when pickled is cooked, the bones removed, the meats trimmed to fit the cans, and the cans sealed. These canned meats find their way everywhere.

It is to this class of packing-house products that so much of what has be-

come widely known as "ptomain" is generally traced. During the Spanish-American War canned meats became generally known as embalmed meats, and men who served in the volunteer army and lived to return home have never resumed the use of canned meats as foods. Quite as many American volunteers died from eating putrefied meats put up by the great packing-houses as were killed by Spanish bullets; and the disorders and diseases caused by eating embalmed beef and unclean meats filled more beds in the hospitals than the fevers of the tropics.

If the meats that enter into this class

of products were good and wholesome when prepared for such purpose, there would still be an element of danger in their use as food by reason of being canned in tin. But meats that have to be treated with chemicals to remove taints, meats that are unfit for use by being cut from old and unclean animals, are positively dangerous for use as food. It is due to the ignorance of the people that such products are purchased for food. In this connection it is but fair to the authorities to say that it is through ignorance on their part that such products are permitted on sale in the markets.

PURE-DIET DEMONSTRATIONS

A GREAT many persons who have tried the experiment of living upon a diet consisting exclusively of nuts and fruits, give very high testimony to its value. Mr. James B. Rawnsley, known as "The Wandering Minstrel," speaks highly in favor of such a diet; and the results experienced in his case, as shown in the following extracts from a letter to Prof. Irving Fisher, would certainly seem to justify his enthusiasm. He is forty-seven years of age, and is engaged as trainer in one of the high schools of Rochester, N. Y.

"Although a grandfather," he says, "I can still clip off ten miles inside the hour, and lift bar-bells my own weight, 150 pounds, all on nuts and fruit, which I have used about ten years, and I will certainly use nothing else the rest of my days.

"I came to this country in 1885, existing on bull beef and beer while out on the road with an opera company. In the '90's I renounced that sort of food, and

started raw food. Now I live life all over again. I can lift more, either single or double hand, and run long distances faster than ever before, and never felt so well in my life.

"In 1898 I took a position in Buffalo for one year. The people in the house where I lodged called me a crank. When I took the room the first thing I did was to open the window, top and bottom, and then put in two screws so that no one could shut out the air. Then I rolled the blankets and pillows up and sent them flying into the wardrobe. Everything went all right until the winter, when I was told that if I did not close my window and put blankets on the bed I would surely freeze to death. But I did neither, and still live, while every other person in the house took cold and finished up the season with the fashionable *grippe*, which I miss all the time, thanks to raw food.

"In 1899 I left to take a position in New York City. People told me how

expensive it was living there. I did not find it so, except for room rent. My food for the year cost me \$35. Almonds, walnuts, apples, raisins, prunes, olive-oil, grape juice, is my fuel. I take eight hours' sleep, either on the floor or on a bed; it makes no difference.

"During the six-days' race, go-as-you-please, in Madison Square Garden, I covered three hundred miles in seventy-two hours, using sixty-five cents' worth of food. The papers said I was the only man who went through the work without having trouble with his stomach.

"Instead of lying around during vacation, I tried hard work as an experiment until time to train the football team. I got a job with the Rochester Gas Company, laying main pipe ten hours a day in the ditch with pick and shovel, which I thoroughly enjoyed. I took one meal of fruit and nuts, after the day's work. Twenty-five men, mostly

dagoes, each had so many feet of ditch to open and fill a day. They all gave me until dinner time, but I fooled them, and by the end of the first week they all took off their hats and said, 'Big fellow goodie man.' During lunch, while they were filling up in the saloons, I would sit at the piano and sing songs. I never had so much fun since I was a boy making mud pies in my mother's back-yard."

With regard to his diet, and the work he is able to do on it, Mr. Rawnsley says: "Yesterday I had two glasses of grape juice, three apples, and one handful of almonds. To-night, at seven, I expect to take about two gallons of air, mixed with a five-mile run, then some more fruit and nuts. This morning I gave one singing lesson and two lessons in physical culture, including work with a pair of fifty-pound dumb-bells, mixed with 140-pound bar-bells."

How to Live in the Tropics.

The president of the Twentieth Century Pledge-Signing Crusade, Mr. J. B. Lewis, while in India made the acquaintance of a certain gentleman, Mr. A. C. Radice, who seemed to be at the head of everything in the section of the country in which he lived, and able to accomplish a vast amount of work. In conversation with him it transpired that he attributed his good health and ability to do more work than any ordinary three or four Englishmen in India, to his well-regulated habits of life. He afterward wrote out a short account of his mode of living, and the extraordinarily good results obtained thereby, and sent it to Mr. Lewis, who has forwarded it to us for publication.

Concerning his habits of life during the first years of his sojourn in India, Mr.

Radice says: "I arrived in India a teetotaler. Then fever got hold of me in a very unhealthy part. I soon shook it off, but doctors advised a little alcohol. I drank very moderately of beer, claret, etc., but my health did not improve. As the years went on, my digestion got out of order. I subsequently discovered that this was due to a diet that did not suit the country."

This digestive derangement became chronic, and so painful that the sufferer set to work in earnest to discover a suitable diet. The result was that he made a thorough change in his mode of life. Concerning the method adopted he says: "I drink only water, lukewarm, an hour before meals, in large quantities,—four pints a day. I drink practically no alcohol, no tea, no coffee, but after a meal half a pint of milk. I eat no meat, and

little vegetables or acid fruit. I live on wheat (whole meal), cheese, fish, milk, eggs, pulses: but wheat and milk make up the greater part of my food."

Of the sustaining nature of his wheat-and-milk diet, he says: "On this diet I can work ten hours a day, hard brain work, for a month on end in a temperature of 97° F. Then when need arises, I can ride straight away thirty or forty miles and do a hard day's office work without inconvenience. I am frequently six or seven hours in the saddle under a tropical sun, without feeling the need of iced drinks or alcohol or much food. I find I can stand the sun much better than much stronger men among my friends who eat meat and drink alcohol or iced drinks at meals."

That Mr. Radice must of necessity live a somewhat strenuous life is shown by the fact that he is the highest government official of the district, and it devolves on him to "collect the taxes and the war revenue; keep the government treasure; register deeds and land; decide criminal cases; prepare criminal prosecutions; administer the police and the local funds; regulate municipal affairs; be responsible for jails, roads, bridges, pounds, ferries, schools, hospitals, vaccination, statistics, inland navigation, prevention of disease, and public health; registration of marriages, births, and deaths."

Health Regained by a Change of Diet.

Mr. Geo. L. Stanley, of Ashtabula, Ohio, sends us for publication the following account of his experience in returning to nature in the matter of diet:—

"I was sixty-one years old yesterday, and enjoy good health as the result of a careful selection of a vegetarian diet during the past five years, during which time I have been a reader of Good

HEALTH, and have profited by the information found in it.

"At the time I began making changes in my diet, my digestive organs had been injured by overeating. My physician advised me to eat less meat, and about that time I began taking GOOD HEALTH, and stopped eating fine-flour bread unless rebaked, pie, cake, butter, condiments, meat, and, as far as possible, all foods cooked in meat fats. But unconsciously, I continued to overeat of vegetarian food.

"About four years ago I was examined and treated at a branch of the Battle Creek Sanitarium, and by following the advice of the physician as to the proper foods and the amount to eat at each meal, I am now in good health and able to do an average day's work at hard labor.

"My diet is rebaked white and brown bread, peas, beans, and eggs. I drink only water, and take a tonic full bath in the morning and a partial bath at night."

A Veteran Art Teacher.

From Miss Adella A. Hutchins, who has never tasted meat in her life, we have received a short account of the life of her mother, an interesting old lady, who, living on a strictly vegetarian diet, has reached her eighty-ninth year with body in perfect health, intellect bright and clear, and all her faculties unimpaired.

Mrs. L. A. Hutchins has always been an up-to-date health reformer, and has paid careful attention to hygiene. She has made a practise of keeping her windows open day and night, living as much as possible in the sunlight, and taking a cold bath daily.

Mrs. Hutchins is a veteran art teacher, having held positions in this capacity in many of the public schools of Vermont and New Hampshire, and also of Cincinnati and Tennessee. Her pen work

was highly complimented by the late President Wm. McKinley.

Although nearly ninety years old, she still draws and paints, and reads the daily paper without spectacles. She is

able to take walks in the park, and to enjoy life in various ways. Time has laid his hand on her so lightly that her hair is even now only slightly turning gray.

A HANDFUL OF DATES

BY J. T. BRAMHALL

DO you remember, in that most delightful and romantic of all Scott's tales of chivalry, "The Talisman," where the Saracen emir and the Knight of the Leopard sat down to their little picnic after the exercise of the combat? "The provision which each had made for his refreshment was simple, but the meal of the Saracen was abstemious. A handful of dates and a morsel of coarse barley bread sufficed to relieve the hunger of the latter, whose education had habituated him to the fare of the desert. . . . A few drafts from the lovely fountain by which they reposed completed his meal. That of the Christian, though coarse, was more genial. Dried hog's flesh, the abomination of the Moslemah, was the chief part of his repast, and his drink, derived from a leathern bottle, contained something better than the pure element."

The phrase "something better than the pure element" seems to be an unconscious deference to British prejudice, for the scene was carefully set to bring out the protest of the disgusted Saracen, who, after watching for some time in silence the keen appetite which protracted the knight's banquet long after his own was concluded, ventured to exclaim: "Valiant Nazarene, is it fitting that one who can fight like a man should feed like a dog or a wolf? Even a misbelieving Jew would shudder at the food which you seem to eat with as much relish as if it were the fruit of the tree of Paradise."

The knight defended himself somewhat lamely upon the plea of exercising his Christian freedom, and took another long draft from the leathern bottle, at which the Saracen came straight to the point: "That, too, you call a part of your liberty, and as you feed like the brutes, so you degrade yourself to the bestial condition by drinking a poisonous liquor which even they refuse."

The Christian knight attempted a defense of wine, but the honors plainly lay with the follower of the Prophet. Of course the romancer, in duty bound, made his knight just a little better than his adversary in the contest, or was it decided by a fortunate chance? Or perhaps they belabored each other with their swords until they could no longer stand, and concluded to call it a drawn game. It was a long time ago. But we remember that the Franks were turned back from the Holy Land, and the infidel holds it to this day. Is it not worth while to inquire into the causes which have enabled the Turk to withstand for centuries the attacks of the Europeans, backed by all the science of their boasted civilization?

Leaving the political considerations out of the question, there is certainly much to be said of the superior physique and power of endurance of the Turk, which has been shown in every struggle down to the Russo-Turkish War. The simple fare, composed of grains, fruits, and nuts, with entire abstention from alco-

holic liquors, the curse of the Caucasian races, with a life passed mainly in the open air with abundant exercise, results in a high type of physical perfection; while the opposite,—flesh diet, alcoholic liquors, and a constant indoor life, including all the abominations of the factory system,—are sapping the energies of the superior European. We have had the story of the Boer War, where all the energies of Great Britain, assisted by her great colonies on both sides of the seas, were hardly sufficient to conquer a few thousand South African plainmen, and this is supplemented by the utter collapse of the mutton-eating, vodka-drinking Russians at the hands of the rice-eating Japanese. The time has come when the races of Europe must seriously consider the advisability of going into training on a grand scale if they would save the race from ultimate extinction.

Nor need we take the yellow races,

unless figuratively speaking, for our trainers. Our own scientific men have pointed out the way, and if our appetites crave a greater variety than our home markets afford, we find the whole world paying us tribute of food. In America we have the best of cereals, fruits, and nuts in every variety. Our "handful of dates" is still brought to us from the eastern shores of the Mediterranean, but we are beginning to raise them, along with figs, pomegranates, and other tropical fruits. The cocoanut and the Brazil nut, rich in oil, come to us in unlimited quantities from South America and the Pacific islands, so that there need be no excuse for our relying upon the unhealthy products of the slaughter-yards. It lies with the American people whether they shall fall to the rear through physical degeneracy, or take a foremost place in the inevitable struggle for the "survival of the fittest."

RATIONAL TREATMENT OF TUBERCULOSIS OF THE LUNGS

BY HERBERT OSSIG, M. D.

(Continued)

THE exercises suggested in Figs. 19-28 are adapted for the third type; the ones illustrated in Figs. 29-37 are suitable for the fourth type.

Figs. 19 and 20.—Assume a position as in Fig. 19; slowly let yourself down to the position shown in Fig. 20 while taking an inspiration. Then breathe out while you slowly press yourself up to the position given in Fig. 19, being careful to keep the whole body perfectly straight and rigid.

Fig. 21.—Lie flat on your back, both legs being extended, and take a deep breath. Then flex the right thigh (leg flexed also), and breathe out. Alternate with left thigh.

Fig. 22.—Same as Fig. 21, except that both thighs are flexed simultaneously.

Fig. 23.—Same as Fig. 21, except that the leg is extended when the thigh is flexed.

Fig. 24.—The patient endeavors to assume an upright position while the attendant resists; repeat on other side.

Fig. 25.—Stand erect and place hands to the hips. Bend the trunk far to the right, breathing in; then bend far to the left, breathing out. Having done this several times, reverse the breathing; breathe in while bending far to the left, and breathe out while bending far to the right.

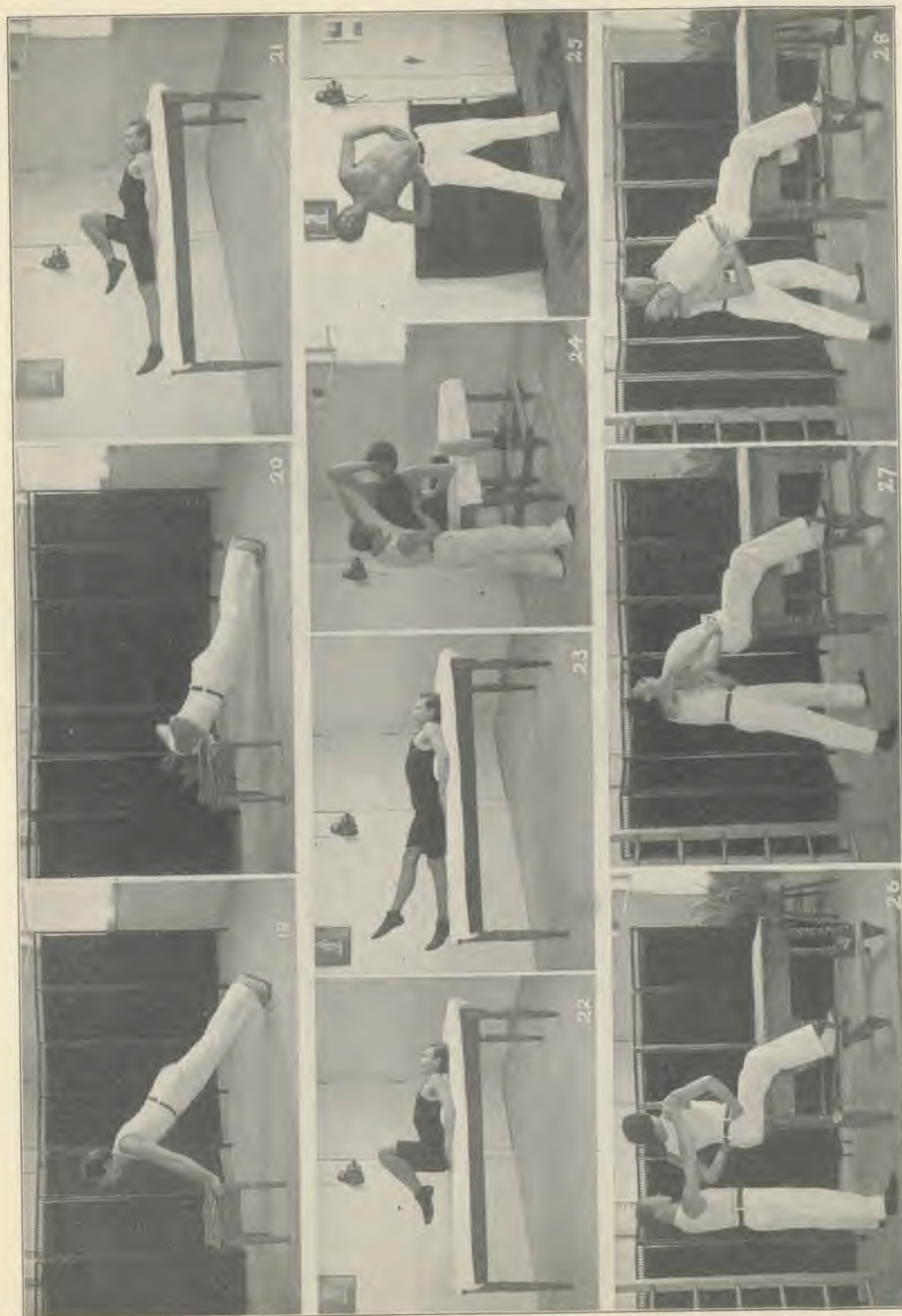




Fig. 26.—The attendant places his hands on the patient's shoulders and twists him far to the left. Then the patient endeavors to turn to the right against the attendant's resistance.

Figs. 27 and 28.—The patient rests on the attendant's breast; the latter places his right arm over the patient's right shoulder and grasps the right wrist, as shown in Fig. 27. Then, pressing his left hand against the left side of the patient's trunk, he twists him to the right, as illustrated in Fig. 28. Now the patient tries to return to the position of Fig. 27 while the attendant resists. Do the same on the left side.

Figs. 29 and 30.—Same as Figs. 19 and 20, except that the feet and hands are on the same level.

Figs. 31 and 32.—In Fig. 31 the patient hangs from a bar and keeps his thighs and legs rigid, feet pointed downward. In Fig. 32 the attendant steps behind the patient and presses with his hand against the middle of the dorsal part of the vertebral column so as to lift the patient high into the air.

Fig. 33.—Same as Fig. 23, except that both thighs are flexed simultaneously; be sure not to bend the knees; breathe in while the legs go down; breathe out when they come up.

Fig. 34.—Sit erect on the bench, hands to the hips, feet in the strap. Take a deep breath and slowly let yourself down until you almost touch the floor with your head; then come up slowly, breathing out completely, till your face touches the bench in front. The movement can be made yet more vigorous by extending both arms over the head, the hands remaining either empty or being weighted by dumb-bells. This exercise is an excellent and sure developer of a genuine corset of muscles,—far more comfortable, hygienic, and beautiful than the artificial corset used by some women,—ma-

king the abdominal muscles as hard as steel. Great caution, however, is indicated in the beginning; otherwise you may see stars and lightning and dark spots before your eyes. This exercise should be taken only once a day for a week or two, and the number gradually increased as the strength and flexibility permit. I began with one movement per day three years ago; now I do it easily several hundred times at one sitting without a moment's rest. Never take this exercise on a full stomach or when you have committed some dietetic error. People with rupture should omit this rather difficult exercise.

Fig. 35.—Same as Fig. 25, except that the arms are extended over the head. At first use no weight; later on practise with one and two light dumb-bells, and, as your strength increases, add gradually to their weight. This is a splendid exercise for the side and small-of-the-back muscles; used in connection with the one shown in Fig. 34, it will fill the patient with buoyancy and make him feel many years younger.

Fig. 36.—Lie with your thigh on the little bench in such a way that the knees do not touch it. While the attendant presses your feet down, place your hands on the hips and raise your trunk high into the air. The difficulty of the movement is increased by extending the arms over the head, especially when the hands are weighted by a pair of dumb-bells. An attendant is not necessary, as a strap over the ankles, holding them down firmly, answers the same purpose. This exercise brings into play in a most effective way the muscles of the back and small of the back. Combined with the exercises shown in Figs. 34 and 35, it will be a great factor in assisting the patient to once and for all carry himself in an upright position; for the powerful abdominal muscles will hold the trunk up

in front; the strong side muscles will keep the trunk up in that region, and the trained back and small-of-the-back muscles will pull the shoulders backward and downward so effectively that the patient can not help standing and walking erect, with his chest high up. The result of all this is deeper breathing and better oxygenation of the blood.

Fig. 37.—The patient faces the wall, extends both arms, grasps the handle attached to the ropes, and brings the arms as far back as possible, being careful neither to bend the elbows nor to lower the arms below the level of the shoulders. This exercise develops the muscles of the back, and forces the sternum forward.

Beer versus Tea.

The *British Medical Journal* states that the recent Parliamentary debate on the bill for the Sunday closing of saloons called forth from some of the members remarkable statements concerning tea, which they believe to be quite as injurious as beer. Sir James Fergusson, an old Scotch member, went so far as to say that he believed "far more deterioration was caused to our race by the excessive use of tea than by the excessive use of beer. He enlarged on the evils resulting in Scotland from the substitution of tea and white bread for the old-time breakfast of porridge and milk. Another member referred to tea as a cause of insanity, and Sir Wm. Tomlinson asserted that tea was doing more harm to the health of the nation than beer.

Sir Michael Foster, in his memorandum prepared for the Board of Education as a guide to the teaching of hygiene in the schools, makes some frank admissions with regard to tea and coffee. He says that thein and caffeine, the essential principles of these beverages, "in adequately large doses, produce effects different from alcohol, but yet such as to justify the term 'intoxicating.'"

The craving that tea drinkers experience for their favorite beverage, and the difficulty of giving it up, are evidences of its containing the intoxicating principle.

Why Dread the Fly?

The fly is usually considered simply as an annoyance, and its exclusion from the home is not so rigidly insisted upon as it would be if all were acquainted with its dangerous character as a conveyer of microbes.

Dr. Hayward, bacteriologist of the Michigan School Board of Health, recently made an examination of the "specks" of flies that were seen gathering about a cuspidor used by a tubercular patient, and found them to be full of tubercle bacilli. As a consequence of the presence of the fly, the bacilli of this dread disease are carried everywhere.

Imprisoned flies fed on tubercular sputum died in two or three days, while those fed on milk lived from eight to ten days. When the "specks" or feces of these flies were rubbed up with sterile water and injected into guinea pigs, the pigs developed genuine cases of consumption.

The suppression of the housefly is a most important means of restricting tuberculosis and other deadly diseases.

Remarkable Health of the Trappist Monks.

The singular health and longevity of the Trappist monks is remarked upon by all visitors to their monasteries. The physician to the monastery of Grande

Trappe met with no case, during twenty-seven years, of apoplexy, aneurism, gout, cancer, or epidemic disease.

The Trappists are in the habit of eating only once a day from the fourteenth of September until the last Saturday in Lent. During this time they fast from 2:30 A. M. until 2:30 P. M., when this one meal is partaken of. These twelve hours are spent in devotional exercises and useful occupations. Their nourishment consists of bread, potatoes, a soup without fat, a dish of roots, or vegetables boiled in water. The usual drink is a pint of cider. Dessert consists of stewed fruit, or apples, pears, etc., in their natural state. Their active mode of life and the pure air they breathe further conduce to the healthfulness of the Trappists.

Preserved Pork Products.

It is a trite saying in Chicago packing-houses that nothing of the pig is lost save the squeal. Even this has now been registered by the inventor of a new phonograph, in order that it may be heard around the world. This is a preserved pork product which, unlike the others, can not do any one any harm. On the contrary, the preserved squeals of the dying hog may serve to diminish the appetite for the pork products manufactured from the carcass of the victim.

Tooth Decay Due to Flour Mills.

"It is remarkable," says Bunge, "that wherever we find a race of men retaining primitive milling customs, or living on uncorrupted grain food, we find their teeth strong, and free from decay." The deficiency of salts in white bread is unquestionably related to the deterioration of the national teeth. The following argument from a noted English physician,

Sir Thomas Lauder Brunton, illustrates this: "Why has America the cleverest dentists?" Answer: "Because she has the best flour mill makers." The better the mill, the finer the flour, the poorer the bread, the worse the teeth, and the better the dentists.

Hard on the Physicians.

Every experienced physician recognizes that most of the disorders to which humanity is subject are due to overeating or errors in diet. "No wonder the rascal's always well," said a noted physician of his friend, Mr. Frank Wilson, the celebrated actor; "he never eats anything." Mr. Wilson abstained from tea and coffee, and was in the habit of taking only two meals a day, one of them so light as hardly to be considered a meal by one not accustomed to a frugal life.

The celebrated French Professor Burdaloue enjoyed excellent health to a ripe old age. When asked by a physician to what he attributed his freedom from disease, he replied, "I eat only once a day."

"For heaven's sake, don't tell any one about it," replied the astonished physician, "or our occupation will be gone."

A Meat Diet Uneconomical.

Humboldt calculated that land growing wheat supports ten times as many persons as pasture; land growing bananas supports two hundred and fifty times as many.

Cannibalism in Scotland.

A lady in Sandyford district would like two gentlemen for dinner daily.—*Glasgow Herald.*

"HEALTH is Nature's reward for conformity to her laws."

Chautauqua School of Health

FOOD AND BODILY DECAY

BY ALFRED B. OLSEN, M. D.

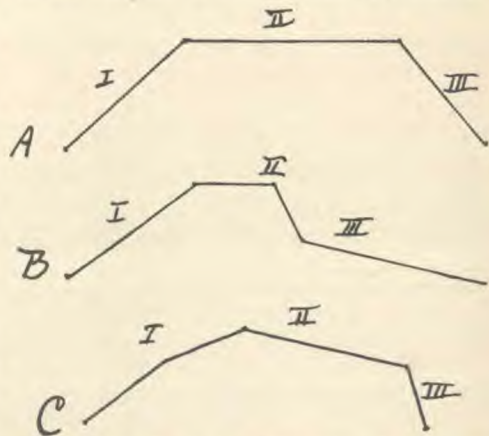
Caterham, England

IN the living body we find two processes constantly at work,—wear and repair. Good health and long life depend largely upon the proper balancing of these processes. If wear is excessive, and is not daily made good, weakness and emaciation follow. On the other hand, if repair, or rather the building process, is overdone, obesity is the result, and this condition makes for ill health and disease. The ideal is to make amply good the worn-out tissues daily, and to do it with the minimum amount of friction and physical disturbance.

Life's Three Periods.—For our purpose we may divide life into three periods,—*Growth, Equilibrium or Maturity, and Decline.* These periods may be illustrated briefly by the accompanying diagram. The upward line indicates the period of physical and mental development. Normally, it is a slow, steady progress, but sound and healthy. During this period, repair must exceed decay, in order that the body building may progress. For most people this period lasts till about the thirtieth year, when the second period begins. From this time on, for many years, there ought to be a state of equilibrium. Repair must compensate waste perfectly, and there should be no deterioration whatever. Obviously, this is normally the longest period, and prac-

tically constitutes a man's lifetime as far as usefulness is concerned.

The third period, or the time of decay, is the briefest of all. When physical de-



cline sets in, it is generally steady and comparatively rapid. Under favorable circumstances the mind is least affected, and, in our opinion, mental strength should be the last to disappear.

A natural death from old age is the exception nowadays. More often there is illness, accident, or some other unnatural cause to account for the passage to the grave.

Unfortunately, many people do not enjoy a normal life and development. For a time there is growth in the first period, then comes an illness—a backset; then more progress upward, with

more interruptions, until more or less imperfect maturity is finally reached.

But maturity, again, is rarely maintained any length of time, and the path is usually a rocky one, with many "ups" and "downs" in the way of physical disorders and weaknesses. The tendency, on the whole, is downward after maturity is reached, or at least soon afterward.

If we let a line represent a normal, healthy life, we might indicate by lines some of the deviations that are likely to take place. Comfortable, not to mention perfect, health is far from common.

The problem of food supply and proper nutrition of the body, is of the greatest importance, and very materially determines the comfort and well-being of the individual. The food, on entering the body, requires digestion before assimilation can take place; then only does it enter the blood and become part of the body. Floating in the blood, it is distributed to the brain, liver, muscles, and the various organs. As the river Nile overflows its banks and fertilizes the surrounding country, so the living blood stream, too, overflows; that is, gives up its food material to the surrounding tissues, and thus nourishes them. The myriads of cells which compose the tissues gather up the food matter eagerly and utilize it in making repairs and producing heat and other forms of energy, and so replace the loss sustained by manual labor and heat dispersion.

What is food? We may answer the question very briefly by saying that *anything capable of digestion, and of building or energizing the body without untoward effects, is a food.* A poison is the reverse. *Poisons* may be extremely deadly and fatal or quite mild, but, in any case, they are poisons; and always do injury to the body.

We must notice briefly, in passing,

certain articles which appear to form an intermediate group and partake of both characters. Alcohol is a good example. It furnishes a certain amount of energy, and consequently might be claimed as food by some. To obtain this energy, a still greater amount of energy is used up; consequently alcohol does not add energy to the body, but expends it, and is really an *energy-waster*. Furthermore, it has most detrimental effects upon the nerves, and, in fact, all tissues. It is a protoplasmic poison, and sets up degenerative processes in the liver, kidneys, heart, blood vessels, and other organs, which induce disease and shorten life. No, alcohol can not be reckoned as a food at all. It is not only unnecessary to life and health, but actually deleterious and dangerous. Finally, it dulls the senses, and mars the finer work of the brain cells.

Man's Natural Diet.—We may classify foods, according to their source, as animal or vegetable.

Animal food includes not only the flesh of the dead animal, but also the animal products, milk and eggs.

Let us first consider flesh, and afterward deal with the dairy products. Without stopping to consider the diet of primitive man, as laid down by the Creator in Holy Writ, or the ethics of the question, let us ask, What is the natural diet for man? Has Nature provided for his sustenance? If so, what is it? *Is it animal flesh?* We say, *No*, emphatically. But it is contended that animal flesh is nourishing. *True*, but that is not a sufficient reason for using it or considering it a wholesome food?

What, then, are the objections? Briefly stated, they are as follows:—

1. Animals are liable to disease, and it is a well-known fact that various diseases may be communicated to man by the use of infected flesh. It is often diffi-

cult, and sometimes impossible, to detect this when purchasing meat from the butcher.

2. Animals are often slaughtered in such a way as to make the flesh especially rich in waste matter and dangerous as food.

3. Animal flesh as sold in butchers' shops is always in a state of decay and putrefaction.

4. *Stimulating Foods*.—Flesh is a stimulating food, and in susceptible persons may give rise to a craving for something stronger and still more stimulating, as alcohol and tobacco. The stimulating properties are due to the presence of various organic extractives which, while possessing no food value, act as tissue irritants and contaminate the blood.

5. Furthermore, these stimulants are actually animal excretions that have formed in the animal prior to death. Even if the animal is perfectly healthy, has been slaughtered properly, and immediately placed in cold storage, where decay would be impossible, still it contains poisonous waste bodies that can only have a harmful effect upon the system. Uric acid is a typical example of these waste bodies, and it may serve to represent the entire group. Its accumulation within the body is always fraught with mischief. It gives rise to a state called *uricacidemia*, which favors rheumatic and gouty disorders. This is one of the causes of migraine, that severe splitting headache, neurasthenia, Bright's disease, etc.

For these and other reasons, which we have not space to discuss, we would exclude the *flesh of animals* from our diet.

A strict vegetarian diet would also bar milk and eggs, and there are many who do without these articles. Fruits, nuts, cereals, and vegetables do undoubtedly

contain all the natural elements required by the body, and in a pure, wholesome form. Still, most people prefer to add the dairy products, and when pure and used in moderation, they must be regarded as wholesome, if not necessary, additions.

Coming to our second class of food products, we find that it is composed of fruits, nuts, cereals, and vegetables. Plants are natural food producers. They stand as the middleman between man or beast and the inorganic world. They gather the carbon from the air and incorporate it with nitrogen and water from the soil to make proteid, starch, and fat. They also store up salts and acids in organic combination that can be utilized by animal tissues.

The dead body of an animal decays, disintegrates, and finally crumbles to dust, returning to the simple elements, carbon, oxygen, hydrogen, etc. The plants take these elements and with them construct food matter suitable to the needs of animals, and so the circle of the nutrition is completed.

Right here let us ask, Are all vegetable products wholesome or fit for consumption? No, certainly not. Many plants and their fruits are poisonous, some fatally so. To these belong the poppy, from which opium is prepared; the tobacco plant; coffee berries and tea leaves. None of these can be considered as foods. They are not competent to build and repair the body or furnish energy.

On the other hand, they injure the tissues, and are all specific nerve poisons. Their action is to benumb sensibility and paralyze the nerve cell. They are believed to soothe the nerves and dull pain, but this is easily explained by their paralyzing effect.

Tea and coffee, too, clog the blood and tissues, and lead to uric-acid disorders.

Let us now classify foods according to their chemical composition. We have:—

- Proteids.
- Starches and sugars.
- Fats.
- Salts.

Practically, all plant foods contain these different substances, but in varying quantity.

Proteids alone contain nitrogen, and are absolutely essential to life. Starches, sugar, and fats are worse than useless without nitrogenous food. *Proteids* may be looked upon as the actual tissue builders. They also contain a carbonaceous moiety which affords energy to the body.

Starches, sugars, and fats are eminently energy producers, and within the body are, to a certain extent, interchangeable. For example, starch and sugar are specially adapted for putting on flesh. In every diet they naturally furnish the bulk of the food. Fats can be taken to advantage only in comparatively small quantities; at least this is the experience of most people.

It would be impossible to lay down a hard and fast rule as to the exact amount of these various foods required by the average person daily, but it might be helpful to reproduce the table of proportions recommended by Dr. Kellogg. Before quoting, let us explain that a calory or heat unit as used here is the amount of heat required to raise one gram of water one degree Centigrade.

Proteids	160 to 240 units
Fats	400 to 700 units
Starches and sugars...	1200 to 1600 units

It would be difficult to express this accurately in ounces without specifying the particular kind of food used, but in a general way we may say that, taking solid food, the amounts would be approximately:—

Proteids	2 or 3 ounces
Fats	1½ to 2 ounces
Starches and sugars...	14 to 16 ounces

This daily ration is not based upon the weight or height of a person, but upon his skin surface. To base it upon weight would be fallacious. This is evident on considering the case of a child of ten pounds with a skin area of three feet square, and a man of one hundred and eighty pounds, and a skin surface of twenty-one square feet. Judged by the weight, the child would get only one-eighteenth as much food as the man, which would be far too little; comparing the skin surface, however, the proportion is one-seventh, or more than double as much, and nearer the correct amount.

We must now turn for a moment to the source of the various food substances:—

Fruits, as a rule, are watery, and do not contain a large percentage of food matter, except dates, figs, and a few others. They contain very little proteid or fat, most of their nutrition consisting of starch and sugar. They are very valuable for their acids and salts, and form one of the important classes of foods. A diet of fruit alone for a few days is often very valuable in relieving digestive disturbances and purifying the blood. *Fruits* always combine well with breads, cereals, and nuts. *Fruits* may be considered as possessing certain medicinal properties which make for sound health.

Nuts, like fruit, are cooked by Nature, and can be taken in their natural state. They are exceedingly nourishing, and contain a large amount of proteid and fat. Hence, nuts and fruit make a well-balanced diet. *Nuts* require careful and thorough mastication; otherwise they are difficult of digestion. They go well with bread and cereals.

Cereals probably form the bulk of our

diet. They include the pulses, such as peas, beans, lentils,—all of which are rich in proteid. Cereals contain a large quantity of starch and a fair amount of proteid and fat. They make a cheap, wholesome diet.

Vegetables are probably the least valuable source of nourishment, and a fruitarian would do without them. They are by no means necessary; still, they add to the variety, and are useful in various ways in vegetarian cookery. The potato is a most excellent food, consisting almost entirely of starch and water. There is scarcely another starch so easily digested. Greens of various kinds are valuable more for their salts than for their nutritive properties.

From this brief résumé it will be seen that food reformers are not confined to a diet of cabbage and turnips. Many probably use less vegetables than the average beef eater. These foods contain all the elements required by the body, and, more, they are in the most wholesome form obtainable.

The selection of food is not the only important question. Bad cookery may make the most wholesome articles quite unfit for consumption. Plain cookery, with careful combination of the different foods, is essential to the success of the would-be food reformer. He avoids rich and greasy foods, fried dishes, and indeed all that would require undue work of the digestive organs. A conservative system of cookery that will retain and bring out the natural flavors of the different articles, and do away with artificial flavors in the form of chemicals, spices, and condiments, will prove most healthful and also acceptable to the unperverted appetite.

In concluding, we will mention a few dietary indiscretions which often undermine the health, seriously injuring the stomach and liver if persisted in, and leading to malnutrition:—

1. Condiments, such as pepper, mustard, curry, etc., irritate and inflame the lining membrane of the stomach, and lead to digestive disorders. They are absolutely unnecessary in any system of healthful cookery.

2. Overeating is a common indiscretion. Professor Chittenden has recently shown by scientific experimentation that people require only about half as much food as is ordinarily taken. Overeating puts a heavy tax upon the stomach and liver, clogs the blood, and poisons the system. It encourages gouty and rheumatic disorders, and is a prolific cause of dyspepsia. There is an old Norse proverb that "oxen know when to go home from grazing, but a fool never knows his stomach's measure," which contains more truth than poetry.

3. Too frequent eating is undesirable. Three meals a day are enough for any healthy man or woman. Never eat between meals.

4. Hasty eating throws excessive work on the stomach, and is likely to give rise to fermentation, flatulence, and other abdominal disturbance. It always pays to chew the food well, and to take sufficient time to eat properly.

Summing up, we contend that the use of alcoholic liquors, tea, coffee, and animal flesh, together with the indiscretions of diet above mentioned, all encourage premature aging and decay of the body, and so shorten life. Flesh, in particular, has a detrimental, animalizing effect, and always tends to gross living.

"HEALTH is the greatest of gifts; contentedness, the best riches."

THE HISTORY AND CHEMISTRY OF BREAD-MAKING

BY ESTELLA F. RITTER

BREAD-MAKING as an art, likewise as a necessity, dates back to earliest antiquity, and from this the saying that "bread is the staff of life" no doubt received its birth, since people of all ages and climes have found it both a useful and palatable food.

The story of the past and present is one: that a dried substance, such as flour of some sort, was used,—wheat, barley, oats, rye, rice, corn, millet, and likewise chestnut and peanut flour, roots and other starch-containing substances; but of all these the preference has been given to wheat in later years. In the days of antiquity, bread was made under disadvantages, for its chemistry was unknown. It is quite interesting to compare the development of the crude article made by the unenlightened and uncivilized peoples of the past and the present, with that of the bread of enlightened people of the past, and especially those of the present scientific age. In its earliest forms, as still used by the wild tribes of South Africa, we find the flour of grains or other substances ground between stones, moistened with water, made into thin sheets or layers, and placed against heated stones or covered with hot ashes. Other forms of portable ovens were also used.

In these forms of simple bread-making, lightness was an absent factor, except that the cakes or sheets of baked dough were thin. During these ages, dyspepsia from bread was probably unknown. Although Mr. Fletcher was not present to advise thorough mastication, it was no doubt done with a thoroughness that has died out with that form of bread-making.

In alluding to the antiquity of bread, we must not forget that the Israelites

in Egypt ate leavened bread, and that the ancient Greeks made use of the yeast plant as a leavening agent. A sample of bread over four thousand four hundred years old, found in Egypt, on microscopical examination showed ground barley and yeast cells. In the ruins of Pompeii a baker's oven containing eighty-one loaves of bread, similar to those of the present day, was found. Thus the steps in bread-making indicate the people's enlightenment.

Not until the dawn of chemistry did baking begin to attain to its present perfection. In 1869, Justus von Liebig, the famous chemist, looked upon the art of bread-making as one that had remained stationary for thousands of years, and began investigative studies to improve it. He says, "We eat to-day the sour bread which the Bible speaks of and Pliny describes." It was therefore left for modern chemistry to explain and improve. It will be worth while to follow the stages of its improvement.

The hydrating of the starchy mass was common to all, but the leavening agent was unknown to the unenlightened of both past and present. Baking was the next step, producing, as a result, porosity and lightness of texture. The discovery of yeast was, no doubt, one of chance in the ancient days, and then handed down to the present time. The explanation of this principle, however, belonged to the realm of modern chemistry. Still the use of yeast in those days was successful, as it is at the present time with many. We have but to realize that Pasteur, the eminent bacteriologist, began to study the yeast plant, and positive knowledge dates back about sixty or sixty-five years. It has always been the belief, even with Pasteur, that fermentation and the

splitting up of sugars and starches by the yeast plant into carbon dioxid (CO_2) and alcohol ($\text{C}_2\text{H}_6\text{O}$) was due to vital action; yet many years before Pasteur's time, two French investigators isolated from germinating grains a chemical substance that seemed to possess almost unlimited capacity for splitting up starch into its simpler compounds. A given amount of the active principle of malt will, for instance, break up a million times its own weight of sugar into carbon dioxid (CO_2) and alcohol ($\text{C}_2\text{H}_6\text{O}$).

That the yeast plant itself is not directly the ferment required, but its chemical product, was beautifully illustrated by the German savant, Buchner. He took cultures of yeast cells, mixed them with very fine sand, and put them under heavy pressure. From this pulp strained fine, a sap was produced that gave exactly the same fermentative action as the yeast cells themselves. This proved conclusively that the fermentative action was due to a chemical substance, as in the case of ptyalin of the saliva and amylpsin of the pancreatic juice. Fermentation produced by chemical substances or enzymes belongs to the class of unorganized ferments in contradistinction to the organized ferments, as yeast plants (*saccharomyces* and *torulæ*), found abundantly in the air.

Let us look into the bakery of fifty or one hundred years ago, and watch the process of making bread. Bakers as a rule made their own yeast, called the wet or potato yeast, which was prepared as follows: Hops were boiled in a large kettle for a period of twenty minutes. Of this a quantity was taken and mixed with brewers' malt and flour into a very stiff batter. The remaining hot liquid or solution and the batter were permitted to cool, after which the two were well mixed. This compound is called stock yeast, and should be kept in a cool place.

to prevent any too rapid action of the malt diastase, or enzyme, converting the starch in the flour and the barley of the malt into maltose. The baker's next step was to boil a large kettleful of small potatoes, commonly called yeast potatoes, in his oven, after which they were taken out, placed in a large upright tub, and mashed and mixed with a quantity of water. To this potato mass he added a quantity of his stock yeast, or malt diastase, mixing well with a large rod, and placing it in a warm part of the bakery, 75° to 95° F., to encourage the chemical action of the malt diastase acting upon the starch and the potatoes. From eight to nine hours' action generally finished the process.

It is interesting to note how the baker judges the finishing stages. If the cover is lifted from the potato mixture tub after several hours, large bubbles of gas distend the surface and then burst. A lighted match or candle held near this gas will always be extinguished, showing that carbon dioxid is being liberated. This action goes on until the material is completely used, and the bubbles cease forming. The mixture falls a trifle along the edges of the tub, and warns the baker that it is time to begin the next stage of his bread-making. He now takes a quantity of this potato yeast mixture and combines it with a quantity of flour and water in a large trough, making a thin batter. The ferment or enzyme still present in the potato mixture, but having used up all the food in the latter, finds additional nutrition in the flour of the new batter (or sponge dough), and again begins to act, producing bubbles of carbon dioxid, thus distending the dough to a greater bulk. A beautiful illustration of this malt enzyme action was shown about six years ago, by the English chemist, Croft Hill, in the discovery of the reversible and constructive zymohy-

drolisis, as follows: When starch or dextrin is subjected to ferment action by the malt enzyme, it hydrolyzes,—splits, by taking up water into one of the simpler sugars, glucose. If this product is not removed, it comes to a standstill; add more starch, and it begins again. But if sugar is added, the glucose is recon-verted into starch.

After the baker has permitted the sponge dough to be acted upon by the malt enzyme for three or four hours, at about 75° to 95° F., the bubbles cease, and the batter dough recedes slightly, as in the potato mixture. After this has finished its fermenting action, he mixes more flour, kneads the dough, and forms loaves of bread, which in a short time are ready for the oven.

BAKING

The malt enzyme and yeast, having now fully distended the starch and gluten cells and converted some into sugar, the loaf is placed into an oven at a temperature of 400° to 500° F. The rapid expansion in the loaf goes on, making the loaf still larger, lighter, and dryer, and hardening the glutinous skeleton framework of the loaf, so that the loaf keeps its shape. The heat at first should not be too great, so as to permit the moisture of the interior of the loaf escaping before a hardened outer crust is formed. After being a short time in the oven, the outer crust of the loaf becomes dextrinized; three-fourths of an hour to an hour finishes the baking process, and the bread is taken from the oven.

Don't Fold the Arms.

A writer in an exchange calls attention to the fact that folding the arms pulls the shoulders forward, flattens the chest, and impairs deep breathing. When the arms are folded, the chest is so flattened down that it requires a constant effort to keep it in what should be its natural position.

The position in which the body is most frequently held becomes its natural position. Continuously folding the arms across the chest develops a flat chest and a rounded back. On the other hand, clasping the hands behind the head, or folding the arms behind the back, and doing much posterior chest-weight work, will develop a flat back and a rounded chest.

SCHOOL OF HEALTH SEARCH QUESTIONS

FOOD AND BODILY DECAY

1. Into what three periods may life be divided?
2. Describe the process of wear and repair during each of these periods.
3. Which period is normally the longest?
4. Name some of the substances used as food which encourage premature decay.
5. What other dietetic errors have the same effect?

THE HISTORY AND CHEMISTRY OF BREAD-MAKING

1. Describe some ancient and primitive forms of bread-making.
2. What evidences have we that leaven was used in ancient times?
3. To what is the fermentative action of the yeast cells due?
4. What should be the temperature of the oven for bread-baking?
5. Describe the effect of too great heat.

Health Chats with Little Folks

IVY LEAVES

WE do not, in this country, see much of the ever-green ivy, but in England the glossy leaves of this beautiful climbing plant are to be found everywhere.



"THE CAPTAIN"

The "Ivy Leaves" we are going to talk about are little English boys and girls who belong to the "Ivy Leaf Society." This society is a company of children and young people who have for one of the rules of their life, Ruskin's beautiful motto: "I will not kill nor hurt any living creature needlessly, nor destroy any beautiful thing, but will strive to comfort and protect all gentle life upon the earth."

To take the life of animals for food is to kill them needlessly, for the Creator has provided that the earth should bring forth food for us. So these children live on fruits, nuts, grains, and vegetables. No living creature has to suffer or die to give them life.

The ivy is a strong and hardy plant, that grows very fast, in all weathers, and in spite of all drawbacks. In this the Ivy Leaf Society has been true to its name. It started a few years ago with a few children in a London home, and now it has hundreds of children in all parts of Great Britain and in other lands enrolled as its members.

Each little "Ivy Leaf" learns this

motto, and tries to follow it day by day: "I am only one, but I AM one. I can not do much, but I CAN do something; and what I can do, with God's help, I WILL do." So each one does what he can to make the world happier by giving to others the knowledge of a better way of life. For those who live on the pure foods brought forth by the earth are healthier and happier than those who slay their fellow-creatures to feed on their flesh, and take their food second-hand after it has been used by the animals.

The "Ivy Leaves" are spreading so fast all over England that last year a





The banner upheld by the two "Ivy Leaves" shows the watchwords of their society: "Peace," that none of God's creatures should hurt or destroy each other; "Love," that all should do unto others as they would be done by; "Health," which springs from the

pure foods which come to us fresh from the hand of God. president was appointed for the Ivy Leaf Society. The president is Mr. Eustace Miles, the Cambridge tutor, who is so well known as an athletic champion. Of course, the children are all glad to have so great a man for president, and some one wittily remarked that now they were "miles ahead."

The ivy is also faithful; it clings. Its little tendrils or rooflets reach out and take fast hold of whatever will support it and help it to climb higher and higher. In this also it is hoped that the little "Ivy Leaves" will be true to their name, and cling faithfully to the principles of love, mercy, and justice that support them in their better and higher life.

The "Ivy Leaves" meet every month in *The Children's Garden*. This is a little monthly magazine where many of



their pictures are published and letters from the members are printed. There are many nooks in this interesting "Garden" where the children can have good times together.

The boys have an athletic club under the charge of "The Captain," Mr. Charlton Short, who teaches them many useful things that will help them to grow into strong and good men.

Little Joyce and Gladys, shown in our picture, have been members of the Ivy Leaf Society ever since they first budded forth into the garden of life. They are still only buds, but they are being carefully trained by their parents in the way they should go to make good strong

"Ivy Leaves" when they grow older.

The two younger children in the other group of "Ivy Leaves" have never tasted flesh food of any kind, and the three older children have been vegetarians for seven years.

When Leonard was three years old he had never seen any dead flesh, and great was his horror when he was told that some passing animals were going to be killed to be eaten. The next time he went out walking he refused to go where he had seen the animals, for fear he should meet the people who ate them. He seemed to think that people who would eat animals must be dreadful to look at.

E. E. A.

Sun Bathing for Longevity.

Mr. Andrew Joseph Thompson, of Santa Rosa, Cal., who has reached the unusual age of 113 years, recently made a trip to Minnesota to attend the marriage of his great-granddaughter. Mr. Thompson is active and bright-eyed. He says that he hopes to complete another century of life. He gives the following as the reasons that have enabled him to reach this great age in comfort:—

"In the first place, I refuse to be worried about anything. Since I ceased active business, about sixty years ago, I have never let a day pass when the sun shone without baring my body to its rays for one or two hours. On my place in California I have an enclosed space where I go as naked as God made me. There is a little lake, and some woodland, and a rose garden, and during the time of my sun bath I ramble about through the paths. The sun sinks into my old bones, and gives them new life. My skin is as brown as an Indian's all over. It has been that way ever since I began the practise of sun bathing. For cold weather I have a glass house at the

top of my residence comfortably fixed up, and there I take my bath through the windows when compelled to do so."

Japan Educating Russian Prisoners.

The prisoners taken by the Japanese in the late war had a new world opened up to them. In their own camp they had suffered for lack of food and clothing, and were huddled together in foul quarters. The Japanese supplied them with plenty of good food and clothing, and instructed them in the laws of hygiene. They were made to pay as strict attention to these laws as the Japanese themselves, taking warm baths regularly and sufficient exercise.

As the majority of the prisoners could neither read nor write, schools were started for their benefit, with Russian officers in charge. Those soldiers who had no ambition to learn were even coaxed to do so by the offering of such prizes as leave to go into the town. The return of these soldiers to their own land to scatter there the seeds of the new knowledge obtained in Japan, can not fail to influence the future of their country.

.. *By the Editor* ..

CANCER OF THE STOMACH AND INTESTINES

THE alimentary canal of man seems to be a favorite seat for malignant growths. According to Ewald, out of more than eleven hundred cases of cancer of the intestinal canal observed in the Prussian hospitals in 1895 and 1896, eighty-nine per cent, or nearly nine-tenths, were cases of cancer of the large intestine, chiefly of the cecum and the rectum.

Out of 10,500 cases of cancer affecting the digestive tract as a whole, in the same period, more than forty per cent were located in the stomach. Stagnation of the contents of the stomach and the colon, with putrefaction, is without doubt the principal cause of the deterioration of the tissues of these organs, which gives rise to the lowered resistance necessary to render the parts susceptible to cancerous disease.

Recent observations have shown that in quite a large proportion of cases, perhaps in the majority of cases, cancer of the stomach is developed upon a preceding ulcer. This is particularly true of cancer of the pylorus. The ulcer produces a cicatrix; the cicatrix produces more or less obstruction and retention of the gastric contents. This leads to putrefaction and lowered resistance and the development of cancerous disease.

Metchnikoff has very well suggested that man might learn a lesson from the monkey in the care exercised in relation to the eating of food. When a morsel of food is offered to a monkey, he examines it minutely, looks at it, smells it, carefully cleans it by wiping it with his hand, tastes it, and very often throws it away even when he is hungry. The average man eats what is set before him, raising no questions for conscience' sake, or stomach's sake. The

result is, man is subject to a host of maladies to which the monkey is a stranger.

These facts seem to indicate that man would be far better off without a colon than to keep his colon and treat it so badly as he does. It has often been suggested that the operation for the removal of the appendix might be well extended to a large part of the colon, and that by the abbreviation of this too capacious organ, the process of putrefaction may be limited so there will be less opportunity for the accumulation of decomposable matter. It is not at all likely that this operation will become popular, although the risk attending the operation is not nearly so great as might be inferred from its magnitude.

The colon is a part of the anatomy of the human being, and is likely to remain such. The proper thing, then, is to reform the diet rather than to remove the colon. As Metchnikoff has well pointed out, the evils which arise from a capacious colon filled with putrefactive food residues may be remedied by restricting the diet to food-stuffs which do not readily undergo decomposition. The natural food of man being fruits, grains, and nuts, there can be no risk in doing this. The flesh of animals is especially prone to putrefaction, and when this enters largely into the food, the fragments of undigested meat retained in the cecum and other roomy portions of the colon encourage putrefaction, and absorption into the blood of great quantities of toxic matters, which, as Metchnikoff has shown, set up degenerative changes of an extremely fatal character, resulting in arteriosclerosis or hardening of the arteries and apoplexy, Bright's disease, dropsy, and many other fatal disorders.

LIVED THIRTY-FIVE YEARS WITHOUT A COLON

A PEASANT woman in Barsovie, as the result of an abscess in the lower right portion of the abdominal cavity, suffered from a fistula which communicated with the small intestine just before it joined the colon. The fistula was so large that the entire intestinal contents passed out through it, thus retiring the colon and rectum entirely from activity. After the patient had suffered from this condition for thirty-five years, during which time she enjoyed perfect health, gave birth to three children, and worked hard continuously, she was examined by a surgeon, who undertook to close the fistula and re-establish the normal connection. The surgeon was greatly surprised, however, on opening the abdomen, to find that the colon was so completely atrophied that it could no longer serve its natural purpose; so he was obliged to close the wound and leave the patient in the condition in which he found her. This fact shows very clearly that the colon is not essential as an organ of absorption.

In a number of cases in recent times, surgeons have shown the same fact by removing a large portion of the colon in cancer or other grave disease.

Dr. Arbuthnot Lane, an eminent English surgeon, recently proposed an operation whereby the small intestine is detached from its connection with the beginning of the colon, and connected with the upper part of the rectum instead, thus cutting out the entire colon. He performed this operation in many cases, and claims to have attained excellent results, not only relieving

the constipation from which the patient had previously suffered, but restoring the general health, which had previously been affected by the constant absorption of the product of the poisons produced by the putrefaction of fragments of undigested food remaining for days or weeks in the dilated colon.

Strassburger has shown (*Zeitschrift für Kleinische Medicine*, 1902), that microbes increase in the human intestine at the rate of one hundred and twenty-eight trillions (128,000,000,000,000) every twenty-four hours. There are few microbes in the small intestine, so most of these are found in the large intestine, which is a sort of cess-pool for the alimentary canal. Here accumulate the wastes of the digestive processes — fragments of undigested food, dead cells cast off by the mucous membrane, and the residues of the digestive fluids and other secretions. In the colon these waste matters stagnate for a sufficient length of time to permit the setting up of active putrefaction. This accounts for the presence of the colon bacillus, an organism which produces putrefaction and flourishes amid putrefactive material. Other putrefactive organisms are also present.

These facts show the importance of taking good care of the colon, first by avoiding foods the residues of which may undergo putrefaction in the colon, and, second, by preventing the accumulation of food residues in this reservoir of body wastes. It is only by long-continued neglect that the abused colon becomes a menace to health and life.

Hypopepsia and Tapeworm.

What is called hypopepsia is a condition in which there is too little digestive power. A common name for this condition is slow digestion. There is not enough acid formed; and, likewise, a deficiency of pepsin produced. In hyperpepsia there is an excess of acid, and perhaps also an excess of pep-

sin. But it is generally the case that when there is an excess of acid, there is a deficiency of pepsin. There are cases of indigestion in which no acid is formed in the stomach, and no pepsin; that is, there is no digestion. This condition is termed apepsia, and is a very dangerous one indeed, because when a person has reached such a

state that there is no acid in the stomach, and no pepsin, it means that the stomach is doing no work at all. It has retired from business, so to speak, and becomes the hold of every unclean and hateful germ.

This is a condition in which tapeworms may readily gain access to the system. The tapeworm can not survive any long stay in a stomach that has the normal amount of acid and pepsin; for these will digest it. One can digest a live tapeworm just as well as he can digest a live oyster. One does not get tapeworms unless he eats them.

Tapeworms come from beef. Nine out of ten of all tapeworms have their origin in beef, and the tenth one is gotten from lean pork. In beef and pork the tapeworm is small. It is enclosed in a little cyst. When the beef is eaten, this cyst is digested off in the stomach, and the little tapeworm fastens its hooks on the walls of the intestine, hangs on, and grows out by yards and yards (some have been known to be fifteen or twenty yards long), and it floats back and forth in the small intestine. Now and then a piece breaks off, so it keeps on growing, producing thousands and thousands of eggs, and every single egg discharging. These eggs go down the sewers into the rivers, cattle drink the water of the river, and get some more tapeworms. If a man has tapeworm, he may contaminate those cattle with tapeworm. Tapeworms are multiplying. There is a combination between men and animals to scatter tapeworms. The man is the nursery, if you please. He raises the tapeworm. He is the incubator. The ox is the hatchery. The tapeworms are hatched out; the ox swallows the egg just as it is hatched out, and it lives in the flesh of the animal, and develops into a further stage. Man then eats the ox, and the tapeworm develops further, producing millions and millions of tapeworm eggs, which produce other tapeworms.

THERE is healing power in obedience, just as there is destruction in disobedience.

Acid Fruits for Rheumatism.

The idea that acid fruits induce rheumatism is a very popular error. It is based on a misunderstanding. The acids of fruits are different from mineral acids. Mineral acid taken into the body is not digestible, and remains as mineral acid. Sulphuric acid, for instance, is always sulphuric acid; it never changes. If it is hydrochloric acid, it continues as hydrochloric acid; it combines with something, perhaps, but it is always hydrochloric acid. It is not so with the acids of fruits.

These acids, when taken into the body, go through the same process of assimilation and change which starch and sugar do; they disappear as acids. Actually they have the effect to increase the alkalinity of the blood, to lessen the acidity of the renal secretion.

Thus a person who has rheumatism, a condition in which there is too much uric acid, may be greatly benefited by the use of fruits and fruit acids. A few years ago we made some experiments which proved this most conclusively. A person was recommended to live a week on sour fruit or acid fruit juices in large quantities, and it was found that the alkalinity of the blood increased right along. The acidity of the blood increased during the first few hours, or, rather, the alkalinity diminished; but after the first few hours the blood rapidly became more and more alkalin, as indicated by the decrease of the acidity of the urine.

Hot Baths and Chronic Disease.

Brieger has shown that very hot water baths are of great value in the treatment of chlorosis, gout in young persons, and Bright's disease. His opportunities for observation have been very great, as he has treated ten thousand cases in the Institute of Hydrotherapy connected with the great Berlin university. Winternitz has shown that these hot-water baths increase the burning up of the waste substances in the body to a high degree, promoting oxidation even more than does fever.

... Question Box ...

10,250. Cracked Fingers — Hernia — Incipient Colds — Mrs. M. S., Michigan: "1. I suffer terribly in cold weather from the ends of the fingers and thumbs cracking open. It is not of the nature of chapped hands. The rest of the hand is in good condition. It is not caused by soap, water, or housework, nor is it like salt rheum. The lips and nose also crack. Kindly suggest cause and treatment. 2. Will 'hot and cold' help hernia? 3. What can be done to break up incipient colds in children?"

Ans.—1. This is probably a form of eczema. Hot and cold bathing—the alternation of hot water and cold water—will perhaps be found beneficial. The parts should be protected by flexible clothing, or very thin adhesive plaster.

2. No.

3. Warm bathing and hot water drinking just at bedtime; a very careful dietary for a few days, especially the free use of fruits, and the withholding of meats, milk, and other foods rich in proteids. A bit of cream may be used in place of milk for a few days.

10,251. Soreness under the Breasts — Zinc Ointment — "Shasta Water." — Mrs. E. J. S., California, suffers from sores just below the breasts. They cause great burning and itching, and discharge. Bathing and sweet cream, vaselin, etc., have been tried without relief. "1. How can they be healed? 2. Is zinc ointment safe and good to use? 3. Is 'Shasta Water' a healthful drink?"

Ans.—1. The difficulty is probably eczema. The parts should be bathed twice daily with resinol soap and very hot distilled water or soft water. Afterward the following lotion should be applied:—

℞ Ichthyol	1 dr.
Sodium Carbonate	½ dr.
Oil of Sweet Almond	2 dr.
Glycerin	3 dr.
Distilled Water	3 dr.

2. When there is much irritation, zinc ointment may be found useful.

3. We have never found occasion to recommend it.

10,252. Preserving Sweet Cider — Constipation — Meltose. — M. G., South Carolina: "1. How may sweet cider be preserved for winter use? 2. What can be done for constipation in case of gastric neurasthenia and hypopepsia? 3. I can not use a can of meltose before a part molds. How can it be preserved? 4. Could it be boiled, and a part sealed?"

Ans.—1. Apple juice may be put in bottles or jars and heated for ten minutes at a temperature of 175° or 180°, and then quickly sealed. Great care must be taken that the cans are perfectly clean and that the operation is done with precision.

2. It is possible that the colon may be dilated. We would recommend the graduated cool enema.

3. Keep it in a cold place.

4. Yes.

10,253. Sense of Fulness in the Stomach.—A correspondent asks: "Should a person continue eating when he experiences a sense of fulness in the stomach, although he knows that he is not eating enough?"

Ans.—No. The moment you feel a sensation of fulness in the stomach, stop eating. Eat food that is very easily digestible, and eat again when the feeling has passed away. When food causes a feeling of heaviness and distress, it is proof that you have taken all the food the stomach will tolerate, and you should stop at once. If you have eaten too little, after two or three hours eat again. You may eat four or five times a day if you eat liquid food, or take pains to masticate so thoroughly that the food is all liquid before you swallow it.

10,254. Gluten Preparations.—A subscriber wishes to know if gluten preparations produce an inactive state of the bowels.

Ans.—No, but they do not have the opposite effect.

LITERARY NOTES

"Unpolished Rice, the Staple Food of the Orient." A lecture by Rev. Henry S. Clubb to the Vegetarian Society of America; to which is added One Hundred Recipes for Cooking Unpolished Rice, Rice Flour, and Rice Polish; also Testimonies of Eminent Food Reformers. Published by the Vegetarian Society of America, Philadelphia, 1905. Price, 15 cts.

Some idea of the contents of this carefully prepared and instructive pamphlet may be gathered from the extracts given on pages 503 and 504. The recipes alone are well worth the price of the book.

The author, Rev. Henry S. Clubb, is the pastor of a vegetarian church—the Bible Christian Church of Philadelphia. Founded in 1850, this community has grown from a handful of people to a flourishing body, new members constantly being added. The Golden Rule is the basis of their creed, and they apply it, not to their fellow-men only, but to the whole creation. They abstain from meat eating because, as stated by their pastor, it "tends to excite anger, to bring out the brutal, and to weaken the gentle and kindly traits." But that the matter of health is also considered is shown by the pamphlets published by Mr. Clubb, "Thirty-nine Reasons Why I Am a Vegetarian," etc. He is himself a fine specimen of the beneficial effects of natural food, being still hale and hearty and very active at the ripe age of seventy-six years.

"Strength and Diet, a Practical Treatise with Special Regard to the Life of Nations." By the Hon. R. Russell. Published by Longmans, Green & Co., London, New York, and Bombay, 1905.

No one can read this book candidly without coming to the author's conclusion that "races or individuals living entirely or chiefly on plant food, with the addition of eggs and milk, are stronger and happier, other things being equal, than races and individuals living chiefly on the flesh of beasts."

The author explains that his bias toward a diet that excludes all flesh was the result, and not the preliminary, of investigation and experience. How extended his researches have been is shown in the material of the book, which is largely a compendium of quotations from naturalists, physiologists, travelers, and philosophers of all ages. The work will form an invaluable reference book for those who

are interested, as all should be, in the subject of which it treats.

"The Dark Side of the Beef Trust." By Herman Hirschauer. Published by Theodore Z. Root, Jamestown, N. Y.

A copy of this book should be in the hands of everybody that can read. If the writer speaks truly, it is a treatise concerning "what takes place on the other side of the partitions of the packing-houses of the Beef Trust while the public is being entertained with music and tinsel and a parade of prize steers for government inspection."

While the book is not a plea for vegetarianism, the lifting of the lid that the public may see what actually goes into the tinned foods and sausages put up in the packing-houses, may well make the vegetarian congratulate himself on his escape. The revelation of the real character of the carrion paraded as dressed beef and carcass meat is enough to turn the strongest beef-eating stomach. Some extracts from the book are given on pages 513, 514, etc.

Popular instruction in the laws of health, preliminary to their application to local needs, is in many places a duty of the hour, looking for its fulfilment to the best and strongest forces of the community, says **Good House-keeping**. What better service could a church, a club of women, or a similar organization render than to hold "good health institutes" or meetings? The earlier gatherings would naturally set forth conditions and experiences, and include talks from physicians; active effort in behalf of better water and milk, the cleaning of dirty streets and alleys, the destruction of mosquitoes, eradication of any and all sources of disease, would follow.

George Bancroft, the historian, was among the very first American students to go to Germany to complete his education. He was preceded only by Edward Everett, and one or two others. Graduating at Harvard College in 1817, when only seventeen years of age, the next year he went to Goettingen. From that time until his death he was acquainted with the leading men of Europe and America while student, diplomat, and historian. **Scribner's Magazine** will publish a selection from the Letters and Diaries of this remarkable man, beginning in the September number.

PUBLISHERS' DEPARTMENT

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A Journal of Hygiene

J. H. KELLOGG, M. D., EDITOR

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HEALTH RHYME COMPETITION.

THE large number of rhymes entered in this contest have been carefully examined by the committee appointed for this purpose, and as they find that the rhymes do not embody the idea intended by the person making the offer, it has been decided to re-open the contest, extending the time to March 1, 1906.

The object in offering these prizes was to obtain rhymes so simple, yet so attractive, that

they would lodge as naturally in the child mind as do the "Mother Goose" melodies.

The length of the rhymes and the length and number of the lines in each stanza will be left to the judgment of the contestants, but we would suggest that the rhymes be short.

First prize, \$5.00; second prize, \$3.00; third prize, \$2.00.

THIS issue of GOOD HEALTH is, as inscribed on the cover and first page, No. 10 of Vol. 40. It is now nearly forty years since this magazine was first published, under the name of the *Health Reformer*. The first issue was dated January, 1866. We have just received an interesting communication from a lady who has been watching its development with interest ever since that date. She says:—

"I have been a reader of your magazine ever since it was published, having set the type for the first number, then the *Health Reformer*, and am most certainly interested in the good work."

The standard antiseptic

LISTERINE



In all matters of personal hygiene Listerine is not only the best and safest, but the most agreeable antiseptic solution that can be prepared.

The success of Listerine is based upon merit, and the best advertisement of Listerine is—Listerine.

Literature more fully descriptive of Listerine may be had upon request.

Lambert Pharmacal Company

St. Louis, U. S. A.

MR. J. H. LAMPKIN, formerly physical director in an educational institution, now pastor of the Christian Church of White County, Ind., writes:—

"I have examined a copy of the GOOD HEALTH magazine, and find it sane, sensible, and seasonable. Such a magazine would be of great value in any home, for we need much instruction along the lines it follows. Good health is natural to man, and any publication which will help us to maintain it is valuable; and this I believe the above-mentioned publication will do admirably."

MR. CYRUS WARWICK, subscription agent, says: "I have received samples of several health journals, none, however, that I can recommend more conscientiously than yours."

NEW EDITIONS.

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THE SIGNS OF THE TIMES

OUR FORTHCOMING SPECIALS

¶ The *Signs of the Times* is set for the purpose of giving the last gospel message of Revelation 14 to the world. And it gives it week by week, number by number. Yet that message is so broad, so comprehensive, that it is impossible to scarcely more than touch it in one issue. In fact, it takes an entire volume of the paper to develop that great message at all adequately.

¶ Yet there are many who wish it presented, in its various phases, briefly. To do this, we propose to issue, beginning with the first week in October, four "Special Message" numbers, as follows:—

1. THE SURE WORD OF PROPHECY AND CHRIST'S COMING.
2. THE SANCTUARY, THE GOSPEL IN TYPE AND ANTITYPE.
3. THE LAW, THE GOSPEL, AND THE SABBATH,—“THE WHOLE DUTY OF MAN.”
4. THE CHURCH TRIUMPHANT.

¶ The above titles express only a part of that which each number will contain. On the opposite page is a suggestive list of the main articles so far as developed.

¶ Besides these our Home Department will be full of precious instruction. There will be Bible-readings, poems, music, if there is room, many illustrations. Each number will have a specially prepared front-page cover design, attractive and appropriate to that issue.

¶ This series ought to have a circulation, at the least calculation, of half a million.

¶ These special numbers will bear the following dates: October 4 and 18; November 1 and 15. Prices will be as follows:—

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5 or more sets to single names and addresses...	15 cents a set
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THE SIGNS OF THE TIMES

OUR FORTHCOMING SPECIALS

I. PROPHECY AND CHRIST'S COMING

1. OBJECT OF PROPHECY.
2. PROPHECY MAY BE UNDERSTOOD.
3. IMPORTANCE OF PROPHECY.
4. ALPHABET OF SYMBOLIC PROPHECY. DANIEL 2.
5. GOD'S VIEW OF THE NATIONS. DANIEL 7.
6. CHRIST WILL COME AGAIN. HOW? WHEN?
7. WHAT HIS COMING MEANS.
8. CHRIST OUR LIFE.
9. THE ONLY POWER THAT CAN SAVE. ACTS 4:12.

II. THE SANCTUARY.—The Gospel in Type and Antitype

1. THE GOSPEL IN TYPE.
2. THE SANCTUARY AND ITS LESSONS.
3. THE PRIESTHOOD IN TYPE AND ANTITYPE.
4. THE DAY OF ATONEMENT AND THE JUDGMENT.
5. THE WONDERFUL BOOK—THE SEVEN SEALS.
6. THE CLOSING WORK OF OUR HIGH PRIEST.
7. THE GREAT APOSTATE POWERS. REVELATION 12 AND 13.
8. SIGNS IN THE HEAVENS.
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7. GOD'S LAST GREAT PROTEST.
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- Hygienic Cafe**, 426 State St., Madison, Wis.
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- Vegetarian Restaurant**, 555 Boylston St., Boston, Mass.
- Vegetarian Cafe**, 814 Pine St., St. Louis, Mo.
- Vegetarian Cafe**, 1519 Stout St., Denver, Colo.
- The Vegetarian**, 755 Market St., San Francisco, Cal.
- Vegetarian Dining Rooms**, 317 W. 3d St., Los Angeles, Cal.
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- Vegetarian Cafe**, 214 Union St., Seattle, Wash.
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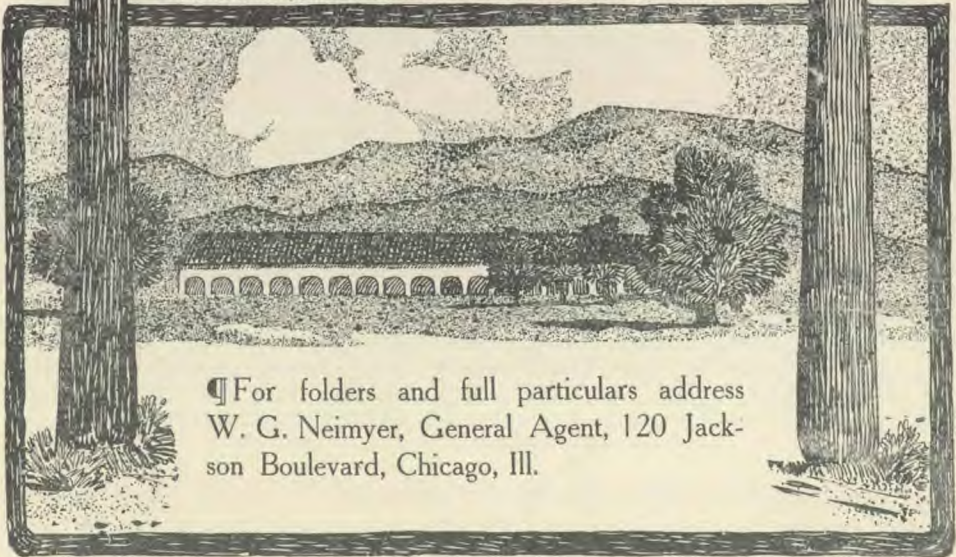
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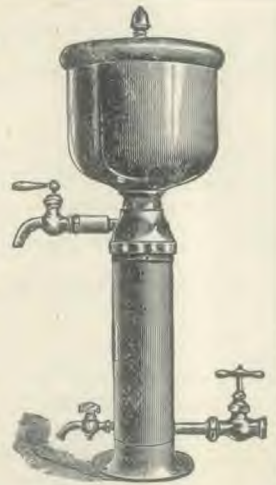
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2. The net earnings for the year 1904 were \$51,000.
3. The gross earnings for the first six months of the year 1905 were \$241,300, and from these earnings obligations were reduced to the amount of \$33,000.
4. The gross earnings for the month of August, 1905, were \$80,692.
5. The daily average number of guests at the Sanitarium during the months of July and August was 900.

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Special departments for diseases of the eye, ear, nose, and throat, and in charge of experienced specialists.

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