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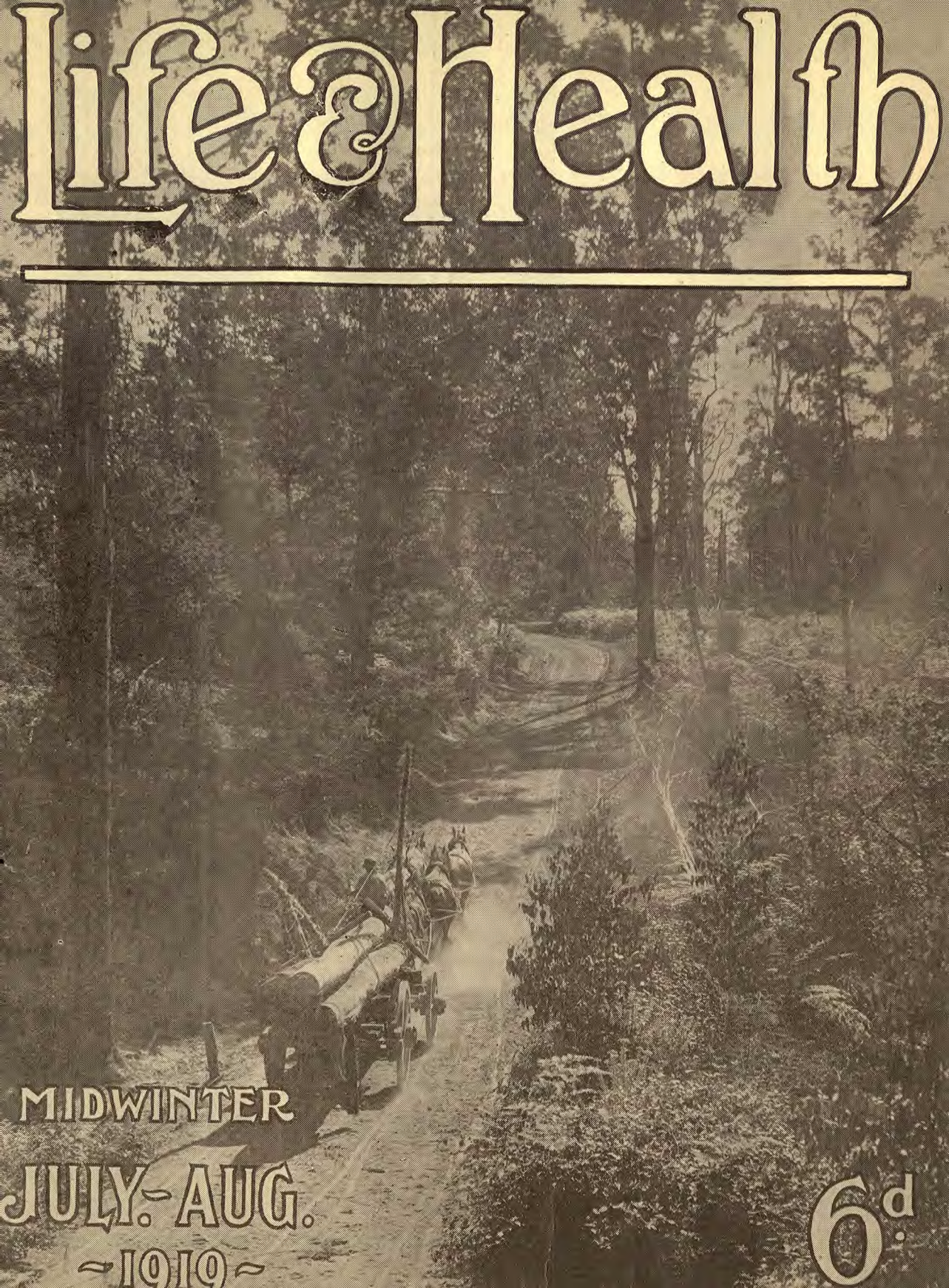

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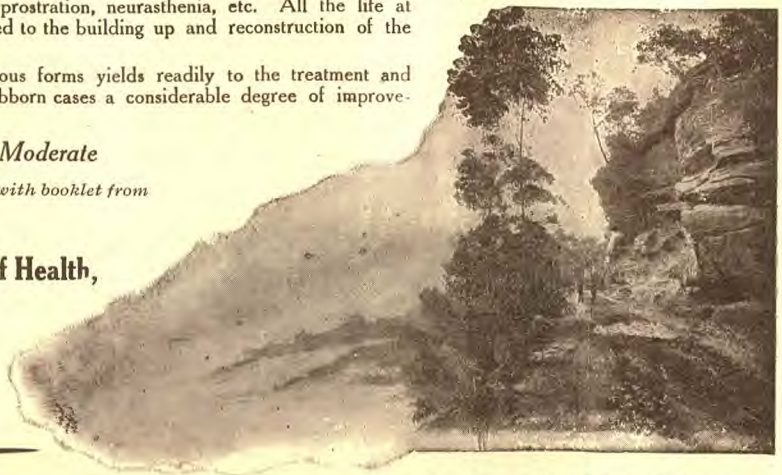

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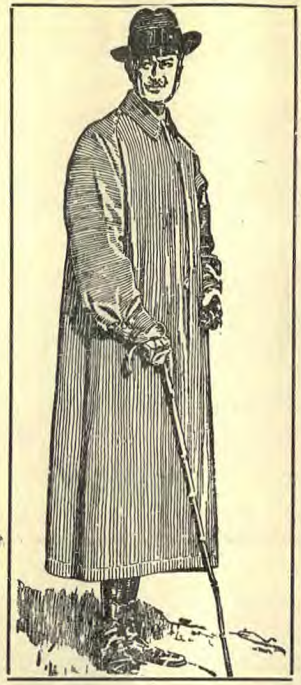

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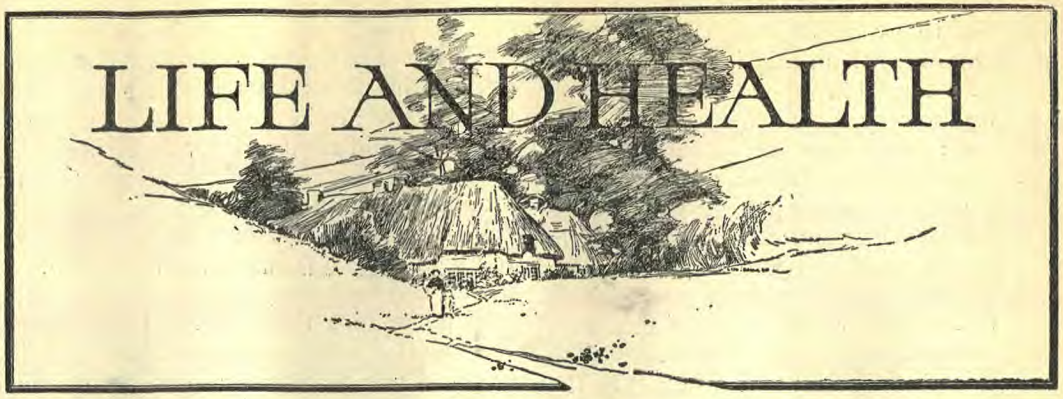
This is one of the most remarkable beaver pictures ever taken. See article on page 183.



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Editor: CHARLES M. SNOW Associate Editors: W. HOWARD JAMES, M.B., B.S. EULALIA RICHARDS, L.R.C.P. & S., Edin.

PLANTS are the only true food producers. With animals food is produced only as a by-product. Plants take water (which is not a food) and carbonic acid gas (which is not a food) and sunlight (which is not a food) and out of these produce starch (which *is* a food). Animals cannot produce starch. They may themselves *become* food, through a perversion of the Creator's original intent, but are not of themselves food producers. What of milk then?—Milk is a by-product of life, diverted from its specific use, and so does not disprove our argument. The animal is a food *consumer*, an *expender of energy*. When a wolf eats a lamb, we have one food-consumer consuming another food-consumer. When a man eats a mutton chop, or calves' brains, we have the same incongruity—just as incongruous as for one plant to consume another. Man's original menu is found in Gen. 1: 29. It reads: "And God said, Behold, I have given you every herb bearing seed, which is upon the face of all the earth, and every tree, in the which is the fruit of a tree yielding seed; to you it shall be for meat." Fruits, grains, and nuts are the diet selected and apportioned for the race, by the One who created the race. When man added flesh to this menu, he did not improve it, and a weakened and diseased race is the consequence to-day. Flesh-eating came in after the Flood, and the shortened lives and weakened systems of mankind show the result of it. If we were living to-day in the unhealthful, unsanitary conditions in which men lived a few hundred years ago, a plague such as occurred in those days would wipe out the race. An increase in the knowledge and practice of sanitation is helping us to keep up our end of the line. It is incumbent upon us, then, if we would preserve our health and our lives, to live as near as may be in harmony with Nature's laws; to eliminate from our dietary whatever poisons or clogs the system or interferes with the purity of cell life within us.

PHYSIOLOGISTS tell us that eight million of the minute cells of which a human body is composed die every second. If we are still in the growing age, this means that *more* than eight million cells are being produced in our bodies every second. That is a large number, and it is fortunate for us that we do not need to count them or to take cognisance of their decease and obsequies. But there is something that is of tremendous importance to us, and that is that these nine or ten million new

cells should be of the best material it is possible to procure, and that nothing should go into them that is going to interfere with their efficiency. Some people load up their systems with the products of decay; some put into their systems that which is in the actual process of decomposition; some put into their systems that which cannot be utilised in any of the vital processes and requires much expenditure of bodily energy in getting rid of it. This does not help either in cell production or in cell purity, and the result is disease and deficiency. In the category of these hindrances may be placed whiskey, beer (in fact alcoholic beverages of all kinds), many of the "soft drinks," drugs, tea, coffee, and a flesh diet. These statements may seem fanatical to some, but scientific investigations have demonstrated their truthfulness again and again. If you wish to get the most out of life that there is in it for you, live in harmony with these demonstrated laws of your system. It is more important that we live a healthy, happy life and live as long as God designed we should, than that we pander to a depraved appetite and die young.

ALCOHOL paralyses the cells that make bone and tissue. The organs of the human system are delicate organs; if uninjured, they will do exactly what they were designed to do. Alcohol stupefies them, and so makes it impossible for them to function properly. They are injured and weakened by it, just the same experience that comes to us from a blow on the head, resulting in unconsciousness. The system then has to perform the function of a policeman and rise up and thrust out the intruder and destroyer. A similar work to that which alcohol does is performed by the nicotine of tobacco, and by the caffeine and theine of coffee and tea. These things are not foods; they do not enter into the construction or the up-keep of the body; they are destroyers and hinderers only, and ought to be eliminated entirely from our dietary.

Feeling Fit and Being Fit

WHEN are we in health? The physician who knows his business will tell you that we are in a state of health when every cell and tissue of the body is doing its part in the great and complicated commonwealth of the human body. But no cell is doing its part or can do its part if that cell is in an unhealthy condition, or if that cell has been made drunk by poisons taken into the body. That is why the habitual user of tobacco and alcoholic beverages is never in a state of perfect health. For years his system may seem to be functioning properly and he may look healthy. But he is not. He is like an eight-cylinder motor-car engine with only six of the cylinders firing. Two of his spark plugs are useless through accumulations of carbon. He can't climb even a small hill on "high," and while his neighbours sweep past him on the "home stretch," he is chug-chugging up the incline on "low gear." What is wrong? His fuel is bad. He is putting into his supply tank that which will clog and render useless some of the vital parts of his delicate machinery. Alcohol will do this; tobacco will do it; drugs of various kinds will do it. Yes, we mean exactly that. You may say you never feel fit until you have had a smoke. You may *feel* fit; but there is a tremendous difference between feeling and being. Sometimes those two things are not in the same class. A man may take a rifle, aim it at the target three hundred yards away, and make a centre shot. He smokes a cigar, and shoots again. He never felt so fit for shooting as at that moment; but somehow the bullet lands two or three circles away from the centre. What made the difference? Some of those delicate cells were rendered drowsy by nicotine, and they could not respond to orders from the brain; or the brain itself was benumbed by the same influence; and "feeling fit" didn't put the bullet in the bull's eye.

Alcohol has a similar effect. The drinker with two or three glasses poured

down feels fit for anything, and will usually tackle almost anything; but somehow the man who is opposed to putting an enemy in his stomach to steal away his brains gets the better end of the bargain, although the drinker felt "perfectly fit." What he had done was to put his sentries to sleep, and give the enemy free access to his citadel. He put sand in his bearings and then wondered why he didn't win the race. He felt fit, certainly; but he lost out just the same. It isn't safe to depend on some outside agency to make us fit. If we feel that we are not fit, then give Nature a chance. Fitness purchased out of a cigar box or a beer barrel or a whiskey bottle is altogether too expensive, no matter how low the price may be which the dispenser charges. That is only the first cost, the first instalment of the price. The remainder of the price is a first mortgage on *you*—your brain, nerves, muscles, tissues, internal organs, vital fluids, and your life. Like all other mortgages, a day of foreclosure is provided for in it.

Many who want to feel fit, and who know they are not, try to make themselves fit by a heavy flesh diet. They clog their furnace with an excess of fuel that is full of ashes and clinkers; and before Nature gets a chance to clean out the fire-box, they crowd in further supplies of the same poor fuel. They get about the same kind of fitness that others obtain through alcohol and tobacco; and long before their time they find themselves laid on the scrap-heap or in some friendly sanitarium drydock for extensive repairs.

There is no epicurean road to good health and long life. The one who made us did not intend that we should live to eat or to drink; but that we should eat and drink what was necessary to the perpetuation of our lives and conducive to that end. He who breaks that rule does so at his peril. It is a trite saying, but none the less true, that many persons dig their graves with their teeth. This playing the part of sexton to our own diseased bodies was never intended by our Creator. Whether we eat or drink, or whatsoever we do, let us do it intelligently, with reason, to satisfy necessity and not to pander to a perverted appetite.

Keep the body clean. We can't do that by using our mouths and nostrils as smokestacks. Keep the body pure. We can't do that by pouring down our throats those products of decay found in the whiskey barrel and the beer barrel. The healthy body is that body whose every cell is clean, healthy, active. No one can have a body composed of such cells who deliberately poisons and benumbs them with poisonous narcotics and the accumulated poisons of a strong flesh diet. Live simply, live cleanly, live intelligently; and then you will live longer and enjoy yourself better while you do live.

Dangers from Tobacco

PROBABLY no industrial enterprise in the world has profited to so great an extent from the war as have the tobacco companies. Their business has increased enormously; and this is due largely to the unwisely directed sympathy of the millions who stayed at home and sent tobacco to the soldiers. They were encouraged to do this by the tobacco companies themselves through judiciously worded suggestions in the daily papers. One American tobacco company alone reported sales for one year (1918) amounting to nearly thirty million pounds, as compared with less than eighteen and a half million the year before.

While such showings as this are a great encouragement to the tobacco companies, it can be only a cause of sorrow to those who realise what this increase in tobacco smoking means for the race. What is known among physicians as "tobacco heart" was one of the chief causes of rejection of young men by the military authorities when examining recruits. The poison of nicotine is one of the most subtle and insidious enemies of the human race. It deranges the nervous system as well as the heart, and dulls the brightest intellects.

Acute Pneumonia (Inflammation of the Lungs)

Symptoms of the Disease and How to Treat It

IT has been proved beyond reasonable doubt that pneumonia, inflammation of the lungs, although not a very infectious disease, is due to the development of germs (the pneumococcus). These special germs are found almost constantly in the sputum and the tissues of the lungs in cases of pneumonia. They are present, however, in the saliva of twenty per cent of healthy persons. When injected into the blood of mice or rabbits they cause death in a few days, and the germ may readily be obtained from their blood. It has not been satisfactorily explained how these pneumococci at times take on special virulence and cause pneumonia, while generally they are apparently harmless inhabitants of the mouth of healthy persons. The underlying causes of colds probably give these specific germs a virulent nature and thus bring about the disease. There are two distinct forms of pneumonia; one is the extension of inflammation from the minute bronchial tubes into the air-cells (alveoli), and is called "broncho-pneumonia"; the other is an inflammation which starts in the air-cells themselves and is denominated "lobar" or "croupous pneumonia." Acute pneumonia (croupous), the one we are now discussing, starts in the air-cells (alveoli) themselves; the capillaries surrounding the air-cells become engorged with blood (congested), the minute lining cells of the alveoli then become infected, and finally the air-cells fill with inflammatory products, and the lung tissues become impervious to air. Three stages are usually spoken of: first, congestion; second, consolidation; and third, resolution. If the disease is treated in the congestive stage, it may be readily aborted, but when the alveoli become filled with inflammatory products, the inflammation must pass through its usual stages, which last from seven to ten days.

Symptoms.—The onset of the disease is usually sudden; a violent chill, shivering ("rigor") lasting for ten to thirty minutes ends in continual feverishness; sometimes the rigor in the young and aged is replaced by vomiting, and in children the illness may be ushered in with convulsions, headache, and more or less fever. The symptoms of pneumonia are very characteristic. The rigor is followed by difficulty of breathing, short, hacking cough, pain in the side, expectoration of a thick tenacious phlegm often of a rusty colour, great prostration, and sometimes delirium.

The fever is usually continuous, there being no marked falls as in typhoid fever, but usually the evening temperature is a little higher than that of the morning. Usually about the seventh day there is a sudden fall to normal with profuse perspiration (the crisis). This may occur as early as the second or the third day, but in some cases not till the third week. In inflammation of the apices of the lungs, the feverishness continues for a longer period.

Sometimes the fever gradually disappears (lysis). A continual rise of temperature after the crisis indicates a relapse or other complications.

The pain in the side is due to pleurisy, and is aggravated by taking a deep breath. The respirations range from thirty-five to forty or even seventy per minute. In children and old people there may be no expectoration. The continued movements of the wings (alæ) of the nose, especially in children, are an indication of difficult breathing. If the chest is inspected during respiration it will be found that the movements are freer on one side than on the other. Pneumonia is a very fatal disease; one out of every five in hospital cases die in the acute stage of the disease. Serious symptoms are increased shortness

of breath, blueness of lips and face, respiration becoming more rapid and shallow, the pulse more rapid and feeble, increased prostration and cessation of expectoration.

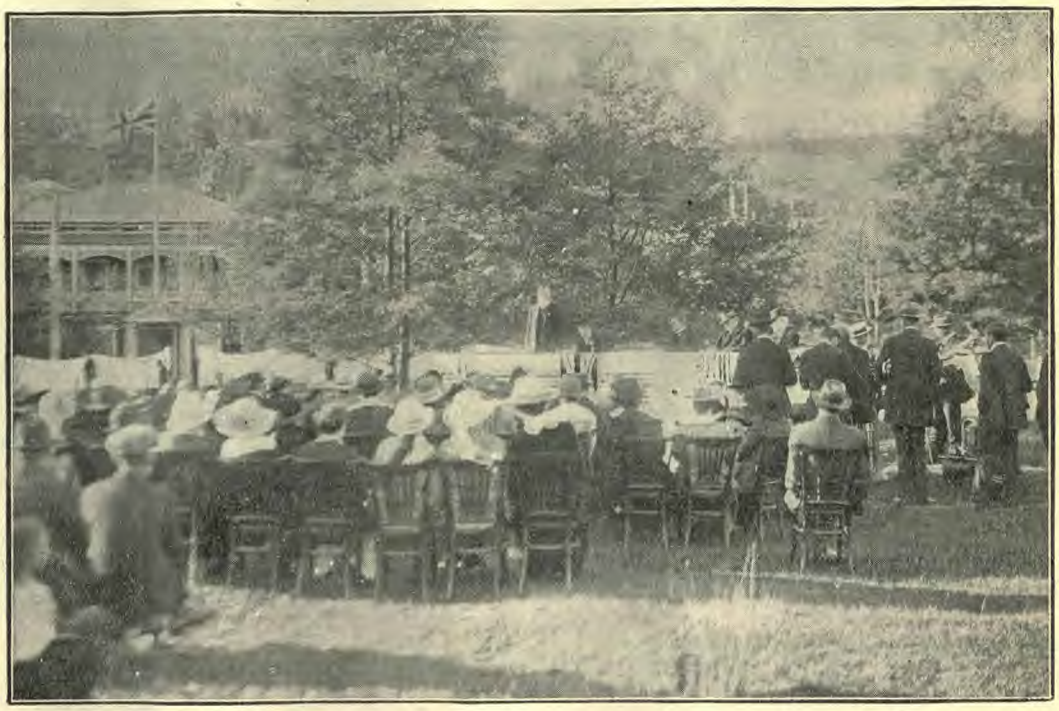
In children convulsions may precede death. The duration of influenzal pneumonia is much more protracted than that of ordinary pneumonia, and prostration is as a rule more marked.

In children the head symptoms—headache and delirium—are often so severe that pneumonia has been mistaken for meningitis (inflammation of the brain); in the latter, however, the headache is very persistent while in pneumonia it passes off after the first two days. Pneumonia as a rule does not come on so suddenly in old people; there may be no initial rigor and perhaps not even a feeling of chilliness. In fact, all the symptoms are less pronounced than in the young adult, but in old people pneumonia is especially serious.

Treatment

The chief dangers in pneumonia arise from deficient aeration of the blood and failure of the circulation. In febrile conditions the tissues do not absorb oxygen so readily and in pneumonia the lungs cannot obtain readily all that is necessary because the air-cells are blocked with inflammatory products. The congestion in the lungs makes more work for the right side of the heart, and this consequently is liable to become dilated.

The early stage, that of congestion, is not pneumonia, and if this be treated early the disease may be prevented. Even though rigor, fever, and difficult breathing exist, the congestion may be relieved in a few hours and the pneumonia prevented. The first treatment is that of derivation (the drawing of blood away from the lungs). This is best produced by some general sweating treatment, as repeated fomentations to the spine com-



UNFURLING THE UNION JACK OVER THE OFFICE OF THIS JOURNAL
Rev. Francis Mason, Senior Naval Chaplain, is speaking.

bined with hot leg bath, or the hot blanket pack. A good hot salt water bath will generally produce sweating. Seven or eight pounds of sea salt should be added to about thirty gallons of water, and the temperature of the bath should be as hot as the patient can bear. If there is no faintness the bath may extend over fifteen or twenty minutes, and after a rapid cold sponge the patient should be put in a warm bed. During the sweating treatment hot drinks, such as lemon and water, should be given to produce perspiration and thus relieve internal congestion. If the pulse is rapid an ice bag over the heart during hot treatment is very valuable. When the patient is free from chilliness and there is evidence of congestion of the lungs, a large ice pack over the side and back of the lungs during the time of the hot treatment will help to drive the superfluous blood from the lungs. This of course could not be done during the hot blanket pack or the hot full bath, but it would be practicable with spinal fomentations and hot foot bath. These cold applications to the chest during the primary sweating treatments, however, should be left to expert hands. Chills of all kinds must be avoided, but when hot applications are skilfully applied or the patient is in a feverish condition, cold applications properly applied will not produce chill.

Plenty of fresh air is absolutely necessary in the treatment of pneumonia. The patient has lessened power of absorbing oxygen and consequently the air must be as pure as possible. The bedroom must be well ventilated, but the bed should be out of the draughts. Cold air is better than warm air as it increases the depth of inspiration. Cold treatment of feverish conditions also, it should be remembered, increases the depth of inspiration and the intake of oxygen. In hot seasons the air of the room should be rendered as cool as possible. A temperature of 65° to 70° F. is the most favourable for cases of pneumonia. It is a well-known fact that those who live in the Arctic regions, Labrador, and other very cold climates, rarely, if ever, develop pneumonia or consumption. In pneumonia the temperature is high, and if the temperature of the room be kept higher than usual, it must help to maintain this high temperature, and it should be especially remembered that cold air increases the depth of inspiration and the amount of oxygen absorbed.

To reduce the temperature and maintain the heart's action and circulation, the cold compress is invaluable in all cases of pneumonia. An ordinary linen towel, two or three thicknesses of cloth, wrung out of ice-cold water should cover well the front and sides of the chest. Over this should be placed a flannel cloth. Leave the compress on for ten or fifteen minutes and then renew. When the temperature is very high or the heart needs special stimulation, the wet cold compress should be changed more frequently. When the patient is sleeping, the compress may be left on for two or three hours; in this case it becomes a heating compress.

The square or roller chest pack is an excellent treatment for the night. Instead of the wet cold compress being applied to the front of the chest only, it encircles the chest; this compress is covered with a good thick layer of flannel or blanket so applied as to exclude all air. This pack can be left on the patient for two or three hours and should be followed by a cold mitten friction. Two or three times a day a series (three) of hot fomentations should be applied to the side of the chest affected, and this should also be followed by cold or tepid sponging of the parts. Pain often experienced in pneumonia should also be treated with hot fomentations; the patient should lie on the sound side and the foments should be applied from the breastbone to the spine on the affected side. In cases where there is great sleeplessness a warm bath (100° F.) with cold applications to the head and heart is often found very efficacious in giving the patient the necessary sleep. Ten to fifteen minutes will, as a rule, be sufficient time for this bath. At the close the patient should sit up in the bath and

receive two to four affusions (pourings or dashes) of water at 90° F.

For cough the hot fomentations and the heating compress give the more relief. When the expectoration has become established and it is difficult to get the phlegm away, the alternate use of hot fomentations and cold wet compresses is very useful. As soon as the heat of the fomentation has lessened (usually about ten minutes) remove and apply a cold wet compress (well wrung out) for from one to three minutes. Dry thoroughly and apply another hot fomentation. There should be three of each, always finishing with the cold compress. This treatment not only aids in the expectoration of phlegm but is a tonic to the heart and circulation generally.

The pneumonic patient should drink freely of water in small amounts to keep the skin acting freely and to eliminate the toxins, or poisons, in the blood. The diet should be light, consisting largely of milk, milk foods, and stewed or ripe fruit. Unfermented wine or other fruit juice is of great value in keeping the blood healthy and eliminating the poisons in the blood. Drugs are very rarely needed where hydropathic treatment is faithfully given. An expectorant may be given if necessary when the phlegm is difficult to expel or is troublesome, such as :—

℞ Am. carb. ʒj
Vini. ipecac. ʒiiss
Ext. glycyrrhizæ liq. ʒvi
Inf. senegæ ad ℥viii
S ʒss ex aq. t.d.s.

If the cough is troublesome, from five to eight drams (ʒv-viii) Tincture Camphor Co. may be added to the above mixture. Children should receive proportionately smaller doses. The rule is for a child of twelve to receive half the adult dose and the child of six one-third.

Broncho-Pneumonia

Broncho-pneumonia is an extension of bronchitis into the lung tissues ; it does not affect large tracts (lobes) of the lungs as croupous (lobar) pneumonia, but small patches, and hence is called lobular pneumonia. Lobar or croupous pneumonia ends suddenly with often profuse perspiration (crisis), but recovery from broncho-pneumonia is gradual (lysis). There is absence of the rusty or prune-juice phlegm so characteristic of ordinary pneumonia.

In children up to two years of age the pneumonias are always of the broncho-pneumonia type; from two to seven years they may either be lobar or lobular ; and from seven years onward the ordinary lobar pneumonia is the rule.

The treatment of broncho-pneumonia is carried out on the same principles as that of the ordinary pneumonia. It should, however, be remembered that very young children do not react well to extremes of heat and cold. For infants the wet sheet pack is of great value. The sheet may be wrung out of tepid or cool water and spread on a blanket. The child is placed on the wet sheet and well wrapped snugly in it, the blanket being folded over all. The child should remain in the pack till sweating is produced. Often, although the child may struggle at the first, the fever drops, and the child falls to sleep. In this case keep the child warm and allow it to remain in the pack till it awakes. Sponge the child with tepid water and dry thoroughly. A heating compress around the chest is also excellent in all cases of broncho-pneumonia. When the child shows signs of difficult aeration of blood and is chilly, it should be placed first in a warm bath or the sheet be wrung out of hot water. W.H.J.

A CLEAN SWEEP.—That it is easier to fell the entire tree of stimulation than to lop off one of the branches is attested by a man of rare resolution, Edward Baltzer, the father of German Vegetarianism. Again and again he tried to break himself of a single bad habit—smoking—but failed. When he made a clean sweep of stimulants and narcotics, alcohol, tobacco, and flesh meats, the change was mere child's play.

Like a Modern City

A Police Department, a Street-Cleaning Department, a Commissary Department, a Telephone System, a Heating and Ventilating System, All In Our Own Bodies

WILLIAM B. HOLDEN, M.D.

THE average intelligent individual is more ignorant in regard to his own physiology than on any other topic. We spend a great deal of time in school studying about everything else but phsiology. We devote four or five years to Latin and Greek, and one-third of a year to physiology. The psalmist David, three thousand years ago, was profoundly impressed with the wonders of physiology when he exclaimed: "I will praise Thee; for I am fearfully and wonderfully made: marvellous are Thy works; and that my soul knoweth right well." Ps. 139:14.

The Complexities of a Municipality

Our bodies are composed of cells,—cells so small that none of them are visible to the naked eye. It takes a powerful microscope to discover them. Yet each one of these cells has an individuality, a definite life, a distinct structure, a definite function. It is just as much an individual as you or I. Each one of these cells—and there are many millions of them, and millions times millions of them, in our bodies—has a life history, a life work.

We might liken a human body to a great city. The cells are the inhabitants. There are the cells of the skin, called epithelial cells; also connective tissue cells, nerve cells, glandular cells, and blood cells. In this great city, there is a central government,—a government that controls and regulates the activities of the inhabitants. This central government is the nervous system, including the brain and the spinal cord. No city in the world compares with it. And the number of inhabitants in all the cities in the world would not equal the number of cells in a human body.

We have a police department in this city of ours, to regulate affairs. If any foreign invaders come in and become obstreperous, the police department attend to them. They put them in gaol, and try to destroy them. Sometimes the police have a fight on their hands when they attack some particularly strenuous trespasser. But the fact that we are alive is evidence that this department is efficient, and that our police force has succeeded in destroying the invaders.

There is a well-ordered street-cleaning department in this city, whose business it is to take care of the rubbish and dirt that accumulate. You know that in a large city, it is very important that the streets and the alleys be cleaned every day. Otherwise, in a very short time, the city is filthy and not a fit place in which to live.

We have also a fine commissary department, which regulates the quantity of food, and the quality, and prepares it, already predigested, for our use. There is no other commissary department that I know of that is so efficient, and does its work so well and so faithfully, as the commissary department in this great city of our bodies.

We also have a heating and ventilating system here. All the inhabitants of this city are warmed and kept at the proper temperature by the aid of a central heating and lighting plant. It is so well regulated that there are no great extremes. None of these inhabitants have occasion to abuse the janitor because the fire has gone out or the room is too warm. None of them have reason to complain that the ventilation is poor. No fault at all can be found with the regulation of this feature of the great city.

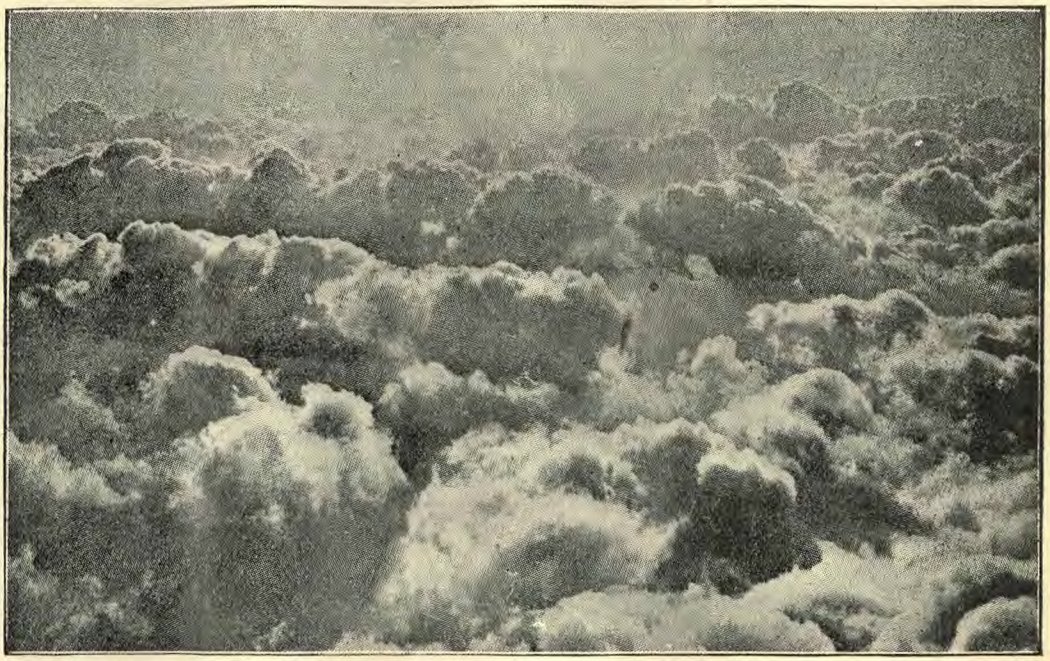
Thus we are a populous city, well regulated, well governed. When this city is not well regulated and well governed, we

send for a doctor. Most of us, during our lives, are so well regulated, so well governed, that we have comparatively little need for a physician.

Our Bodies an Evidence of God's Watch-Care

It is very interesting to study these cells, these individuals that compose our bodies. Persons who have studied these cells most,—who have spent most time in the study of physiology,—are filled with the greatest wonder and the greatest admiration because of their structure and their function. One man who spent his lifetime studying physiology says, "The function of every living cell in the body is more complicated in structure and in action than the machinery of the biggest steamship afloat." That is, when the Lord made these millions of cells in our bodies, He put more thought, more wisdom, into each and every one of these cells, than mechanical engineers have been able to put into the engines of the biggest steamships.

There is great satisfaction in considering the works of God in the minutiæ. When we stop to think that many millions of times more thought is placed in our body than can be placed in the machinery of a big steamship nearly a thousand feet long, we can realise a little of the thought and care our Father has for us. Some people get great comfort in looking at the stars, and marvel at the wonderful power of God in maintaining all these suns in their places millions and millions of miles away, and millions of miles from one another. Sometimes we wonder if a God who has such business on hand as controlling suns and worlds and planetary systems can stoop down to care for us. Possibly He might forget us little atoms down here. But when we think that in our bodies there is so much thought, so much wisdom, so much care, manifested in every single cell, we begin to think that a Creator who can put so much thought on these little cells certainly never will forget our happiness, our welfare. In the worlds as revealed through the telescope, and of cells seen only by



SUNSET IN THE CLOUDS 12,000 FEET ABOVE THE SEA

means of the microscope, we obtain a comprehensive conception of our all-wise, all-powerful Creator, obtained in no other way.

Evolutionist's "End of the Trail"

The psalmist says, "I will praise Thee; for I am fearfully and wonderfully made." These words are well chosen. Physiologists can tell us that our foods are composed of certain substances, — sugar, starch, proteids, fats, and a little salt. They can tell us that the starches are changed into sugar by the action of saliva in the mouth. They can tell us that proteids are not changed in the mouth, but that the digestion of proteids is completed by the pancreatic juice of the alimentary canal. They can tell us that the fats are not changed by the saliva nor in the stomach, that only when they get down into the intestinal tract are they digested. There are about fifteen or twenty different chemical steps in changing starch into sugar. Physiologists can tell the different steps, until the starch finally is ready for absorption.

But after this food is all in solution, —after the starch is made into sugar, after the proteids are made into peptones, after the fats have been emulsified and saponified,—after all that has been done, physiologists stop. They can go no farther. How your bread became bone and muscle and nerve and skin, they know nothing about. In other words, just where and how your breakfast became *you*, they cannot understand. They look very wise, and say, "That is a chemico-vital change."

Many scientific men utilise a big word as a cloak for their ignorance. A scientific man who cannot talk in ordinary language is generally trying to conceal something.

And so it is with a "chemico-vital" change. We can digest proteids and starches in the laboratory perfectly. But we cannot make a man out of those things in the laboratory. And until philosophers succeed in building up a full-grown man, evolution has absolutely no foundation to stand upon.

Our Self-Repairing Power

ALFRED B. OLSEN, M.D., D.P.H.

ALL through the ages, man has been looking for an elixir of life that would confer perpetual health. He has been seeking for something to take that would rid him of his ills and prolong his life. To-day he is still seeking for the magic draught that will disperse his aches and pains. He still imagines that life and health can be obtained from a bottle or a pill box.

Great is the faith of man; for rarely does he know what he is taking, except that it is a drug of one kind or another, for which more or less fantastic and false claims are made. If the draught is nauseous, it is all the more potent, according to his simple mind. If patent medicines and proprietary medical compounds were as scarce as food is in Europe to-day, it would be a great advantage for the community; but we notice that drugs are advertised almost as freely as ever through the public press and on the hoardings.

All such drugs are not only expensive but also dangerous luxuries. But the average man, when he falls ill, is rarely content to go to a doctor for advice with regard to diet, drink, hours of sleep, habits of life, *et cetera*. What he wants is something to take in the medicinal way, and he usually insists upon getting a bottle or a powder before leaving the surgery.

Man forgets that he is a self-repairing engine, and that he is marvellously endowed, by the Creator, with the power of self-healing. When the body is worn out through labour, or its strength is depleted by illness, repair or healing is necessary to make good the loss. Too

often we forget that man is a dying animal, and that daily he is wearing out, perishing. To maintain life and to keep fit, it is necessary that the body should be repaired daily. The loss through the breaking down of the worn-out tissues and organs must be made good. Otherwise he will very soon weaken and become unfit for work. This is the beginning of illness, and the next step may be the invasion of the body by some pathogenic germs bringing with them a serious or even grave disease.

J. H. Kinnear

APPETITE-PRODUCING EXERCISE IN THE OPEN AIR

The vital forces of the body are supported by the air we breathe, the water we drink, and the food we eat. These so-called necessities of life, combined with adequate raiment and shelter, and a suitable amount of activity, comprise the essentials for the sustenance of life. The living particles of matter called cells, which in their countless millions go to make up the human body, are capable of taking the different substances that we call food, and imparting to them the spark of life, thus making them a part of the living tissues.

This process of re-creation, or repair, or healing—whatever we call it—goes on daily in varying degree, according to the requirements of the body. When a man is in ordinary health, the repair of the waste energies and waste material is comparatively simple; but when he falls ill, and is laid up with a fever or some chronic ailment, there is the same process of repair going on, the only difference being that it is greater in degree and more complicated.

The power of repair, or recuperation, which is inherent in the living body, is the gift of God; for do we not read in Holy Writ, that "the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul"?

Food is utilised in at least two ways in the body: first to repair or rebuild the worn-out structures, and second to restore or make good lost energies. Man is the steward of the living temple, and it is his duty to supply the necessary flesh-repairing and energy-producing material required for the maintenance of life and

health. It is for him to select the best and most wholesome food material available, and at the same time to avoid articles that are capable in any way of injuring the delicate structures of the body. Therefore he should avoid alcohol in all its forms, tobacco, tea, and coffee; for none of these are in any true sense foods, but rather drugs, and, strictly speaking, habit drugs, which produce a perverted appetite, and set up an unnatural craving, which is oftentimes difficult to resist.

WINTER ON A BATTLE-SHIP IN THE NORTH SEA

And there is ample scientific evidence to show that man does not require the flesh of other animals for his sustenance, for he can obtain all the food material that the body requires from the dairy and the garden. Moreover, there is evidence to show that the flesh of animals is by no means an ideal diet from any standpoint. Flesh eating is a form of semi-cannibalism, and does not and cannot appeal to the higher æsthetic qualities of the mind.

From the standpoint of both physical and mental health, man should make his diet as simple as possible, avoiding what we might call highly-seasoned and complicated dishes. The food should be cooked in a conservative way, so as to preserve all of its nutritive properties; and a certain amount of uncooked food, such as fruit, nuts, and salad, should be taken daily. Not more than three meals should be taken, and it is a fact that many people would thrive better on two plain but nourishing meals daily rather than three.

Try the Life

NOW that winter is really upon us, let us try to adhere to the principles which Nature has forced us to obey by her hot weather and her pleasant days during the past summer and autumn. You have lived as much in the open air as possible; keep this up. The healthy, warmly-clad body enjoys a rough, keen, bracing wind; do you? Now that the colder weather has come, do remember that staying shut up in heated rooms is vitally destructive, and that you will add to your general vigour in the same proportion that you breathe the life-giving open air.

Try a good, long walk occasionally. Walks are especially valuable, for they renovate the body, purify the blood, stir the nerves, and accelerate the activity of the poison-eliminating functions. Try a daily walk, but do not make it monotonous. Look for something new or curious each time and make it pleasurable. Throw your whole soul into it with enjoyable abandon. Fill your lungs to the deepest capacity at frequent intervals. Inhale the glorious "breath of life," and soon the air will actually "taste good" to you. A good walk clears the brain of cobwebs just as certainly as it clears the body of poisons. Difficult problems and puzzled decisions melt into simplicity if they are settled while taking a good, brisk walk; and settled to your satisfaction, too.

Therefore, try the life! H.G F.

The Housekeeper's Battle

The Household's Invading Armies and How to Defeat Them

HORACE G. FRANKS

IN the process of civilisation, mankind has ever been seeking to protect itself from the enemies that are without. Commencing with perhaps the stone hut, or it may be the mud house, he has always sought to build himself a refuge from the enemies of field and forest. True it is that as far as the large and powerful foes of nature are concerned, he has been fairly successful, but Dame Nature has set her small insect sleuths on the trail of man with the result that to-day many homes are overrun with house-dwelling and house-damaging insects.

For instance, the student goes to his library and finds that the dainty little silverfish has been at work building a home out of the beautiful volumes de luxe. And as though the silverfish family could not do enough damage, we find traces—and very serious traces—of that next-of-kin, the book-louse, who makes a specialty of old books. And often after having made havoc in the library, these two active little tribes transfer their energies and affections to the wallpaper, while often they have also been found amid the wreckage of lace curtains, starched linen, and silk. The best treatment to mete out to these depredatory insects is fumigation. Another good remedy is to "answer a fool according to his folly." Silverfish are particularly fond of starch. Therefore mix up a stiff starch paste, poison heavily with arsenic, spread on pieces of cardboard or wood, and place on the shelves of bookcases, in drawers, or other places which the destroying armies frequent. But be certain to place the poisoned delicacy *out of the reach of the children;* otherwise you might do more damage than you intended to.

Look at Your Carpet!

Having dealt satisfactorily with the invaders of the bookcase, it would be well for the housewife to turn her attention to the carpet. If you have never seen one, become acquainted with your insect enemy by a study of the drawings herewith produced. And having been shown its photograph, go after the carpet beetle with a glass of kerosene. This procedure, together with frequent cleaning of the carpet, and persistent washing of the floor with benzine, will gradually result in the extermination of the pest. It is also

LOOKING FOR THE CARPET BEETLE

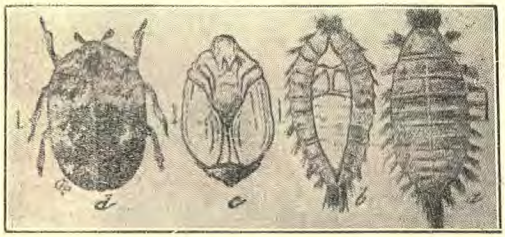
helpful, where possible, to lay the carpet over tarred paper.

Now go to the wardrobe and make a good search for the friendly moth, who is not adverse to making its home in your costliest garment or cosiest fur. All clothes should be brushed and exposed to sunlight at least once every month, and if a garment is not likely to be used for some time, it is much safer to wrap it in printed newspaper or tarred paper, after having carefully brushed it in order to make sure that larvæ and eggs are first removed.

A Winter Guest

In winter time, when the house is likely to be somewhat damp, the good lady of the house often meets a weird-looking creature called the house centipede, which

looks as if it were made of wire. Because of its uncanny appearance, its quick movements, and its wicked and fearless habit of darting at all comers, it is a most unwelcome visitor. It is a creature of the dark and damp, and only comes out in search of food. In the region of its mouth it is armed with mandibles, which it often uses to defend itself, when it inflicts a



CARPET BEETLE (magnified)
a, larva, dorsal view; *b*, pupa, within larva skin; *c*, pupa, ventral view; *d*, adult

painful, poisonous bite. The frequent inspection of all dark, damp corners and the use of borax pyrethrum powder are the only protection against this self-invited guest. Before leaving this strange insect to its doom, perhaps it is only fair to say that as it is a sure and bitter enemy of flies, bed bugs, carpet beetles, moths, and mosquitoes, some people are willing to put up with the centipede as long as it does its work of killing its insect-brothers creditably.

The Social Ant

There are several species of that interesting and social insect called the ant; but they are equally obnoxious to the housewife. In dealing with this ubiquitous little visitor there are only two things to do. Either find the home and pour kerosene or carbon bi-sulphide over it, or else lay traps for the ant in its most frequent household haunts. Many such traps have been suggested, but I will mention a few of the less common ones.

A kerosene sprayer kept handy is most useful.

Another good method is to saturate small sponges with sweetened water, and put in the most accessible place. Then, when the sponge is literally "alive" with ants, plunge it into boiling water; and start all over again. This will eventually destroy the colony and cause the queens to die of starvation.

Or again, a little olive oil (or cottonseed oil is cheaper) placed in saucers will prove a great temptation for the ants—and in it they perish by the hundreds.

The most successful "repellant," it is said, is "ant-tape." This is made by soaking ordinary cotton-tape in a solution of corrosive sublimate, and allowing to dry. No ant will cross it. Therefore if placed around table legs, or safe legs, or tacked along shelves, the contents of cupboards, etc., will be ant-isolated.

Two other good suggestions are found in a recent issue of *Popular Science Siftings*. Here is one:—

"When fast poison is used the sexless workers are killed before they can carry it back to the queens at home, engaged in maternal activities, and, besides, ants quickly learn to shun the places where bodies of their fellows are thickly strewn. That is why the average commercial poison is so often a failure. But the new poison is slow, and an ant never knows what was the matter with him, and is not able to warn the others, so that dying he kills the babies at home.

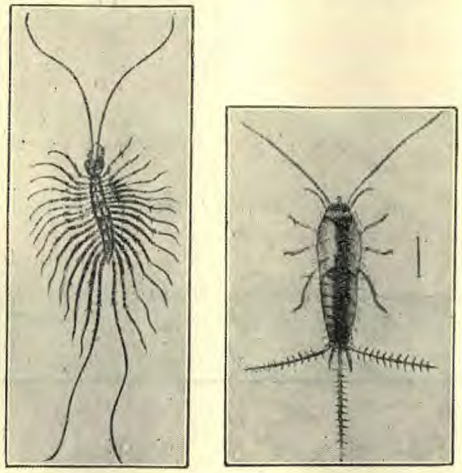
"There is no secret about the formula—though it should be mixed by a chemist for best results. The constituents are 2 parts of granulated sugar, 1 of water, 8 per cent of strained honey, a small amount of tartaric acid to convert the sucrose into glucose, and $\frac{1}{8}$ of 1 per cent of arsenic. A sponge is saturated with this concoction and enclosed in a tin can, which has small holes punched into the top to allow unsuspicious ants with a sweet tooth to enter.

"It is very dangerous to use this out of doors, however. Bees have a sweet tooth as well as ants, and if cans are hung outside the bees will carry the poison home to their hives, where it will not only kill the queens and young as well as themselves, but will also poison the honey, rendering it highly dangerous to its consumers."

The other suggestion reads as follows:

"A good method of destruction on a wholesale scale involves the use of what are called 'winter traps.' A fair sized cardboard box, early in the autumn, is filled with hay and old seeds. It is left open at the top, so that the contents may be wetted by rain and undergo decay.

"This arrangement, says Professor Rene Bache, whom we quote, is ideally attractive to the ants. It offers a hiding place, and the decomposition of the vege-



THE HOUSE CENTIPEDE AND SILVERFISH

table material engenders warmth. The apartment is automatically heated.

"When cold weather arrives, all the nearby colonies transfer themselves to the box, in which are presently assembled hundreds of thousands of workers and hundreds of queens. This being accomplished, a lid is put on the box, and the whole insect population is destroyed with bi-sulphide of carbon or by fumigation."

Try these suggestions, for they will surely repay a trial; and having tried them, recommend them to your friends and neighbours.

When Marriage Is a Failure

IF neither husband nor wife has married for love, but merely for money, convenience, or any other mundane motive.

If the meals are ill-cooked and badly served, and dirt, discomfort, and disorder reign supreme in the home.

If two young persons rush into matrimony, and take upon themselves all the burdens of married life when too young to realise the responsibility of it.

If husband and wife are prone to have a "few words," and do not know how to keep silent on certain subjects.

If the income, when well managed and made the most of, cannot cover the expenditure.

If the husband be a faddy, fidgety man, perpetually prying into household matters, and thinks he knows more about them than any one else.

If both parties are resolutely resolved to see only the worst side of each other's character.

If the husband tries to be mistress as well as master, or the wife master as well as mistress of the house.

If, when dark days come, husband and wife forget that they have taken each other for better or worse, for richer or poorer.

If the wife is a fine lady, totally ignorant of even the rudiments of domestic economy, and thinks more of her dress than of her husband's comfort.

If the husband is a domestic tyrant, or the wife a slatternly, scolding vixen.—*Christian Herald.*

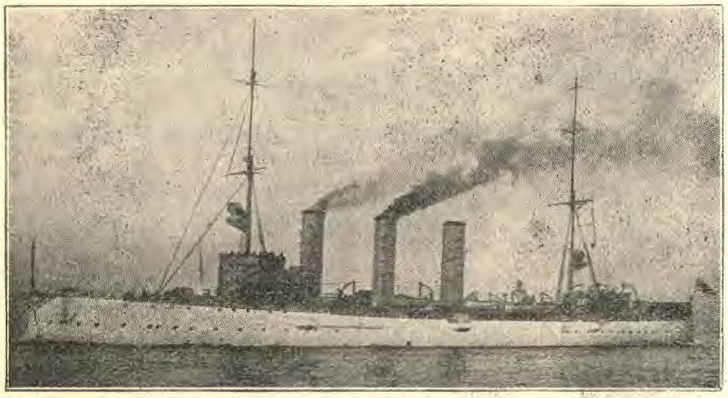
Making Pumpkins Grow Fast

A GOOD way for hustling the growth of pumpkins, marrows, etc., is to feed the fruits with water. It is only needful to secure some pieces of round lamp wick. Holes are made in the stalk of the fruit and, into these, one end of the wick is inserted. The other end of the wick rests in a jar of water which is kept well supplied. The pumpkins grow at twice the rate they do normally and are ready for cutting much sooner. In this way the produce secured from the plant is largely increased. The plan is well worth following out.—*S. Leonard Bastin.*

An Instructive War Experience

David Paulson, M. D.

OF all the terrible things that have happened in this war, there is one experience that is wonderfully illuminating and instructive. August, 1914, the German war cruiser, *Kronprinz Wilhelm*, started out on her campaign to destroy English and French ships. During the two hundred and fifty-five days that she was on the ocean she sank fourteen vessels. Each time she first helped herself to the best meat, the richest food, the canned vegetables, the sweet cakes, and other "good-



ONE OF THE GERMAN RAIDERS

ies" that were on board these vessels. It must have seemed a pity to these German sailors accustomed to comparatively simple rations to let all this "good food" go to the bottom of the Atlantic ocean when they might just as well have it as to waste it.

As a consequence, these five hundred men lived on the fat of the land as they never had before. They took on board enough meat supplies so as to furnish each man three full pounds every day, to say nothing of all the other rich food. They certainly had what too many people yet consider a "strengthening diet." And Dr. Gray, discussing this incident, said, on the theory that well fed men make alert and hard fighting men, so these men continuously were well fed. What was the consequence? Ere long, this magnificent German cruiser was compelled to put in at an American port, not because of English or French guns or submarines, but for exactly the same reason a lot of people who live the same way on land have to "put in" at some hospital.

High Living on a Ship

Beriberi, a disease that never happens excepting when the diet is all wrong, broke out among them, and one hundred and ten then contracted the disease. Dr. Gray says, "Some of her crew began to complain of swollen ankles, some fancied insects were crawling over their skin, or they experienced peculiar fibrillar twitchings of certain muscles; some had pains in the nerves and legs, and still others had very curious disturbances of vision, hearing, taste, smell and memory." In short, they were suffering from too much acid in the blood, and it was beginning to eat up their nerves and destroy their health generally.

And it is the same thing that is destroying the health on land, only now such are considered "dispensations of Providence." Dr. Gray, speaking of this, says: "It is this same unbalanced ration that is working havoc in our homes. For every case among the five hundred men on that ship there are thousands of individuals in the same condition in every country. Why should there not be when the dietetic conditions are practically identical?"

The very food that those German sailors gorged themselves with is precisely the diet that is used by people who are living high to-day, and more and more folks are aspiring to live in that kind of style.

HERE is an economical way of boiling your cracked eggs. Wrap up in a piece of paper, screw the ends of the paper wrapping tightly, and boil as usual. The albumen will set before the paper comes off and half of your egg will be saved instead of wasted.

CHATS WITH THE DOCTOR

NOTICE TO SUBSCRIBERS: All questions for this department must be addressed to the EDITOR, "LIFE & HEALTH," WARBURTON, VICTORIA, Subscribers sending questions should invariably give their full name and address, not for publication, but in order that the Editor may reply by personal letter if he so desires. Because of this omission several questions have not been answered. To avoid disappointment subscribers will please refrain from requesting replies to questions by mail.

260. Throat Irritation and Growing Pains

"Mrs. A.H." writes: "My boy, 6 years and 9 months old, has itchy feeling at back of the nose causing him to make a peculiar noise to rid himself of the irritation even in his sleep. He breathes through his nose, so I do not think he has adenoids. He has a non-flesh diet and is very fond of oatmeal porridge with which he eats cream but no sugar. For the past few months he has had a good deal of cocoa to drink and very sweet, two teaspoonfuls or more of sugar to a breakfast cup, but seldom more than two cups of cocoa in the day. He is fond of eggs and sometimes has two at a time, but never more than three eggs in the day. His staple food is brown bread and butter. He at times complains of pains in his legs below the knees, the trouble which in my childhood we called 'growing pains.'"

Ans.—It is quite possible there may be some adenoids, but most probably some inflammation of the pharynx (back of the throat), and perhaps a long uvula. His food is altogether too rich, and he takes too much sugar. Milk would suit him much better than cocoa, and one egg a day would be ample. The "growing pains" are wrongly named and are due, most probably, to the circulation of waste products, physiological ashes, the result of too rich food. If the irritation is not removed by simpler diet the throat and nose should be inspected by a qualified medical practitioner.

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261. Inflamed Eyelids

"G.A." asks for a remedy for the above. He has been to six doctors, and all state he is in sound health. Two doctors state that the inflamed lower lid is due to nerve trouble.

Ans.—We cannot give any advice in this case, a personal examination is absolutely necessary. We would suggest a consultation with a registered eye specialist (a medical man).

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262. Mucous Colitis

"E.M.H." asks: "Will you tell me the best possible cure for catarrh of the bowels (small intestine)? The douche will not reach them. The colon I have cleansed with the salt water douche, but I am confident the small intestines are full of catarrh and mucus. Now and again I pass a long round white string about two feet long, easily broken, with the salt water douche. I use plenty of granose biscuits, and charcoal biscuits and tablets. My main food has been for the last eighteen months: Granose biscuits with a little salt, and charcoal biscuits. I take a lot of charcoal tablets and drink a lot of hot water. I never eat sweets or fat of any kind."

Ans.—All cases of colitis are not the same. It would have been better had "E.M.H." given details. It is a good thing the douche does not reach the small intestine, for its contents are always liquid and do not require any help to hasten evacuation. The most constant and characteristic symptom of colitis is a diarrhœa which does not properly evacuate the bowels. There is also a marked amount of mucus which does not occur in simple catarrh of the small bowel. Scybala (hardened fæces covered with mucus) are found in the excreta, but not intimately mixed with the mucus. The mucus appears as boiled sago, clear jelly-like masses, or in small discrete blobs. It may be stained with fæcal matter or be of a green colour. In severe cases the motion may consist of pure mucus. Sometimes the mucus appears in a hardened condition, shreds, flakes, stringy and twisted membranous pieces of many inches or feet in length, and sometimes hollow and forming casts of the surface of the bowel. Bright blood may appear, due to some violent irritant or ulceration. "Intestinal sand," a form of lime, is sometimes found in the intestine. Marked irregularity of the bowels is characteristic; it is mostly a case of chronic constipation with appearance of diarrhœa. There is usually pain, especially when membrane is passed, the pain is griping and colicky and often very severe. There are generally symptoms of dyspepsia and the patient is very depressed, due most probably to absorption of poisons from the alimentary canal.

The food should be free from all irritating particles, such as coarse vegetable fibres, husks, seeds, etc. The diet should be substantial and not confined to liquids. The general health should be attended to. Sometimes surgical interference is necessary to remove abnormal growths; often the bowels have dropped and need support. Relief is often found by covering the abdomen with a layer of wadding covered with oil-silk, and kept in place by a flannel belly band. Irrigation of the large bowel in chronic cases is very beneficial, such as the use of a warm saturated solution of boracic acid. The injection should be given slowly and the amount be large, turning the patient from side to side to allow the fluid to reach the whole of the colon. Pain is best relieved by hot fomentations and the injection into the bowel at night of warm olive oil (4 to 6 ozs.). This may be followed by plain douche of normal saline next morning (two teaspoonfuls of salt to two quarts of water). Any neurasthenic or gouty conditions should receive attention. Pain and tenderness over the abdomen generally make abdominal massage impracticable. Sanitarium treatment is very helpful in these cases. All the tonic hydropathic treatments, such as cold mitten friction, salt glows, etc., are applicable in these cases and an occasional electric light bath is helpful.

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263. Tonic Food

"Manaia" asks our opinion about a certain advertised "tonic food" and asks, "What would you advise for a tonic food?"

Ans.—We have had no experience with the food mentioned. There are no more strengthening foods than milk, fresh eggs, nuts, and the cereal foods. Unfermented wine and fruit juices keep the blood in a healthy condition and are also foods. Oatmeal is an excellent food when it agrees with the digestion. Many of the advertised foods consist largely of dried milk. We prefer milk in its natural condition. If one is not certain of the healthiness of the cow from which the milk is obtained, the milk should be sterilised, but fresh milk is more nourishing, more easily digested, and has no constipating effect on the bowels. A glass of fresh milk with each meal is a good and easy way to increase the amount of food taken. Eggs taken as an oyster or beaten up also form useful additions to one's food. Malted nuts are easily taken and digest readily. Granose biscuits, granola, and toasted corn flakes are excellent foods.

264. Loss of Hair

"Patient's Friend" asks about the above.

Ans.—Loss of hair frequently occurs during an acute illness or subsequent to the illness, especially after scarlet fever, measles, and typhoid fever. It also occurs in the latter months of pregnancy and while the mother is suckling the child. In many cases what is known as "seborrhœa"—a rough scaly condition of scalp producing as one result dandruff—is the cause. There is no specific drug that will produce hair. The hair is much more likely to develop if the general health is improved. The treatment of falling hair consists in the treatment of the general health and of any local disease of the scalp, such as dandruff. Syphilis, if it exists, should be treated by mercurial preparations and myxœdema by thyroid treatment. Mostly, however, the patient simply needs change of air, good generous digestible food, and tonic hydropathic treatments such as cold mitten friction and salt glows. The treatment of seborrhœa is of the greatest importance. The hair should be frequently washed with soap spirit, and the soap thoroughly removed by two or three washings in plain warm water. The drugs most serviceable for seborrhœa are sulphur, salicylic acid, and resorcin, from five to fifteen per cent of each. Castor oil should be added if the scalp be dry, and acetone if it be oily. The following are useful formulæ:—

℞		
	Resorcini	ʒj (one dram)
	Quininæ sulphatis	grs. xv
	Castor oil	ʒj (one dram)
	Spirits of wine (rectified)	to 4 ounces

Resorcin tends to make the hair of a darker tint. When this is objected to, salicylic acid should be substituted.

℞		
	Resorcin	ʒj
	Hydrargyri perchloridi	grs i
	Acetone	ʒvi (6 drams)
	Spirits of wine	℥iv (4 ounces)

Ointments are sometimes preferred to lotions. The following may be used:—

℞		
	Resorcin	grs xv
	Sulphur præcipitati	ʒss (1½ drams)
	Attar of roses	qs (or sufficiency)
	Vaseline (white) up to	℥ss (1½ ounces)

The soft soap for washing the hair (saponis viridis) should be mixed with equal parts of rectified spirits and a little antiseptic may be added, such as thymol (10 grains to the ounce of the solution).

Where there is no seborrhœa or disease of the scalp, the following more stimulating lotion may be used:—

℞		
	Tincture of cantharides	℥ ii (2 ounces)
	Strong acetic acid	℥j (1 ounce)
	Glycerine	ʒiv (½ ounce)
	Spiritus Rosmarini	℥j (one ounce)
	Rose water up to	℥viii (8 ounces)

"Patient's Friend" asks for a list of good nourishing foods and what foods can be used to keep the bowels in order. Nourishing foods have been already given in this edition of "Chats." The following foods are useful for constipation:—

Granose biscuits, wholemeal bread, bran cakes, tablespoonful of thoroughly boiled wheat with each meal, fresh milk or lactosa, prunes, fruit, vegetables. Hard boiled eggs, cooked milk, tea, and coffee are constipating.

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265. Bladder Trouble and Operation

"Patient's Friend" also writes: "My father has had inflammation and swelling of the bladder. The doctor wants him to undergo an operation. Is the operation serious? My father is about sixty years of age."

Ans.—Probably the operation is removal of the prostate gland. Although the operation is a big one, it is usually successful; it is, however, a serious operation and occasionally is attended by death. Much depends on the general health of the patient. A man of only sixty, with ordinary health, most probably would come through the operation successfully.

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266. Bladder Trouble

"Mrs. L.L." writes: "About eight years ago I got into a bad way—it took

the form of dizziness in the head. After consulting many doctors and getting no relief, I tried the Sanitarium health foods and for some years have been very much better. I have reached a good age (78) and have developed a trouble in the bladder. When the water comes, it smarts a good deal and I find relief in bathing the parts with cold water very frequently, but I am very unsteady on my feet in walking. I never eat butter or use milk and drink only water—nothing else. I follow the health food instructions. I take the gluten meal for my breakfast, only vegetables for my dinner, and grainut and a little fruit for my tea. I have only three meals a day. Lately I have developed constipation."

Ans.—The urine is evidently too acid and needs more dilution. We would recommend that fresh milk be taken twice daily and that more water be drunk. There can be no objection to a little fresh butter being added to the meals. Olive oil or cream if desired may be substituted for the butter. Granose biscuits and hot (170° F.) milk or well cooked oatmeal porridge for breakfast would make an agreeable change from the gluten. Stewed prunes or other fruit would help the constipation. Rice or sago cooked in milk would be a suitable addition to one of the meals.

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267. Heart Trouble and Running Ear

"Mrs. R.H.W." writes: "I am suffering with my heart, terrible pains around it, also throbbing pains through it. My husband suffers from a running ear (right side) and the right side of the head. There are times that he cannot lie on the right side on that account. Do you think an operation necessary for him?"

Ans.—The affection of the heart is probably of nervous origin, and is not accompanied by any actual disease of the valves. In these nervous affections the pain very often extends down the left arm, but this is not always the case. This neuralgic condition can generally be traced to some form of indigestion, tea drinking, tobacco smoking, or sexual excesses. If the general health is run down, it must be built up by tonic measures, such as good wholesome food, outdoor exercise, and the daily sponging of the body with cold water (drying very thoroughly). Worry, anxiety, excessive mental work, and want of sleep are active causes, and these conditions must receive appropriate treatment. Apply twice daily three or four wet cold compresses to the heart; a large handkerchief folded several times will serve the purpose. With some, alternate hot fomentations and cold compresses give more relief, always finishing with the cold compress. Belladonna plasters give temporary relief. Your husband should see a specialist in ear troubles; probably an operation is necessary.

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268. High Stomach (Obesity)

"Maryborough" writes: "This past twelve years I have been troubled with a very high stomach; it commenced after childbirth and has gradually increased. I am in good health and have no pains. The stomach is very large and the increase in size extends right to the breasts. I feel most uneasy and tired out carrying this load. I cannot wear corsets or dress to go out.

Ans.—The treatment for this trouble is that used for obesity, and must be largely dietetic. The amount of food taken must be reduced, especially starchy and fatty foods. The following foods must be taken very sparingly: bread, potatoes, farinaceous puddings, sugar, and sweets. Some authorities limit very much the amount of fluid, but others allow the free use of water. Unless the diet is considerably reduced the condition will not disappear. Hot baths or some sweating treatment two or three times a week are helpful. These should always be followed by cold water treatment—a sponge or a shower—in order to avoid the debilitating effects. Exercise is always necessary. Excessive food in these cases can do no good, for it is simply

converted into fat and, as correspondent states, it is a load that has always to be carried about. In some cases liberal diet causes considerable loss of weight; in others the reverse. Many blame the nurse for not applying the obstetric bandage properly, but this has nothing to do with the subsequent development of the "high stomach."

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269. Diabetes

"J.N.C." asks if we "could recommend any special clothing in diabetes and what exercise would be best. Could melsitos be used to replace sugar and jams? Are granose, grainut, and granola good for diabetes?"

Ans.—The diabetic is especially liable to take cold, but this does not mean that he should wear a lot of clothing; more clothing than is actually needed increases the liability to take colds. We would recommend a light Jaeger combination garment and good warm socks, and in winter good stout boots. Avoid as far as possible neck wraps and overcoats; it is better to keep the body warm by exercise rather than by extra clothing. Exercise should be of a light nature and out of doors. Exercise, short of fatigue, lessens the amount of sugar in the urine. Walking, light gardening, and easy wood chopping are good forms of exercise; much, however, depends on the strength of the individual. Melsitos is not to be recommended in diabetes. It is, however, preferable to ordinary sugar and jams. Jams and sweets must be avoided altogether. The diabetic rolls make an excellent food in diabetes. Granose, grainut, and granola are preferable to ordinary bread, but the amount taken must be limited. In diabetes the urine should be regularly tested to ascertain the tolerance for starchy foods. An article on "Diabetes" appeared in LIFE AND HEALTH a few months back.

ONE OF THE MOST HEALTHFUL FORMS OF EXERCISE

270. Menu for Diabetes

"J.N.C." asks for menu for diabetes and if it is possible to get a starch-free flour in Melbourne.

Ans.—The main rules in the dietary for the diabetic are as follows:—

1. It should contain no sugar or articles containing sugar.

2. There should be restriction of all articles containing starch (which is converted into sugar in the system).

3. It must not contain an excess of flesh foods.

Milk is good for most diabetics, but it contains four per cent of sugar (lactose); the sugar contained in milk is of a very digestible nature. Sugar-free milk may be prepared as follows: "Place four tablespoonfuls of cream in one pint of water. Mix well. After standing for twenty-four hours skim off the fat and place in a second vessel; to this add water, a pinch of salt, a little saccharin, and a little white of egg until the fluid has the consistency and colour of milk. This artificial milk can be used without restriction."

The following vegetables may be taken after being cooked in a large quantity of water: greens, spinach, turnip-tops, french beans, brussels sprouts, cauliflower, broccoli, cabbage, asparagus, vegetable marrow, lettuce, tomatoes, water cress, endive, spring onions, leeks, celery, and rhubarb. The vegetables that should not be eaten are potatoes, carrots, parsnips, beetroot, peas, and spanish onions. Bread ordinarily contains about fifty per cent of starch, and consequently must be avoided except in very limited quantities. The diabetic rolls are highly recommended in the place of bread; these can be cooked in various ways to take the place of flesh foods. All nuts may be taken except chestnuts. Olives are good. Eggs fortunately contain neither starch nor sugar, and can be taken scrambled, boiled, fried, or beaten up. If flesh foods are taken, liver, oysters, cockles, mussels, and crabs should be avoided. Toast, rice, arrowroot, cornflour, sago, tapioca, macaroni, and vermicelli all contain large quantities of starch and must be avoided. Both almond and bran flour, we believe, may be obtained in Melbourne; these can be cooked in various ways. The diabetic menu generally contains a considerable quantity of fat to make up for the loss of starches and sugars, but this excess is attended with danger of diabetic coma. The following symptoms should be looked on with suspicion: want of appetite, nausea, vomiting, restlessness, unusual fatigue, giddiness, noises in head, drowsiness, and painful or deep breathing. When these symptoms occur, a little fresh fruit or oatmeal should be added to the diet for a time; it is better to increase the amount of sugar in the urine than to run the risk of death from this dreaded complication of diabetes.

The bulk of the diabetic diet should be made up of vegetables containing less than five per cent of starch, such as those already mentioned. Vegetables should be thoroughly cleaned, cut up, and cooked in two or three lots of water. The removing the vegetables into a second and third lot of water frees them from much of their starches. Dr. Joslin gives the following directions for cooking vegetables: "The vegetables are cleaned, cut up fine, soaked in cold water, and then strained. The vegetables are then tied up loosely in a large square of double cheese-cloth—large enough so that the corners of the cloth, after it has been tied up with a string, make conveniently long ends, and also large enough to allow the vegetables to swell without sticking together. They are then transferred to fresh cold water, placed on the fire, and brought to the boiling point, at which temperature they are maintained for from three to five minutes. This water is then poured off and replaced by fresh, and the vegetables again boiled for an equal length of time. Three changes of water are usually sufficient to remove the carbohydrates (starches and sugars). The pots for the vegetables should be of sufficient size to hold a large quantity of water. . . Vegetables thus cooked will keep in cold storage two or more days, and the reheating of the same in a steamer is a simple affair. If the vegetables are cooked with the cover left off the pot they will be lighter in colour and the flavour not so strong."—"*Treatment of Diabetes Mellitus*," *pages 533, 534*.

Bran or gluten bread may be used. Dr. Watson gives the following recipes:—

Bran Bread

½ lb. bran (thoroughly washed); 2 ounces almond flour; 3 ounces butter; 6 eggs; ½

pint milk; 2 teaspoonfuls bicarbonate of soda; 1 teaspoonful tartaric acid.

Place the butter in a basin and beat it to a cream, then add the almond flour, and well beat; add the eggs one at a time. Partly mix in the bran before adding the milk. Well mix the whole together, and place it in a well buttered tin, and bake for an hour in moderate oven.

Gluten Bread

1 lb. gluten flour; ¼ lb. bran (well washed); 1 ounce yeast; 1 ounce ground almonds; 2 eggs; pinch of salt.

Make a sponge as for ordinary bread, and set it to rise. This will take about three-quarters of an hour. Then bake.

"The addition of a little ground almonds and two eggs is an improvement. Gluten bread in slices, cut into small pieces, soaked in butter, and toasted, is very palatable, and will be found a useful article in the preparation of many dishes." "*Food and Feeding in Health and Disease*," *pages 477, 478.*

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271. Malaria

"Burwah" asks if anything could be done to ward off attacks of malaria. "Burwah" lives in Queensland, but the disease originated while on active service.

Ans.—There is nothing better than a change of climate; hot low-lying districts are bad; a cold climate with fair elevation is the best. While living in hot districts quinine is often necessary. Quinine is not a drug to be recommended for general use, but in case of malaria it is the choice of the lesser evil. The general health should be maintained by good food, out of door exercise, and daily sponging of the body with cold water. Be sure that the sleeping room is properly screened to prevent the entrance of mosquitoes.

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272. Diet and Treatment in Pregnancy

"Jake" asks about the diet and exercise in pregnancy. She is anxious to know if she should continue her ordinary work and what to do for an annoying discharge.

Ans.—It is certainly a great mistake to lead an idle life because of pregnancy; exercise, if not excessive, is decidedly good for both mother and child. Certainly outdoor exercise is preferable to indoor work. See that the rooms of the house are well ventilated, and thus the air kept as bracing as possible. Heavy lifting and stretching, as in hanging out clothes, should be avoided. "Jake" states she is of a nervous temperament, and this fact makes a certain amount of exercise necessary. Good, plain, wholesome food should be taken, especially milk, and cereal foods, vegetables, and fruit. Wholemeal bread will be better than the white as it contains more of the salts necessary for the development of the child. Oatmeal is a good food if it agrees with digestion. Eggs are good but should always be lightly cooked. Avoid complicated dishes; eggs are more digestible by themselves than when mixed in cooking with milk and sugar. Even the simplest of foods are very complicated in their organisation; the mixture of many different kinds of food in the one dish is certainly not to be recommended. Avoid foods cooked with or in fat and sweet foods. "Jake" will find great benefit from the daily sponging of the whole body with cold water. This stimulates every function of the being. For the discharge regular douching is necessary. The easiest way to douche is to use a douche can holding about a quart of water. This can be fixed to the wall about three feet above the patient. Use a large teaspoonful of alum or sulphate of zinc with a small pinch of permanganate of potash to a quart of slightly warmed water. Once or twice a day is sufficient. The alum and the sulphate of zinc can be used together; mix well in equal parts and use of the mixture a large teaspoonful to the quart of water, adding also the permanganate of potash.

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273. "F.W's." Question

Ans.—The question is of such a nature that it cannot appear in "LIFE AND

HEALTH." We would recommend light evening meals, the sponging of the hips and lower part of the back every night and morning with cold water, the abstinence from flesh foods and eggs, also all condiments such as peppers, sauces, etc. Milk should be used largely instead of flesh foods. Keep the mind occupied with good solid reading and healthy moral thoughts.

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274. Headache and Bowel Trouble; Lactosa

"Fairfield (J.J.)" writes: "I am subject to frontal head pains, so bad at times that I cannot sit up. I am afraid to eat anything at times. I also get severe pains in the bowels. I am constipated, but take an enema every evening before retiring. I do not eat meat or drink tea and only take a little sugar. I get so weak at times that my work, which is mostly indoors, becomes a burden to me and food I do not relish. I crave for sweet foods or something palatable. I sleep well and have been taking cold sponges night and morning since Christmas."

Ans. — The bowel trouble is most probably the cause of all our correspondent's discomfort. The daily use of the enema is not good, for the bowels get accustomed to this treatment similarly to purgatives. A dose of liquid extract of cascara (about a teaspoonful) before the evening meal or at bedtime taken twice a week would be preferable to the continuous use of injections. We would advise that bread, especially white, should be largely dropped from the diet and that granose biscuits be taken in its place. Toasted corn flakes, wheeties, granola, and such dextrinised preparations should form a large part of the dietary. Fruit, vegetables, and fresh milk would also suit our correspondent. Take nothing in the way of food between meals. A glass of lactosa does good after each meal in many of these cases (but not in all). The lactic acid tablets can be obtained from the chemist. The variety "Bulgaricus" we have found most satisfactory. One powdered and dissolved in a little warm water is added to a quart of milk which should be kept in a moderately warm place for forty-eight hours in winter. This when stirred is ready for use. A little of the lactosa should every evening be added to a quart of milk (or the amount required for the day) which should be allowed to stand for twenty-four hours, when it will be ready for use. Use a fresh tablet once a week. All sweets and fats should be avoided and especially foods cooked in or with fat.

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275. Rheumatism

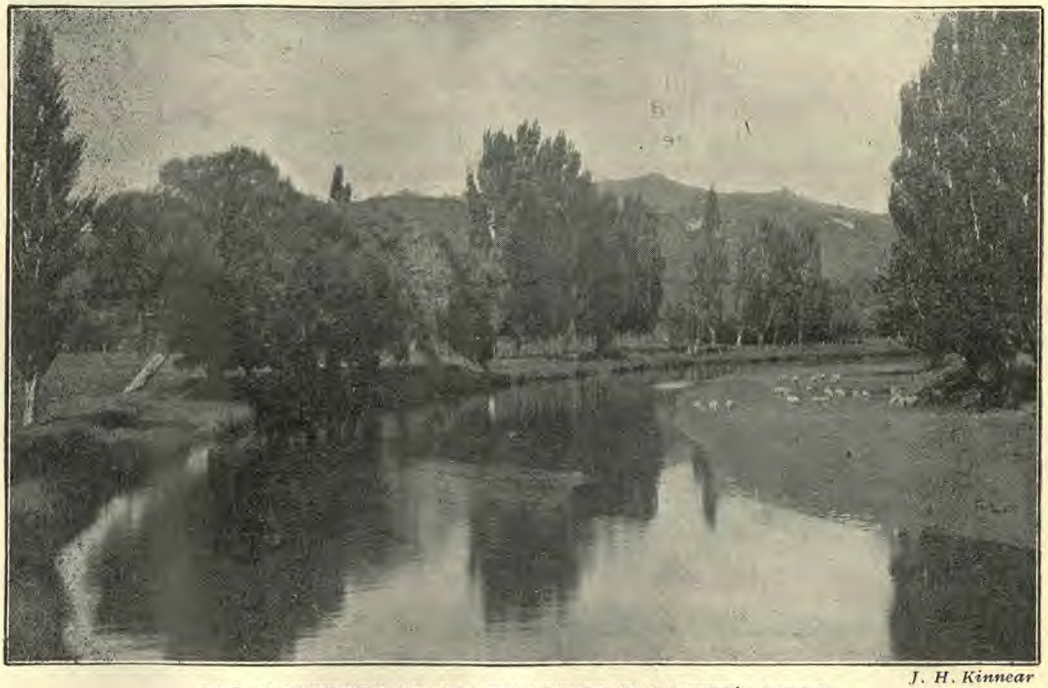
"Nelson, N.Z.": "My only trouble is I have just a little rheumatism in my right shoulder. I am nearly a vegetarian and fruitarian, eat only wholemeal bread, don't take any condiments, sauces, or pickles; no tea, coffee, or cocoa. I cannot understand why I have it at all since I am such a simple liver, also a teetotaller of fifty two years."

Ans.—The causation of rheumatism is by no means fully known. Certainly heredity plays an important part, and highly nitrogenous diet (especially of flesh foods) is an important predisposing cause. Sugar and sweet foods generally, by causing imperfect digestion, interfere with the healthy reaction of the blood, and this to a large extent delays the excretion of nitrogenous waste products. Once rheumatism is established it is generally difficult to eradicate, and when highly nitrogenous food and sweets are indulged in it must become worse. Hot air bath, hot water bath, or some other sweating procedure just before bedtime twice a week, will help to keep the blood in a healthy, freely-circulating condition. In rheumatism the blood circulates slowly through the capillaries of the part affected; hot treatments, or alternate hot and cold, will increase the circulation and improve the local condition. Undoubtedly the predisposition to rheumatism in different individuals varies very considerably, and what would cause severe rheumatism in one case would have no effect on another case in this direction.

276. Varicose Ulcers of Leg

"Lyndhurst" has been troubled with the above for years. After resting a considerable time they have healed, but break out again after she has been on her legs some time.

Ans.—We find for these ulcers that they heal quicker under dressings of plain boiled water than with any ordinary lotion or ointment. Evidently in this case the varicose veins should be treated. The operation for the removal of varicose veins is not a serious one, but entails two or three weeks in bed. While the veins are varicose the circulation in the legs is poor, and the nutrition of the parts being lowered ulcers heal slowly and break down again quickly after healing. The healing of ulcers after skin grafting is more permanent than those healing in the ordinary way.



J. H. Kinnear

THE HANDIWORK OF GOD REFLECTED IN NATURE'S MIRROR

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277. Youth's Questions

Ans.—A child will be more likely to add to his stature by taking sufficient plain digestible food than the one who receives insufficient or improper food, but we do not believe there is any special treatment that will add in any way to a man's height. Apparent increase in height due to special exercises means simply that the individual maintains a more erect posture.

The best foods for increasing one's strength are fruits, grains and nuts. Wholemeal bread, milk, eggs, and all cereal and grain foods are excellent. Granose biscuits, granola, and oatmeal are good specimens of cereal foods. Any exercise in the open air, such as wood chopping, rowing, swimming, walking, or gardening, will increase one's strength. We believe in these practical exercises rather than the artificial exercises of the gymnasium; the latter certainly are good but the former are better. Pimples on the face are generally due to too rich food, too much sugar and fat in the food and excess of animal food. Sometimes it is the result of poor soap used in shaving. Boys at puberty should not develop

pimples. The practice of first rubbing the soap on the face and then converting it into a lather we believe to be a bad one. First make a good lather from a good soap and then lather the face; do not use scented soaps.

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278. Night Screams

"J.J." asks for treatment for his sister: "She screams in her sleep every night, is very small, eighteen years of age. The doctors state her nerves are in a bad state."

Ans.—The morning and mid-day meals should be substantial, but the evening meal should be very light—a little bread and butter with fruit. Give a hot foot or leg bath on going to bed. She probably requires iron in some form. She would probably benefit from citrate of iron and ammonia—as much as will go on a three-penny piece three times a day after meals, to be continued for three months. A daily sponging with cold water and out of door exercise would be beneficial.

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279. Chicken Pox.

"Mr. E.A." writes in reference to his children. They have unsightly sores all over the body; they begin as pimples, then fill with fluid which becomes matter."

Ans.—Probably the trouble is chicken pox. Wash the body daily with coal tar soap (Wright's) and have soft unirritating clothing next to the skin. The food should be simple and nourishing, and the bowels should be kept regular. The disease is infectious.

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280. Lactic Acid Therapy

"H.F." asks us to explain lactic acid therapy.

Ans.—When milk turns sour as the result of the development of lactic acid, it will resist putrefaction for a long time. Prof. Metchnikoff, of the Pasteur Institute, took advantage of this fact in treating diseases of the intestine accompanied by putrefaction. Lactic acid is produced by a special germ and when secreted by the germ the nascent lactic acid prevents the development of germs that are especially harmful to the human being. Sour milk, for instance, owing to its containing lactic acid, can prevent butyric fermentation and putrefaction, both of which produce various disorders in the human organism.

Lactic acid itself if introduced into the stomach is liable to undergo changes which destroy its value in preventing fermentation and putrefaction. In lactic acid therapy the living germs that produce lactic acid are introduced into the system. These germs continue to multiply in the intestine and as they are amply supplied with sugar they produce lactic acid in abundance in the intestine. It is the newly formed lactic acid that has the beneficial effect in diseases of the intestine.

Write in Ink

Correspondents are requested to write with ink and not lead pencil as the letters sometimes become almost unreadable.

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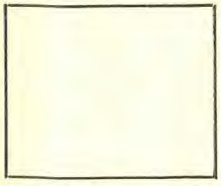

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THE HOUSEKEEPER

A Few Suggestions about Cooking

GEORGE E. CORNFORTH

THE centre, or most essential, of the kitchen equipment is the stove or range. This piece of equipment should be thoroughly understood. Take off the covers and examine the inside of the stove. Learn the arrangement of all the draughts and dampers. Learn how the heat is drawn around the oven to heat it on all sides. Find out where the opening is from which to remove the ashes that, in time, collect under the oven. Remember that a stove needs to be frequently cleaned out, and the ashes removed from the top of the oven and from beneath it.

Because many people find great difficulty in successfully making a coal fire, I will describe the way it should be done. First, clean out the stove by dumping the grate to remove all the ashes. If there are any ashes or pieces of coal on top of the oven, scrape them into the fire box, to be removed with the ashes. Open all the draughts and dampers. Place a few shavings, or paper that has been crumpled or twisted so that it will lie loosely, on the grate. On this lay some small sticks of dry soft wood (kindling wood); on top of this lay a few pieces of dry hard wood, arranging the wood loosely so as to allow air to be easily drawn through it. Be sure that the wood fills the ends as well as the centre of the fire box. Put the covers on the stove. Twist paper into a roll. Light one end of it with a match, then hold this burning paper close up under the grate to light the fuel. A little kerosene poured on the wood before the fire is lighted will hasten the process. The danger in starting a fire with kerosene is in pouring the oil on after the fire is lighted. If the fire has to be started early in the morning, it is a help to "lay the fire," that is, get it all ready to light, at night; then as soon as one comes into the kitchen in the morning, the fire can be lighted.

When the fire is burning briskly, place a shovelful of small pieces of coal on the burning wood. As the coal begins to burn, add a little more, and continue adding a little coal at intervals till a bed of clearly burning coal is formed. Then close the direct draught, so that the heat will be drawn around the oven. Never fill the fire box above the level of the top of the oven. Keep the draughts closed except when a very hot fire is needed. Otherwise much fuel is needlessly burned. To keep a fire at a steady heat, add fuel frequently, in small quantities, so as not to cause any appreciable decrease in the degree of heat, thus keeping up the fire instead of allowing it to burn low before adding more fuel. Occasionally shake the grate or rake out the ashes at the bottom of the fire to permit a free draught.

It is a matter of economy to sift the ashes and save the partly burned pieces of coal.

The kind of fuel that is most econom-

ical depends upon the locality. In country places or on a farm, wood is most economical. In cities, coal is usually more economical than wood. In regions where natural gas can be obtained, that is most economical; and where manufactured gas can be obtained, at a reasonable price, that is economical, especially in summer. Petrol and kerosene are economical fuels to use in the summer time, because no fuel is wasted in making a fire, and none is left to burn out after the cooking is done. Gas, petrol, and kerosene are far less economical for heating ovens than for other cooking, and if much baking is to be done, other fuel will be found more economical.

I believe that electricity has not yet been made an economical means of providing heat for cooking, except in the electric fireless cooker, and, of course, the cost of these is considerable.

In using gas stoves great care should be taken to keep all parts, especially the burners, clean. The inlet to the burners is so arranged that both air and gas are let into the burners, and there is an arrangement for controlling the amount of air. To get the greatest amount of heat, the gas that reaches the burner must be mixed with a certain amount of air. When the mixture is right, the flame burns blue and produces the maximum amount of heat. If the flame burns yellow, it smokes the cooking utensils, and does not give the greatest amount of heat. This yellow flame indicates that the air inlet is not properly adjusted. When gas stoves come from the factory they are usually properly adjusted. In lighting a gas burner the gas should be turned on before the match is applied to the burner. If the match is held at the burner when the gas is turned on, the flame will not light properly. When lighting a gas oven, the oven door should be left open, the gas turned on, and then a match applied.

There should be plenty of ventilation in the room in which gas, petrol, or kerosene stoves are used. It would be well if these stoves were connected with the chimney as gas stoves are in the western part of the State of New York, where natural gas is used; for while these stoves do not produce smoke, they produce carbon-dioxide gas, and sometimes carbon-monoxide, which renders the air less wholesome.

Petrol and kerosene stoves should always be kept clean, especially the burners. In using petrol stoves it should be made certain that there are no leaks in the pipes. The stove should not be burned when the tank is nearly empty. The petrol can should not be kept near a fire, and should be well corked. If proper precautions are observed, petrol is perfectly safe.

If cooking utensils become blackened with soot, petrol will remove the soot.

The most durable and most sanitary cooking utensils are those made of aluminium. Next to aluminium in desirability are agateware utensils. Iron, tin, or copper utensils should not be used for cooking, because some of the acids in foods act upon these metals, producing poisonous substances.

If food becomes cooked onto an agateware utensil, lye may be boiled in the vessel to remove the food. Lye should not be boiled in an aluminium vessel. The only way to clean aluminium is to scour it with a brush and some kind of scouring powder.

When the proportion in which different substances are used in cooking is known, it is possible to make many simple things without reference to recipes. It is well therefore to have in mind the following :—

Thickening Agents

(Flour should always be sifted before measuring)

1 tablespoon flour to one pint liquid for soups.

4 tablespoons (¼ cup) flour, to 1 pint liquid for gravies.

3½ quarts (3½ pounds) flour to 1 quart liquid for doughs.

The thickening power of cornflour is about twice that of flour.

4 tablespoons (¼ cup) cornflour to 1 pint milk for cornflour blancmange. Proportion, 1 :8.

4 tablespoons (¼ cup) farina to 1 pint milk for farina blancmange. Proportion 1 : 8.

8 tablespoons (½ cup) cornflour or farina to 1

pint liquid in cornflour or farina fruit mould. Proportion, 1 : 4.

⅓ cup pearl tapioca to 1 pint water in tapioca fruit pudding. Proportion, 1 : 6.

3 tablespoons sago to 1 pint of water or fruit juice in sago fruit pudding or sago fruit mould. Proportion, 1 : 10.

2 eggs to 1 pint milk for cup custard.

3 eggs to 1 pint milk for custard pie.

¼ ounce vegetable gelatine (agar agar) stiffens 3 cups liquid.

Shortening

Fats are added to doughs to counteract the adhesive properties of the gluten and starch, and to make the product brittle, tender, "short."

Pastry flour contains more water than bread flour, and its gluten seems to be less adhesive. For this reason less shortening is required with pastry flour.

Pie crust No. 1: 2 cups (½ pound) flour, ½ cup oil, ¼ cup water; or ¼ as much oil as flour, and ½ as much water as oil.

Pie crust No. 2: 6 cups flour, 1 cup of oil, ⅔ cup water; or 1-6 as much oil as flour, and ⅛ as much water as flour.

Yeast bread: 1 to 2 tablespoons oil to 1 quart flour.

Yeast buns: ¼ cup oil to 1 quart flour.

Flavouring

SALT

1 teaspoon salt to 3 cups liquid in soups or gravies.

1 teaspoon salt to 3 cups water for cereals.

1 teaspoon salt to 1 quart flour in doughs.

1 teaspoon salt to 3 cups total volume in seasoning vegetables.

½ teaspoon salt to a 3-egg sponge cake.

1 teaspoon salt to 3 quarts total volume in desserts.

1 teaspoon flavouring extract to 1 quart material to be flavoured.

SUGAR

For frozen desserts, as ice cream and sherbets: 1 cup sugar to 1 quart liquid.

For most puddings and custards: ⅓ cup sugar to 1 quart.

For blancmange and junket: ¼ cup sugar to 1 quart.

For apple pie: ½ cup sugar to ¾ quart sliced apples, ⅛ teaspoon salt, 2 tablespoons water.

For blackberry pie: ½ cup sugar, ⅛ teaspoon salt, 3 tablespoons flour, to ¾ quart blackberries.

For rhubarb pie: 1 cup sugar, ⅛ teaspoon salt, ⅓ cup flour, to ¾ quart rhubarb.

For squash or pumpkin pie: 1 quart milk, ½ quart squash or pumpkin, ¾ cup sugar, 3 eggs, ½ teaspoon salt.

MISCELLANEOUS

Cream rice pudding: 1 cup rice to 15 cups milk, ½ cup sugar to 1 quart milk, 1 egg to 1 quart milk.

Creamy rice pudding: 1 cup rice to 10 cups milk, ½ cup sugar to 1 quart milk, ½ cup raisins to 1 quart milk.

Tomato bisque: ⅓ strained tomatoes, ⅔ water; 1 pound peanut butter to 6 quarts soup.

Cream rice or cream barley soup: 1 measure of rice or barley to 32 measures of liquid.

Tomato macaroni soup: ⅓ strained tomato, ⅔ water; 1 pound peanut butter to 8 quarts soup, 1 pound macaroni to 16 quarts soup, or 1 ounce to 1 quart soup.

Bread pudding: 1 quart milk, 2½ cups diced bread, ¾ cup sugar, 1 whole egg and 2 yolks. The two whites for meringue.

Puffs: 1 cup milk, 1 egg, 1¾ cups sifted flour, ½ teaspoon salt.

Cream pea soup or cream corn soup: 1 can peas or corn for 1½ quarts soup.

Bean soup, split pea soup, or lentil soup: 1 cup dried peas beans, or lentils for 1 quart soup.

QUIET TALKS WITH MOTHERS

Teach the Baby to Be Good-Natured

Importance of Acquiring Right Habits from Birth—The Divine Plan of Training the Child

MARY ALICE HARE LOPER, M.S.

THE greatest problem of the home is the proper training of the child. And parents cannot afford to have their time so occupied with other things as to exclude their best efforts in this direction. When a baby has been committed to their care, everything else should be subservient to the one great end of bringing him up "in the nurture and admonition of the Lord." Such a grand result is never accomplished through spasmodic efforts; it is never achieved through a work covering but eight hours a day. In the divine plan child-training covers twenty-four hours a day, three hundred and sixty-five days in the year, for an indefinite number of years. No other problem of life requires so much time, so much earnest thought, such untiring efforts, such intelligent consecration to the Creator; for its proper solution can be worked out only according to the divine plan.

During his first few weeks of acquaintance with things of this world, a baby learns much more than may be attributed to him by those who have never taken time for close observation. He tells, in his own way, whether he is pleased or not pleased with the treatment he receives; and but a short time is required for him to form habits that may not be conducive to the happiness of others. He soon learns to demand a light all night, or to go quietly to sleep without it. He is not slow in determining that it suits his fancy to have some one rock him or walk the floor with him; and having become convinced of his preferences, it is difficult for him to unlearn those things which never need be taught to a baby of normal health.

A baby of a few days acquires the habit of taking nourishment by means of a spoon or in nature's own way; and when he becomes accustomed to the one method, he is not always easily convinced that the other should ever be tolerated.

Since a wrong habit is much more difficult to overcome than to acquire, the child's care from the first should be in strict harmony with health, comfort, and his best good as considered from every standpoint.

Do not imagine that because a baby is blessed with beautiful "red" hair, he must inevitably become a pugilist. Remember that not all pugilists have "red" hair. A beautiful brown-haired baby may become decidedly pugilistic in his tendencies. In some instances, only a few lessons of this character are required to awaken in him his slumbering combativeness, which should not be disturbed.

A baby's needs should be anticipated. He should not be compelled to form the nerve-racking habit of crying because he is uncomfortable or hungry. His clothing

should be both healthful and comfortable. A tight band or a tight sleeve does not feel any better to a baby than to an adult; while flannel next to the skin may be irritating to some babies, especially in warm weather.

Intelligence should be used in regard to the feeding of a baby. This should not be done at haphazard. Many a baby's digestive system is permanently injured through injudicious feeding during the first few weeks of his life. Overfeeding and underfeeding are both to be avoided. The normal baby that is fed regularly, nourished properly, and treated as a baby should be treated, regardless of the colour of his silken hair, brings very little discord into the music of the family circle.

"What is the matter with your baby?" asked a house guest of her hostess.

"Nothing," cheerfully replied the hostess. "Why do you ask?"

"Why, I haven't heard her cry since I have been here; and if it were my baby, I should think she was sick."

This mother was so accustomed to hear her baby cry, that she had come to consider the habit an evidence of health.

The neglected baby soon forms the disagreeable habit of crying—a habit that is likely to continue indefinitely, and that may affect his disposition permanently.

"TEACH THE BABY TO BE GOOD-NATURED"

Neglect Causes Irritability

A baby should not be permitted to become irritable through neglect. He should be kept sunny-tempered, a source of never ending pleasure in the home. Little babies do not cry without a reason for doing so; and it always pays to study the situation, and to remove the cause of all trouble if possible. "Straws tell which way the wind blows." Little daily experiences of a baby's early life work very much for or against his disposition later. The baby that does not have

proper care becomes a "cross baby," when this unpleasant and harmful result might be easily avoided.

It is the duty of parents to study the individual needs of a baby, to take into account his little likes and dislikes, and to harmonise with them as far as it is consistent to do so. Do not teach a baby to become accustomed to a light all night, and then suddenly compel him to cry himself to sleep in a dark room. Such treatment is seriously detrimental to a baby's nervous system, and may result in lasting injury.

Be Patient After Sickness

Have all patience with the little child who through illness has been humoured to everything, and demands a continuation of the same treatment when he has recovered. *Have patience.* Do not expect a complete reformation all at once, but little by little bring him back to his former habits. Much tact and heavenly wisdom are required in imparting successfully the first lessons in obedience. Do not break the "bruised reed," but care for it tenderly, sympathetically, until it is restored.

The healthy baby that receives proper care does not early discover that he has any combativeness. It is possible to keep him in such blissful ignorance that he may never learn to kick and fight viciously, or to stiffen his little frame and hold his breath. When a baby shows his first intelligent reasoning, but at times draws his conclusions from wrong premises, a gentle little tap from a loving hand may sometimes be beneficial, but a harsh, impatient slap—never! It is a shame that little bodies so often reveal the barbarous markings of "black and blue," the result of cruel treatment received from one whose temper gained the ascendancy, or whose ideas of government are not found in the divine code.

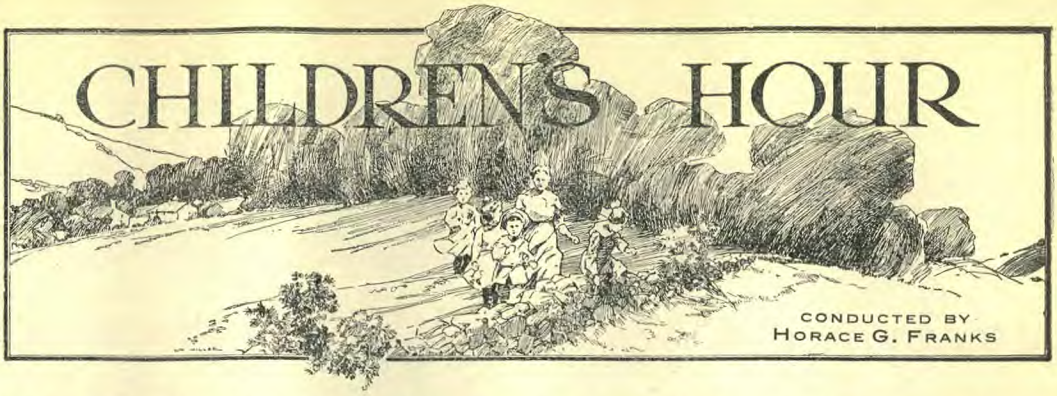
Always be kind. Preserve peace by constantly avoiding that which will cause the baby to become irritable. Do not imagine that an unnecessary battle with a little child is beneficial in any respect. Many a warfare is waged with disastrous results, where there has been little or no occasion for an encounter. Far better avoid the unnecessary battle than leave the child injured for life upon the battlefield.

Ill-Gotten Victories

For example, little children usually are fond of water; but not all enjoy having the face washed, especially after they become old enough to anticipate regularity in this respect. How easy it is to slap the baby, get him to crying, and stir up a regular family feud that bids fair to "keep on keeping on"! This is the method adopted by many well-meaning mothers who believe in "conquering" their children. Such "victories" are ill-gotten, and would better never be won. Instead of bestowing harsh slaps or spanks, and compelling the baby to submit to superior strength, how much better to practise the law of kindness! Many a baby has a good reason for resenting the disagreeable process to which he is so often subjected. It is not soothing to a baby's nerves to be tortured with a wet cloth possessing from one to four cold corners that follow one another in awkward succession in every direction over his face.

Face Washing Without Torture

If your baby dislikes to have his face washed, be sure to remove the element of torture, as much as possible, by having the wash cloth of an agreeable temperature, corners included. Get his mind off the unpleasant task by having something in view that you know he enjoys looking at. Tell him something that will interest his little mind, and thus arrest his attention for the time, and have his face gently washed before he knows it. Never stir up his combativeness when there is a good way to avoid it. Leave ill traits of character dormant, while you earnestly seek, from day to day, to strengthen the better qualities of the heart and soul, giving to their culture time and careful thought—the very best thought of which you are capable.



The Little Builder of the Stream

The Wonderful Story of the Shy Beaver

AUSTRALIAN children delight to handle an axe, and with it fell a tree, and no doubt they will be glad to read the story of a dear little animal which not only fells trees but with them builds his home. The little animal I mean is the beaver, which lives principally in America and Europe. This creature is one of the most shy members of Mother Nature's family, and it is only after a great deal of patience that even a photograph of it can be obtained. But fortunately there are some men who are extremely fond of hunting—not with a gun, but with a camera, and in this story we will profit by some of their experiences.

These little animals have always excited the curiosity of man. Their colony is one of the most fascinating spots in the bush. It is really a little world all on its own. Our birds fly miles to get their food; the other animals of the bush roam over wide areas to find the necessities of life; but in a little enclosure the beaver builds his house, rears his family, provides for his children, and incidentally does much for mankind by building up the soil and holding back the water which feeds the streams in the dry seasons. Is it any wonder that the American Indian called him the world builder?

A few years ago a traveller in America was out especially to take photographs of the black bear, and in his travels he discovered a family of these animal builders. They had thrown a dam across a mountain brook far back in the bush, making a pond which was nearly a mile in length and more than a quarter of a mile wide. The dam, he tells us, was nearly five hundred feet long and much of the surface of the pond was free from snags and scrub.

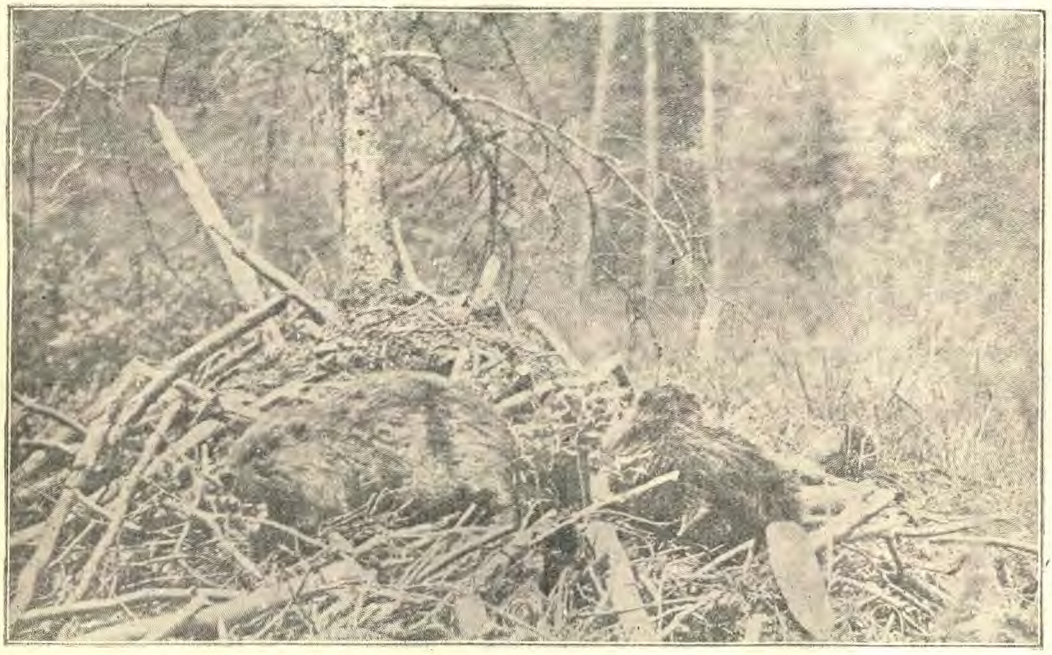
A BEAVER'S HOME

There were three beaver mansions scattered along the brook, and three families were at work repairing their houses, extending their dam, and busily cutting and storing their wood for winter.

The animals seemed to work night and day. One morning one of the little animals decided to fell a tree for some special work. After carefully choosing not only the tree but also the place in which he wished it to fall, the courageous little fellow started his great task. He had chosen a birch tree more than a foot in diameter, and without any hesitation he sat down on his hind legs, used his big fleshy tail to brace himself, and began to

chop. And he chopped with his teeth! Soon the chips began to fly. Occasionally he would give his head a twist to one side to force out a piece of wood; and then he would go on to chew.

And how long do you think it took him? Only an hour and a half! At the end of that short period, the tree went crashing into the pond. But his work was not finished; it had only just begun.



TWO BEAVERS ENJOYING A SUN-BATH

The crash of the felled tree seemed to be a call to his fellow-labourers. Within a minute or two several other beavers came from various corners to join the faithful cutter, and together they began to trim away the small twigs, gnaw the branches from the trunk, and finally to divide the great tree into short logs, all of which were floated and guided down the stream to a corner near their home where they were stored as wood and food for the coming winter.

Now let me tell you how the beautiful photograph of the two beavers resting on the roof of their home was taken.

One day as the traveller, with his camera, was creeping along the shore of the pond, hiding behind trees and scrub, he came across two beavers repairing an old deserted house. Evidently these two had decided to leave the old homes and set up housekeeping for themselves; so instead of erecting a new mansion, they decided to economise and repair one that had partly fallen into ruins. They were busy carrying sticks and mud to the dome of what would soon be their palace.

After working hard for some time repairing the places where the roof leaked and strengthening the weak portions of the walls, one lazily lay down with her back to the photographer and her long, fleshy tail stretched out in the sunshine. The other beaver had jumped into the water, and was plunging and diving most playfully. Finally the swimmer came within three or four feet of the house, looked up and down the pond to discover any foe lurking in the scrub, and then climbed from the water. Slowly and clumsily he walked along the roof of his house toward his mate. Then the photographer's knee accidentally touched the camera, making a slight noise. In a

second the front beaver was all attention. Not daring to wait longer, the photographer clicked his shutter, whereupon the two shy creatures rushed to the pond, and slapped the water with their tails, a warning signal to all other beavers in the neighbourhood that danger was at hand. But the picture was safe on the plate in the camera.

When beavers work they do not adopt a "go slow" policy. There is no eight-hour day with them. They are among the hardest animal workers there are. One afternoon at two o'clock, our photographer friend tells us, a beaver came down the pond and climbed upon the dam. Though he showed no sign of nervousness or hurry, he accomplished an unusual amount of work in less than a minute. A small opening had been accidentally made in the dam, through which the water had poured, washing away rocks and earth as it plunged through the break until a channel was formed nearly a foot in depth. Quickly looking around for a small log, the beaver carried it some distance, threw it into the hole, forced up some mud with his blunt nose, and in less time than two men could have done the work, the break was repaired and so sealed that not a single drop of water would leak through.

The large picture which forms the frontispiece of this magazine will well repay study by interested students of nature. In order to take that photograph, the traveller waited for hours, and he says that when he got home "there was not a square inch on my face or hands which might not have been taken for raw beefsteak," for he had been so thickly coated with mosquitoes that "they were tumbling over each other to find a place on my face not already occupied."

IN our next issue we will have two most interesting stories, one about soaps and the other about spectacles. These are specially written for the younger ones among our LIFE AND HEALTH readers. Watch for the magazine.

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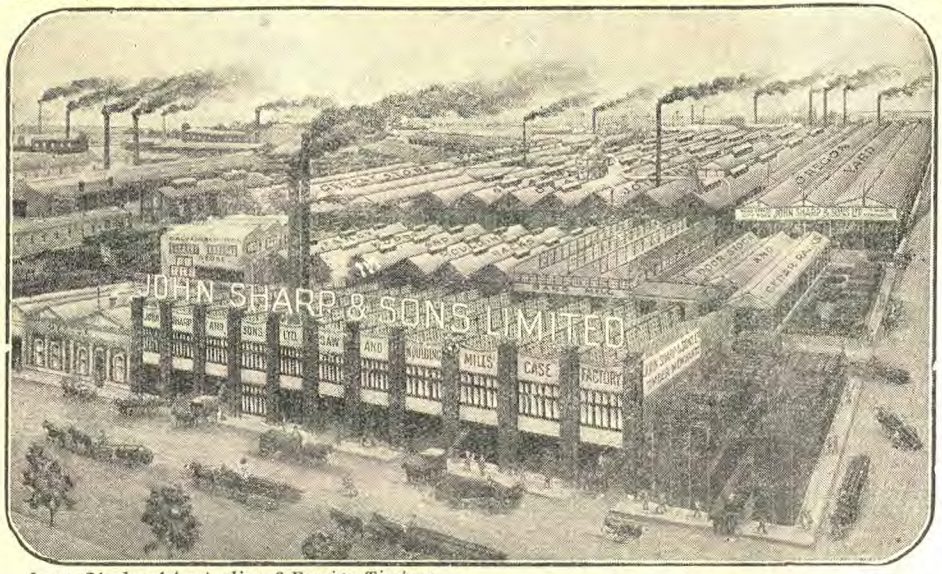

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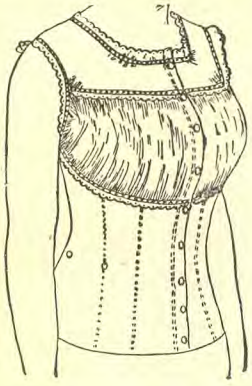

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