Life & Health

Health is the vital principle of bliss.—
James Thompson

HEALTH

Your health is your fortune. Upon it depends, in a large measure, your success and your happiness. It cannot be purchased any more than it can be bestowed upon you by a friend. Yet you can obtain it if you have not neglected it too long.

To attain to its greatest development the living plant must be put under conditions favorable to its growth. True, the sturdy oak will grow and prosper under many adverse circumstances, but the tender vine must be given more gentle care. Even the king of the forest, when broken and twisted by the storm, must receive careful attention or it will die. So, also, a strong constitution will stand a good many hard knocks, and may not require much attention, but broken health must be placed under the most favorable conditions. Nature must be given a chance to work unhampered. Scientific and painstaking care is needed.

The Chamberlain Sanitarium has been planned for just this purpose. Remember that the human body is the most intricate mechanism of which we know. Like the carefully balanced elements of a watch, the health may be easily broken, but it is quite a different matter to build it up again. The Chamberlain Sanitarium bases its treatment, first of all, upon the natural laws of our being. Every facility for the scientific reconstruction of your health is here at your disposal.

Come and let us show you the way to health.

CHAMBERLAIN SANITARIUM AND HOSPITAL

CHAMBERLAIN, SOUTH DAKOTA

Life & Health

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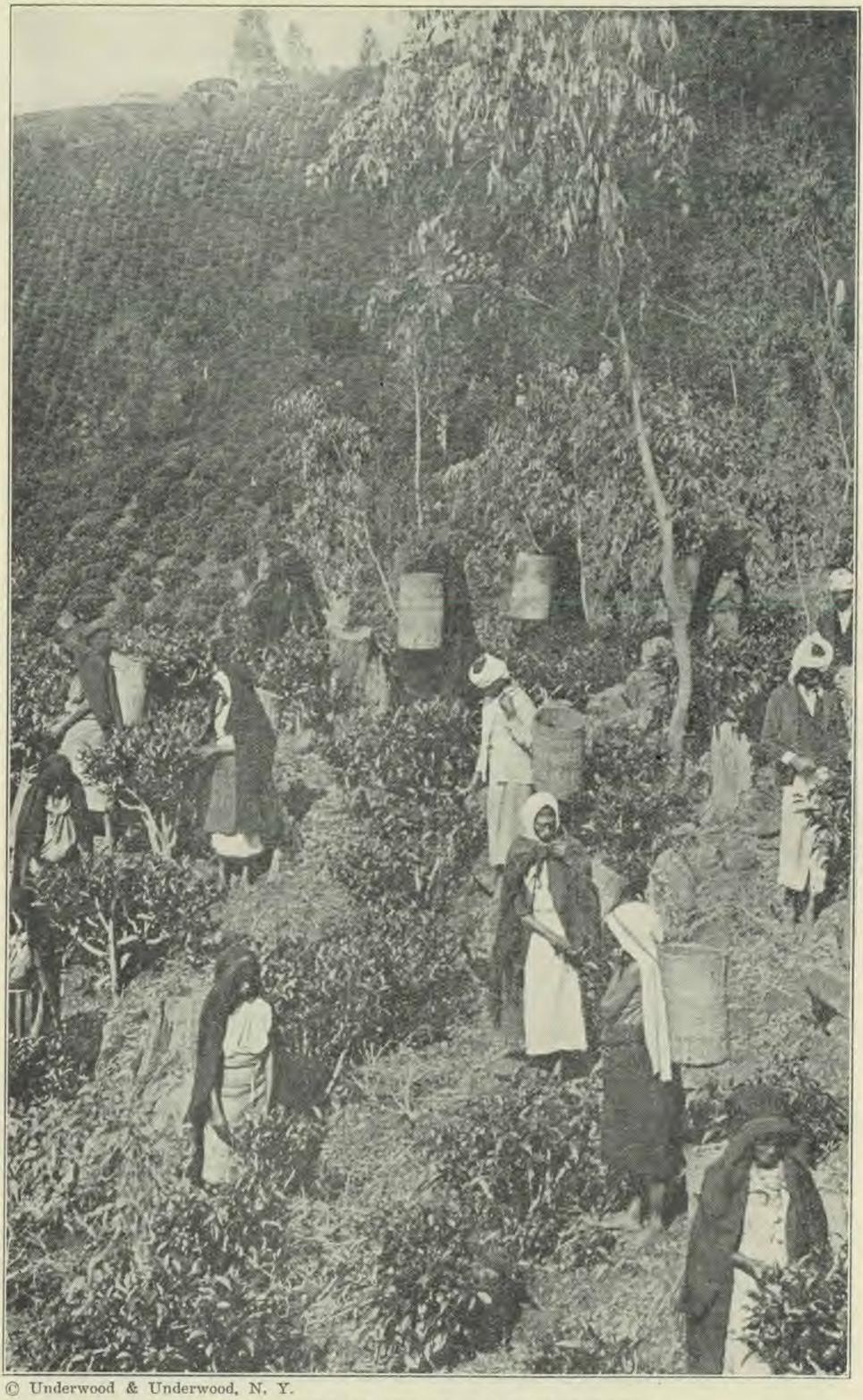

COOLIES PICKING TEA ON A CEYLON ESTATE

Much land and human energy are devoted to the production of stimulant and narcotic drugs.

Life & Health

HOW TO LIVE

Editor H. W. MILLER, M. D.
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Vol. 33 March, 1918 No. 3

Stimulants and Narcotics Are Deceivers

G. H. Heald, M. D.

WHEN the wise man said, "Wine is a mocker, strong drink is raging: and whosoever is *deceived* thereby is not wise," there were no such drugs as morphine or cocaine, and tobacco was unknown — at least to civilized man. Had these habit-forming drugs been in general use in his day, he would doubtless have included them in his category of deceivers.

It is true that alcohol has been the prince of deceivers. For generations it deceived even scientists and physicians into the belief that it was beneficial and necessary to health. It deceived even life insurance men into thinking that the mortality among abstainers would be higher than among drinkers. It deceived rulers into thinking that the use of alcohol was good for the nation, and that the revenue received from liquor licenses more than paid for the mischief wrought by liquor. It deceived army officers into thinking their men were better off and more efficient if they had access to liquor, at least in a diluted form. It has deceived every generation of men, leading them to think that they were being made warmer by alcohol, when they were rapidly losing heat; that they had increased strength and skill after a drink, when, as a fact, they were subnormal in these respects; that they had brighter and more witty minds, when all observers could see that their brains were befuddled with booze. Notwithstanding one can readily see that a person under the influence of a moderate dose of alcohol has lost his normal self-control and dignity and has descended to a lower stage of mentality, if he himself takes a little alcoholic drink, he immediately

experiences a sensation of exhilaration, well-being, and mental alertness, and a freedom from the cautions and inhibitions normal to him, which leads him to imagine that his mind is working to better advantage. It was not till science by severe laboratory tests demonstrated that even with very moderate amounts of alcohol the effect is depression and not stimulation, that men were fully undeceived as to the action of alcohol. "Whosoever is deceived thereby is not wise."

Russians Frozen While Under Influence of Liquor

But alcohol is not the only deceiver. All drugs which act on the nervous system, either as so-called "stimulants" or as narcotics, are deceivers. If one could be made to visualize beforehand the pain, the remorse, the unsatisfied cravings, the degradation, the living hell, that accompany drug habituation, it is safe to say that fewer would fall victim to these habits. It is the first experiences,— more or less pleasing,— that deceive and lead on to a repetition of the experience, and eventually to the formation of a habit vice. It is more than the formation of a habit; it is the evolution of a disease; for every drug habitué is very seriously diseased, in such a way that only by taking increasingly larger doses of the drug is he brought temporarily to a condition something like normal. But while the drug has this temporary effect,— a seeming cure for the disease,— it is all the while rendering the disease more intractable and desperate. Some cases of drug addiction are cured permanently; but usually the cure involves an amount of fortitude that the patient is unable to muster.

Now that the national and State habit-drug laws are being vigorously enforced, there is less opportunity than formerly to form the morphine and cocaine habits; and in a very large portion of the country it is not so easy as it once was to form the liquor habit. But there are other deceivers against which we should be on our guard. They may not be capable of doing so much harm as the drugs mentioned, but they are far from harmless.

Among the deceivers not under the ban of the law are certain of the soda-fountain drinks, which though they may contain neither coca nor cola, do contain sufficient caffeine to give a temporary stimulating effect. And there are the caffeine beverages, tea and coffee, which are said to cheer, but not inebriate. While these caffeine drinks are not in the class with morphine and cocaine, they have, to a certain extent, a similar effect. They produce an exhilarating effect; and when one is tired or in need of sleep, or when one's nerves are near the breaking point and need a prolonged rest, one may by the use of one of these stimulating drinks whip up the organism to further effort; and by increasing doses of the drink, this process may be continued until the nervous system is completely wrecked. Especially to one who has to have a bracer in order to keep up his work, is the use of such a stimulant a dangerous expedient, for it is enabling him to borrow on his reserve force to such an extent that it is only a question of time when he will be bankrupt.

All stimulants and narcotics are by their very nature deceivers. The wise man uttered a truth borne out by the experience of ages when he wrote: "Wine is a mocker, strong drink is raging: and whosoever is deceived thereby is not wise."

FOOD ADMINISTRATION BUILDING, WASHINGTON, D. C.

Food Economies

G. H. Heald, M. D.

THE world is face to face with its most stupendous food famine. Unless relief can reach some of the stricken populations, starvation is destined to add more of its horrors to the horrors of war. Canada's food controller, Mr. Hanna, in a recent urgent appeal to his people for more effectual food conservation, showed that the world food shortage is far more serious than was suspected when the food conservation movement was begun. A later appeal from Mr. Hoover, based on recent very disconcerting reports of the world's food shortage, urged a more careful husbanding of our food supply than was contemplated at the time of his first appeal.

To us in this favored country where there is comparative plenty, it is hard to realize what is meant by a food famine. We have known, perhaps, what it is to pay exorbitant prices for cabbages, onions, and potatoes; we are experiencing the discomforts of a shortage in milk and eggs, with soaring prices; we have, in some sections known something of what it means to be without sugar; and in many sections a shortage of coal has caused acute suffering. These are some of the inconveniences the war has brought to us, but hard as they seem to us, they sink into insignificance when compared with the condition of chronic suffering in many parts of Europe.

And there is no immediate prospect of better conditions, and would not be, even if hostilities were to cease at once; for the expert farmers over large areas have been fed to the cannon, and such farming as is done is in the hands of those who are handicapped; fertilizers are scarce or unobtainable; transportation is at a standstill; and thousands of square miles of the most fertile land in Europe have been made worse than desert by mutilation of military operations. Countries which in times of peace cannot produce all the food they require, find their normal agricultural yield diminished by one third, one half, or even two thirds in some instances, and yet there are the hungry mouths of millions crying for food.

We in North America have more food than we need, and can spare some for export; but not enough to satisfy the hunger of starving Europe unless we learn to stop some of the large leaks and to husband our own food supply more carefully. It is to impress this fact on the minds of the American people that the Food Administration has been conducting its campaign of education, urging Americans to prevent all food wastage and, as far as possible, to substitute in the bill of fare perishable and bulky foods, and foods not adapted for shipment, in order that a maximum of the foods best adapted for shipment and for European consumption — sugar, wheat, beef, mutton, and pork — may be reserved for Europe.

Medem Photo Service

ONE OF EARTH'S RUINED HOMES

As an important means of saving food, the use of foodstuffs for the manufacture of liquors has been prohibited in this country and Canada. The fate of beer still hangs in the balance. There seems no good reason why, when grains are needed to feed the starving, they should be destroyed in the manufacture of a beverage that is not a food. In view of the present food crisis, which gives promise of growing more acute for some time to come, there is a serious question as to whether tillable land should be devoted to the cultivation of such a crop as tobacco, when it might be used for the growth of human food.

If the food stringency is to be progressive, and we are to be called upon to furnish larger and larger portions of our products to feed our hungry neighbors, it will behoove us to cultivate every possible foot of ground, and to give up all wasteful methods of food production.

One of the most wasteful methods is the use of grains and other human foods in the production of flesh food. Every calorie in flesh food represents the consumption by the animal of many calories of vegetable foods. In every thickly settled country which cannot obtain supplies from some more sparsely settled country, the amount of animal food in the diet gradually reduces to a minimum. It takes more land and more expense to produce animal foods than vegetable foods; and were it not for the notion that flesh foods contain some elements not obtainable from the vegetable foods they would be more rapidly superseded as an economic measure by a nonflesh dietary.

It is the firmly rooted belief in the superiority of flesh foods that keeps man producing food by an uneconomical and unprofitable method.[1] Notwithstanding the fact that it has been shown that flesh

[1] It is not unprofitable to the producer, who sells his meat for enough to pay for his work and investment, but unprofitable to the consumer, and unprofitable to the community or nation as a whole, if it is so thickly settled that it has become increasingly difficult to make the land feed the population. Under the present conditions it is unprofitable economically for the world as a whole to use valuable agricultural land in the production of meat.

The following quotation from "The Science of Nutrition," by Prof. Graham Lusk of Cornell University Medical College, is significant in this connection:

"As this book goes to press it seems that America herself is certain to face a food shortage before very long. This can be remedied by increasing the number of milch cows and by reducing the live stock raised for meat. The latter would free arable land for the

contains only substances which have come from the plant; that flesh, being only part of the animal, does not represent all the needs of the animal body; that flesh in its purins (products of breaking-down tissue) gives to the body something which is not only useless to the body, but places extra demands on the eliminative and excretory organs, and favors the production of goutlike diseases; that animals now are frequently diseased, and diseased meat often passes the inspectors or goes through uninspected slaughterhouses, to the consumer, — notwithstanding all these and the added fact that it has been definitely shown not only in actual life but in the laboratory where the work is carefully checked up that with a properly selected vegetarian dietary, animal food is not essential to health or well-being; and that if animal food is used, milk is both more economical and physiologically a better food than meat,— notwithstanding all these established facts, the great bulk of mankind, always conservative regarding the acceptance of new truth, continues to regard flesh as a superior food, is willing to pay more for it, and willing to use several times as many acres to produce say a million calories in beef as to produce an equal number of calories in corn and oats.

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WAR'S TOLL HAS CLAIMED THEIR ALL

Such uneconomic methods might do in times of plenty; but at the present time those who are desirous to assist in real conservation should use by preference the products of agriculture rather than the products of cattle raising.

The urgent necessity for the strictest food economy suggests that we —

1. Cut out *all* alcoholic beverage production.

2. Cut out all tobacco production.

3. Cut out the extensive raising of products, such as beef, which involve a waste of food.

4. Use the land heretofore devoted to these purposes, and all land now unused, in the growth of food.

5. As far as possible, grow food intensively, getting two crops where one was obtained before.

6. Avoid waste from spoiling of food, from careless handling and cooking, from too liberal serving, from the foolish notion that an article of food should not appear on the table a second time.

7. As far as possible, substitute the foods that are perishable and not adapted to ocean transport, for wheat, meat, sugar.

We give in another article some recipes for meat and wheat substitutes.

The first three suggestions are not made with the thought that they will be taken seriously. Habits of generations are not given up so easily.

production of grain and potatoes, and save for human consumption, grain fed to steers. It is quite certain that meat in the quantity it is consumed today is entirely unnecessary, and it is susceptible of scientific proof (see page 312) that mechanical work is more efficiently and economically derived from carbohydrate food than from meat."

Foods to Replace Meat and Wheat

George E. Cornforth

CEREALS, recipes for the use of which were given in the November number of LIFE AND HEALTH, are the most economical of all foods; that is, you get more nourishment for a given sum when you buy cereals than when you buy any other kind of food. Dried beans, peas, and peanuts rank second in the category of most economical foods; that is, in beans you get more nourishment for the money you pay for them than in any other food except cereals. Beans and peas are exceptional among plant foods in containing a large amount of the kind of nourishment that is furnished by meat. Therefore they can be used to replace meat in the diet.

The most nutritious of all legumes, except the peanut, is the soy bean, and at the present time it is the cheapest. It contains much more fat than the other members of the bean family. A Chinese woman physician, Dr. Yamei Kin, a graduate of the Woman's Medical College of New York City, and head of the woman's hospital work of northern China, said recently, "Instead of taking the long and expensive method of feeding grain to an animal until the animal is ready to be killed and eaten, in China we take a short cut by eating the soy bean, which is protein, milk, and meat in itself." Here is a recipe for cooking the soy bean:

BAKED SOY BEANS

1 pint soy beans.
3 teaspoons salt.
2 tablespoons molasses.
1 tablespoon vegetable cooking oil.
1 onion.

Wash the beans and soak them in cold water overnight. In the morning drain off the water in which they were soaked. Put them into a bean pot. Add the salt, molasses, oil, and whole onion, and water enough to more than cover the beans. Put the cover on the bean pot and set it in the oven. Keep the beans cooking slowly till noon of the following day, when they will be ready to eat. As the water in the beans boils away, replace it with boiling water. These make an appetizing dish, and may be served with Boston brown bread like Boston baked beans.

SOY BEAN LOAF

Left-over soy beans may be made into a loaf by grinding them through a food chopper, adding to them half as many bread crumbs, a little chopped onion, sage, tomato juice, and salt, and packing the mixture into an oiled bread tin. Bake till nicely browned, and serve with tomato sauce.

Another very palatable legume is the chick-pea. Chick-peas contain more fat than other peas or beans, except the soy bean.

CHICK-PEAS

1 pint chick-peas.
3 teaspoons salt.
2 tablespoons vegetable cooking oil.
1 onion.

Wash the peas and soak them in cold water overnight. In the morning drain off the water and put them to cook in fresh water. Add the salt, oil, and whole onion. Stew them slowly for six or

seven hours. Serve plain or with chili sauce. Left-over chick-peas make a very tasty soup.

CORN GRIDDLE CAKES

¼ cup cornmeal.
½ cup boiling water.
1 cup thoroughly dried fine bread crumbs.
½ teaspoon salt.
About ¾ cup milk.
1 egg.

Scald the cornmeal with the boiling water. Heat the milk, but not to boiling, and stir it into the scalded cornmeal. Stir in the crumbs and salt. This should make a thick pour batter. If necessary, add more crumbs or milk to make the batter of the proper consistency. Separate the white from the yolk of the egg and mix the yolk with the batter, then beat the white stiff and fold it in last. Cook on a hot, slightly oiled griddle, and serve with honey or maple sirup or corn sirup. These cakes, containing egg and milk, can be used for bread and meat combined.

BAKED PEANUTS

Peanuts are cheaper than beans, and contain more nourishment than even soy beans, so that they are the most economical of all legumes, and they can be prepared so as to make a substantial food.

Put one pint of raw shelled Spanish peanuts into boiling water, and let them stand two minutes. Drain and spread them on a pan, and put them into a warm oven to dry. When they are thoroughly dry the red skins will be loosened. Spread the nuts on a bread board and roll them with a rolling-pin to remove the skins, then take the nuts out into the wind and pour them from one pan to another to winnow them. Then wash the nuts and put them to soak in cold water overnight. In the morning put them into a bean pot in the water in which they were soaked. Add two teaspoons salt and two tablespoons molasses. Put the cover on the bean pot and set it in the oven. Keep the peanuts cooking slowly, adding boiling water as may be necessary, till noon of the following day, when they will be ready to eat. Serve with corn bread.

BRAN DROP CAKES

2 eggs.
½ cup sugar.
½ teaspoon salt.
¼ cup vegetable oil.
¾ cup pastry flour.
¼ cup raisins, cut into small pieces.
¼ cup nut meats, cut into small pieces.
2½ cups bran.
1 cup milk.

Break the eggs into a mixing bowl and beat them with a Dover egg beater till they are light and stiff; then beat in the sugar, adding it a little at a time, beating till the mixture is stiff; then beat in the oil and salt; then stir in the pastry flour and half the bran; then stir in the nuts and raisins; next stir in the milk and the rest of the bran. Beat well and drop by spoonfuls onto an oiled pan, and bake till lightly browned.

Recipes for Conservation Pie Crusts

INDIVIDUAL PIES — OATMEAL CRUST

2 cups finely ground oatmeal.
1 cup boiling water.
1 teaspoon fat.

Scald the oatmeal with the water. Add fat and mix thoroughly. Roll very thin and line small pie or tart tins with the mixture. Bake in a hot oven. Fill with apricot marmalade or other thick mixture. If desired, spread a meringue on top and brown in the oven.

CORNMEAL CRUST

Grease a pie plate well. Cover with raw cornmeal, giving the plate a rotating motion so that an even layer of the meal will stick to the plate about one sixteenth of an inch in thickness. Fill the plate with a pumpkin-pie mixture. Bake in a hot oven.

U. S. Food Administration.

Back-Yard Preparedness

G. Henry Hale

EVERY American possessor of a back-yard — or front-yard — patch of ground which receives as much as five hours of sunshine a day should, by raising a few vegetables, "do his bit" toward food conservation. For the novice in gardening a small patch with one or two kinds of vegetables will be all the better as a beginning.

As was suggested in the article last month, the first work is to read, study, plan beforehand, the season's work, and order in advance the needed supplies — seeds and tools. It is taken for granted that the reader has obtained some one or more of the books suggested, if nothing more than Farmers' Bulletins Nos. 255 and 818, which can be had free on application to the U. S. Department of Agriculture, Washington, D. C.

Any back yard, no matter how poor the soil, can be built up into a fertile garden spot. The most hopeless condition ordinarily met with is where the heavy cellar clay has been spread over the surface, covering the top soil. Such a yard without adequate preparation would yield nothing; but with proper preparation of the ground and ample fertilization, it can be made to produce a fair crop the first year, and to increase in fertility from year to year.

Clay is rich in mineral plant food, but is so tough that it is hard to work, and when the sun strikes it after a rain it bakes into a condition that is almost unworkable. To improve such land a liberal supply of sand or sifted ashes should be worked in. Whatever the nature of the ground, plant food or fertilizer is important, and the best general-purpose fertilizer is well-rotted stable manure, spaded in if possible in the fall, but good results may still be obtained if the spading is done in the spring.

For spading, a spading fork is superior to a spade. It requires less muscular exertion, and with it the ground can be better and more rapidly pulverized than with a spade.

As soon as the condition of the ground will permit, fertilizer (barnyard manure) should be spread thickly over the ground and spaded under. It will improve the condition of the soil to turn it over two or three times and pulverize it thoroughly before the seed is planted. Nothing improves the soil so much as frequent and thorough cultivation, not only before planting, but while the plants are growing. And the spading is a much-needed tonic for the man of sedentary habits, who during the winter has had little or no muscular work.

Soil consists of a mineral base — clay or sand, or a mixture of the two — to which has been added organic matter, such as decaying vegetation, manure, etc. Under the influence of soil bacteria, or germs, this organic matter is constantly undergoing changes. In the absence of sunlight and air there may be a process of souring, unfavorable for the growth of ordinary plants. For the best development of the soil, there should not be an excess of water (hence the necessity for good drainage) and there should be an abundance of oxygen (air) through the soil, hence the necessity of frequent tillage. The better the drainage and the more frequent the cultivation, the better will be the condition of the soil, and the better the growth of vegetables. In some cases of sour soil it is advisable to spade in a little hydrated lime, but the best prevention of sour soil is sunlight, frequent cultivation, and good drainage. If your yard is level so that the water cannot run off, it may be well to trench around the garden spot, and raise the height of the garden a little above the surrounding ground.

Begin as early as the condition of the soil will permit, fertilizing, cultivating, pulverizing until the ground is mellow. From personal experience the writer can testify that with the aid of sifted ashes the heaviest of soils can be mellowed in a comparatively short time.

The important prerequisites to a successful vegetable garden are sunshine, moisture, plant food (fertilizer), and *thorough tillage*. The last is by no means least, though it is often considered unimportant by the amateur gardener, who seems to think that the principal object of tillage is to remove the weeds.

Where rotted stable manure is not obtainable for a reasonable price, street sweepings may be made to answer the purpose. In any event, make your ground mellow enough by the addition of ashes or sand to work easily, and rich enough by the addition of fertilizer, preferably stable manure, to yield a continuous supply of plant food to the young plants.

If the soil is quite sandy, it will not retain moisture well, and unless it can be liberally irrigated during the summer drouths, it will be better adapted to early crops such as peas and radishes, than to summer crops. Heavy clay soils, on the other hand, will be rather cold and slow for early spring crops, and would do better with summer crops. Thus the natural condition of your soil may partly decide for you whether you will attempt to grow cool-weather vegetables or warm-weather vegetables.

WHAT SHALL I PLANT?

For early plants, radishes, lettuce, and peas. These are cool-weather plants which do not do so well in the heat of summer. The sooner such plants get a start in the spring the better — just as soon as the ground can be prepared.

Tomatoes and beans require warmer weather and should not be planted until danger of frost is over.

The beginner's garden should perhaps consist of a small variety — not more than have been named above. Decide on what you will specialize. Determine how much you will be able to plant on your available space, and send for your seeds early.

If your seeds have not been ordered by this time, you would do better to attend to it at once, as seedsmen are slow filling orders later in the season, and seed will be particularly scarce this year. It is better to order by mail of a reliable seedsman than to buy of the stocks in the local stores.

You should have one or more garden guides as suggested in last month's LIFE AND HEALTH, and from these make a careful study of the habits of the vegetables you intend to plant. Each vegetable requires a somewhat different treatment from others. Do not allow your garden to perish for want of knowledge. Read garden books for knowledge and enthusiasm, and do not let your courage leak out at the first spell of hot weather.

SUNSHINE

R. A. Crawford, M. D.

Superintendent Chamberlain (S. Dak.) Sanitarium and Hospital

SUNSHINE is nature's great disinfectant. If it were not for the beneficent rays of the sun, disease would be almost unrestrained in its ravages. It is true that diffused daylight will kill a great many germs in time, but with much less effectiveness than the direct rays of the sun.

Almost all disease germs soon succumb if exposed to the sunshine. Even typhoid germs are killed within two hours, and tubercular germs are rendered lifeless by an exposure of from fifteen minutes to three hours, depending upon the climate and the material in which the germs are embedded. The organisms of pneumonia, influenza, and cholera are also among those which do not long survive the effects of the sun's rays.

What, indeed, would become of us if it were not for this universal disinfectant — sunshine? Living tubercle bacilli, carelessly expectorated upon the ground, would be blown about with every gust of wind, and our lungs would be filled with the virus. Typhoid germs would contaminate food and water everywhere. Instead of the occasional disease germ which escapes nature's provision, our whole surroundings would be full of them.

As there is no better disinfectant than sunshine, it is very important that we use it to the fullest extent. If possible, on sunny days every room in the house should admit the sunshine for a portion of the time. If every room were thoroughly exposed to the sunlight and fresh air daily, our houses would be much better places in which to live. We should see the color blooming in the faces of our children, even though the carpets and tapestry did occasionally show a faded streak.

Especially is it important that the living-room be sunny and airy. The living-room should be the best room in the house, because upon this room the health of the family depends in no small degree. The bedrooms also should receive a generous supply of sunshine whenever this is possible.

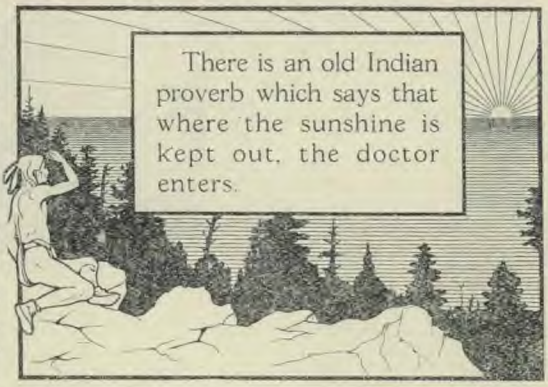
If our dwelling houses should be thoroughly sunned, it is surely no less important that public dwellings should be. It goes without saying that the admission of plenty of sunshine is an absolute essential for a hospital. School buildings, halls, churches, and other public buildings, should likewise receive sunshine.

Dark, damp rooms may retain for many months living germs about the walls, and these may cause the return of a disease to the family later, or to some other family who may subsequently move into the house.

While a good supply of fresh air is always desirable in a sickroom, there are a few conditions in which direct sunlight might not be best for the patient. It may be possible, however, even in these few cases to remove the patient to an adjoining room for a part of the day while the room is being sunned.

After contagious diseases, or even

after any prolonged illness, not only should the rooms be disinfected, but they should be thrown open to the sunshine. Bedding and articles about the room should be put outdoors and thoroughly exposed to the direct rays of the sun. Sunshine will make the room sweet and clean, and ready for occupancy again.



There is an old Indian proverb which says that where sunshine is kept out, the doctor enters; and there is no small degree of truth in the old adage. It cannot be denied that if we would utilize God's free sunshine, as it was intended that we should, there would be a substantial reduction in the doctor's bills.

We must not merely sun our houses inside and out, but we must sun ourselves. The sunshine, except during excessively warm weather, exerts as beneficial an influence upon us as it is deleterious to the disease germs. A walk in the spring or autumn sunshine, and brisk outdoor exercise during the sunny days of winter, often afford us a veritable new lease on life.

And, too, we must admit the sunshine into our lives. We must let it nestle in our hearts until it beams out in a sunny smile upon our faces, produces a new ring in the voice, gives more elasticity to the step, and makes itself evident in every motive and principle of our being.

So let us be thankful for the sunshine. Let us appreciate it more and utilize it to a fuller extent. Let the sunshine dispel the gloom from your heart and the disease from your home. If you will welcome it, and put it to the test, I assure you that it will add both to your health and to your happiness.

A Few Facts About Fats

L. A. Hansen

THE fact that fat is a food and as such is essential to the human system, is not a thing of recent recognition, although the importance of the fact has been very much accentuated in our present war discussion of food essentials. Feeding fat to fighting soldiers may be regarded not only in the light of a war necessity, but as pointing out the fact that human beings require food fat in some form.

The original diet of man provided fat in the nuts given him to eat, which fact goes to show that the human machinery was built to require fat in its operation. Authentic records trace the use of olive oil clear back to the peoples of Asia Minor. The Phœnicians and early Romans used olive oil as food and for light. The Bible tells of the use of butter in very early days.

Fat in some form is an important constituent of food for both human beings and animals. A failure to supply it in proper amounts will eventually result

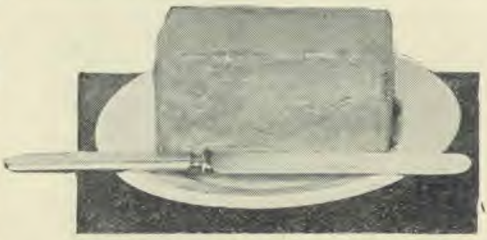
Nuts are a Good Substitute for Meat

in harm. The amount required varies largely with individuals and races. The natives of the frozen regions live very largely on fat, while the natives of the tropics use comparatively little fat. As a rule, more fat is used in cold than in warm weather. Fat is a heat and energy producer. One ounce of fat gives more heat and energy than two ounces of water-free albumen or starch or sugar.

Fats are slower of digestion than starches. They are not nearly so plentiful as the starches, and are very much more expensive. When used in excess, they are liable to cause serious derangement. In moderate quantities they replace the carbohydrates (starches and sugars) at the rate of one ounce of the former to two and one-fourth ounces of the latter.

While fat is an essential to a well-regulated dietary, some care must be exercised as to the amount that is used, and the way in which it is used. While Europeans use fats in considerable quantities, the Japanese use very little; so that, in a measure, the use of fat may become more or less a matter of habit or custom. It might be possible for individuals to reduce materially the amount of fat used without the disturbance of nutrition and with material lessening of expense, for fat is one of the expensive food elements.

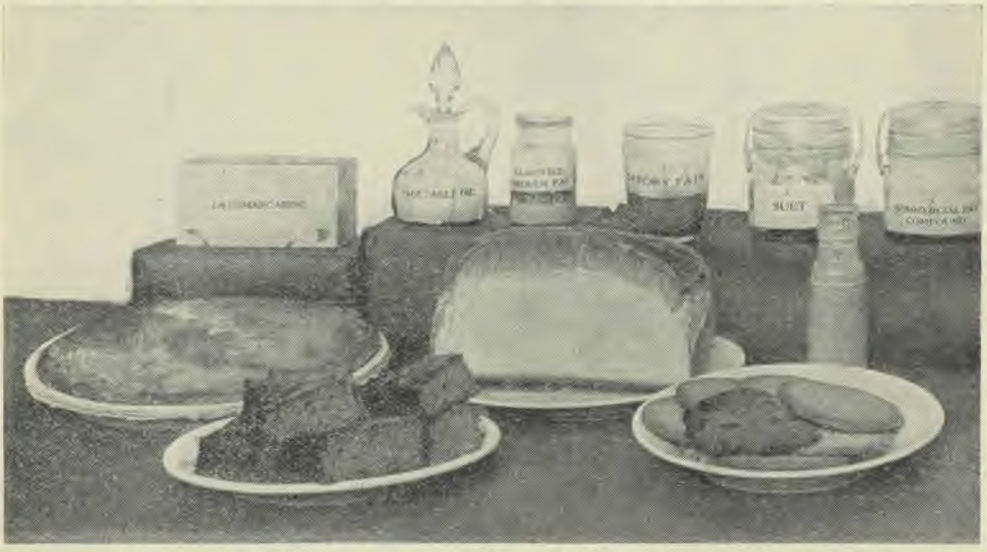
The fats and oils are a series of compounds of carbon, hydrogen, and oxy-



WHY USE BUTTER IN COOKING?

There are other fats good for all cooking purposes.

gen, consisting of the combination of glycerin and fatty acids. In making soap, the glycerin is removed from the combination, and in its place is substituted an alkali. Practically this same process takes place in the digestion of fats in the body. The fats are first emulsified, or divided into minute droplets, and then are converted into glycerin and fatty acids, the fatty acids uniting with the pancreatic juice and forming soap. The soap and glycerin are absorbed through the lining wall of the intestine, and again converted into fat before en-



ILLUSTRATIONS BY U. S. FOOD ADMINISTRATION

We commend the vegetable fats as more cleanly. The various dishes shown can be well

tering the blood current. This soap-making process is nature's way of getting the fat through the intestinal wall.

Fats have various melting points. Those which are liquid at an ordinary temperature are called oils, and the others are called fats. As a rule, those which have a lower melting point are more easily digested than those which have a higher melting point.

SAVE BUTTER

by not serving too much to each person. Serve individual portions. A pound makes 48 one-third ounce pieces. Hotels have learned that there is the least waste from one-third ounce pieces.

The fats occur liberally in both the animal and the vegetable kingdom. Fats of both animal and vegetable origin are easily digested, and are utilized largely as human foods. Among the vegetable oils in most common use are olive oil, cottonseed oil, corn oil, and peanut oil. Other vegetable oils used more or less are coconut oil, the sunflower oil of Russia, soy-bean oil, poppy-seed oil, and sesame-seed oil. Among the animal fats and oils are suet, tallow, lard, cod-liver oil, and butter.

As a general thing, fats found in their natural state or in combination with other food elements are best. Among vegetable foods rich in oil are peanuts, ripe olives, the various nuts including the coconut, but not chestnuts. The cereals most rich in oils are oats and corn. Among the animal foods most rich in oil are cream and egg yolk.

Pure oils and fats are practically free from water, an ingredient present to some extent in nearly every other food except sugar and thoroughly dried grains. Edible oils contain no indigestible vegetable substance, such as the crude fiber of vegetables and the cartilage and tendons of meats. The various vegetable fat oils are quite similar in chemical composition and in digestibility. Their relative values for domestic use is largely one of preference rather than of absolute food value. What oil is best suited to an individual depends largely on the individual. Persons with abnormal digestions or very marked idiosyncrasies in taste may have to restrict themselves to certain oils or fats.

The fats of butter and egg yolk contain an ingredient not known to be present in any of the vegetable oils, except perhaps in the oil of the soy bean, and is

SHOWING VARIOUS SUBSTITUTES FOR BUTTER FAT

cheaper, and fully as nutritious as the animal fats. made with the use of vegetable fats.

Above — Branch of olives
Center — Picking olives
Right — Pressing olive oil

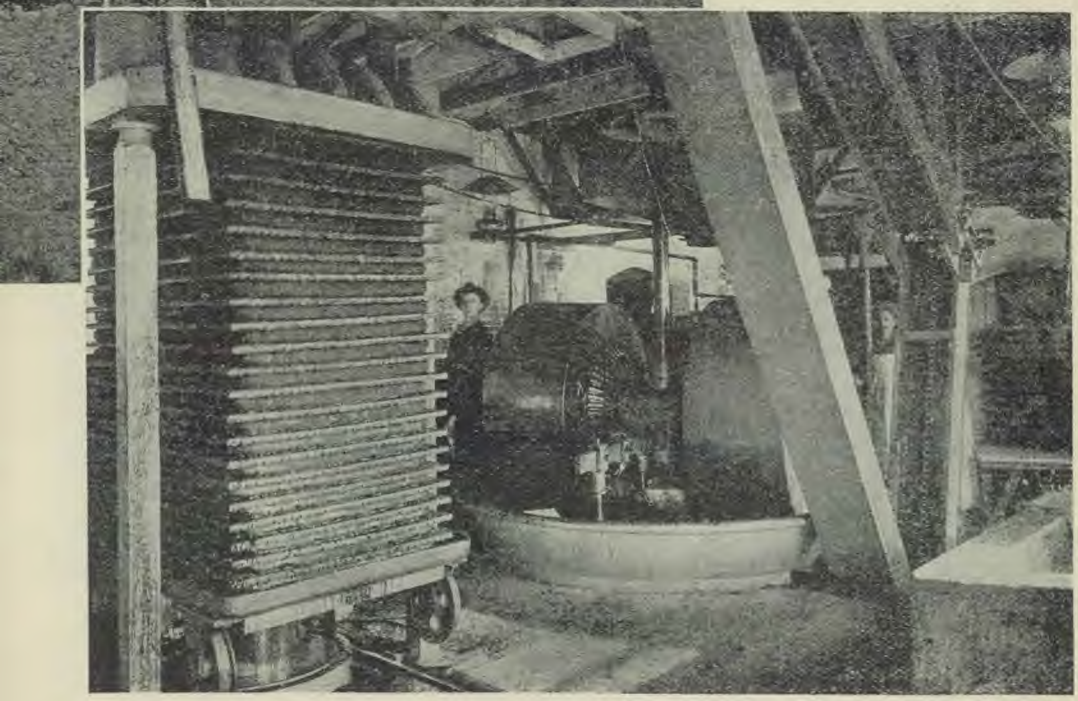
present in only a few of the animal oils. This is the element which has been given the term "fat-soluble A," and is one without which a young animal will not grow, no matter how much other or what other food ingredients may be given it. It seems to have been placed in the milk (the food of young mammals) and in egg (the pabulum of young birds) for the express purpose of promoting growth of the young. In choosing fats for children it is well to keep this fact in mind, that milk fat contains pre-eminently the substances to make the child grow, and after baby is weaned there are few foods that can safely be substituted entirely for cow's milk,— perhaps none. When the child is a little older, and his digestive powers are better developed, the free use of green vegetables will give a liberal quantity of the fat-soluble A, which stimulates growth.

Although the fat of animals, and especially lard, has been looked upon as the principal source of fat, and has been more or less the standard of fat from the standpoint of market valuation, animal fats are by no means the chief source of supply. While the introduction of vegetable cooking oils is comparatively a recent thing, it is fortunate that we are learning the value of these substitutes. Many people have for a long time questioned the use of lard as a human food article. Bible instruction is against it altogether. The prevalence of disease

among animals, and the special tendency of the hog to serious diseases, make the use of lard as a food decidedly unsafe.

Nature does not produce many vegetable fats solid at ordinary temperature. Cacao butter is an exception, and possibly coconut oil. There are a number of products on the market consisting partly of beef suet and partly of cotton-seed oil, sold as lard substitutes. There are butter substitutes, margarine or butterine, consisting partly of lard, partly of tallow, partly of vegetable oil. Nut margarine is said to be made entirely of coconut fat.

A very satisfactory cooking fat made entirely of vegetable oils has been on the market about five years. It is made by a process in which hydrogen is added to oil, thus making what is known as a hard oil. After the oil is filtered, the hydrogen is added, and then the product is sterilized at a very high heat. A cooking oil thus made is less liable to become rancid. It does not smoke readily when heated, and does not give off odors. This preparation will not smoke until it reaches 455° F. The high claims made for this product seem borne out by its many users. The question



of cost of a solid fat like this as compared with liquid cooking oils must take into account the claim that the solid fat will go about one third farther than the liquids.

OLIVE OIL

One of the best of the vegetable oils is olive oil. But we mean the pure olive oil pressed directly from the olives, and not treated with any chemicals in its preparation. We do not mean just any and every oil that may be called olive oil. The Bureau of Chemistry of the United States Department of Agriculture, various boards of health, and State pure food officials have found it necessary to make regulations regarding the sale of so-called olive oil. For a long time we have heard that cottonseed oil and peanut oil have been exported from this country only to be imported back under the names of "Lucca," "Extra," "Superfine," "Fine," "Select," etc., olive oil. This is not the worst side of the question, for cottonseed and peanut oils in themselves are not bad. Of course we object to paying olive oil prices for them. But it has also been found that many nicely branded, so-called refined olive oils are made from very inferior grades wholly unfit for use as food, and treated with chemicals to make them light in color and odorless.

Fortunately an excellent grade of olive oil is produced in California. The last few years the ripe olive has become recognized for its dietetic values, and instead of olives being pickled green they are now, at least in this country, allowed almost wholly to ripen. Certain grades are best suited for making olive oil. For making the best grades of oil the olives are gathered by hand just before they become fully ripe.

The quality of olive oil depends considerably upon its freshness. In the first place, it must be properly stored before being put up in small containers. Packed in small tins or bottles, it is quite liable to become rancid and deteriorate after six months. If kept at cool temperature, it may be stored in large vats at the factory for a period of from one to two years and will still retain its freshness.

In the use of California olive oil, an advantage besides that of being assured of its purity, is that it is prepared with scrupulous regard for cleanliness, while this is practically an unknown virtue with many of the olive oil manufacturers and refiners of the Mediterranean countries. A personal visit by the writer to some of the olive oil factories in California impressed him with the fact that our own olive oil people are building for a permanent business, and that their methods are such as to entitle them to a good business. Considerable pains and expense are paid to the development of the highest grade product.

The average American housewife uses the olive oil only as an ingredient in salad dressings. It is one of the finest oils for frying, and may be used instead of butter in general cooking. Olive oil can be heated to more than 600° F. before it burns, or more than twice as high as butter and suet.

In connection with the consideration of olive oil, let us again call attention to the fact that the oil is admirably adapted for consumption in its natural state, that is, in the ripe olive. Ripe olives are rich in fat and albumen. In nutritive value they are good substitutes for meat. They are easily digested, and most people can use them. Some people have to cultivate a taste for them. The medicinal virtues of the ripe olive are not a few. The twenty-five per cent of fat contained makes the olive, particularly worth consideration in connection with the subject of our article.

By the way, in the consideration of ripe olives there is this point to be observed: to secure olives that are real ripe, or in other words, are tree ripened. They do not need to be black,— the belief of many to the contrary, notwithstanding. Neither do they need to be of uniform color, for olives do not all ripen at exactly the same time, and some of the fruit in the interior part of the tree will be different in color from other fruit on the same tree. The blossom end of the ripe fruit is always

darker than the stem end, and the perfectly ripe olive may have a fairly light color. It appears that black olives have the best sale, even though the olives be very poor in texture and quality. This, and the fact that it is more convenient to gather an entire crop at once even though some of the fruit is unripe, have led some factories to process green olives, and by artificial methods give the olives an inferior dark color. Recent pure food laws are safeguarding against this practice, and the olive packers themselves are paying more attention to supplying tree-ripened olives.

COTTONSEED OIL

Cottonseed oil is produced in Great Britain, Germany, France, Smyrna, India, China, and South America, but the larger production is in the United States. This country produces annually more than three million barrels, or 150,000,000 gallons. In normal times we export about 700,000 barrels. Although cottonseed was at one time regarded as so much waste matter, the cottonseed oil industry has now developed to a point where this by-product is one of our staples, with market quotations at this writing of about $1.90 per gallon in one-gallon cans.

Crude cottonseed oil is not suitable for human food, as it contains coloring matter and other foreign substances, such as albuminous bodies and free fatty acids, which would encourage early rancidity. The acids must be neutralized and removed, and most of the coloring matter taken out of the oil before it is suitable for table use. This refining process is done at the larger plants prepared to do it, which plants receive the crude oil from the smaller oil mills scattered throughout the South.

We have no reason to believe that a moderate use of cottonseed oil is productive of harm. There have been statements to the effect that pellagra was induced by its use, but we know of no authentic proof to this effect. It must ever be borne in mind that grease or fats can be used too freely in cooking, and that greasy foods or food that is soaked in fat are positively harmful. Fat may be used for shortening purposes to such an extent that its use will shorten the life of the eater.

PEANUT OIL

The peanut is becoming one of the most satisfactory crops in the South, especially in districts where the raising of cotton is uncertain, for not only has the peanut attained to a position of no mean standing on the regular menu in the form of salted nuts or nut butter, but the oil pressed from peanuts is becoming popular as a salad and cooking oil. With very little changes, many of the cottonseed oil mills of the South have been remodeled to fit them for peanut oil production.

Considerable peanut oil is produced in countries outside of the United States. In Europe the finest grades of the oil are used exclusively for edible purposes. Its production in this country is yet in its infancy, but is rapidly growing. There is a lack of uniformity in the methods of American manufacture of peanut oil, resulting in various grades of the product. When cold-pressed from good sound nuts, and well filtered, the oil is suitable for use just as it comes from the mill. Oil made either from spoiled nuts or from nuts improperly treated can be refined and the disagreeable flavor and odor removed, but such oils lack the true peanut taste of the virgin oil, and are inferior for table use.

As yet there is not a strong demand in the United States for a high-grade, table peanut oil, due to the fact that not many people know how good it is.

CORN OIL

Another vegetable oil now finding place among lard substitutes is corn oil, sometimes called maize oil. A kernel of corn contains from 3 to 6.5 per cent of oil, almost entirely found in the germ, which is more than half oil. This oil, if allowed to remain, would cause corn products, such as hominy, grits, and cornmeal, to become rancid if kept for any length of time, therefore the germ is removed. In the manufacture of corn-

starch, which is almost a pure carbohydrate, the germ is removed.

Two distinctly different processes are in use for obtaining the oil from the corn germs. The older one, the wet process, came into use about twenty years ago. While this process yields about five times as much oil as the dry process, the oil is not so suitable for food as that obtained by the latter process. In the wet process the corn is soaked in dilute sulphurous acid for some time, and yields a germ in which the oil is already rancid. The oil from this product has to be refined in order to make it fit for food.

The dry process of degerming corn is a mechanical one. After the germs are separated from the kernels, they are subjected to hydraulic pressure and the oil is secured. The writer was one of the first to introduce corn oil as a cooking oil, ten or twelve years ago, before the days of the popular use of cottonseed oil. At that time corn oil had a marked corn flavor and was not palatable to all tastes. While the methods for producing a desirable oil have been perfected, corn oil is not as yet in common use, but it is now being placed on the market for use as a table and cooking oil, and bids fair to find a growing sale.

We should not use more than three-fourths pound of fat per person per week, and not over six ounces for children under ten years of age.

Do not use butter in cooking.

Use little pastry.

Use the vegetable fats instead of animal fats in making the pastry.

If vegetable oils are used, the quantity of fat may be reduced by one third: that is, two and three-fourths tablespoons of oil to one cup of flour is sufficient. The oil itself helps to moisten the flour so that very little water is necessary. The dough should be made as dry as possible to make a tender pastry.

BUTTER

No matter how good a butter substitute may be, many people feel that there is no substitute for real good butter. Most of us will probably agree with this. On the other hand, many of the substitutes are a good deal better than much of the real butter now sold on the market. It is not generally known that the use of butter may be attended with all the dangers once so prevalent in the use of milk. The disease germs which flourish in milk are not affected by the process of making it into butter, and may remain active for months. Federal and State dairy departments are working on the problem of bringing about a uniformity in butter making, looking to more cleanliness and to better methods. It is stated that a large percentage of the butter on the markets today is of a very inferior quality, being made of dirty, decomposed materials, and wholly unfit for human consumption. With the present price of butter there comes a strong incentive either to make sure the butter is good, or else to use the lower-priced clean vegetable substitutes.

We must not make a sweeping indictment of all creameries and dairies, for a number of them are making a clean product. Pasteurized butter made from sterilized cream is beginning to command a higher price than the ordinary grades. Those who make their own butter at home can make sterilized butter from sterilized cream by the usual process of making butter. The cream should be sterilized first, and allowed to stand in a cold place until the next day. By whipping or churning it the butter will form. The buttermilk may be drawn off and the butter washed with cold water, and salt worked into it.

A suggestion for sterilizing butter is as follows: Boil the butter in water for fifteen or twenty minutes, allowing the whole to get cold. Remove the butter from the top of the water. It will have a grainy consistency which will make it unpalatable, and will have lost its salt,

which dissolves in the water. Warm the butter just enough to melt. Add salt and beat it with an egg beater while it cools. It will then have a smooth, creamy consistency, and will be palatable.

To those who can get it we recommend pure, sweet cream as an ideal way of using fat. Practically all of the nuts will provide a liberal quantity of fat, but these must be well chewed.

At the present time the question of fats is of particular interest in the light of food conservation which urges an economical use of the same. We are told that the people of the United States use much more fat per capita than is required. An intelligent study of the subject will no doubt enable most housewives to use less fat in cooking and to make the best use of such as is actually necessary to nutrition and health. Like most of the recommendations for food conservation, this is one the practice of which is beneficial rather than harmful to the health.

Why Does a "Dead" Tooth Sometimes Ache?

W. C. Dalbey, D. D. S.

OF course in reality a tooth that has had the pulp (commonly called "nerve" by the laity) removed cannot ache. But it is a small matter to the sufferer whether the pain he feels is actually inside his tooth, as seems to him the case, or outside of it and in the socket around and beneath the tooth — which is really the plain fact.

The whole trouble lies outside, beneath, and at the very end of the root or roots. This condition of things arises wholly from infection, from either decayed matter or faulty and careless work of the dentist — if work has been done upon the tooth. In either case gases are formed, and as they accumulate, pressure is increased. As the gas must find an outlet it goes by the way of least resistance, which is usually through the little hole (called the apical foramen) leading out of the very end of the root into the tissues comprising the tooth's socket.

Gases crowding through these root ends cause inflammation around the tooth roots. The resulting congestion of blood and thickening of the tissues raises the tooth up in its socket until it has a feeling of being longer than the others. Being longer, it strikes first before the jaws are fully closed; and as a result, the parts are apt to get very sore.

Such a condition causes breaking down of tissue through gas pressure and also microbic action, forming pus. Pus if left in this condition will finally burrow its way through the gums and escape into the mouth. This forms what is commonly known by the laity as a "gum boil," which gives at least temporary relief. This condition is a real abscess, and it is dangerous to let an abscess run for any length of time.

Every such abscess should have careful and immediate attention, not only to correct the present inflammation and clean out the abscess, but to remove the cause of the infection, and also permit of permanent healthy healing. Such a tooth should be carefully opened up by the dentist, every decayed particle should be removed finally, but not at the first sitting, lest further particles of decayed matter be forced through the root of the tooth and the trouble be prolonged. When the tooth is opened up properly and sterilized, an abscess cure is placed in the root canals where the pulp (nerve) was, and sealed in for several days. The process is afterward repeated in a more thorough manner until the abscess is completely cured, and then only can the tooth be safely filled.

Opportunities of the Invalid[1]

J. W. Hopkins, M. D.

BY the term "invalid" I mean not only bedfast persons, those who are crippled or those who are convalescing from severe illnesses, but also the men and women who are satisfied with a state of health which is much below what it should be. Invalidism is more or less a relative term. This will be seen by considering the lives of men, well developed physically and mentally, who have lived in times past and of some who are living now.

Referring to Bible times, we find that Abraham lived 175 years and his son Isaac 180 years. Job passed through the furnace of affliction, was made stronger and better by it, and lived 140 years after that. Joseph was prime minister of one of the greatest kingdoms of the world, and had charge of its government during a most critical period, when its food supply was conserved for its own benefit and for the benefit of the neighboring nations. He died at the age of 110 years. His father, Jacob, took his family to Egypt when he was 130 years old, and died seventeen years later. Moses, who took the children of Israel from slavery and led them through the wilderness to the border of the Promised Land, was 120 years old when he died. Of him it is said, "His eye was not dim, nor his natural force abated." The great prophet Isaiah was nearly 100 years of age when he was murdered. Enoch walked with God 365 years, and then God took him, so he did not see death. Methuselah, the oldest man, lacked thirty-one years of being one thousand years old when he died. Many of those patriarchs who lived so long, associated with Adam, who died at the age of 930 years, and with Noah, who was 950 years old at the time of his death.

Centenarians have been found in all periods of the earth's history. In the beginning of the Christian era there were one hundred twenty persons reported by Pliny who were between one hundred and one hundred forty years of age. Besides these people, who lived in Italy, Norwegian history shows quite a number who reached the age of from one hundred ten to one hundred thirty years. English history gives many examples of centenarians. John Wesley lived to be well past fourscore years, and it is worthy of note that he abstained from the use of flesh meats and wine for many years before his death. Benjamin Franklin says in his biography that he gave up the use of flesh meats, and found that, as a result of this and temperance in eating and drinking, he attained greater clearness of head and better apprehension.

The great-great-grandfather of Thomas A. Edison lived to be 102 years old, and Samuel Edison, the father of Thomas A. Edison, lived to the age of ninety-four,

[1] Lecture in the Washington (D. C.) Sanitarium parlor, Dec. 13, 1917.

passing away naturally, without pain or illness.

The United States Census of 1910 reported 3,555 persons of all classes and races who had reached and passed the age of one hundred years. It will thus be seen that the standard of health should be much higher than is usually expected, and that we should endeavor to keep our body machines — health — in good condition, so that we may reach a higher efficiency and live to a greater age.

This being true, we may ask what is the purpose of sickness and ill health. Why are sickness and adversity allowed to come? Meredith gives us a suggestion as to the cause:

"There is purpose in pain,
Otherwise it were devilish. I trust in my soul
That the great master hand which sweeps over the whole
Of this deep harp of life, if at moments it stretch
To shrill tension some one wailing nerve, means to fetch
Its response the truest, most stringent, and smart,
Its pathos the purest, from out the wrung heart,
Whose faculties, flaccid it may be, if less
Sharply strung, sharply smitten, had failed to express
Just the one note the great final harmony needs.
And what best proves there's life in a heart?— that it bleeds!
Grant a cause to remove, grant an end to attain,
Grant both to be just, and what mercy in pain!
Cease the sin with the sorrow! See morning begin!
Pain must burn itself out if not fueled by sin.
There is hope in yon hilltops, and love in yon light.
Let hate and despondency die with the night!"

Emerson, in his essay on "Compensation," says, "Crime and punishment grow out of one stem. Punishment is a fruit that unsuspected ripens within the flower of the pleasure which concealed it." Again he says, "The law holds with equal sureness for all right action." And so it is true that although we shall surely reap ill health and disease if we sow for them, we shall reap health and strength if we are as careful to sow and cultivate health. Disease does not always come as a means of punishment. This is shown by the case of the blind man who was brought to Christ, and of whom he said, "Neither hath this man sinned, nor his parents: but that the works of God should be made manifest." God does "not afflict willingly nor grieve the children of men." He allows invalidism, or a falling away of the health, to come for a purpose, and that purpose is either to bring man back to his Maker or to glorify His name in some way. One who will learn this lesson and practice it in his life becomes a most valuable member of society.

Prof. Irving Fisher says: "If you want to live long and be of the greatest benefit to your community and society, catch an incurable disease and cure yourself of it. An invalid can, in most cases, cure himself of his trouble if he has the necessary self-control, enthusiasm, and knowledge."

It seems to me that sanitarium patients are greater debtors than are any other sick persons. There is a greater opportunity for them to teach health and to do good in their homes and neighborhoods than there is for others. The cause of their trouble has been sought out and demonstrated to them, and they are taught to remove the cause and to treat the trouble in the most rational way,— by avoiding drugs and using natural treatments.

"Master, who did sin, this man, or his parents, that he was born blind?"

Dr. Oliver Wendell Holmes said, "Excepting opium, ether, chloroform, and wine, I fervently believe that if the whole materia medica now used could be sunk to the bottom of the sea, it would be all the better for mankind and all the worse for the fishes." Science has advanced since Holmes's day, and alcohol is not now generally used as a medicine.

Sanitarium patients can teach their families and their friends how to live so as to avoid disease, and how to cure the beginnings of sickness with other measures than drugs.

Healthful cookery offers a great field of operation for those who have been sick and have recovered. They have seen the ill results from the use of food which has been poorly cooked or from the use of various unhealthful foods. The use of tobacco, alcohol, tea, and coffee has also been demonstrated to them to be injurious. The invalid can learn a lesson from his sickness which will uplift him and make him better able to cheer, inspire, and teach others who otherwise would pass a toilsome journey through sickness that could be avoided. What sickness has cost him he can save to others. The years that the locusts have eaten in the invalid's life he can restore to others who are similarly threatened, for by his example and teaching he can help them to avoid sickness.

These principles have been worked out in the lives of men of our country. Roosevelt was a thin, weak boy, and by perseverance he has developed into a strong, rugged, virile man. Trudeau, who contracted tuberculosis, instead of giving up his medical profession, took himself to the health-giving hills of New York and worked out a marvelous system for the cure of tuberculosis. This man was of untold benefit to the world and prolonged his own life many years.

Let us all patiently and perseveringly make good use of our talents and of the things which we have learned by experience and be as the —

"One who never turned his back, but marched breast forward;
Never doubted clouds would break;
Never dreamed, though right were worsted, wrong would triumph;
Held we fall to rise, are baffled to fight better,
Sleep to wake."

— *Browning.*

AS WE SEE IT

Conducted by G. H. Heald, M. D.

FOODS BUILD UP BODY, POISONS NEVER

Professor Mathews in his textbook on physiological chemistry, gives a definition of food which is worthy of consideration.

"The term 'food' has been variously defined. It has been said to be a substance containing valuable potential energy; that is, energy which can be utilized in the body. But by this distinction some poisons are foods, since, like alcohol, morphine, or caffeine, they are partly oxidized in the body, and thus setting free their energy, contribute to its work or store of heat; and other substances, such as water, salts, or oxygen, which are absolutely necessary to the body, are not foods, since they carry no energy in the body. Obviously such a definition is of very little value.

"A food has one characteristic: It has the power of repairing waste, or contributing substances necessary for the growth of the body. The body is not a stove that burns fuel. Foods do not burn as they do in a stove, being contained in the material, but not made part of it. It is true that some oxidation of this kind may occur, but not the combustion of the foods. It is the living matter which is burning, not the foods which are in it. Foods may or may not bring valuable energy into the body; but they all repair waste and provide raw materials for growth. The substances which have this power are foods; those that lack it are not foods. Thus water, salts, and oxygen are true foods. The things necessary for the construction of the living machine are foods. Poisons such as alcohol, coffee, morphine, or other substances which may be oxidized in the body but which are incapable of repairing waste — these are not foods. All foods which do not nourish the living matter

and which are not chemically inert are harmful to it. So a poison may be defined as a substance, not a food, which acts chemically on the body. Too much of one kind of food or too little of another may be harmful, but such substances do not thereby become poisons. They are still foods. On the other hand, poisons may change living matter in a manner to benefit it temporarily, or restore it when it has been disturbed, but such substances are none the less poisons, although they may be temporarily used for valuable needs. *No material has yet been found which is able to improve protoplasm so that it will live longer than it does in its normal condition. All substances not foods shorten life when they find entrance into protoplasm, provided they are taken in sufficient amount to affect it at all.*" [Italics supplied.]

This statement from an authority in physiological chemistry recognizes that though alcohol and other stimulants may on oxidation yield energy to the body, they are not foods but poisons; also that any substance which, not being a food, has any effect on the body, must in the long run have a deleterious effect. This means that all nostrums and patent medicines, all "stimulants," "tonics," "sedatives," and the like, though they may temporarily seem to benefit the body, damage it in the end.

SAVING FOOD — OUR PART

THE word has gone out from Food Administration headquarters that America is not asked to stint itself in food. All that it is asked to do is to prevent waste and to substitute for certain foods highly desired for export to Europe certain other foods. But America, while not stinting itself, can cut down on its food supply to its own advantage. Here is how the editor of the *Medical Record* states the problem:

> "Aside from the immediate need of minimizing the great wastage of food that is without doubt one of our besetting national sins, it is imperative to increase production and reduce our consumption of certain foods, especially meat, wheat products, and sugar. This calls for the utmost care in selecting dietaries. It is beyond dispute that many people eat more food than is actually required for their proper maintenance in good health and strength. This can be attributed chiefly to the habit of self-indulgence and the desire to 'tickle the palate' with some delectable dish. The epicurean tastes developed by a not inconsiderable part of our population *pari passu* with the phenomenal prosperity that this country has enjoyed during the last two years, probably accounts for some of the evils from which we are now suffering.
>
> "The excessive ingestion of food leads to an overtaxing of the organs of elimination with resultant injury to the system as a whole from the accumulation of deleterious waste products. It is a well-known fact that a continued high-protein intake is a prolific source of arterial degeneration, and that bugbear of modern life — high blood pressure. From the standpoint of the individual and collective health, therefore, a restriction in the amount of protein consumed would not only make for greater efficiency, but would also lessen the tendency to many of the ills which can now be ascribed to overeating."

Which is to say that we eat too much meat, eggs, and the like.

SAVING FOOD — THE SOLDIER'S PART

WE are saving meat for the soldiers. In doing so, if we get a properly balanced nonmeat dietary we immeasurably benefit ourselves, but what about the soldiers? Do they need the meat? The general opinion is that in their strenuous life meat is absolutely necessary. It was not so among some of the victorious soldiers in ancient times. Prof. Graham Lusk put it about right when he said:

> "The muscles are active when hard labor is done, but the muscles do not need meat for the performance of their work. A fasting man may have considerable power. The popular idea of the necessity of meat for a laboring man may be epitomized in the statement — a strong man can eat more meat than a weak one, hence meat makes a man strong. The proposition is evidently absurd."

We are told by reliable authority (Dr. Grenfell) that Germans, when they send their men to the front in mass form, load them up with whisky and ether, and they march on under the withering fire of the machine guns to be mowed down like dogs. Perhaps the meat and tobacco are needed to put this kind of courage into men. Certainly the battle field is no place to change a man's lifetime habits, and if men have been used to using meat all their lives the change to

a vegetarian dietary would certainly be inadvisable at such a time, but I do not think it can be demonstrated either from history, experience, or experiment, that a meat diet will make a better soldier. Many of the Japanese soldiers, who were in the successful battles against the Russians, and who showed the rarest of courage and devotion to their country, were men who were practically vegetarians. The notion that meat is necessary to develop a superior type of manhood either in war or in peace, is based on old-time prejudice rather than on scientific knowledge.

SUNSTROKE AND FATIGUE TOXINS

MAY TEVIS, in *Scientific American*, November 24, calls attention to the work of certain European surgeons during the last three years, especially that reported before the French Academy of Sciences by Dr. Jules Amar on the nature and prevention of sunstroke. Dr. Amar is convinced that sunstroke is caused by toxins due to muscular fat in connection with deficient oxidization of the blood. It was found, as a result of experimenting on robust, nonalcoholic men twenty to forty years old, that whether in the sun or shade, prolonged hard labor led toward the end of the fifth or sixth hour to functional troubles and "symptoms indicative of sunstroke; namely, headache, giddiness, sleeplessness, paleness of face. On the other hand, where the work was timed and interrupted by frequent intervals of rest and where the muscular strain was not too severe, these disturbances did not occur even at high temperatures."

It was also noted that "even with the same degree of fatigue there was a much greater resistance to heat when the individual was able to breathe freely and deeply. Obviously such ease of respiration is interfered with by garments too tight about chest or neck, and here we have a physiological reason for the use of 'sailor collars' and 'sport shirts,' and a physiological condemnation of the stiff collar and tight cravat." According to Dr. Amar, "heat stroke does not occur except as a result of fatigue, and is extremely rare when the pulmonary ventilation is excellent, i. e., when there is proper breathing."

When we realize that violent fatiguing work in itself lessens lung ventilation and that intense heat lessens the breathing, we can see that when men must labor for long periods in hot situations, the combination of circumstances greatly favors the on-coming of heat stroke. Dr. Amar suggests that it is of immeasurable value to have men engaged in severe work pause at stated intervals and take deep breaths with heads bent backward and mouths open. Yawning is nature's method of relieving fatigue and ventilating the lungs. Another recommendation for those in danger of heat stroke is to snuff up a mixture of vinegar and water and wet the face with it. This gives a sensation of coolness which stimulates respiration. And we must add with emphasis that any one in danger of heat stroke should above all things let alcoholic products alone.

CUNNING WHEN YOUNG, BUT WHEN OLDER —

FOND parents who think their children are about the cutest, prettiest, smartest children in existence, and are not loath to tell others so in the presence of the children, should ponder well the following words from an editorial in the August, 1917, *Pediatrics*, a magazine devoted entirely to the treatment of children's diseases. It is well to remember that precocity is a disease, not something to be proud of.

> "Few parents can be gotten to believe, for example, that 'forwardness,' disobedience, and rude conduct in a young child are sometimes a grave sign of mental deficiency. Gowers has noted them as one of the earliest indications of abnormal cerebral function. Instead of the youngster being prompted to rudeness and impertinence and laughed at for his supposed precocity, such performances should be viewed with anxiety, and should be gently but promptly suppressed. That small chil-

dren should be 'seen and not heard' is a maxim based on an enlightened psychology. The abnormal self-consciousness that prompts such outbreaks can easily develop into an incurable egomania. . . .

"Even where it is not congenital, a morbid feeling of self can be awakened and nourished with alarming ease and speed. No child should be encouraged to repeat poetry before his mother's guests, or praised for his 'pretty curls,' or even have his first trousers made too much of. The less he thinks of himself the better."

FOOD POISONING FROM VEGETABLES

It may not be generally known that a dangerous form of food poisoning may result from the use of canned vegetables and fruits, especially canned beans, but also other vegetables and fruits. The fact that there may not be a very marked change in taste or appearance adds to the danger. A number of cases of poisoning by this means have been studied, and there is reason to believe that there are many cases of death and of severe intestinal symptons attributed to something else (perhaps "ptomaine poisoning") which may have been caused by canned foods.

This form of poisoning is caused by a toxin produced in the foods by a germ, *Bacillus botulinus*, which thrives best when air is excluded, so that if foods are not thoroughly sterilized before sealing, the germ can continue to grow even though the can is air-tight. The cases studied seemed to indicate that botulinus poisoning is more liable to occur from eating home-canned foods than from those commercially packed, for the latter are usually sterilized by means of steam under pressure.

If canned foods are changed, either in appearance or flavor, even though they are not "decomposed" in the ordinary sense, the change may be due to the action of the botulinus germ. The toxin is destroyed by thoroughly heating, and if the precaution were always taken to heat the canned food before serving it, there would be fewer cases of botulinus poisoning. It should be remembered that canned fruits have sometimes caused this form of poisoning.

Another source of danger from botulinus poisoning is in foods such as salads, which are prepared from uncooked material and allowed to stand overnight before serving.

MILK VALUABLE FOR YOUNG CHILDREN

Mothers often do not realize what a valuable food milk is for children, even after the nursing age. Some physicians advise a quart of milk a day for each child. With this quantity supplemented by cereals and appropriate fruits and vegetables, the child should be well nourished. The following quotation from a paper by Elias H. Bartley, M. D., which appeared in the *New York State Journal of Medicine* of August, 1917, is well worth the careful attention of every mother:

"If a child of two to four years takes milk, he does not need egg or meat of any kind. He gets all the protein he needs in the form of casein and albumin and in a better form than as meat. It is a very common observation that the child who drinks milk freely is stronger, grows to a larger stature, than other children of the same family who do not drink milk. I regard it a misfortune when a child does not take milk. Rarely we meet the cases of milk anaphylaxis, but more often we find that the mother is to blame for the distaste for milk. At the weaning period she allows other foods to displace milk, or, because she does not like milk, she causes her child to dislike it because of suggestion. This I have often observed. Efforts should be made in such cases to induce the child to return to milk in some form, as junket, custards, malted milk, etc. When possible a lactofarinaceous diet will generally be found to give the best results. Vegetables will be a useful addition to these, letting the child at first select the vegetables it is willing to eat. Among the farinaceous foods, allow the greatest possible liberty of choice and method of cooking. Cast theory to the dogs, when necessary, in methods of cooking or selection of cereal. The main object with these children is to promote appetite and nutrition."

QUESTIONS AND ANSWERS

Conducted by J. W. Hopkins, M. D., Washington (D. C.) Sanitarium

This is a service for subscribers to LIFE AND HEALTH.

If a personal reply is desired, inclose a three-cent stamp.

If you are not already a subscriber, send also the subscription price with your question.

Replies not considered of general interest are not published; so if your query is not accompanied by return postage for a personal answer, it may receive no attention whatever.

Remember that it is not the purpose of this service to attempt to treat serious diseases by mail. Those who are sick need the personal examination and attention of a physician.

State your questions as briefly as possible, consistent with clearness, and on a sheet separate from all business matters. Otherwise they may be overlooked.

For prompt attention, questions should be addressed to J. W. Hopkins, M. D., Takoma Park, D. C.

Gastric Catarrh

"Give treatment for catarrh of the stomach."

In the treatment of catarrh of the stomach you should avoid all condiments, as mustard, pepper, and spices. Beefsteak, fish, and all other flesh foods increase the catarrh. Coffee and tea are also harmful. The bowels should be kept regular, and you must be careful not to overeat. If you eat two meals a day be sure you do not eat too heavy a supper. When you use vegetables, reject the hard and woody parts. Be careful of your food combinations, taking milk with vegetables and grains, but not with fruits. Fruits may be used with grains, but not with vegetables. Masticate your food well. Get plenty of rest at night, and a little relaxation after your meals. Fomentations to the stomach after meals are of great service.

Weak Heart

"1. I have what my doctor calls a weak heart, following la grippe. It skips one or two beats at times. Do you recommend heart tablets, or sanitarium treatments?

"2. Would you recommend osteopathic or chiropractic treatments for this trouble?

"3. Give treatment for high blood pressure."

1. La grippe, or influenza, is often followed by very serious effects on the heart. I think you should not take heart tablets unless on the prescription of a very competent physician. I should much rather see you visit a good sanitarium and take treatment for your present condition, with instruction as to the life which you must lead hereafter. Heart trouble is a disease from which one will not recover quickly. The patient must plan to spend several months in getting on his feet again, giving attention to his exercise, diet, and sleep, as well as to the medicine he takes. There are some simple treatments which he can take at home, as fomentations, cool frictions, sponge baths, and tepid full baths, and he should avail himself of these. They are best learned by a visit to a good sanitarium.

2. Decidedly no.

3. In regard to high blood pressure, and its treatment: I can see no proper reason for resorting to manipulations. The condition would probably be aggravated by them, and serious damage done. The treatment for high blood pressure includes a proper diet, limiting the proteins, with abstinence from flesh foods of all sorts, and from coffee and tea. Tobacco and alcohol are also injurious. Proper attention should be given to the bowels, kidneys, and skin in order to make them work better. These measures, with rest, will accomplish much good. Electricity and hydrotherapy are also of service. Valvular heart trouble is considered a weak heart, although the weakening is more advanced in the later stages.

Catarrh; Diseased Tonsils and Adenoids

"Give the treatment of catarrh, diseased tonsils and adenoids in our family."

The child suffering with catarrh and other troubles caused by enlarged and diseased tonsils and adenoids should have a surgical operation for the removal of these enlarged organs. It is impracticable to endeavor to remedy these conditions by medical treatments, as the diseased organs are a continual source of disturbance and are a menace to the mental and physical growth of the child.

For the rest of the family who suffer from catarrh without any organic disease in the tonsils or adenoids, I would recommend the use of an alkaline antiseptic spray two or three times a day, followed by an oily spray. The alkaline wash is best made of the Seiler's alkaline antiseptic tablets. For the oily spray you should use a mixture containing five grains each of menthol and camphor to the ounce of liquid petrolatum. The chloretone inhalent manufactured by the Parke, Davis & Co., of Detroit, contain these remedies in very good proportion. In addition to the local treatment you should endeavor to keep the feet and lower limbs warm and well clad. The child's bowels should be regulated, and he should have very little sugar in the diet. Excess of sweets and fats increases the catarrh. The skin should be kept active by warm baths given twice or three times a week.

Periodical Diarrhea

"I am fifty-seven years of age, and for years have had spells of running off at the bowels, the discharges passing off like water — stopping for a week and then commencing again. I have gas in the stomach and bowels also. I cannot eat meat, but grains and milk agree with me quite well."

This looseness of your bowels followed by a period of constipation, will most likely be relieved by attending to the constipation, using

a laxative diet which contains food not excessively coarse and irritating, but which possesses the residue in a finely divided state. Such foods are lettuce, spinach, celery, asparagus, the bran of wheat, whole-wheat foods. Coarser foods, as parsnips or cabbage, will aggravate the condition. The general health should be built up by stated periods of rest during the day and systematic exercise suited to the individual case. During the period when the bowels are loose, much benefit will be gained by abstinence from the coarse foods, and the use of bismuth subcarbonate in fifteen- or twenty-grain doses three times a day. You should masticate your food thoroughly, avoid too many foods at each meal, and eat the proper amount of food.

Try to rest for fifteen or twenty minutes after each meal, and get an hour's rest or sleep in the middle of each afternoon. You should have a thorough physical examination to ascertain the cause of these spells. The most common cause is, as I said, the constipation.

For the gas in the stomach and bowels, you will get much relief by following the above directions. If you will also get some charcoal tablets and take two tablets one hour after each meal, afterward drinking a glass of very hot water, you will get relief.

Sore Mouth; Bloating Bowels

"What is the treatment for a chronic sore mouth caused by an acid stomach; and what would you do for a severe bloating of the bowels, and a loose, flabby accumulation of flesh over the abdomen?"

To cure the chronic sore mouth, which is caused by your acid stomach, you must first relieve the acidity of the stomach. To do this you must have regular actions of the bowels, using a laxative diet and the appropriate doses of mild laxative.

Fermentation, Gas, Spitting Blood

"I have fermentation, with gas and spitting up of blood. Potatoes and acid fruit disagree, also milk and buttermilk. I had two operations for adhesions around the gall bladder and duodenum last year. What shall I do?"

You are undoubtedly suffering from a mild form of nervous dyspepsia, and probably have an increased amount of acid in your gastric juice.

You must secure two bowel movements every day. Use cereal foods which have been thoroughly dextrinized, as corn flakes, rice flakes, rice biscuit, grape nuts, puffed wheat, puffed rice, and zwieback. Use liquid foods made from well-cooked vegetables and cereals, as gluten gruel and potato soup. The vegetables you eat must be well cooked. You may use potatoes baked or boiled with the jackets on, or mashed and mixed with butter or a moderate amount of oil. Fats in the form of olive oil, sterilized butter, or cream, may be taken best at the beginning of the meal. Fruits should be eaten at the close of the meal, and if you confine yourself to the subacid fruits, as prunes, prune marmalade, figs, fig marmalade, pears, raisin pulp, and baked sweet apple, you should have no difficulty. Nuts are an excellent source of fat, especially pine nuts, pecans, filberts, Brazil nuts, and peanuts properly cooked. You can also use the legumes, as peas, beans, and lentils, in the form of a purée or in soup. Eggs may be used in moderation, either soft boiled or as eggnog, or hard boiled and only the yolk eaten.

Your condition is undoubtedly partly due to lowered vitality following the operation and the condition which preceded the operation. It will take time for you to get better, but with patience and persistence, you will make a complete recovery.

Liquid Foods for the Sick

"What do you advise for liquid foods for the sick? Are beef extracts and broths permissible?"

Beef extracts and broths are worse than useless. They contain very little nutrition which is derived from meat. If they are made with rice or vegetables added, the nutrition is found mainly in these articles and not in the meat extract. That derived from the meat is mainly waste matter in the form of urea and the other substances which are drawn off by the kidneys; so that meat extracts are chemically similar to the kidney secretion.

The better liquid foods consist of fruit juices, cereal gruels, vegetable broths, and milk either peptonized or made into artificial buttermilk by the action of lactic-acid bacilli. Barley water, oatmeal gruel, and cornmeal gruel, thoroughly cooked and strained, are excellent. The dextrinized cereals may be made into very satisfactory gruels, and are more easily digested than are the other cereal gruels. Malted milk contains malted cereals with a very satisfactory preparation of milk. These cereal gruels and the malted milk may be flavored with salt or with celery salt as desired. The fruit juices contain the carbohydrogen in the form of fruit sugar which is already digested by the sun and ready for absorption. The fruit acids stimulate the digestion and call for further food, and are of further service in the tissues by being oxidized, and as alkaline carbonates utilizing many of the acid wastes of the body. Peptonized milk, kumiss, or yogurt, and malted milk are more satisfactory than the raw milk, as the curds formed in the stomach are not so large nor are they so tough.

Effect of Pepper on Liver

"What is the effect of pepper upon the liver in poultry and in human beings?"

Pepper is five times as active in producing hardening of the liver, and causing irritation of the other organs and of the blood vessels, as is alcohol. It will produce the same results in other animals or in fowls. However, you must remember that to do this requires quite a long time — several years, so you see that it would not be so dangerous in poultry. A little pepper in the food to prevent certain summer diseases, used wholly as a medicine, and not as food, and not continued over a long period, would not harm the poultry. However, I believe that they as well as human beings should have healthful feedings.

NEWS NOTES

Deaths by Firearms in 1916

The total number of deaths due to the use of firearms in the registration area in 1916 was 8,240, corresponding to a rate of 11.5 per 100,000. Of these deaths, 3,386 were suicidal, 3,241 were homicidal, and 1,613 were accidental.

Measles, Whooping Cough, and Scarlet Fever

The principal epidemic maladies of childhood — measles, whooping cough, and scarlet fever — were together responsible for 17,586 deaths of both adults and children, or 24.6 per 100,000, in the registration area in 1916, the rates for the three diseases separately being 11.1, 10.2, and 3.3.

New German Foods

Among the foods now being utilized in Germany, according to a German publication, are seaweed, straw meal, rhubarb leaves, spelt chaff meal, concentrated straw fodder, ground maize cars, heather stalks, by-products of kohl-rabi, ground sugar-beet seeds, bran, mixture of brewer's grain and yeast, wine yeast, ground grape pips, beechnut cake, walnut cake, fish meal.

Crop Shortage in France

Using the production of 1913 as a basis, the 1917 wheat crop of France is short 53.3 per cent, or 176,000,000 bushels; the potato crop is short 33.1 per cent, or 165,000,000 bushels; the sugar-beet crop is short 67.9 per cent, or 148,000,000 bushels; the number of cattle has declined 16.5 per cent, or 2,435,000 head; the number of sheep has declined 36.6 per cent, or 5,535,000 head; the number of hogs has been lessened 40.2 per cent, or 2,825,000 head.

Causes of Death in 1916

The "registration area," which contained approximately 70 per cent of the population of the entire United States, reported for 1916 1,001,921 deaths. Of these deaths, nearly one third were due to three causes,— heart diseases, tuberculosis, and pneumonia,— and nearly another third were charged to the following nine causes: Bright's disease and nephritis, cancer, apoplexy, diarrhea and enteritis, influenza, arterial diseases, diabetes, diphtheria, and typhoid fever.

Cancer Deaths in 1916

Cancer and other malignant tumors caused 58,600 deaths in 1916. Of these, 22,480, or nearly 39 per cent, resulted from cancers of the stomach and liver. The death rate from cancer has risen from 63 per 100,000 in 1900 to 81.8 in 1916. The increase has been almost continuous, there having been but two years, 1906 and 1911, which showed a decline as compared with the year immediately preceding. It is possible that at least a part of this increase is due to more correct diagnoses, and to greater care on the part of physicians in making reports to registration officials.

Wheat Shortage in France

Shortage of wheat in France is becoming more and more alarming each week. M. Maurice Long, Minister for General Revictualing of France, indicated recently that a further reduction of twenty per cent in the bread ration would soon become imperative. The manufacture and consumption of pastry has been suppressed except on Sundays and holidays.

Hotels and Conservation

More than ninety per cent of the first-class hotels in the United States have signed the pledge cards of the Food Administration. This pledge includes a meatless Tuesday and a wheatless Wednesday. Some go farther than this. For instance, the New York Stock Exchange Club has officially adopted two meatless and two wheatless days a week, and prints on its menus the request that members save sugar and fats, and that they observe the same program of food saving in their homes. A very large proportion of the sixty-six railway dining-car services have adopted meatless and wheatless days, and are urging the public to save food.

High Prices and Milk Supply

Mayor Mitchel of New York has, as the result of a careful investigation, made an appeal to the dairymen, stating that the present high price of milk (14 cents as against 9 cents a year ago) had reduced the total supply of milk in the city by 25 per cent, and in some sections by 50 per cent. In some sections the quantity used by infants was less than the minimum considered by experts to be necessary for the maintenance of health. There has been a recent increase in infant mortality, which the health department believed to be due to a decreased use of high-grade milk.

Standardized Bread

The bread of the United States is approximately forty per cent baked in bakeries, and sixty per cent in the homes. The object of standardization is to reduce the cost of public baking and distributing bread, to reduce the waste of flour, and to limit the use of sugar and lard in the preparation of bakery bread. By fixing the weight of bread at one-pound minimum loaf, with one-and-one-half pound, two-pound, and four-pound loaves, and with a stabilized price of flour, the present variables in bread will be largely eliminated and competition will be centralized upon price. The Administration has no power to fix the price. In many cities there are grocery stores whose whole business is conducted on the cash basis, the consumer carrying the goods home, and who conduct their own bakeries. It is anticipated that a standard one-pound loaf of baked bread can be put before the public from these groceries at about seven cents. The other type of grocers, doing business upon a credit-and-delivery basis, must charge more.

Food Situation in Switzerland

The food situation in Switzerland is rapidly falling to the danger line. A ration far below the consumption in many of the warring countries has already been ordered. Under the new regulations the Swiss may have only a pound and a half of sugar per person a month. The bread ration has been fixed at about half a pound a day, and the butter ration at one fifth of a pound a month.

Meatless Days

Reports from the Childs restaurants throughout the country show that on each meatless Tuesday the saving in meats now amounts to about seven tons. This is distributed as follows:

Bacon	500	lbs.
Corned beef	848	"
Hams (boiling)	1,192	"
Hams (sliced)	1,211	"
Lamb stew meat	758	"
Liver	561	"
Pork shoulder	1,453	"
Pork bellies	116	"
Beef hips	7,537	"
Total	14,176	"

Less Fat and Sugar in Bread

In the interest of conservation it has been decreed by the Food Administration that not more than three pounds of cane or beet sugar shall be used to each barrel of flour. This, it is expected, will effect a saving of 100,000,000 pounds of sugar a year. The difference will not be noticed by the consumer. A maximum of two pounds of shortening per barrel has been established as against an average consumption of six pounds, and the use of vegetable oils has been required. The milk used in bread has been limited to skim milk. These economies, while not materially affecting the quality and palatability of the bread, will save enormous quantities of foods valuable for export to Europe.

Wheat Conservation in France

Measures adopted in France for the conservation of wheat flour consists in the use of bread made of 80 per cent wheat flour with an admixture of other cereals, such as rice, barley, oats, rye, maize, beans, and ground nuts. Rice flour is the most practicable of these admixtures. This rice is now being obtained from the French colonies of Indo-China, Tunis, and Algeria, where there is an exportable surplus.

Use More Potatoes

The United States Food Administration is planning a campaign to increase the use of potatoes. Grocers will be urged to inaugurate a "potato day" each week, selecting whatever day is slack in deliveries and making a special price for potatoes delivered on that day. Housewives will be asked to buy a week's supply on each potato day. The Administration wishes to place the Irish potato, every day in the year, on every table in America.

Wheat Scarce in Denmark

Denmark is looking forward to a reduction of wheat rations. Final figures for the cereal harvest show a total of about 62,000,000 bushels, which is 20,000,000 bushels less than in 1916 and about 10,000,000 less than was estimated in the summer, when the populace was put on bread rations. The authorities are considering a further reduction in the allowed consumption.

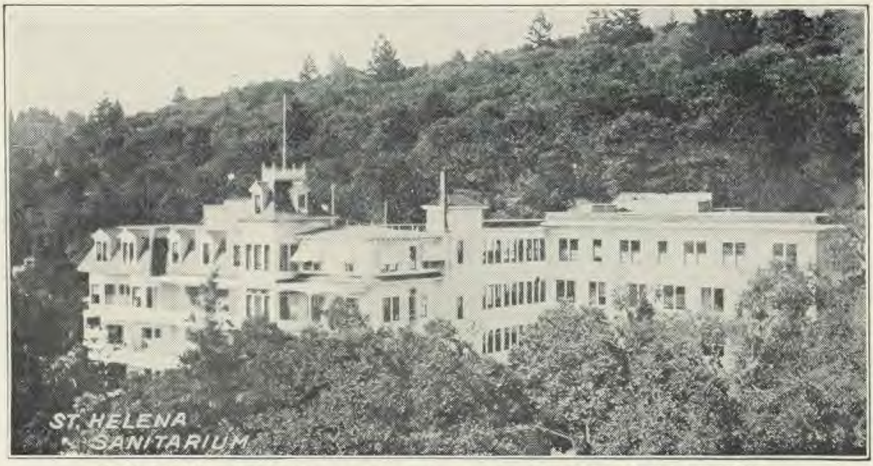
Bulletins on Conservation

The following Farmers' Bulletins, which will be mailed free to any person sending a request to the U. S. Department of Agriculture, contain instruction pertaining to various phases of food conservation. Order by number.

No.

255 Home Vegetable Garden.
818 The Small Vegetable Garden.
256 Preparation of Vegetables for the Table.
287 Poultry Management.
289 Beans.
293 Use of Fruit as Food.
295 Potatoes and Other Root Crops as Food.
372 Soy Beans.
375 Care of Food in the Home.
413 Care of Milk and Its Use in the Home.
431 The Peanut.
565 Cornmeal as a Food: Ways of Using It.
647 Home Garden in the South.
807 Bread and Bread Making.
808 How to Select Foods: 1 — What the Body Needs.
817 How to Select Foods: 2 — Cereal Foods.
824 How to Select Foods: 3 — Foods Rich in Protein.

St. Helena Sanitarium



THE MAIN BUILDING — SHOWING THREE OF THE FIVE STORIES
New Concrete Hydrotherapy Building at the Right

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ITS natural setting, in a forest of live-oaks, firs, manzanitas, and madronas, together with an almost unending variety of flowers and foliage, gives a beauty and fragrance to the place that beggars description. It must be seen and enjoyed to be appreciated.

EVERY modern facility favorably known to medical science in the treatment of curable conditions, has been incorporated into the institutional régime. Thus nature and science have combined to make the St. Helena Sanitarium all that can be desired by the diseased body or the weary mind.

Health is Contagious at St. Helena

Sixty-five miles from San Francisco, easily accessible by either steam or electric line; three and one-half miles from St. Helena; 750 feet above the sea level; splendid climatic conditions at all seasons of the year; pure mountain water; beautiful view of valley, mountain, and plain; seven physicians, seventy nurses; excellent service, liberal cuisine,—these and many other advantages are to be enjoyed at this beauty spot of California.

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Sanitarium, Napa County - - - California