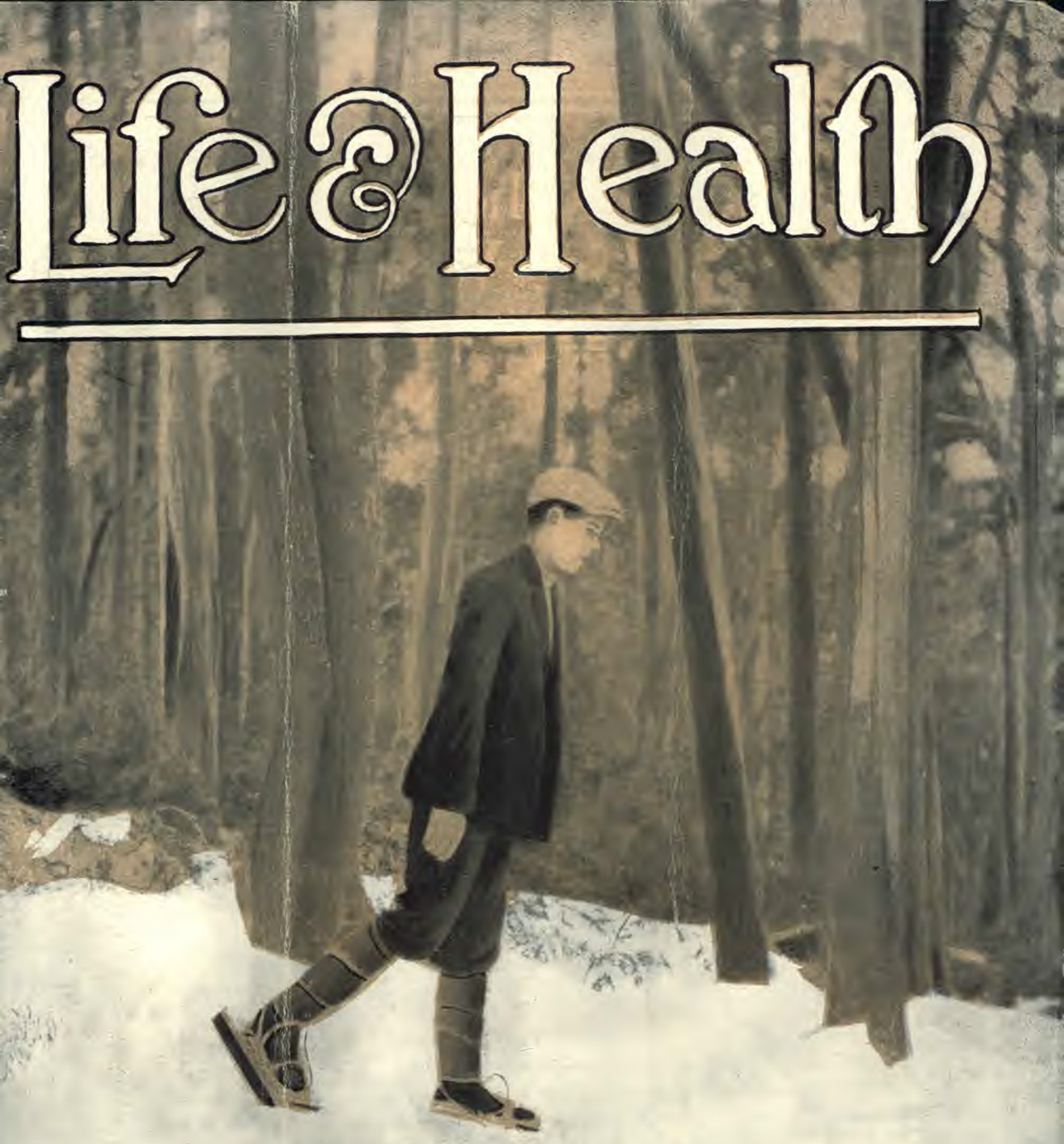
Life & Health



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THE TALK OF THE OFFICE

"In proportion as society refines, new books must ever become more necessary."

AGAIN we issue the Magazine brim-full of practical knowledge. We receive many evidences from our readers of the benefits which they derive from the visit of this messenger of LIFE AND HEALTH to their homes. "Chats with the Doctor" Department speaks for itself every time, and meets the needs which the human body, through the frailty of the flesh, is heir to, and the questions answered and advice given in such a practical manner that the home treatments for the different diseases inquired about are made easy and plain, thereby saving much expense.

The General Articles, too, are up-to-date, and are of such a nature that if followed out would banish much of the sickness which is in our midst to-day.

Glance for a moment at some of them: here is the Garden Village at Bournville, which not only shows the necessity of a country life where people can breathe fresh air into their lungs, but also what one man who realised the necessity of God's free blessings did in order to improve the conditions of the working class, who are usually crowded so close together in our cities and in unsanitary houses, that when disease does attack them they have little chance of life.

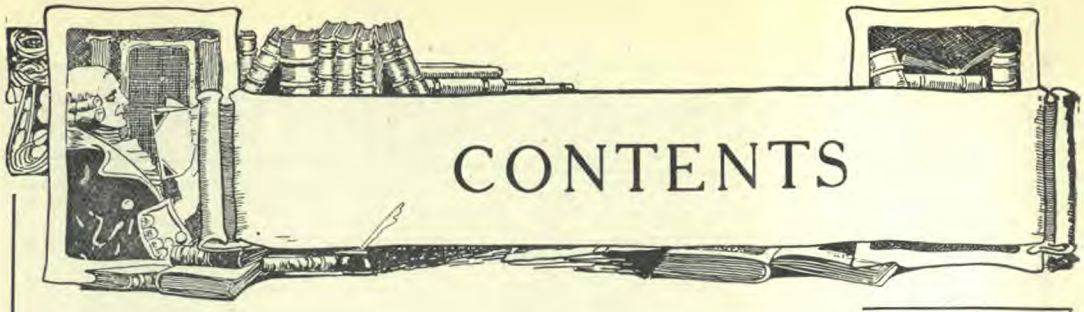
Then we have the "Science of Drinking," not tea and coffee, but water, pure water. Many people do not realise its worth, and very many discard its use for other drinks that are gradually but surely breaking down the nervous system. Water is also one of the greatest remedial agents extant, and acts beneficially when applied outwardly, and very much, indeed, when taken inwardly regularly and at proper intervals.

Next comes the "Care and Hygiene of the Skin," which plays an important part in the protection of, or as the writer puts it, "in the binding for our bodies," showing that it is essential that we have a healthy skin. Read it. Also read what alcohol does for the human system, and compare it with the use of pure water.

Then we have an article for those who are sleepless; also one on chilblains, that irritating winter malady. They are easily cured. The relief lies again in pure water, God's free gift to man.

Next comes the article on Ozone; oh, the beautiful fresh breezes, blowing from mountain or sea. Open doors and windows, and let the gentle zephyrs in, and your life will take on a new lease.

Such are a few of the articles which the Magazine contains this time; it is full of good, practical advice as to how to keep in health and be happy.



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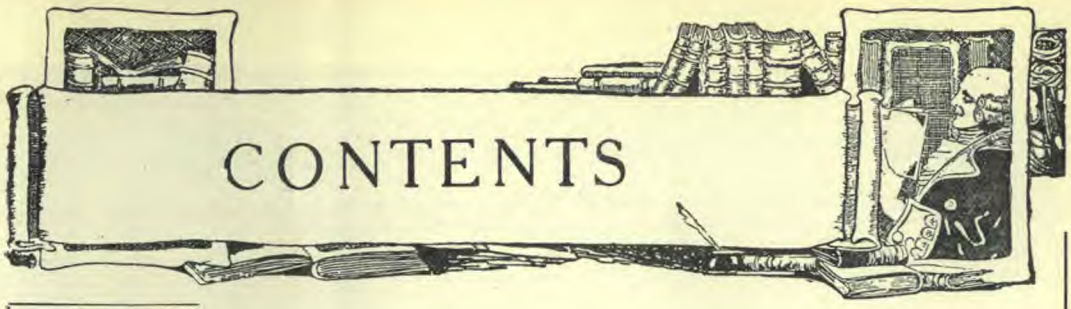

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THE CHILDREN'S HOUR

CHATS WITH THE DOCTOR

F. C. Richards, L.R.C.P. and S., Edin.

ELEPHANT ROCK, PORT CAMPBELL, VICTORIA

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The Cause of National Decadence

SEVENTEEN centuries ago Clement of Alexandria said, "Error seems old, but truth seems a new thing." Error, no matter how long it may be accepted or followed never becomes truth; nay, the longer an error is followed the more dangerous it becomes. A prevalent but erroneous idea concerning diet is that human strength is proportionate to the amount of animal food consumed. Never was there a greater error. Go back to ancient times, and it will be found that, "on the whole, the diet of the majority of races, both civilised and uncivilised, in ancient times, and till the early Middle Ages, seems to have been chiefly derived from plants." The rich, however, partook of a mixed diet which was largely animal, but this custom was not followed without strong protest by the thinking men. Pythagoras, the famous philosopher who flourished in the sixth century before Christ, and who was one of the greatest thinkers of his time, protested strongly against the use of flesh foods. This great philosopher is represented by Ovid as arguing thus:—

"O mortals, from your fellows' blood abstain,
Nor taint your bodies with a food profane!
While corn and pulse by nature are bestowed,
And planted orchards bend their willing load;
While laboured gardens wholesome herbs produce,
And teeming vines afford their generous juice;
Nor tardier fruits of cruder kind are lost,
But tamed with fire, or mellowed by the frost;
While kine to pails distended udders bring,
And bees their honey redolent of spring;
While Earth not only can your needs supply,
But, lavish of her store, provides for luxury—
A guiltless feast administers with ease,
And without blood is prodigal to please."

Diogenes, a cynic philosopher, noted for his witty and biting apothegms, and who flourished contemporaneously with Alexander the Great, is reputed to have said, "We might as well eat the flesh of men as of other animals." Plutarch, the Grecian biographer, whose writings disclose that he possessed "a kind, humane disposition and a love of everything that is ennobling and excellent," said: "I am astonished to think what appetite first induced men to taste of a dead carcase."

"How could men dare to see an impotent and defenceless creature slaughtered, skinned, and cut up for food?"

The Persians, who regarded the education and training of children as the most essential part of government, and who made the State responsible for this most important duty, reared all their boys of whatever rank upon one uniform menu. "The only food allowed either the children or the young men, was bread, cresses [vegetables], and water; for their design was to accustom them early to temperance and sobriety, besides, they considered that a plain, frugal diet, without any mixture of sauces or ragouts, would strengthen the body and lay such a foundation of health as would enable them to undergo the hardships and fatigues of war to a good old age."—*Rollin's Ancient History*, book IV., chap. 1, sec. 1.

Such training enabled the Persians to overcome the mighty Babylonian Empire. This superhuman task was accomplished under the leadership of the indefatigable Cyrus, of whom the historian says, he "performed more extraordinary marches, fought more battles, won more extraordinary victories, and exhibited more personal prowess and bodily power of effort and endurance than almost any other general who ever lived."

Grecia, the next mighty empire to make herself felt in the affairs of the nations, arose to her exalted position—eminent both in athletics and culture—upon two meals a day, consisting principally of maize and vegetables steeped in oil. In the dawn of their national history, the invincible Romans subsisted upon "roots, milk, and coarse pottage, eating flesh only on extraordinary occasions." On attaining the pinnacle of human greatness, that nation who had made all nations submit to her yoke, became the prey of her own intemperate and luxurious living. Says Petrarch, "Virtue has not a greater enemy than wealth. It was that which conquered Rome, after Rome had conquered the world. Every foreign vice entered that city by the same door at which poverty went out of it."

The barbarian races who supplanted Rome lived upon a simple diet, while the Saracens who threatened at one time in their career to overrun the whole of Europe, possessed "a hardiness of constitution and a fiery spirit which enabled them to undergo the greatest fatigues, and rendered them the terror of their enemies. Their chief drink was water; their food consisted in great measure of milk, rice, and fruits."—*Strength and Diet*, p. 118.

Writing of the ancients the poet Lucretius penned these beautiful lines:—

"Soft acorns were their first and chiefest food,
And those red apples that adorn the wood:
The nerves that joined their limbs were firm and strong;
Their life was healthy and their age was long,
Returning years still saw them in their prime;
They wearied e'en the wings of measuring time."

The ancient Britons, according to Plutarch, "began to grow old at 120. They were remarkable for their athletic form, great strength, and extraordinary capacity for bearing hardships of all kinds." "Their food," says Goldsmith, "consisted almost exclusively of acorns, berries, herbs, roots, and water."

Socrates, the Grecian philosopher, set forth what he considered to be the best method of establishing a well-ordered State, advocating a simple and natural life, and a temperate and vegetarian diet. To an objector Socrates replied, "I am certainly of opinion that the true and healthy constitution of the State is the one which I have described. But if you wish to see the State in a fever, I have no objection." Proceeding, this philosopher argued, that in the fevered state "the city will have to fill and swell with a multitude of callings which are not required by any natural want. . . . And there will be hosts of animals if people are to eat them." This, he contended, would be followed by a much greater prevalence of disease. Then, "a slice of our neighbours' land will be wanted, and then we shall go to war, Glaucon, that will be the next thing. Then, without determining whether war does good or harm, this much we may affirm, that now we have discovered war to

be derived from causes which are also the causes of almost all the evils in States, private as well as public."

Could Socrates see how remarkably his words were fulfilled in subsequent history, he would have an unmistakable illustration of the ineradicable perversity of human nature. With all the history of the past before us, the overthrow of mighty, but intemperate and luxurious nations by temperate and simple-living nations, the inevitable degeneracy consequent upon intemperate and luxurious living, men still go on repeating the mistakes of their forefathers.

The greatest peril which faces the nation is its luxury, intemperance, addiction to pleasure-seeking, and its transference of athletics to trained professionals and experts, whose exploits the people admire but cannot emulate. The British nation was not built up by men nursed in luxury, but by a race of men who were inured to hardships, and who were reared on fruits, herbs, water-cresses, roots, potatoes, milk, and grain. It is said that in "Scotland, so late as 1763, the slaughter of bullocks for the supply of the public markets was a thing wholly unknown, even in Glasgow, with a population of 30,000. A small ox's carcase would last a small family a whole year." In the eighteenth century, except by the wealthy classes, scarcely any flesh food was used by our ancestors, and, of course, nervous diseases were unknown. The women were wonderfully hardy, and could carry burdens which even the men of this generation would not attempt. Meat eating and tea-drinking were habits almost unknown to the athletic, healthy, long-lived women of the eighteenth century. Where are their compeers to-day? Surely there must be a reason for a degeneracy so rapid and so marked! The cause is not far to seek; it will be found in the change of diet, the more luxurious living, and the almost universal use of stimulating and narcotic drinks.

Competent authorities consider that the chief fault in the diet of the working classes to-day is the excessive use of tea and bread. There are many women who make their meals of these two articles. A cup of tea, or *cups* of tea, and a piece of bread and butter appear to satisfy their hunger, and as long as the natural craving is appeased, they are content. But such a diet, although satisfying for the time, is slow suicide, and will inevitably produce a most unenviable condition of physical health.

The ignorance of the relation between diet and health is nothing short of appalling. Mothers inadvertently slay their helpless infants through ignorance of their physiological needs. Incredible as it may seem mothers frequently substitute the natural food of infants by anything which happens to be on the table. If an infant be strong it may successfully fight its way through such overwhelming odds, but if not, it will add one more name to the list of slaughtered innocents. The degeneracy of modern women as exhibited in the incapacity of modern mothers to provide their offspring with natural food, is the chief factor in producing the unnecessary and abnormal rate of infantile mortality. It has been ascertained by Dr. Hope of Liverpool that "fifteen times as many artificially fed infants die under three months, as of infants fed on breast milk." "In France," says the Hon. R. Russell, "the mortality of artificially-fed children is sixty-one, and of breast-fed eight per cent. In England, of 150,000 infants who die the first year of life only one-fourth have been fed at the mother's breast."

In Australia no more important matter of public concern can receive the attention of the people than the preservation and development of the national physique. Our boys who have been compelled to submit themselves for medical examination for military training have shown a remarkably high percentage of effectiveness. It is doubtful, indeed, if any European country could show a return as favourable. But it is sad to think how large a percentage of these vigorous lads will soon wreck their splendid physiques by imbibing nicotine, which is fatal to all physical

development, by indulging in luxurious foods diluted with tea or some other equally harmful poison which debilitates the human system and makes it the prey of disease.

It is affirmed that no people on earth possess the endurance of the Japanese, and their vitality is wholly due to their system of living. Their diet consists largely of rice, and their method of training includes a course of exercises which aims at developing and toughening every muscle in the body. A nation whose men and women are trained thus must be counted with. It is nearly time that Australians faced the future manfully and practically. To be strong physically we must deny ourselves a luxurious table, we must be abstemious in our habits, rational in our diet, and train our muscles as well as our brains. Temperate, simple-living people who are not afraid of hardships have always been invincible, while luxurious, indolent, pleasure-loving people have always succumbed to their voluptuousness.

Cholera

A Personal Experience

IT is all very easy to sit down in one's comfortable office here at home and tell how to treat diseases in the tropics, but a personal experience in the care of virulent epidemics amongst the natives of the tropics is in every way a very different matter.

A comparatively small number even of experienced medical men have had the opportunity to observe and personally superintend the treatment of cholera patients.

We therefore take pleasure in supplying for the benefit of LIFE AND HEALTH readers Dr. Frank Van Allen's observations on the management of this disease as he has met with it in Medura, India.

"Cholera," says Dr. Van Allen, "is a disease which is caused by a germ, the comma bacillus of Koch. It is characterised by ejections, later on by collapse, and if the collapse does not turn very quickly, death; but it may turn to recovery. About fifty per cent of those attacked by cholera die. Epidemics differ in intensity and in virulence. In an epidemic of cholera almost all of those who are first attacked die, and almost all of those who are attacked toward the last get well, showing that the virulence of the disease exhausts itself. Something can be done to help nature, and we are often rewarded by it, but we who have to deal with it feel very depressed at the beginning of an epidemic of cholera, and we feel very pleased at the end of it.

"Attention might be called to the rapidity of the disease. It comes on quickly; the victim is down in collapse in a very short time, and presents a most fearful picture with sunken eyes and sunken cheeks. His voice is husky, and he is fearfully thirsty, and is crying for water, and the picture is a terrible one to remember. An epidemic of cholera begins absolutely without warning, not particularly during the rainy season, or the sunny season, or at any particular season of the year. We can never tell when it is going to appear. The first we know of it is when a messenger comes and says he wants medicine for somebody who is ill with cholera. He is not much more than gone before somebody else comes and wants medicine for cholera. Then you know you are in for a siege of cholera, and that you are going to have an awful time.

Treatment

"I have lived in India for some years, and have had a good deal of experience, and have gone through all the vicissitudes of the changing treatment for cholera, trying this treatment and that treatment, trying everything on earth that anybody can think of, but for some years I have settled down to the following treatment as being the most available and promising: When I go to a case of cholera, the things I take are about one hundred bichloride of calomel tablets, one-tenth grain each. The second thing is a two-ounce bottle of mustard, and about twenty

ounces of common turpentine. There is not much use of waiting for diagnosis. The case is very plain. And without waiting a minute, because the disease is so quick in its action, I do not stop to pull out the cork of the bottle of mustard, but hit the neck and break it off, get a piece of cloth, pour the mustard on to it, add cold water to it, make it into a mustard plaster, and put it on the man's abdomen just over his stomach, and tie it on with a good wide bandage of cloth. The reason for tying it on is that the man will begin to roll by and by, and the mustard plaster will not stay on very long unless it is tied on. You will do well to keep it on twenty minutes.

"The next thing after getting the plaster on is to begin with calomel. I have found it to be good to give one-tenth grain every ten minutes until ten grains have been taken. That is a pretty round dose, and the man may feel so much better after you have given the ten grains that you do not have to go further. We have had to build fires around people to keep them warm, and we have tried everything on earth you can think of, and there is nothing I have found to be so good in my mind as calomel. Calomel acts on the liver, the liver secretes bile, and the bile is one of the natural disinfectants of the intestine. And I think the success of calomel is due to that reason. The way of giving the calomel is important. I usually take a teaspoon about half full of water, put a tablet of calomel in it, carry it to the patient's lips, and he takes that water with the greatest pleasure. We cannot give him all the water he wants, because it would cause vomiting, and I have observed that vomiting brings out perspiration, brings down the pulse, and reduces the vital and resisting power far worse than the ordinary ejections. The most important consideration of all is to stop the vomiting, and the effect of mustard is to stop it.

"Then the turpentine. I usually get four people to rub the patient with the turpentine. I began with rubbing the body all over, but after having treated people for a good long time that way, I have found that it gives them more relief to rub the palms of the hands and the soles of the feet than anywhere else, and when cramps in the legs come on as they will sooner or later, and then cramps in the abdomen, which are very agonising, and cause the patient to shriek with pain, vigorous rubbing on the bottoms of the feet relieves the cramps quicker than anything else. Turpentine is antiseptic, and every person in the room is likely to get cholera himself, because he will almost surely get some of the infection on his hands. The effect of the turpentine is to make the hands aseptic, and that is not a small consideration.

"When I get hold of a case of cholera I tell the people to get four coolies. I usually give them a rupee each, and that is about four times what they would ordinarily get for a day's labour. I do not hesitate because they are poor people, for in that case I pay for this labour myself. So I tell them to get four coolies as quickly as they can, and in the meantime I have some members of the family rubbing, and I usually get down and rub too, and thus disinfect my own hands. Turpentine is a safe thing to have around in case of cholera because of its disinfectant qualities. After having rubbed the patient for three or four hours those four men are tired out. It is practically massage. They have to go off and lie down, and we get another four. So I usually reckon that a case of cholera is going to cost somebody about eight rupees for rubbing. This is the best treatment for cholera that I have found.

One Warning

Do not use opium for cholera. There are very many mixtures for cholera. Chlorodine is one of the common remedies. In India every family has a bottle of chlorodine. It contains opium, and is one of the worst things one can give for cholera, and yet one of the things people always fly to in an attack of cholera. There are two reasons why opium should

not be used. One is it stops the action of the liver and prevents the secretion of bile, and the germs have a good time multiplying and disporting themselves, and the opium helps them to do it. It is true that opium stops peristalsis, and in that way it helps, but in other respects it is a very bad thing. Perhaps in an epidemic of cholera there is not a house anywhere but somebody is down with the disease, and people are just as afraid of cholera as of death; and some friend will call in to see how the patient is getting on, and he gives him a dose of chlorodine and goes away. Some other friend comes in and repeats the dose, and the man dies of opium-poisoning instead of cholera." F. C. R.

Immunity from Disease

IMMUNITY from disease of every description would indeed be a priceless condition. Some folks have the reputation of "catching" everything that comes along, while others seem to be almost impregnable. It is often remarked that those who take most care of themselves are the most vulnerable. That this is often true cannot be doubted, the explanation being that the most susceptible require the most care, and that very frequently the care taken is not of the right kind.

We are naturally immune from almost all infectious diseases that attack animals, the plague, however, being an exception. In 1897 the rinderpest killed hundreds of thousands of cattle in South Africa, and yet not a single human being showed the slightest symptom of the malady. Again the tsetse fly in many regions of South Africa attacks all horses except those which have recovered from the disease caused by the bite of the fly (which horses are said to be "salted"), and yet man is immune from the disease. Animals, on the other hand, are never attacked by measles, scarlet fever, smallpox, and many other diseases which are so frequently developed in the human family. This immunity, whether it be in the human being or the lower animal, is undoubtedly due to the special power the blood has of destroying the germs of disease as soon as they enter the circulation. The blood is a natural germ-killer. Traube, more than thirty years ago, showed that if putrefying material were placed in contact with blood, the blood possessed the power of remaining sweet, and demonstrated from this fact that the diseased germs must be destroyed by the blood.

Metchnikoff of Paris, the successor of the famous Pasteur, demonstrated the wonderful power the leucocytes, the white corpuscles of the blood, have of destroying germs of disease. These cells he called "phagocytes," or cell-eaters: they cause their semifluid bodies to surround the

Medical Science of To-day

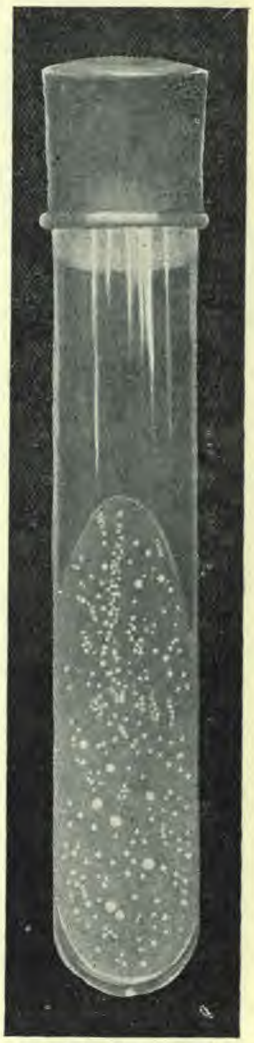
An Amœba

This is a low form of animal, and in shape and movements it resembles a white corpuscle of the blood. In the upper figure an amœba is about to surround and swallow a minute form of plant.

germs and quickly destroy them. These leucocytes are very similar in appearance to the amœba, a minute protozoan animal found in stagnant waters. They consist of minute specks of almost structureless protoplasm, a substance resembling white

of egg. They have no permanent organs of locomotion, but move slowly about from place to place by simply changing their outline: a small portion of the jelly-like body is thrust out from one side or other of the creature, and the rest of the body gradually follows this projection. The animal lives on other low forms of life by simply enclosing them in its body structure. It simply wraps its body around its food. What is digestible is digested, and the undigested part is dropped out of the body at the most convenient point. The phagocytes of the blood are very similar both in their appearance and their movements to these creatures; they are carried on by the general circulation, but have a tendency to cling to the walls of the blood vessels; in inflammation, the result of germ life, they thrust their semi-fluid bodies through the walls of the smallest blood-vessels, and attack the offending bacilli. They are like an army of soldiers; if they kill the enemy all goes well, and the inflammation subsides: but if the enemy be too strong, the citadel is taken, and the disease runs its course. This course, however, would always end in death if the leucocytes ceased to work. If they cannot kill the enemy outright they set to work to develop bodies in the blood which will do what they failed to do. In many diseases we know pretty definitely how long it takes to develop these bodies, and that is the reason why the physician can often state fairly definitely the duration of a disease, provided complications do not ensue. We have likened the phagocytes to amœba, but in respect of size they differ greatly, for the amœba may measure one one-hundredth of an inch in diameter, while the white corpuscle measures only one two-thousand-seven-hundredth of an inch.

The phagocytes are aided in their work by other important bodies. In the plasma of the blood there are certain substances which make the disease-producing germ a more easy prey to the phagocytes. These substances are called "opsonins," a word derived from a Greek verb meaning "to provide with food." They prepare the bacilli for digestion by the leucocyte. When they are present in large quantities, evidenced by general good health on the part of the individual, the phagocytes feed greedily on the bacilli, but when the health is impaired and the opsonins are correspondingly scanty the phagocytes have less power. Good health is thus that which enables a man to resist disease, for this means not only a good supply of phagocytes, germ destroyers, but also of opsonins. Good health means "natural immunity" from disease, and this can be maintained only by simple living and obedience to the laws of our being.



Medical Science of To-day

A "Culture" of Diphtheria Bacilli

A culture-tube containing serum, on which are seen small white patches. These are masses of the bacilli of diphtheria, which have been grown in an incubator.

We, however, are not naturally immune to all diseases, even though we keep in fairly good health. Scarlet fever and measles, for instance, will attack almost every one exposed to infection if he has not previously had the disease, and strong young men contract typhoid fever when apparently in the best of health. Lowered vitality undoubtedly precedes all cases of tuberculosis, but such cannot be said of scarlet fever, measles, and typhoid fever, in which there is immunity only

when the system has passed through an attack. In the case of measles, smallpox, and scarlet fever this immunity is for life, but in typhoid fever and diphtheria it ceases after but a few months. This immunity is called "acquired immunity." Immunity from consumption is natural immunity, and exists as long as the general health is good. Some families are much more prone to consumption than others; their "opsonic index" is said to be low, and they must keep their general health good, must always be on their guard against an invasion of tubercle bacilli. Others have a high "opsonic index;" lowered vitality may make them prone to other diseases, but not to tuberculosis.

Acquired immunity is a particularly interesting subject; it is due to the production of substances in the plasma of the blood known as "antibodies." These are different to "opsonins;" for the latter always exist to a greater or less extent, whereas the antibodies are produced as a result of a successful battle with certain diseases. Even non-bacterial products, such as snake poison, will produce "specific antibodies." Calmette's "antivenom serum" is a serum fortified by special "antibodies." Some snake poisons are so virulent that one quarter of a drop will cause death. If, however, very much smaller doses be injected into the blood of an animal, such as the horse, it recovers from the special symptoms produced thereby, and can successfully resist larger doses of the poison. By repeated injection of gradually increasing doses of the poison the animal becomes immune to snake poisoning, due to the production of "antibodies." Calmette's antivenom serum consists of the plasma, the fluid part of the blood, of an animal made immune as above described. If it be injected into the blood of a man bitten by a snake within a reasonable time after the biting, he will undoubtedly recover. If, for instance, the poison would kill in three hours and the serum be injected within the first hour, the life would be saved. The antivenom serum may also be used as a preventive measure for snake-poisoning, just as we vaccinate with cow pox vaccine to prevent smallpox, or inject diphtheria antitoxin to ward off diphtheria. If a child has been exposed to the infection of diphtheria and the antitoxin be injected, the disease cannot develop, for the child has "acquired immunity." These antibodies act in two ways: some destroy—or rather enable the "phagocytes" to destroy—the germs themselves, while others neutralise the poisons (the toxins) produced by the germs.

All these facts point to the wonderful powers of the human body, and remind us of the statement of the psalmist: "I will praise Thee; for I am fearfully and wonderfully made: marvellous are Thy works; and that my soul knoweth right well. . . . How precious also are Thy thoughts unto me, O God! how great is the sum of them! If I should count them, they are more in number than the sand: when I awake, I am still with Thee." W. H. J.

What to Do When Sleepless

WHEN you actually find yourself sleepless, the best thing to do at that particular time is nothing whatever, and the more thoroughly and completely you do it, the better. Just make up your mind what you are going to do next day to prevent sleeplessness to-morrow night, and resign yourself to the situation. Remember, it won't do you the slightest harm in the world to lie awake in a comfortable bed, in a well-ventilated room for one, two, or even three hours at a stretch, provided you keep your muscles quiet and your mind at rest.

If your mind wants to think, let it. It won't do you any harm, and there are few of us who do too much of that useful process during our waking hours. Just try to turn it into interesting, profitable, and entertaining directions. The man or woman who cannot enjoy a couple of hours with his or her own thoughts has sadly wasted his opportunities.—*Woods Hutchinson, M.D.*

The Defences of the Body

MANY people seeking relief from invasion of disease are under the impression that it costs money to maintain a high vital resistance. Expensive sea trips are taken, long periods are spent at health resorts, brain foods, nerve foods, electric belts, and patent medicines are purchased with the hope of curing every ill that flesh is heir to.

It is a difficult matter to convince people that the secret of good health lies in the simple life. Everyone knows that fresh air is essential, but is that knowledge put into practice?

Fresh air is abundant; it costs nothing, yet many are content to breathe secondhand air, which is more objectionable than wearing secondhand clothing, for the latter can be washed and purified.

When one realises the far-reaching effects of a single breath taken in by the lungs one begins to have a faint conception of this free commodity. The air which enters the body is spread out over a surface of two thousand square feet of membrane in the air sacs and passages of the lungs, where fresh blood circulates every two or three minutes. When the blood is in a good condition disease-producing germs are readily destroyed.

During sleep the defences of the body are lowered. The temperature of the body is slightly diminished. The respiration is slowed. It is at this time when fresh air is most essential, yet many people sleep with the bedroom window closed or only partially open. We find this so in the country, and it is the young women folk who suffer. After their morning duties are finished they sit inside sewing or reading, and then at night retire with closed windows. That is why we find so many who are suffering with tuberculosis of the lungs.

Another simple means at our command is the use of cold water. Cold is the best tonic in the world. It makes the heart beat stronger and lessens its rate. It increases the circulation. It makes us breathe deeper so that more oxygen is absorbed. The number of blood cells are increased. It improves the appetite and digestion, gives tone to the muscles, and increases the activity of the kidneys.

Every organ in the body is stimulated by a short application of cold water, because in the skin there are millions of nerve endings connected with the spinal cord and brain.

Cold water applications can be taken in various ways. The less severe method is to use a wet mitten or wet towel, bathing and rubbing thoroughly dry only a part of the body at a time. Cold bathing of any kind should not be taken when one is chilly or tired. It should be followed when possible by moderate exercise. There should be a general feeling of well-being after a cold bath. The person who takes cold baths properly has better resistance against colds, influenza, etc., than the non-bather.

There are individuals who, notwithstanding their attention to fresh air and cold baths, do not enjoy a full measure of health. Wherein lies the reason? They may be overworking. One of the important defences of the body is *rest*. The nervous system is the most highly specialised of all the systems. To perform its functions properly it must have time to recuperate. In our work we draw upon our nerve energy. If at night we could examine our brain, we would find the nerve cells have changed. They are shrunken or exhausted. They are built up and recharged with energy when we rest. An overworked member of the body is the one which first suffers. For instance, the hand that is used for much writing suffers with cramp. The milkmaid's hand becomes painful. The person who uses his voice too often is

troubled with sore throat. Others whose occupation necessitates the use of the legs complain of sciatica. The pains thus experienced are calls for rest. The student or anyone else who burns midnight oil is reluctant to rise in the morning. His face is pale, and he feels unfit for a new day's work. He is weakening his body defences, and some day must pay the penalty.

It is a well-known fact that alcohol predisposes to numerous diseases. It may be of interest to learn a few scientific opinions concerning its influence in tuberculosis. Dr. Osler says, "It was formerly thought that alcohol was in some way antagonistic to tuberculous disease, but the observations of late years indicate clearly that the reverse is the case, and that chronic drinkers are much more liable to both acute and chronic pulmonary tuberculosis. It is altogether a question of altered tissue-soil, the alcohol lowering the vitality and enabling the bacilli more readily to develop and grow."

"In France a direct connection has been noticed by Dr. Bauderon between the mortality from tuberculosis and the amount of alcohol consumed in special districts. Thus, in a district with an alcohol indulgence per head of 12.5 litres per annum the death-rate from tuberculosis is only 3.3 per 1,000; whereas in another with 35.4 litres per annum it is 10.8 per 1,000—three times as high."

At the International Congress on Tuberculosis, held in Paris in 1905, the following resolution was passed :—

"That in view of the close connection between alcoholism and tuberculosis, this congress strongly emphasises the importance of combining the fight against tuberculosis with the struggle against alcoholism."

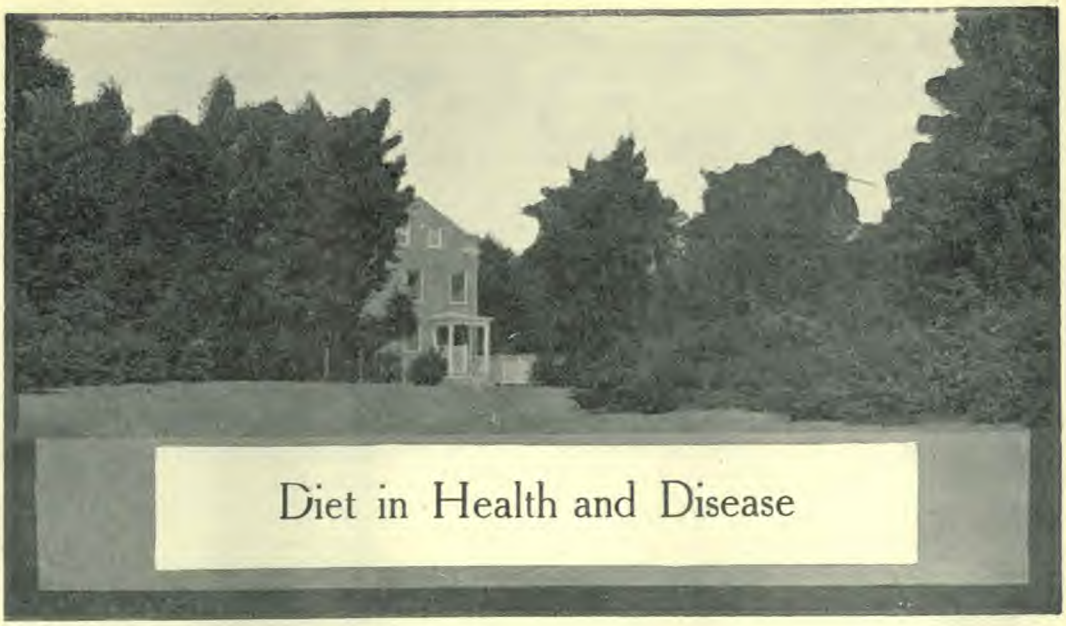
Dr. Lane of Guy's Hospital, London, who has had much experience in treating fracture, says: "A drunkard's bones are rotten; they are not good for anything. Whatever alcohol is good for, it is certainly bad for bones."

Overeating renders the body more susceptible to disease. The drowsy, tired feeling which is so common, is often due to eating to excess, particularly of meat, eggs, peas, beans, and lentils.

Many years ago the harmfulness of tea and coffee was not recognised. We must confess that headache, irritability, insomnia, and digestive disturbances attributed to other causes are due to tea and coffee drinking. There is significance in the fact that to-day there are numerous substitutes for these beverages.

"Health is the most priceless of treasures. When deprived of it we are willing to exchange for it everything else we possess; yet when well, we squander it ruthlessly, regardless of consequences."

E. M. H.



Why Do We Eat?

EVERY action of the muscles as well as every movement of the nerve cells, caused by mental activity, such as thought, expression of feeling, or the exerting of will power, results in waste of tissue.

It therefore becomes necessary, in order to sustain life, to replace the materials thus used up by activity. It is in this effort the various processes of life are manifested. In all life there is activity. When activity ceases, stagnation and death take place.

That cessation is death is seen in the speedy decay of stagnant water and air.

Wholesome tissue must work continually to maintain health. In other words, life is activity. If we therefore desire to keep young and able for the duties of life, it is essential that this work, this cell activity, the process known as change of tissue, should proceed vigorously and evenly. Failing this, man becomes prematurely old, worn out, and unfit for work, in due time life is extinguished, and man dies.

It is by means of food we must replace the loss of vitality. Therefore, if by careful investigation we can find the kinds of food most conducive to keep the tissue fresh and young, then we shall at least have come a little nearer to the true source of eternal youth.

We are now in possession of knowledge whereby we understand that the various manifestations of vitality, the warmth of the body, physical and mental activity, result from, and are closely connected with, certain physiological and chemical processes continually taking place in the cell structure of our bodies. Our food must, therefore, contain the following elements:—

1. Elements for cell construction. That is, elements which ensure the increase and development of the growing cells of the child. Also elements to maintain the fully developed cell by replacing the waste. And right here it is necessary to bear in mind that it invariably takes *the best of food to construct first-class tissue*. Just as it is utterly impossible to

make good bread with poor flour and spoilt yeast, so it is absolutely impossible to produce good muscles, healthy nerves, strong bones, and clean blood, from poor foods. He, therefore, who desires a strong frame and good tissue, that is, the most healthful, best developed, and most powerful body, must make sure of the most wholesome, cleanest, and best elements for body building. This calls for albumen and salts.

2. But besides this our foods must contain elements for the up-keep of that heat of the body so important to health and comfort. If the temperature falls too much we get cold, we suffer. If the temperature is too high we have fever with its evil effects. It is therefore important that we should, as far as possible, be independent of the outside temperature.

It is also interesting to note that men and animals, whether in the coldest or warmest countries, have the same inward body-heat. The right food elements in the right quantity to ensure the up-keep of the most suitable bodily temperature is therefore an essential condition.

3. We continually need material which will serve to keep up energy for work whether it is muscular exercise, mental work taxing the brain and nerves, or gland secretions and other digestive activities.

Energy must have a source, and that source must be continually flowing. It flows into the body through good foods raised from the soil by means of sunlight and heat. As we use some of our energy in the process of digestion, we not only obtain strength to work, but we also add strength to our digestive organs. The up-keep of bodily temperature, especially calls for starch, sugar, and fat.

4. In addition we require food elements, which, without undergoing any special chemical change in the body, will assist and lighten the distribution of nutriment, and the separation of the products resulting from the waste and change of tissue. The most important of these materials is water. All organic life must have water, as one noted authority has stated, "All organism lives in water, yes, in flowing water at that." This is also clearly pointed out by the large quantity of water found in such natural food as fruit.—*J. Ottosen, in Rationel Ernäring, translated for Life and Health.*

Pointers on Becoming a Successful Cook

By George E. Cornforth

IT has been said that in order to be a success in any line of work one must first be a success in one's own body. This means that he must be master of himself. A theoretical and practical knowledge of one's line of work is not all that is necessary. Success depends upon character as well as upon knowledge. Even one's disposition may make or mar one's success in life. Politeness and an attractive manner are recognised as good business qualifications. These truths apply in the profession of cooking as well as in any other; though sad to say, many cooks develop an unpleasant disposition, and forget that politeness should have a place in the kitchen as well as in the parlour.

"Practice makes perfect" is an old saying. Whether it is true depends upon how the practising is done. If every time we do a thing we strive to do it a little better than we did it the last time, we may hope to come very close to perfection. We should not be contented to do a thing as well as some one else does it. "Do him one better." Those who make their mark are not always the ones who do things that no one else has done, but those who do things better than any one else can do them. Large sums of money are sometimes paid for a few minutes' work because the man who does the work is an expert in that line, and can do what no one else can do, or because he can give an expert opinion which is regarded as safe advice.

There are some qualifications that are particularly necessary in cooks. These are: Neatness, carefulness, accuracy, the possession, either by nature or cultivation, of a certain refinement of taste which

makes one do things daintily and tastily, the ability to think and act quickly, to keep many things in mind at once—to tend many irons—to keep her temper, and to be self-possessed no matter how hurried she may be. Temper is too good a thing to lose. When one loses that, she loses power, as well as the respect of her fellow-workers. If her fellow-workers recognise her as an authority upon her subject, it will never be necessary for her to "show her authority." She must be observant, ready to take suggestions.

With the recognition of the fact that cooking is becoming a science, the idea that a really proficient cook need not measure her ingredients is passing away. Of course, there are some simple things which may be made without taking the trouble to measure exactly, but in the making of other than the simple things, cooks have in the past depended upon "luck," which is really the natural result of their good or poor work. The materials used in cooking are governed by the laws of nature, physical and chemical, which are God's laws, and God has so arranged that under the same conditions the same laws always operate, therefore we may be sure that uniform results will always follow accurate work. This means that if we have a good recipe and follow it exactly, we shall get the same results each time.

Young cooks often fail in the proper seasoning of foods. This seems such a minor part of the recipe that the attention is mainly put upon the principal ingredients, and the seasoning is often missed; but when tested by the eating, the seasoning is found to be the "making or the marring" of the dish.

Another matter which sometimes escapes the attention of young cooks is the keeping of the kitchen neat and clean. The preparation of the food seems to engage their whole attention, and the kitchen is left to take care of itself, and it fails to keep itself tidy. My mother used to say, "Anybody can *clean*, but it takes some one who is neat to *keep clean*." I have found that the old dictum that the only way to conquer dirt is by "eternally keeping at it," is true.

We find many girls who grow up to dislike housework and cooking. I believe one reason of their distaste for these tasks is because they have never been taught to do them well. The best way of doing home duties is being taught under the name of "Domestic Science;" and thus an effort, which is being crowned with success, is being made to elevate these duties to a higher plane in the minds of young women. It is very true that we generally like what we do well. Therefore if we study these tasks as a science with a view of doing them in the best possible way, we shall come to enjoy them. It is very often not the *tasks themselves* that are disagreeable, but the *way* they are done. Innumerable inventions have been made to simplify other lines of the world's work. A few have been made to simplify home duties. We should make use of these and study to discover others. In this study of Domestic Science young women can find as profitable and enjoyable employment as in other lines of work, and more profitable if we consider the rewards not only in shillings and pence but in the lives of people.

THE art of cookery is as old as history; its development measures the development of civilisation. More people are engaged in cooking all or a part of thei time than in any other occupation. On the selection and preparation of food depends, more than on any other single factor, the health and consequent happiness and prosperity of mankind.—*American School of Home Economics.*

IN caring for infants and little children there are five principal things to look out for—unwholesome milk, impure water, flies, dust, over-exposure to heat and cold. Each of these is a menace to the child, and each is, except in certain unusual and unpreventable circumstances, unnecessary. —*Selected.*

Superiority of a Vegetable Diet

IT is a common supposition among the ignorant and the half-informed that animals are, as a whole, overwhelmingly carnivorous. And this supposed fact is often pointed to in justification of the carnivorous practices of men. If the supposition were true, it would have no such significance as is ordinarily imputed to it; for man does not need, in the first place, to sit at the feet of his intellectual inferiors to learn what is proper and what is improper; and, in the second place, if he did need to do so, he would be under no obligations to select the most reprehensible examples as his models rather than the fairest, just because the reprehensible ones are in a majority.

But the supposition is not true anyway. A very large number, perhaps a majority, of the something like one million species of animals living on the earth derive their food directly from the vegetal kingdom—from the fruits, flowers, foliage, grains, stems, bulbs, barks, roots, nuts, juices, seeds, and secretions of plants. These species are scattered throughout the animal kingdom, from protozoa to primates. And these plant-eating species are, as a rule, superior, intellectually, morally, and physically, to the predaceous species. The insects, representing more than one-half the known species of the earth, live prevailingly on plants and plant products. The bees and butterflies, the crickets and katydids, whose beautiful and wonderful lives so often furnish lessons of innocence and industry to mankind, belong to this class. Fishes and reptiles, like men, are prevailingly carnivorous. But there are many fishes and a few reptiles that feed wholly on plants. The sargasso and the diatom, which grow so abundantly every-

Apple twigs make good fare for deer when the snow lies deep

where in oceanic waters, are the foundation of the life and energy of the sea.

The most beautiful of the birds, including nearly all those that sing and all those associated with man, are either wholly or fundamentally granivorous. The canary, oriole, humming-bird, dove, skylark,

A strong, intelligent vegetarian

nightingale, meadow-lark, linnet, tanager, cardinal, wren, brown thrasher, wood thrush (the most serene and heavenly of all voices), bluebird, bobolink, waxwing, chewink, grosbeak, gold-finch, mocking-bird, vesper-sparrow, song-sparrow, quail, cassowary, crane, ostrich, parrot, peacock, grouse, pheasant, fowls of all kinds—all of these and many others live entirely or chiefly on seeds, fruits, and grains.

The mammals are the most powerful and influential of the inhabitants of the earth. And excepting the dog, who was originally a wolf or jackal, and who has become much changed in both character and diet since his association with man, the most beautiful, the fleetest, the most sagacious and most useful of the mammals are strict vegetarians. The horse, the most magnificent of known creatures, whose strength rivals that of the engine, and whose speed outruns the wind, feeds on grains and grasses. The proverbial might of the ox is derived from the dynamite of the cereal. The elephant, whose strength uproots the forest, and the camel, the most enduring of man's slaves, live on herbage. The camel will amble over the yielding sands of the hot desert with a burden of 200 pounds, at the rate of five or six miles an hour, for fifteen hours out of the twenty-four. This marvellous creature will keep this up every day for a week or ten days, without a drop of water to drink, and with nothing to eat but cactuses, desert thorns, and a handful of barley-meal once a day. The moss-nourished reindeer attains a speed of ten miles an hour with a pack on his back.

No carnivorous animal can boast the enormous might of the rhinoceros, or the endurance and strength of the herb-fed mule. The gibbon is the most remarkable of all animals for its agility. It has long arms, a lithe body, and can swing forty feet from one limb to another. It swings through the forest in such rapid succession as to rival in its speed the flight of birds, and it is said to be able to

Man's noblest servant is a vegetarian

keep this up for hours without fatigue. The gorilla is said to be strong enough to crack a gun-barrel in his jaws and to

vanquish the African lion by main strength. The orang is also very strong. According to the natives of Borneo, the orang is sometimes attacked by the crocodile when he goes to the river-side to drink. In such cases, the natives say the orang beats the crocodile to death or rips up his throat by pulling his jaws asunder. All of these anthropoids live on a simple diet of nuts, fruits, canes, and flowers. The human-like monkey, the nimble squirrel, the fleet antelope and deer, the sheep, the swine, the llama, the giraffe, the mouse, the alpaca, the hare, the beaver, the manatee, the tapir, the kangaroo, the buffalo, the zebra, the musk-ox, the reindeer, etc., are all vegetarians. And they are, as a class, far superior in character, strength, and intelligence to the carnivora.

Since a majority of the most powerful and splendid races of the earth derive their aliment from the plant, it is hard to see how there can be any question as to the fact that alimentary substances of the highest excellence are found abundantly in the vegetal kingdom.—*J. Howard Moore, A.B., in Chicago Vegetarian.*

Vegetables and How to Use Them

By E. G. Fulton

THE term "vegetable," as here used, is applied to such plants (grains, nuts, and fruits excepted) as are cultivated and used for food. The use of a large variety of vegetables in our food assists in promoting good health. To get the best results, they should be judiciously combined with nuts, fruits, and grains. Green vegetables are rich in potash salts and other minerals necessary to the system, and in such a form as to be easily assimilated.

Starchy vegetables, as potatoes, supply energy and heat, and give necessary bulk to the food. Peas, beans, and lentils contain a large amount of proteid, used in building and repairing tissue, and are therefore used in place of meat. For weak stomachs they are more easily digested in the form of purées and soups, with the outer indigestible covering removed. All vegetables should be fresh; for in spite of all that may be said to the contrary, all vegetables, whether roots, leaves, or any other kind, begin to lose bulk and flavour as soon as removed from the ground. The kind that suffer least in this respect are beets, potatoes, carrots, etc. Those which are most easily affected are cabbage, lettuce, celery, asparagus, etc.

Vegetables that have been touched with the frost should be kept in a perfectly dark place for some days. The frost is then drawn out slowly, and the vegetables are not so liable to rot.

General Directions for Cooking Vegetables

Fresh green vegetables should be cooked as soon after being gathered as possible. Those containing sugar, such as sweet corn and peas, lose some of their sweetness by standing. Wash thoroughly in cold water, but unless wilted do not soak. It is better not to prepare fresh green vegetables until they are needed; but if they must be prepared some time before cooking, cover with cold water.

Most vegetables should be put into fresh, rapidly-boiling water, and if cooked in uncovered vessels, they will retain a better colour, as high heat destroys their colour. In no instance permit them to steep in the warm water, as this toughens them, and in some instances destroys both colour and flavour.

The salt hardens the water, and also sets the colour in the vegetable. For peas and beans do not add salt to the water until they are nearly done, as they do not boil tender so readily in hard water.

Sweet corn should not be boiled in salt water, as the salt hardens the outer covering of skin and makes it tough. Cook the vegetables rapidly till perfectly tender, but no longer. If vegetables are cooked too long, flavour, colour, and appearance are all impaired. To judge when done, watch carefully, and test by piercing with a fork. The time required to cook a vegetable varies with its age and fresh-

ness; therefore the time tables given for cooking serve only as approximate guides.

Delicate vegetables, as green peas, shelled beans, celery, etc., should be cooked in as little water as possible, toward the last the water being allowed to boil away till there is just enough left to moisten. In this manner all the desirable soluble matter that may have been drawn out in cooking is saved.

Strongly flavoured vegetables, as cabbage, onions, etc., should be cooked in a generous quantity of water, and the water in which onions are cooked may be changed one or more times.

The general rule for seasoning vegetables is as follows:—

To two cups small whole vegetables, or two cups of vegetables mashed or sliced, add a rounding teaspoonful of butter, and half a level teaspoonful of salt. To beans, peas, and squash, add one-half teaspoonful of sugar to improve them. Add milk or the vegetable liquid when additional moisture is required.

Potatoes

Pre-eminent among vegetables stands the potato. The solid matter of potatoes consists largely of starch, with a small quantity of albumen and mineral salts. Potatoes also contain an acid juice, the greater portion of which lies near the skin. This bitter principle is set free by heat. While potatoes are being boiled, it passes into the water; in baking it escapes with the steam.

New potatoes may be compared to unripe fruit, as the starch grains are not fully matured. Potatoes are at their best in the autumn, and they keep well during the winter. In the spring, when germination commences, the starch changes to dextrine, or gum, rendering the potato more waxy when cooked, and the sugar then formed makes them sweeter. When the potatoes are frozen, the same change takes place.

In the spring, when potatoes are shrivelled and gummy, soaking improves them, as the water thus absorbed dissolves the gum, and makes them less sticky. At other times, long soaking is undesirable.

Soak about half an hour in the autumn, one to three hours in winter and spring. Never serve potatoes, whether boiled or baked, in a closely covered dish, as they thus become sodden and clammy; but cover with a folded napkin, and allow the moisture to escape. They require about forty-five minutes to one hour to bake, if of a good size, and should be served promptly when done.

Baked Potatoes

Potatoes are either baked in their jackets or peeled; in either case they should not be exposed to a fierce heat, inasmuch as thereby a great deal of the vegetable is scorched and rendered uneatable. They should be frequently turned while being baked, and kept from touching one another in the oven or dish. When they are pared, they should be baked in a dish, and oil of some kind added, to prevent their outsides from becoming burned.

Mashed Potatoes

Pare and boil or steam six or eight large potatoes. If boiled, drain when tender, and let set in the saucepan for a few minutes, keeping them covered, shaking the saucepan occasionally to prevent scorching. Mash with a wire potato masher, or, if convenient, press through a colander; add salt, a lump of butter, and sufficient hot milk to moisten thoroughly. Whip with the batter whip, or wooden spoon, until light and fluffy. Heap up on a plate, press a lump of butter into the top, and send to the table hot.

Potato Puffs

Potatoes, prepared as for mashed potatoes, 2 cups; cream or milk, ¾ cup; melted butter, 2 tablespoonfuls; eggs, yolks and whites beaten separately, 2; salt.

Mix and beat up thoroughly, folding in the beaten whites last. Make into balls, put into greased pans, brush with beaten egg, and bake a light brown.

Minced Potatoes

Mince six large, cold potatoes. Put them in a baking-pan, cover with milk; add a little cream, and bake fifteen minutes.

Scalloped Potatoes

Potatoes, medium size, 6; milk sufficient to cover, mixed with tablespoonful of flour; crumbs, butter, salt.

Cut potatoes into even slices, put in a baking-pan, sprinkle with a little salt, and a few small pieces of butter. Pour over the milk and flour mixture, and sprinkle the top with a layer of crumbs. Cover and bake till potatoes are tender. Remove the cover and brown lightly.

Hashed Browned Potatoes

Use cold, boiled potatoes or good left-over baked potatoes. Pare and cut into three-quarter-inch dice or irregular pieces. Put in a shallow baking-pan, sprinkle with salt, pour over sufficient cooking oil, season well, and prevent scorching. Put into the oven, and when they begin to brown, stir continually till all are nicely browned.

New Potatoes and Cream

New potatoes, cream, salt, butter, parsley.

Wash and rub new potatoes with a coarse cloth or scrubbing brush; drop into boiling water and boil briskly till done, but no more. Press the potato against the side of the saucepan with a fork; if done, it will yield to gentle pressure. In a saucepan have ready some butter and cream, hot but not boiling, a little green parsley, and salt. Drain the potatoes, add the mixture, put over hot water a minute or two, and serve.

Potatoes a La Creme

Cold, boiled potatoes, 2 cups; parsley, finely chopped; flour; milk; butter, 1 tablespoonful; salt.

Heat the milk and stir in the butter cut up in the flour. Stir until smooth and thick. Salt, and add the potatoes, sliced, and a very little finely-chopped parsley. Shake over the fire until the potatoes are heated through. Pour into a deep dish and serve.

Potatoes a La Delmonico

Cut the potatoes with a vegetable cutter into small balls about the size of marbles. Put them into a saucepan with plenty of butter and a good sprinkling of salt. Keep the saucepan covered and shake occasionally until they are quite done, which will be in about an hour.

Potato Croquettes (Delmonico's)

Cold, mashed potatoes, 2 cups; flour or cracker crumbs; salt; eggs, 2; butter; cooking oil.

Season the potatoes with salt and butter. Beat the whites of the eggs, and work all together thoroughly.

Make into small balls slightly flattened. Dip them into beaten yolks of eggs, roll in flour or biscuit crumbs, and fry in hot oil.

"THE laws of our being cannot be more successfully violated than by crowding upon the stomach unhealthful food just because it is craved by a morbid appetite."

THE rations of infants and children should be generous; the rations of mature men, sufficient; and the rations of old age, limited.—*Dr. Wiley.*

Salt and Drunkenness

THAT indigestion is one of the chief causes of drunkenness, and that salt in excess is a potent cause of indigestion, are the theses upheld by Dr. H. O. Beeson, of Calcite, Colo., in *The Journal of Inebriety* (Boston, Spring). He wastes little time on the first, regarding it as amply demonstrated by observation. "From a medical standpoint," he says, "a careful study of inebriety must of necessity be a study of indigestion," and "when the digestive apparatus is performing its functions normally there is no distress, and consequently no call for drugs." The greater part of the article is devoted to clearing up the relations of a too salty diet to this unnatural craving for alcohol. He writes:—

Children's Encyclopædia

Salt is sometimes collected by evaporating saltwater in reservoirs and then collecting the brine.

"The purpose of this paper is to call attention to a very common and an entirely avoidable cause of indigestion; viz., the use of common salt in excess. The standard claim that salt is an aid to digestion is not true. This statement needs to be qualified as to quantity only.

And I am prompted to make the following more explicit statement without fear of successful contradiction: *All supplementary salt with food is superfluous and distinctly harmful to digestion.*

"Salt with food in the proportion of 4 parts or less to the 1,000 is beneficial to digestion, but beyond 6 parts to the 1,000 it is positively harmful. Our daily average consumption is approximately 22.5 parts to 1,000.

"Sea-water contains about 27 parts to 1,000.

Children's Encyclopædia

This is a view of a dried up salt sea in the great Colorado Desert, California. The salt is stacked in heaps ready for transport.

"The taste for salt with food is acquired in every instance. It does not exist in animals or birds. Animals and primitive man alike take salt only in the intervals of digestion. Unsalted food is as palatable as salted food, except when the taste is perverted by the long-continued use of salt with food."

A nine months' continuous diet of unsalted food enables me to make this statement with positiveness.

"Natrium chloride exists in all living bodies. In mammals, both sea and land, it is contained in the approximate proportion of 6.5 parts to 1,000; in marine vertebrates, 16 to 22 parts to 1,000; in birds and fresh-water fish about the same as in mammals, while in vegetable matter 1 to 2 parts to 1,000.

"These proportions vary within very narrow limits, physiologically. In vital bodies salt is always in solution in the fluids of the tissues. It has not been demonstrated that it ever enters the cell. . . .

"It being well understood that the density of the blood serum cannot vary to exceed 0.50 per cent from the normal, it should be easy to see that hyperchloridation renders the blood pathological, inhibiting both assimilation and disassimilation by the damage to the red cells. . . .

"When food contains a proportion of salt greater than the normal salt solution, it: (*a*) retards absorption; (*b*) diminishes secretion; (*c*) causes transudation into the canal. Hence the ideal conditions to re-

Children's Encyclopædia

A Russian Salt Field

sult in indigestion exist. In good digestion, secretion and absorption must be equal. Digestion is retarded by diminished secretion, by diminished absorption, and by the presence of fluid that is not digestive."

According to Dr. Beeson, our daily army ration contains 307 grains of salt, of which only 15 are assimilated. In experiments made recently at Colorado University, it was found that 2 parts of salt in 1,000 lessens the time of digestion by one to three hours, while if the proportion per 1,000 were increased to 6 the time was increased again by two to three hours. The writer concludes:—

"Enough has been said to show quite conclusively that salt is a certain disturber of digestion when used with food in a proportion greater than that of the blood, or 6.5 parts to 1,000. Also it is clear that hyperchloridation means the storage in the system of an injurious amount of water. That extra salt demands extra water is plain. And it is easily seen that a thirst accompanied by physical and mental distress is prone to resort to drugs in addition to water for relief.

"The dry fauces produced by a salty meal is the index to the dry condition of all the mucous surfaces. When elimination takes place a reaction occurs, and the mucous glands become active again. This process repeated day after day can have but one result, exhaustion and secondary infections. This is the picture of the production of catarrhal inflammations wherever located.

"And no wonder that a child bred on an excessive salt diet becomes an invalid, an incorrigible, or a criminal, or a lunatic?"

Recipes for Soups

Vegetable Bouillon

Vegetable soup stock, 2 quarts; cooked and strained tomatoes, two cups; bay leaves, 2; salt, 1 tablespoonful; onions, grated, medium size, two.

Mix all the ingredients together, and let simmer slowly two or three hours. There should be about one quart of soup when done; strain, reheat, and serve.

White Soubise Soup

Bread, 4 or 5 slices; onions, 4; salt, 1 teaspoonful; butter, 1 teaspoonful; rich milk, 2 cups; potatoes, 2; flour, 1 teaspoonful; water, 4 cups.

Soak the bread in the milk, boil onions and potatoes in water until well done, and mix with the bread and milk; add salt and flour rubbed in the butter; strain all through a fine sieve; bring again to the boiling point, but do not allow it to boil; serve. If too thick, add a little boiling water.

Noodles for Soup

Beat one egg till light, add a pinch of salt, and flour enough to make a stiff dough. Roll out very thin; sprinkle with flour to keep from sticking. Then roll up into a scroll, begin at the end, and slice into strips as thin as straws. After all are cut, mix them lightly together, and to prevent their sticking together keep them floured a little till you are ready to drop them into the soup, which should be done a few minutes before serving. If boiled too long they go to pieces.

Exercise and Symmetry

EXERCISE brings into active play the muscles which control the chest. Every time we breathe we move the ribs; and at the same time the cartilages by which the ribs are attached to the spine behind and to the sternum in front are also stretched and bent. Now if these movements are neglected, and we depend entirely for breath upon the movements of the diaphragm,—and there are a great many persons who do depend entirely upon the diaphragm,—we are never able fully to distend the chest, because, as the result of the neglect of movement, the cartilages have become hardened, and the joints are no longer flexible—they have lost their power to bend and stretch; the chest has become rigid.

Such a person cannot increase the size of his chest to any great degree. It is only by stretching the diaphragm down as far as possible that he is able to increase the capacity of his chest at all. His breathing capacity is thus limited, and he easily gets out of breath. This is one reason why an old person cannot run well.

Another point worthy of consideration is the effect of exercise upon the joints of the spinal column. Now each joint of the vertebral column contains a fibro-cartilaginous body between the bodies of the vertebræ, the purpose of which is to render the vertebral column flexible. By means of these ingeniously constructed joints we can bend the body in every direction. Now suppose we do not bend the trunk in every possible direction many times a day, or often enough to keep these joints flexible, what will be the result?—These cartilages which lie between the vertebræ, and which form about one-fourth of the entire vertebral column, will become, in time, inflexible and rigid. The ligaments also which bind the vertebræ together will lose their flexibility, and thus the ability to bend the spine will be lost. Further than this, the muscles which support the spine, being attached to the ribs and to the spines of the vertebræ become rigid and shortened when they are not stretched by frequent backward bendings, side-bendings, forward-bendings, etc. This is the reason why we find most old people unable to bend the trunk freely. How many persons even among those of middle age, are able to bend forward and touch the floor without bending the knees? You ask an old gentleman to touch the floor, bending only at the hips; and if he succeeds in getting over far enough to reach the floor, he does wonderfully well. Why is this?—It is because of the consolidation of the spinal column. If this same old gentleman had begun thirty or forty years ago to take regular exercise of this kind, he would not have lost his ability to bend the spine. At the age of fifty or sixty, or even at forty-five,

a person whose spine has become rigid from lack of exercise, will not be likely to improve in this direction so as to be able to touch the floor without bending the knees, unless unusually well preserved.

But you say, "What harm if a man cannot touch the floor without bending his knees? Isn't he just as well off physically as the man who can do so?" —By no means. This stiffness of the spine, especially in the lower regions, always involves a corresponding weakness of the abdominal muscles. When the spine is as rigid as a jury mast, the body is held erect with little muscular effort. It is thus not necessary for the muscles to be in constant play to keep the body balanced. This is a great disadvantage, since the muscles which hold the body erect, balancing the chest and shoulders upon the pelvis, by the same effort and at the same time perform a most useful office in holding the liver, spleen, stomach, bowels, and other important internal organs in position. Thus when these muscles become weakened through disuse, we have, as the result, a relaxation of the abdominal walls and a prolapse of the abdominal contents—the spleen, pancreas, liver, stomach, etc. It is thus apparent that there is a great significance in this rigidity of the back—it always means a weak, relaxed condition of the abdominal muscles; and this means weakness, disease, nervousness, in fact an endless multitude of maladies.

Thus we see that it is of vast importance that the elasticity of the joints and cartilages of the spine should be maintained. This can only be done by proper exercise begun in childhood and continued through life.

It is important that the youthful flexibility of all the joints and muscles should be preserved; and this may be done by constant exercise. The marvellous performances of acrobats have given rise to the idea that these men are double-jointed. This is, of course, not true. They have simply preserved the flexibility of their joints by constant training. The acrobat is put in training when he is a small boy. Professional acrobats usually have one or two small boys with them who participate in some of their performances. These small boys are the apprentices of the acrobats. The acrobat begins his professional work at the age of eight or ten; it is too late if he waits till he is twenty-five or thirty years old. The story is told of Pompey, the famous Roman general, that he had so maintained the elasticity and strength of his muscles by continuous exercise that he could run, leap, and carry heavy burdens equal to the most robust of his soldiers. Hufeland tells of a remarkable dancer, Galeria Copiola, an Italian woman, who made her first appearance on the stage as a professional dancer at the age of ninety, and who appeared before Augustus in that capacity some years later. Just think of a *danseuse* one hundred years old!

Another advantage of exercise—general, regular, systematic exercise—is found in the fact that it counteracts the deforming tendency of occupations and bad positions. As the result of the bad position usually assumed in sitting, especially in a rocking-chair, the chest falls in, and posterior curvature of the spine is produced. Half an hour's daily work in a gymnasium will bring back the shoulders, restore the natural curve to the spine, and bring the chest forward and the hips back into a normal, symmetrical position. The daily use of such exercises will largely counteract the effects of bad positions. A person whose occupation causes a certain set of muscles to be constantly employed should take general, systematic gymnastics, to counteract the deforming tendency of his occupation. Every occupation, no matter what it is, and though it may supply an ample opportunity for muscular work, if it requires the long-continued use of particular sets of muscles, has a tendency to develop deformity, because the muscles which have been in constant use have become too strong for the rest of the body, and so pull the skeleton into some misshapen position. We must counteract this tendency by the development of those muscles which are not used in the

daily occupation. Spinal curvatures and posterior and lateral curvatures, coming from bad positions, are all curable by proper exercise if begun in time.—*Good Health.*

The Erect Figure

IN everyday life, says Dr. Anderson, of Yale University, we seldom see a man or a woman who stands well. A well-known specialist, a surgeon of Boston, in addressing young women some time ago, used this method of explaining the necessity of carrying the body well.

The various organs, so to speak, rest on shelves, parallel with the floor, and when the body is perfectly erect, these organs are very easily sustained, and there is no pull upon other organs or upon ligaments; but just as soon as the body begins to bend, the shelves begin to tilt, and the organs are all forward and down, and perhaps off the shelves, producing various ailments. Therefore I urge every man, woman, and child, regardless of age and conditions, at least to try to stand well.

You will Find That It Rests You

The body that is inclined forward, the shoulders that are rounded, the hips that protrude from the body out of its mechanical lines, make an extra and a useless waste of energy. The body that is erect, with the arched chest, and the hips carried well back, so that the weight is above the long bones of the leg, is the normal body; the organs should then be in their normal position, and the result is better health. If I can persuade many of our men who come to me ailing to stand well, I know that I have taken a long step in the right direction. When young women complain of sideache and backache, and one can see at a glance that the head is forward, the chest is back, and the body is something like a question mark, one has at once the first cause for at least a part of their distress.

If one would stand against the edge of a door or the side of a wall with the heels touching, the hips back, the chest arched, and the head forced back, in a short time one would begin to approximate that standing position. Not only will that save a certain amount of strength that is being wasted, but it

Adds to the Personal Appearance

Men who are forty or fifty years of age can change the body, if they have the courage. But things do not come of their own accord and unsought in this world.

I met in a certain city, some time ago, a beautiful woman whose hair was perfectly white. She must have weighed 160 or 170 pounds, and I asked her to what she attributed her unusual agility and life. She said, "I skip the rope every morning and evening for two or three minutes." If the machinery of the body is becoming sluggish in its action, follow the example of this lady. This whips the heart into action, and the breathing is deep provided there is nothing to prevent deep breathing, and there is a change in the tissues of the body that is most desirable. We have at our university fifty or sixty skipping ropes, and we set the men at this exercise daily.

When I speak of physical training, I mean by that, not development of the muscles merely, but the development of every part of the body—the care of the eyes, of the nose, of the mouth, the training of the heart, the development of the lungs, and the washing out of the various organs of the body.

WITH all deductions, the triumphs of sanitary reform as well as medical science are perhaps the brightest page in the history of our century.—*Lecky.*

THERE is, in my opinion, no more reason for selling polished rice as the best possible form to market this article than there would be for selling skimmed milk, representing it as the complete product of the cow.—*David Fairchild, M.D.*

Peter Henry Ling: the Founder of Swedish Gymnastics

By Carl August Westerblad, D.Ph.

Member of the Society of Swedish Teachers of Gymnastics

A HUNDRED years ago the name of Peter Henry Ling had not passed beyond the boundaries of Sweden. Even at Ling's death in 1839, Swedish gymnastics were hardly known out of their native country. In regard to influence, however, they have grown as the mustard-seed. Not only in Scandinavia but also in England, Belgium, France, Greece, Russia, even in Germany which has a gymnastic tradition of her own, Swedish gymnastics have made their way. In the New World, too, they are represented. Ling's work has become international.

The Child

PETER HENRY LING

Peter Henry Ling was born in the southern part of Sweden in 1776, not far from the place where Carolus Linnæus, the famous naturalist, saw the light. In 1793 we find Ling at a Swedish University as a student. Six years later on he betook himself to the capital of Denmark, where he spent the following five years. The works of the continental representatives of the new current in literature, which in England burst forth in the beginning of the nineteenth century in Coleridge, Scott, and Byron, now had their influence on Ling. He made himself familiar with modern German and Danish literature. In addition to this he studied the old Norse literature. In Copenhagen Ling developed a poetical activity, which activity increased after his return to Sweden in 1804. During Ling's lifetime his poetry in no less degree than his method of gymnastics may have contributed to his renown. His poetry reflects the spirit of the Vikings. The persons in his epics are seldom human beings, they are giants and heroes. The largest of Ling's large poetical works is "Asarna," an epic, comprising more than 800 printed pages. From 1804 to his death in 1839, Ling remained in Sweden carrying on his gymnastic work. That this was extensive is proved by documents from Ling's time which state that he became an inventor not only in pedagogic gymnastics, but also in medical gymnastics. Here, however, I have to deal with Ling's ideas only so far as they concern the physical education of youth.

The bearing of his gymnastic aims cannot be understood without some knowledge of the physical exercises that were practised before his time. The exercises that distinguished the Grecian gymnastics were partly of the description that we now-a-days call sports: jumping, running, wrestling. Gymnastics in Greece offered, just as do modern sports—a weak point, which the ancients themselves indicated by noticing that competitions, rather than real physical training, absorbed the general interest.

It is a mistake to think that bodily exercises were neglected during the Middle Ages. In the "Canterbury Tales" Chaucer describes vividly the martial sports performed by the knights. The fourteenth and fifteenth centuries inherited the martial sports of chivalry. During the last decades of the eighteenth century, and in the beginning of the nineteenth, new kinds of exercises appeared. The social conditions in which people lived had altered, and, as a result, the exercises hitherto in use became inappropriate. New exercises were evolved, gymnastics in the modern sense of the word, that is to say, movements defined in regard to form effect and performance. In this connection two names are especially worthy of remembrance; viz., the German Gutsmuths and the Swedish Ling.

The gymnastic movements with which Gutsmuths was acquainted were taken to a large extent from the Grecian gymnastics. The gymnastic inventor was the Swede.

Of real physical exercises there are several kinds. There are exercises that assist the development of some special dexterity, such as skill in jumping or in running. There are others by which no special dexterity is attained, but which bring about a harmonious development of the whole body. Movements of this kind are gymnastics in the Swedish sense of the word, and were invented by Peter Henry Ling.

Ling recognised that gymnastics were not only of service in the physical development of the body, but furthered intellectual and moral powers, and hence greatly enhanced the value of the individual as a social unit. Modern science shows that physical exercises not only exercise the muscles, but also develop and educate the central nervous system. In his method of physical education Ling included sports as well as games as far as the latter involved physical exercise. But he excluded from his method such sports as were unsound or unsuitable for education.

Ling is a man of times bygone, but he is also a man of the present age. Seldom does a man devote himself wholly to the pursuit of his ideal. Ling followed the gleam with all the fervour of his ardent soul; he devoted himself to the welfare of mankind. This is perhaps the reason why his teaching is now exercising world-wide influences.

Walking as a Sport

IT may never have occurred to you to think of walking as a sport. If you observe the people on the street,—the girls and women particularly,—the reason for this will be plain: nearly every one in taking steps puts her heel down first.

You have probably read the directions for correct walking, or have heard them in the gymnasium—"Carry the body erect, the chest well forward; swing the legs from the hips; bend the knees but slightly; step squarely on the ball of the foot with the toes inclined outward; relax the ankles as you put the foot down."

The most important part of these directions is, "Step squarely on the ball of the foot." The chances are that you have tried walking in that way for a few yards, and have in the end fallen back into your habitual gait. Make up your mind that walking is as much of a sport as golf or tennis, and try it again. Just as you must practise to get a straight drive or an accurate serve you must practise to make the correct walk seem natural and easy.

At first it seems too springy and uncertain. You tend to walk on tiptoe. That is, of course, because you are trying to break the old habit of stepping heel first. Keep at it; after trying the correct walk for half a mile or so, you will find that it begins to seem natural. Your heels complete the step almost instantaneously, and motion becomes pleasurable.

There is no doubt that beneficial effects come from stepping on the ball of the foot. When the correct step is taken, the body is necessarily held erect, and there is much less jarring of the spine, and much less misdirected energy. The correct position of the body brings freer, deeper breathing. If you cannot have an automobile or an aeroplane, adopt nature's own provision for an easy, buoyant, exhilarating means of locomotion.

Walking in the right way gives you a feeling of lightness that is a real pleasure. At first some of the muscles in the calf of the leg feel the strain. That is because they are unused muscles, but they ought not to remain idle. Before long the fatigue disappears, and you can walk a great distance without feeling weary.

To feel wholesome, refreshing muscular fatigue, is good for you. But do not regard the correct walk as a duty; learn it and practise it because it is good sport. —*Selected*.

Retiring from Business

AT what age ought a man to drop money-making and begin to have a good time? What shall he do when he stops grinding out his daily task? Is he likely to live longer if he retires at fifty or continues his drudgery?

The rule with hard-pressed business men seems to be that when they leave off their usual routine they soon die. Life has nothing more to offer them. They do not love pictures or music. They have no desirable hobby.

Unless a man has some occupation which he is sure will keep him pleasantly busy after he retires, it is far better for him to stick to his desk. It is our interests that keep us alive. The more of them we possess, the more vigorous is our hold on the world. So when a man begins to think of dropping his work and retiring, the main question which he ought to ask himself is, "Have I anything that will interest me day after day and year after year?" Unless a man wants to march directly to the grave, he must not leave himself without employment.—*Portland Oregonian*.

"IF you want to live long and well, keep cheerful and useful."

Bournville, the Garden Village

By G. H. Heald, M.D.

ONE never tires of viewing the quaint old English villages, with their narrow, crooked streets, their high fences of brick or stone, their half-timbered tile or thatch-roofed cottages, lighted with small leaded windows, and crowned with the inevitable chimney-pots, for these all tell of past generations and antique customs, and introduce us, as books cannot, to the days of our forefathers. But in Bournville one sees the beginning of a newer England, the omen of a coming civilisation. There is something very attractive about its well-kept streets and neat yards; but its chief charm lies in the fact that here a great sociological experiment has been worked out successfully, and it has been proved for all time that it is practicable to ameliorate the conditions of the working classes. Bournville is both an inspiration and a working model for other communities.

The most remarkable fact, perhaps, in connection with the foundation of Bournville is that it is the result of the efforts not of working people, but of a man of wealth. Mr. George Cadbury, who, as an extensive employer of labour, and as a Sunday-school worker in Birmingham in connection with what is known as the "Adult School Movement," came to know pretty thoroughly the conditions of insanitation and lack of comfort under which the labouring population ordinarily live—conditions which are truthfully called "a scandal to our civilisation." He was profoundly impressed with the disadvantages and adverse conditions under which the labouring class exists, and as a result, he set for himself the problem of finding a remedy.

To Mr. Cadbury, the most practicable way to ameliorate the conditions of the working class was to give them the opportunity to remove from crowded and insanitary city dwellings to the more favourable surroundings of the country. The problem was to give all the advantages of country life, combined with such city advantages as water, light, sewerage, proximity to the factory and shops, and social privileges.

Having outlined a plan, Mr. Cadbury set aside a considerable portion of his Bournville estate for the establishment of a model garden village in which there was to be no crowding. It was planned that each house should have a good-sized garden, and should occupy not more than one-fourth of the lot; roads should be wide and bordered with trees; and about one-tenth of the land, in addition to roads and gardens, should be reserved for parks and recreation grounds.

It was at first planned to sell the sites

and cottages outright; but as this was open to the danger that the purchasers might not follow the general policy outlined for the village, it was decided finally to sell the houses and lands in leases of ninety-nine years. Tenants under the new arrangement pay ground rent in addition to the rates, and agree in the leases to abide by the regulations which make this an ideal garden city.

The village having been successfully established, the next problem was to insure its perpetuation and the extension of the movement. To this end a trust was established to hold the property and administer it in accordance with the terms of foundation; and on the fourteenth day of December, 1900, Mr. Cadbury surrendered to this trust all private interest in the Bournville Village property, as regards both capital and revenue, so that from about the beginning of the twentieth century all income from the property has been administered by the trustees, who, in accordance with the trust deed, employ all income that is not required for maintenance and repairs, in laying out the estate, building houses, and in purchasing other estates, near Birmingham or elsewhere, to be developed the same as Bournville. Thus the scheme contains within itself the principle of continuous and almost unlimited extension. The total value presented to the English people in this gift is estimated at more than £200,000.

Among the powers granted the trustees are: To make arrangements with transportation companies for cheap rates; to lease, underlet, or sell land, or to develop it and prepare it for building; to borrow money, and invest funds; to give land or erect buildings for places of worship, hospitals, schools, technical institutes, libraries, gymnasiums, laundries, baths, and kindred objects. The deed provides that all schools and institutions built by the trustees shall "be so organised as to exclude sectarian influences, and so conducted as to avoid denominational jealousies."

It has evidently been the wish of the founder to exclude permanently from the village the sale of intoxicating liquor. In order that a license may be obtained to sell liquor, it is necessary, by the terms of the deed, to secure the unanimous consent of all the trustees in writing; and all net profits arising from such sale must be devoted to securing for the village community counter-attractions to the liquor traffic. The clause relating to the sale of liquor concludes by giving the founder's "intention that the sale, distribution, or consumption of intoxicating liquors shall be entirely suppressed, if such suppression does not, in the opinion of the trustees, lead to greater evils."

The trust deed also contains provisions requiring that the administration of the trust shall be unsectarian and non-political, and stating that "it will be a violation

The Shopping Centre, Bournville

of the intention of the founder if participation in its benefits should be excluded on account of religious belief or political bias."

It is evident that the founder is a thoroughly broad-minded and liberal-minded man, and he has had the foresight to establish the trust in such a way as to insure the perpetuation of his purposes.

One visiting the village finds it well-planned, well-kept, picturesque, beautiful, and healthful. The village planners have endeavoured to conserve as far as possible the natural beauty furnished by the pleasing contour and the old shade-trees, and to add to this beauty by the arts of the landscape gardener.

The cottages, semi-detached or in blocks of three or four, are treated in a variety of styles to avoid monotony, and are given ample garden room. There are about seven houses to the gross acre. Most of the houses have two sitting-rooms, a kitchen, three bedrooms, and the usual conveniences. Some have one large sitting-room, and a few have only two bedrooms. Recently there have been built two quadrangles of small bungalows suitable for single women. There are also more pretentious houses. The cheapest houses are let for about four shillings a week, rates extra. From this minimum they run up to eight shillings a week, plus rates. Gas, water, and sewer facilities are supplied by the city of Birmingham. Each house has a garden-plot of about five hundred square yards, which is laid out by the estate gardeners at the time of building, so that the tenant taking a new cottage finds the garden already prepared, with lawns, lines of fruit trees and shrubbery. Tenants usually manifest much interest in their gardens. There are gardeners who give

Front Gardens, Bournville

information and advice when requested, and gardening classes are well attended by boys and young men, who develop a lively interest in the work.

With broad streets, houses set well back, playgrounds for children, and a park, there is abundant opportunity for the open-air life. The park, which has been left as much as possible in its natural condition, has, running the full length of it, a partly shaded brook, which is very popular with the children.

The Park, Bournville

There are a number of public buildings. The "meeting-house," a place of worship, is open daily "for private meditation," and on Sunday for public services. There is a mixed school accommodating about five hundred children, and an infant school for two hundred and fifty. The school buildings are said to rank with the best in the country. In the tower of one of the school buildings is a clock with chimes said to be the best in the country. The writer heard it play "Rocked in the Cradle of the Deep," and certainly he has never heard its equal in chimes.

Here stands a village of eight hundred and fifty houses, every one a model, with everything planned for the convenience and health of the inhabitants. The village is only fifteen years old, and is modern in every particular. There is a great demand for houses, and tenants rarely leave unless they are moving to some distant part.

In order to stimulate interest in gardening, there are three annual flower shows, —the Rose Show; the Flower, Fruit, and Vegetable Show; and the Chrysanthemum Show. Actual test of twenty-five gardens shows that the average weekly yield per garden is two shillings, or five pounds a year. This is an economy not to be despised by the family of the labourer; moreover, it furnishes an agreeable and healthful occupation. As the *Economic Review* expresses it, this land now yields six times as much produce as

"The Triangle," Bournville

it did when farmed in the ordinary way, and in addition, it houses under ideal conditions a population of nearly two thousand persons. So much for the value of intelligent and intensive cultivation of the land in small sections.

What might not be accomplished for the health and comfort and prosperity of the labouring classes if they could be induced to leave the crowded cities and settle in properly appointed factory villages, each family with its little garden-plot?

An interesting feature of Bournville is what is known as the village council, which consists of a body of workers elected by the residents to further the interests of the village. A certain proportion of the councillors retires annually. The councillors receive no remuneration. The council has done much for the town, especially in fostering the interest in gardening. It arranges for the co-operative purchase of plants and bulbs in large numbers. Garden tools are let on hire. A loan library of garden books has been established. The council has charge of the various flower shows, which are very successfully managed

Hitherto Bournville has formed part of a district which was controlled for local government purposes by an Urban District Council; but in November of last year it became a part of the city of Birmingham, owing to the extension of the city boundaries.

It may be interesting to our readers to compare the vital statistics of Bournville with some others. The annual death-rate per 1,000 inhabitants for the five years ending 1910, was:—

For Bournville	5.7
For urban district	10.5
For England and Wales ...	14.6

This may not be altogether a fair showing, as we have not all the factors for correction, but here is another. The infant mortality per 1,000 live births, average of five years ending 1910, was:—

For Bournville	62.4
For urban district	82.6
For England and Wales ...	117.4

Comparison of the Bournville children in height, weight, etc., with city children of the same age, shows a marked advantage for the Bournville children.

Mr. Cadbury has realised that such an enterprise as this, in order to be perman-

ent and to grow in influence, must be on a self-supporting basis; and notwithstanding the fact that it is more difficult to get adequate returns on small rentals where so much land is allotted to each family, the trustees are now able to fix the rents on the new houses so as to yield a net return of four per cent on the investment after paying all running expenses, including repairs.

Some of the facts demonstrated by the Bournville experiment are:—

1. There is a great demand for garden houses, notwithstanding the disadvantage of distance from work. (Less than half the tenants work near the village.)

2. Men who have gardens will cultivate them and take an interest in them.

3. The outdoor life adds very much to the health of the community.

4. The education in co-operative methods and in citizenship is invaluable.

5. The tendency is toward a general uplift of the community, physical, mental, and moral.

6. The garden city project is financially practicable.

The Science of Drinking

By W. W. Worster, B.A., M.D.

IT has long been known that water is one of the most powerful remedial agents known. Many treatises have appeared touching upon its external application, therefore we shall confine this article to a discussion of its internal use. Very little thought has been given to this subject by the masses. About all that is known by them concerning the matter is that water quenches thirst, and assists in rapid eating. The benefits to be derived from proper drinking may be divided into two classes, eliminative and digestive. Each of these may be again divided into two classes—physiologic, those which assist the natural functions of the body; and therapeutic, those which act remedially.

Elimination

In the process of elimination water plays a very important part. It dissolves the poisons formed in the body, and acts as a vehicle for their excretion. In health at least three pints, in addition to that contained in the food, is daily required to ensure good elimination. The temperature of the water does not play so important a part as the amount. The habit of regular drinking should be cultivated. One glass at a time periodically taken is better than larger quantities at longer intervals. If the excretory organs fail to perform their functions properly, or a rheumatic condition exists, increase in the amount taken will be beneficial. Once a week the amount daily consumed should be doubled in order to flush the sewers of the body. Those who find water objectionable may be able to use to advantage fruit juices, lemonade, and the like.

When sufficient water is not taken, elimination is interfered with. The kidneys are compelled to struggle under an extra burden. Their excretion is so concentrated that it acts as an irritant to the entire urinary tract. The percentage of poisons in the blood is increased, and this usually results in autointoxication. If the condition continues very long some of the poisons will be deposited in the tissues, and there excite a diseased condition.

Digestion

Water assists in the work of digestion. Usually there is enough in the cooked foods, soups for example, to satisfy this demand. If the food is served in a dry or semi-dry condition, a small quantity of water may be taken at the meal to advantage. Unless some therapeutic effect is desired, this should be neither very hot nor very cold, and should not exceed one glass. The free use of water at meals dilutes the gastric juice, decreasing its digestive action, and interferes with the motility of the stomach. Hot water taken at meal-time has a tendency to relax the

stomach. Cold water chills it, and retards digestion until it has been warmed to body temperature. Continual drinking at meals, especially of cold water, has been the cause of many digestive disorders. The real effect of this evil may not manifest itself for several years, but the harvest will surely be reaped unless the sowing is stopped. Drinking at meals is not only associated with rapid eating, but is the means by which the latter is made possible.

Semi-detached Cottages, Bournville

Water is a powerful agency for combating diseased conditions of the digestive tract. The value is not so much in the water itself as in its temperature. Hot water produces a temporary stimulation, which is soon followed by a corresponding relaxation. Cold at first depresses, but is soon succeeded by a stimulation and contraction. A practical application of these principles will now be made to the two main types of digestive disorders.

When there is a diminished secretion of gastric juice, accompanied by acid fermentation and slow motility, a glass of cold water (in some cases, ice-water) should be taken half an hour before meals. Unless the stomach is greatly dilated, a contraction soon takes place, emptying it of mucus and undigested food. This peristaltic action continues for a considerable distance in the bowel, and to many it acts as a mild laxative. Following the contraction, a reaction soon takes place in the stomach, which places it in better condition to digest the meal. The results obtained by applying this principle are not so satisfactory before the last two meals of the day as before breakfast, as there is usually more residue of food left in the stomach in the morning. But this can partly be offset by lying for a few moments on the right side soon after drinking the cold water.

When there is a tendency to excessive secretion of hydrochloric acid, from half a glass to a glass of hot water taken half-an-hour before meals proves very bene-

ficial in many cases. The short stimulation from the heat comes at a time when there is no food in the stomach, but the following depression comes at the right time to diminish the flow of acid during the meal. If this is not sufficient to check its flow, half a glass of cold water taken at the meal will sometimes prove beneficial. If the foregoing plan proves unsatisfactory, a glass or two of hot water taken an hour after meals is usually sufficient to relieve the distressing conditions by diluting the secretion. If this is not successful, consult your physician.

The Care and Hygiene of the Skin

By Mary W. Paulson, M.D.

MUCH more importance should be attached to the skin than generally is. It covers the outside of the body as a protection to the tissues inside. In other words, it is the binding for our bodies, and it is more important that our bodies be well bound than it is that a book which we have in constant use be well bound.

Analysis of the Skin

The average individual has about seventeen square feet of skin. It is made up of several layers of epithelium, and is supplied with abundance of nerves and blood-vessels. The outside layer is horny, and is for the purpose principally of protection. Growing out from this horny layer we have finger nails and toe nails.

In the layers of the skin are sweat-glands, or pores, as they are commonly called. There are about twenty-five hundred of these to every square inch of skin, in some parts of the body, or about two and one half millions to the whole area of skin. Each little gland has an opening on the outside of the skin, called the duct of the gland. These sweat-glands, with their ducts, may be spoken of as the lungs of the skin, and are a very important part of its anatomy.

On some parts of the skin we find hair growing in more or less abundance. This grows from the deeper layers of the skin. The skin also contains sebaceous or fat glands, which are usually connected with the hairs of the skin, and open into the same place on the skin where the hairs are found. We find these fat-glands also on the face and head, and other parts of the body where they are necessary.

If these fat-ducts become stopped up, as they do sometimes on the face, the dirt then adheres to the fat in the ducts, and produces what we call blackheads; and blackheads mean that there is not a healthy condition of the skin, because the fat is not thrown off as it should be from the skin. This should not be allowed to continue, but an effort should be made to press them out, and so give the duct an opening. The face should be washed occasionally with warm green soap solution, to remove grease and dirt which otherwise is not removed.

The skin is supplied with all these tissues for a purpose. It not only acts as a covering, but has other important functions. As a covering it protects the very soft and delicate tissues underneath. If one macerates the skin, or removes it by bruises or sores or burns, he can soon discover that there are delicate tissues underneath, which when exposed give a great deal of pain. The skin acts as a protection to these many thousands of nerves which are beneath the skin.

The Sense of Touch

Another important function of the skin is the sense of touch. In the deeper layer, or the true skin, are nerve endings. In some parts of the body, such as the tips of the fingers, the palms of the hands, the lips, and the soles of the feet, we find these nerves of touch more abundant than in other parts.

Another important function of the skin

is that of the sweat-glands, which enable it to do excretory work. By means of the sweat-glands, water, which forms the greater part of the perspiration, is excreted, also some disease germs and poisonous matters.

Inasmuch as the skin is so well supplied with these sweat-glands all over the body, it is extremely necessary that it should be kept in such condition that its glands can functionate. Suppose that the ducts of these glands should be stopped up by substances on the skin, which does occur if the skin is not frequently bathed; then a very important function of the skin is interfered with, and necessarily more work must be done by other excretory organs of the body than they normally should do. Many people suffer from obstructed elimination of the skin; and as a result the lungs and kidneys are overworked, because they must do some of the work which the skin fails to do. History tells us of a child in Europe who, to represent a goddess, was covered with gold-leaf. This child died in a few hours, because the excretory functions of the skin were entirely cut off by the gold-leaf.

Regulator of Temperature

The skin is also an important agent in regulating the body temperature. This is done by means of the numerous blood-vessels in the deeper layers of the skin. In cases of fever the skin is hot, particularly if these blood-vessels contain a large amount of blood; and by sponging the body we reduce the temperature, because we help to furnish evaporation from the hot, blood-filled skin. There is taking place all the time from our skin a certain unobserved evaporation, which is dependent upon a free circulation of blood in the skin. In pale skins this does not occur so well, because in such cases the blood-vessels of the skin are contracted; and as a result we have the internal organs, such as the liver, lungs, and stomach, engorged with blood, and so these organs become congested, producing disease.

The nerves in the skin also affect greatly the circulation in the body. Through the skin, by the application of hot or cold or other stimulants to the nerves, we can regulate the internal temperature of the body. In fact, the functions of all the organs of the body are influenced to a greater or less degree by the skin. This enables one to use the skin as the medium for treating diseased conditions of such organs as the liver, the lungs, the stomach, and the kidneys.

From the above we can see that the care of the skin is extremely important as a means of maintaining the health of the body. Exercise is very essential to the health of the skin. By means of exercise, the circulation is increased in the skin, and the sweat-glands do better work. Indeed, the action of the sweat-glands is greatly dependent upon exercise. The Lord told Adam, "In the sweat of thy face shalt thou eat bread," because He knew it was good for him.

Importance of Perspiring

Many people do not exercise until they sweat. Here they make a great mistake. The natural sweat which comes from exercise is very much more valuable than that which comes from simply taking a hot sweat-bath, because in exercise more poisons are eliminated than are eliminated in a sweat-bath. The sweat-bath cannot take the place of exercise. Just as we are instructed to work out our own salvation, so we cannot relegate the work we should do to the sweat-bath.

Another important duty which we owe to our skin is bathing. Some sort of bath should be taken every day. As a means of stimulating better circulation in the skin, the cold friction to the skin is very valuable. This can be given by means of a rough mitt dipped in cold water and quickly rubbed over the skin. Some people can endure a short cold plunge. However, there are many who cannot react well, and such people should only use the cold friction. Both accomplish the purpose, although the plunge is more vigorous. Do not take prolonged cold baths, as they do not increase the blood

supply of the skin, but rather decrease it.

A warm bath is necessary to keep the skin clean. Even this should be followed by a short cool application to the skin, as the warm dilates the blood-vessels and does not stimulate their contraction. In connection with this warm bath, soap-suds should be used, so as to emulsify the fat which adheres to the skin.

Some people have a softer and more sensitive skin than others. Such people should give their skin greater care, particularly in the use of the cold sponge-bath. Also the air-bath to the entire body is valuable.

Diseases of the skin are often produced by soaps. Castile soap and vegetable soaps are not irritating to the skin. If the skin of the hands becomes diseased, as in eczema, make a change in the soap you are using. Some soaps which are highly perfumed are irritating, as is also ordinary laundry soap oftentimes.

Woollen underwear next to the skin may be an irritant. We find that the delicate skin of babies is often affected in this way, so that a rash appears all over the body. In such cases either linen or silk or even lisle thread underwear should be used next to the skin.

Some skins become very dry and scaly, which interferes greatly with the elimination. Frequently in this condition the other eliminative organs need to be stimulated. Either there is constipation, or else the kidneys are not doing proper work. Often these skins are of a sallow, muddy appearance, accompanied by a coated tongue. The diet should be regulated, more fresh foods, such as fresh vegetables and fresh fruits, should be used. The skin should be rubbed with salt every other day until it is in better condition. This salt should be moistened a little before applying it, that it may not be too harsh. The use of the sweat-bath in such cases is also very valuable, followed by a cold sponge to the skin. Exercise daily in the fresh air is extremely important in the cure of such conditions.

If your brain is not clear, or in other words is muddy, please notice if your skin also is not muddy. This means that you need to look after your elimination, of both the skin and other organs.

One often gets an itching of the skin, particularly in the winter time. This may be due to living in rooms where the air is too dry. Moisture should be added by putting a pan of water on the stove or on the hot coil, so that there is an evaporation in the air constantly. Oftentimes the cause is acidity in the blood, and the diet needs to be changed. The use of very hot or very cold water many times aggravates this itching. A bath at body temperature is more agreeable in such instances.

Hardening of the Muscles

THIS is fortunately a very rare disease, says an exchange, although it is better known to the general public than many other more common affections. Being so rare and also so striking in its manifestations, its wretched subjects, having no other means of livelihood, often lend themselves to exhibition in museums as "ossified men." That is what they are literally, for their muscles are largely converted into bone.

In one of the earliest-known cases of the disease, the sufferer became so rigid during his long martyrdom of forty-four years, that for some time before his death the only joints in his entire body that he could move were the knees and one wrist. He was wholly unable to change his position in the bed, and had to be moved about like an iron bar or a log.

The disease affects men more often than women in the ratio of about three to one. It begins usually in childhood, or even infancy, and progresses steadily, or with only slight remission, for years. As a rule, the first indication of its onset is a localised swelling in the muscles of the neck or back, hard, and more or less painful on pressure. This is usually thought to be due to a sprain, or to some forgotten injury, and in a few days it subsides, leaving a hard lump in the substance of the muscle.

Similar attacks recur from time to time, and the theory of injury being plainly untenable, are, for want of a better name, called chronic muscular rheumatism. In the course of years the painful swellings appear in other parts of the body, and the hard lumps, which are bony formations, extend, and gradually join with the bones of the skeleton, limiting or preventing movement in the neighbouring joints.

As the disease goes on, one after another of the joints stiffen, the head becomes immovable, the back is rigid, the jaw is fixed so that the chewing of food is impossible, the arms and legs are held as in a vise. Almost the only muscles not affected are those of the face.

The disease is not fatal in itself, and its victims often live to an advanced age, and die of pneumonia, consumption, or some other intercurrent disease. There is as yet no known cure, but the malady is evidently one of nutrition, and when the physicians learn how to modify the nutritive changes in the body,—as they are now learning,—they will doubtless be able, not to cure, but to prevent ossification of the muscles.

No Need for Alcohol

By J. Burney Yeo, M.D., F.R.C.P.

WITH regard to the use of alcoholic stimulants, we are convinced that in more than two-thirds of the cases of acute pneumonia, as they are generally encountered, there is no need of them whatever. The routine administration of alcohol in pneumonia, especially in the early stages, with the idea of preventing cardiac failure later is, we think, a *serious error*. Alcohol produces vasomotor *paresis*, and causes dilatation of the vessels, and it must, therefore, aggravate or induce tendencies to vascular engorgement. It acts like a poison to many persons, and causes considerable nervous and general depression after its first stimulating effect passes off; it increases the amount of toxic substances in the blood, and the elimination of considerable quantities of alcohol must impose a severe strain on the already overtaxed organs of excretion. When we further consider the large quantity of *impure* spirit—brandy and whisky—which must be used in hospital practice — for the pure and best kinds are very costly—we are disposed to believe that some of the more serious forms of cardiac failure, with albuminuria and gastric and hepatic congestion, encountered in the later stage of pneumonia are, to a certain extent, contributed to by the excessive and premature use of impure alcohol.

The *early* routine use of alcohol takes from us also the power of resorting to it as a fresh resource in advanced stages, when in exceptional cases it may be of undoubted use.—*A Manual of Medical Treatment*, Vol. I.

What Is a Boy Worth?

DURING a country local option campaign in Ohio, U.S.A., for the prohibition of the liquor traffic, an incident occurred that created a good deal of amusement, and at the same time taught a valuable lesson. At a temperance meeting, a speaker was comparing the worth of a boy with money, because so many people in the country were afraid that the banishing of the saloon would injure business and increase the taxes. After the speaker had dilated on the peril coming to the boys through the open saloon and the liquor traffic in general, he declared that the boys were worth a great deal more than business or any money value whatever. In order to make his argument all the more forcible by means of a concrete example, he stepped forward to the front seat, and laid his hand on the head of a bright lad, saying, "What, for example, is this boy worth?"

There was a moment of impressive silence, while the speaker looked earnestly over his audience. Then a mischievous lad some distance away called out, "He's worth ten cents!"

For a moment there was an uproar of

merriment. The laugh was on the speaker. It was a question how he should recover his poise and save his argument on the value of the boy from defeat. You know how that is. In a promiscuous crowd the fellow who gets off the laugh on his opponent almost always has the best of the contest, whether the argument is on his side or not. The temperance orator had to save the day in some way—for, after all, the truth was on his side; so after the laughter had subsided, he took advantage of the situation in this way: "Yes, that is just the way a good many people look upon this matter. They put a high money value on a horse, a cow, a sheep, or even a hog; but when they come to estimate the value of a boy, they think he is worth about ten cents."

That was a pretty apt reply, and many in the audience caught the point and applauded loudly.

However, another thing happened to save the day for the temperance cause. As the speaker ended the foregoing sentence, a man on the other side of the room arose and spoke as follows:—

"Mr. Speaker, the boy you have been referring to is my boy; and I want to say before this whole audience, that there isn't enough money in the county or the State to buy him."

Then a storm of applause that almost "raised the roof" broke from the delighted auditors, who appreciated the noble way in which the true worth of a boy had been vindicated. It is a good thing to be as quick-witted in the cause of truth as other people are in the cause of error.—*Leander S. Keyser.*

Drugs and Health

WHY do we take drugs? Because we are sick. Yes, but why are we sick? Is sickness due to right living or to wrong living? Are we sick because we obey the laws of health or because we disobeyed them? Paregoric relieves (it doesn't cure) green apple colic in the boy. Is eating green apples a sensible act? Pepsin and bismuth relieve (they don't cure) indigestion.

What causes indigestion? Is it the result of eating proper food in proper amount in the proper way? Or, is it the result of eating improper food in improper amount in an improper way? If the latter, why do it? Is it our large amount of common sense which leads us to it?

What is good for a cold? Syrup of wild cherry, syrup of squills and paregoric mixed together make a "good cough medicine." Yes, but why overeat and breathe bad air and so make a cold. You don't have to overeat and you don't have to breathe foul air.

Just observe closely the next time you have a cold, and see if it did not follow a big feed and close confinement in an unventilated room. Live on plain, well-cooked, well chewed food, breathe pure air, be temperate, and you will never have a cold, pneumonia, or other diseases of the breathing organs. We don't have to have colds and then take squills, paregoric, and wild cherry to cure (?) them. The whole business is simply evidence of our impracticability, of our foolishness.—*Indiana Board of Health.*

Why?

WHY is it that in France the officers placard the barracks of the soldiers with notices warning against drink? Why is it that many British officers accustomed to the moderate use of liquors have become total abstainers as an example to the men? Why is the total abstinence movement in the British army so popular that forty per cent of the Indian troops are total abstainers? Why is it that the German Emperor is earnestly urging abstinence in the German army and navy?

It is because the leading army men in France and England want efficient fighting machines, and they know that liquor even in moderate amount does not make an efficient soldier.—*Good Health, London.*

The Sleep of the Sleepless

By David Paulson, M.D.

MODERN civilisation is developing an alarming number of people who are almost entire strangers to the luxury of sound and refreshing sleep. The amount of sleeping powders and other nerve-quieting remedies that are sold is enormous, and is rapidly increasing year by year. All drug sleep is, however, a wretched substitute for the real article. Sleep-producing remedies induce a stupor by a species of intoxication. That is why the insomnia patient so frequently remarks after such a sleep, "I feel as if I had been on a drunken spree."

Thirty centuries ago the Scriptures declared that "the sleep of a labouring man is sweet," and to-day it is precisely the sedentary man, or he who earns his bread by the sweat of his *brain* instead of his brow, that is a candidate for insomnia. This only confirms the inspired declaration that "the abundance of the rich will not suffer him to sleep." Eccl. 5:12.

"Far from the Madding Crowd"

And this applies equally well to the entire stress and strain of our modern business system.

A recent editorial on this subject in the *New York Medical Record* gives the following additional common causes for the prevailing sleeplessness:—

"Perhaps the second most efficient reason why we sleep so little is the general use of grey-matter stimulants—coffee, tea,

cocoa, tobacco, alcohol, all or one or more in a day. Largely because at times they have enjoyed good sleep immediately after taking these, many unmedical persons are firmly convinced that they are not kept awake by these stimulants, when, in reality as a rule they are. Of course, at times one may sleep in spite of these, for reasons that no one can as yet explain. As it is, throngs of sedentary people are kept from feeling normally sleepy at the proper time by these stimulants.

"A third reason obviously is the evening-entertainment habit, despite the necessity of early rising for work. How numerous are the theatre-mad and the opera-mad and the bridge-mad in our day and generation needs no emphasis, and they unduly waste the sleep-time."

Our city population who must continually endure the clanging of the street car, the "hoot" of the motor-car, the rattling of the heavy truck, and a thousand other artificial sounds, scarcely knows what a quiet sleep is except when a night is spent in the country with some friends.

In addition to these ordinary causes may be mentioned the uncertainty of business affairs, the remorse of a guilty conscience and the despair of one who is not at peace with God.

How to Coax Sleep

It has been said that you may lead a horse to water, but you cannot make him drink; so you may go to bed and close your eyes, but you cannot force yourself to sleep. From a somewhat extensive experience in dealing with nervous patients the majority of whom were more or less sleepless, I offer the following practical suggestions:—

1. Don't worry because you cannot sleep. Some remarkable experiments made by Edison in his electrical laboratory show that very little sleep suffices for a time, provided the waking hours are not spent in worry; remember, just lying in bed and enjoying the rest is a fair substitute for refreshing sleep.

2. All means that tend to relieve the congested brain are sleep producers; for instance, a short warm bath just before retiring which draws the blood into the skin. Sometimes a long *lukewarm bath* is even more soothing. A fairly good substitute is a warm foot bath, or even a hot-water bag or hot brick to the feet or the spine after going to bed. Raising the head end of the bed by putting a couple of bricks under it works like magic in some cases. Occasionally wrapping the head in a light towel wrung out of cold water will also encourage sleep.

3. The drinking of a cupful of hot water or hot milk is a trusty sheet anchor for many a sleepless patient.

4. Moving the bed out on the verandah not only tends to induce sound sleep, but to improve the general health as well. Extensive experience has convinced me that the "sleep-outs" actually require less sleep than the "sleep-ins."

5. Avoid as far as possible all exciting work, reading, or games in the evening. Some moderate but agreeable physical exercise is the ideal thing if nothing else is available. A pleasant walk can be indulged in often with the most happy results.

6. Sleeplessness is sometimes merely a bad habit which can be broken most successfully by some decided change like a brief visit to agreeable friends, a week's camping out, a little trip to the seashore or mountains. When planned sensibly such an outing can easily be taken without any great outlay of either time or money, while the benefit to be derived from it generally far exceeds the actual expense.

7. Sleeplessness is sometimes caused by a heavy heart instead of a congested brain. Such cases require intelligent spiritual treatment rather than the most expert physical remedies.

The assurance of sins forgiven, the knowledge that divine grace not only can but will restore fully "the years that the locust hath eaten" (Joel 2:25), that the domestic sorrow or other heartaches when committed to the great Burden-Bearer,

will actually in His hands be transformed into a sweet blessing instead of a grievous curse—such assurance I can say from abundant personal observation will enable many a poor nerve-racked, sleepless sufferer to exclaim, "Thou hast put gladness into my heart. . . . I will both lay me down in peace, and sleep; for Thou, Lord, only makest me dwell in safety." Ps. 4:7, 8.

A Plea for the Speaking Voice

PERHAPS because speaking is so easy, explains why we fail in it. So little effort is required that we seem to do very little, and yet how much lies hidden in that word fitly spoken! The tones of some voices stay with us always. They seem to weave a spell about us, from whose thralldom we would not escape. Summon aid from your retinue of vocal workmen when you speak; use only the necessary parts of the vocal apparatus, and not every muscle of the throat, and so save yourself from becoming a victim of that dread complaint, "clergyman's sore-throat," which is the natural result of over-strained throat muscles. All these ills can be avoided by opening the way from the diaphragm to the lips, keeping it free from obstacles and hindrances. A little wholesome thought, and the matter of plain and pleasant talking is a solved problem.—*Margaret Blanche Best, in the Chautauquan.*

Chilblains

By J. J. Bell, M.D.

CHILBLAINS are local congestions of the skin, caused by exposure to damp and cold. They usually occur on the toes, fingers, and sides of the feet, less often on the heels, ears, and tip of the nose. Local swellings of a pink or purplish colour, with much itching, especially when warm, are the chief characteristics. In more severe cases the formation of small blisters occurs.

A frequent abuse of chilblains is to sit with the hands or feet before the fire after exposure to cold.

To prevent chilblains when the extremities are cold, the parts must be warmed by exercise. This causes a quickening of the circulation of the blood through the tissues. A brisk walk or run in the open air, or gymnastic exercises with the feet and hands, will also accomplish this.

Persons suffering from chilblains should avoid chilling the extremities (1) by active exercise, and (2) by wearing loose, warm garments. Tight-fitting boots and gloves and the use of garters should be avoided. It is a good plan to change the stockings frequently.

One of the most effectual remedies for chilblains is the dipping of the parts alternately into hot and cold water. The hot water must be kept as hot as can be comfortably endured by the patient, and the cold may be as cold as can be obtained. The affected parts may be kept from thirty to forty-five seconds in the hot water, and about ten seconds in the cold. This may be kept up for ten minutes at a time, and repeated at least three or four times daily. Always finish with the cold water, dry the parts thoroughly, and give friction. The alternate hot and cold acts in a manner somewhat similar to exercise. It brings to the parts a large supply of blood, which promotes healing.

If the skin is broken, the parts should be kept clean, and some mild antiseptic ointment applied after the use of the water.

"BOSTON authorities are making a determined effort to stop the spitting nuisance, the police commissioner having announced that he will have arrested a certain number of offenders on a certain day, twice that number on the following day, and so on, increasing the number of possible arrests until the public is awake to the offence."

Ozone

THERE is more ozone in air at the seaside and on the shores of lakes and rivers than in the interior. Tests read one-third higher in sea breezes than in land currents.

Air has the lesser quantity before a rain, more afterward; and more following a fall of snow. Hot, moist air has less than cool, dry air. But tropical currents always have a higher percentage of ozone, while polar currents contain exceedingly little or none at all. It is cool land or sea breezes that have the ozone; but polar currents even at sea have only very minute traces.

There is a greater amount in the air of hills and mountains than in low-lying areas and valleys. There is less ozone at five or six feet above level earth of low-lying districts than below this point or at a height above. According to Houzeau, 700,000 parts of country air at about six feet above the soil contain practically one part ozone by volume. Mountain or seaside air contains as much as one part ozone to 400,000, or even as high a proportion as one part in ten thousand.

From pure oxygen, ozone can be made by the electric spark to the extent of nearly one part in four.

There is much more ozone produced on clear, bright, sunshiny days than on hazy, or dull, cloudy days. In the clear shining after rain on a spring or summer day, there are immense quantities of ozone generated. But deficiency of ozone always accompanies a hazy sky and sluggish air.

Temperature for temperature, air that is the more invigorating contains the greater amount of ozone. Warm air with the same amount of ozone as cool air would be less invigorating.

Cold itself is bracing because of its insulating effect upon the body. Warm air is a better conductor of electricity and magnetism than cold air, and abstracts or conducts away not only the magnetism

N. J. Caire, Photo., Melb.

TAKING A WHIFF OF OZONE

from the body, but also from telegraph and telephone wires; so that in hot weather they work badly, and sometimes even fail unless the battery currents are increased.

A waterfall creates ozone in greater quantities than an open stream running smoothly in its channel.

According to Scoutetten, there is more ozone in air sixteen inches above a deep current of water than fifty feet above soil; though above soil the quantity steadily increases up to several hundred feet.

Living rooms contain only a small amount ordinarily, hospital wards contain less, and wards with fever patients have the least quantity of ozone, because of the greater amount of emanations thrown off by fever patients, which use up the ozone. Ozone generated artificially is found to be an important measure in keeping a pure atmosphere and eliminating possibility of contagion in fever wards.

Artificial Production

A spray of water through the air creates some ozone; as, a lawn spray or a fine fountain spray. The finer the spray, the greater quantity of ozone created. In England, ozone is generated to a practical extent by water dust—that is, cool water so finely divided into spray that it largely disappears into the air almost immediately after being produced. This is done very simply by forcing water under high pressure through fine spray openings, causing it to pass just before reaching the nozzles, through strainers that arrest all floating particles of any kind that would clog the small openings.

Distilled water which has been boiled to exclude air, does not create ozone on evaporating.

The use of perfumes separate from flowers is quite as productive of ozone as if the perfume were emanating direct from the flowers themselves, for it is the action of their volatile oils on the oxygen that creates ozone.

Mantegazza states that small quantities of essential oils evaporated under influence of air and sunlight or daylight ozonise no small amount of the atmospheric oxygen, and are therefore convenient sources of ozone. The oil of peppermint, thyme, lavender, aniseed, clove, cinnamon, and wintergreen, are some of the oils that can be used for this purpose.

A wire-gauze box can be made 3x3x3 inches, or a small wire-gauze cylinder, and suspended near the source of the incoming air. This will distribute it to all parts of the room. In the box place some cotton with a few drops of the essential oil. The oil can be renewed from time to time as necessary.—*M. E. Yergin, D.C.H.D.*

The Boy Who Couldn't Be Trusted

HARVEY held up his fingers, as if there was something in them, saying, "Speak for it!" then waited for his dog to take a seat on his hind feet and bark a request for it. But the dog did no such thing. Instead, he poked his nose between the rails of the fence, and looked surly.

"Why, what a dog!" said Harry Wheeler, who was visiting Harvey, and waiting to see the dog perform. "Now my Trusty, the minute I bring him anything and hold it up so, will speak so plainly, that everybody knows what he says."

"This dog used to do so," Harvey said, looking crossly at him. "I'm sure that I don't know what's got into him; he doesn't take any notice at all. He ought to be whipped."

Just then Harvey's sister came out to see the fun. She was in time to hear what was said. "I know just what's got into him, Harvey Barr," she said; "and if I were a dog, I would do exactly so. He doesn't believe a word you say. You cheat him all the time. You snap your fingers and say, 'Speak for it!' and you haven't a thing for him, and he knows it. What would he speak for? If I had a dog, I wouldn't cheat him."

"Pshaw!" said Harvey; "as if a dog knew when he was cheated!"

"Why, of course he does! If he didn't, why wouldn't he take notice when you spoke to him? He used to ask nicely for things, but now he knows you are just doing it to fool him."

"Well, he ought to obey, whether I have anything or not," Harvey said. "A dog ought to obey. Anybody who won't do what he's told isn't worth a penny. Father makes us obey, whether he has anything for us or not."

"Oh, Harvey, as if father ever cheated us! You never heard him say, 'Come here, and I'll give you something,' and then not do it after all."

"I don't care; if he *did* say so, we would have to obey him."

"But he *won't* say so ever, because it isn't right; and I don't think that it is right to treat a dog so. It just ruins him; mother said so. She said that

Aunt Hattie was bringing up Tommy just as you bring up your dog. She tells him to be a good boy, and she will bring him something; but she always forgets it, and Tommy knows that she will. He says: 'Oh, pooh, she won't!' I suppose that is exactly what your dog is saying to himself now."

"Boys are boys, and dogs are dogs," said Harvey; but he jumped down from

HARRY AND TRUSTY

the fence, and went away. He had made up his mind that there was no use in trying to have the dog "speak." Whether it was bad bringing up or not, he *wouldn't* take any notice.—*Our Boys and Girls.*

"Do all the good you can,
In all the ways you can,
At all the times you can,
To everybody you can,
As long as ever you can."

Three Lessons from the Bee

1. THE bee teaches us to be industrious. No bee ever shirks his work.

2. He teaches us to be loyal and obedient. Bees obey and love the queen who rules them.

3. They teach us to be fond of our homes. No bee leaves his home, except for a time, if he can help it.—*Children's Hour.*

"I Would Rather Sing"

AN eight-year old child, with a cut in her hand, was brought to a physician. It was necessary, for the best results, to make a few stitches with a surgeon's needle. While the physician was making preparations, the little girl swung her foot nervously against the chair, and was gently warned by her mother.

"That will do no harm," said the doctor, kindly, "as long as you hold your hand still," adding, with a glance at the strained, anxious face of the child, "you may cry as much as you like."

"I would rather sing," replied the child.

"All right; that would be better. What can you sing?"

"I can sing 'Give, said the little stream.' Do you know that?"

"I am not sure," responded the doctor, "how does it begin?"

The little patient sang the first verse.

"That's beautiful," said the doctor; "I want to hear the whole of it." All the while the skilled fingers were sewing up the wound, the sweet, childish voice sounded bravely through the room, and the only tears shed on the occasion came from the mother.

Now crying and groaning and singing all help to lessen pain, but since weeping and fretting and groaning make our friends unhappy, how much better it would be for us all to try singing instead. —*Our Little Friend.*

The Old and the New

MANY thousands of boys and girls in Australia have probably never seen an old stage coach similar to the one in our picture. Doubtless they would be surprised to know that not so very long ago stage coaches were the only means of public transit from one part of the country to another.

What a vast change has taken place since then! Formerly these old coaches rattled along the highways at about eight or ten miles an hour. Then the expense of travelling was very heavy compared with what it is now. Railway travelling has not only reduced the time occupied in reaching distant places, but the cost has been reduced even to a greater extent.

Although for rapid transit and solid comfort the railway train is far ahead of the coach, yet there was something romantic about riding on the top of a coach behind five or six good horses. But modern improvements aim at practical things, taking little notice of the romantic side of life.

N. J. Caire, Photo., Melb

THE OLD

The writer well remembers the time when many of these old stage coaches ran from Melbourne to various parts of Victoria. Their bright red colours and prancing horses were objects of much interest to him as a child. He well re-

members a most enjoyable ride to Healesville he had on the coach shown in the picture, before the railway line was carried to that popular tourist resort, although, needless to say, he did not happen to be one of the party which occupied the coach when the photo was taken.

In more ways than one the picture reminds us of the past. Formerly this continent was solely occupied by dark-skinned aboriginals who roamed through the forests of giant eucalyptus trees entirely ignorant of the enormous wealth of minerals which lay at their feet. All that has now changed, and the old has given place to the new.

N. J. Caire Photo, Melb.

THE NEW

Instead of tribes of blackfellows roaming through the bush armed with boomerangs and spears, the country is now occupied by white men who have brought into being everything which modern civilisation calls for. The blackfellow has given place to the white man, and the old stage coach to the railway train and motor car. So in our picture of the new order of things we have the motor car crowded with a number of white children instead of a coach loaded with aboriginals.

Seeing, then, children, that we have displaced the blackfellow, and have taken possession of his great and wealthy territories, surely it is fitting that we should extend as much kindness as possible to the few remaining remnants of the dark-skinned Australians whose land we are now using with so much benefit to ourselves. And let us also ever be grateful to the hard-working and courageous pioneers who laid the foundations of the great Australian institutions which are

noble monuments to their foresight. They did not have the conveniences which we have, but their success lay in making the most of their opportunities. Success to-day is won in exactly the same way.

A. W. A.

Playing Lady

Little girls like me, I think, who haven't any one
Just specially to play with, can't have a speck of fun
Unless their mothers play with them the way mine plays with me—
Playing lady—that's a game as nice as nice can be!

One of mother's old shirt-wastes, a lovely skirt that trails,
Sister Belle's last summer hat and one of her old veils,
Gloves and fan and shopping-bag and aunty's parasol—
Playing lady—I like that the very best of all!

For mother acts so natural. "Why, my dear Mrs. Brown,
How good of you to come to-day! When did you come to town?
And tell me how is every child, and won't you stay to tea?"
Playing lady it's such fun when mother plays with me!

Harriet Crocker Leroy.

Dependable

"ELEANOR is such a dependable girl." What a desirable adjective "dependable" is! "Depend" means to hang from. If you put a nail in the wall, and it goes merely through the plaster, the mirror or the picture hung from it is likely to fall and be broken. The nail is not dependable.

If, instead of going through plaster only, it had gone into firm wood, it would have held. So character, to be dependable, needs to be clinched firmly in truth. A dependable person may be relied on to hold, to be true to a trust reposed.

The dependable girl does what she is told to do, when the order comes from one in authority; and she keeps her own promises. How many girls are there who do not say, "I meant to, but —" That "but" may have various excuses following it—they all mean the same thing: the girl is not to be relied on. The dependable girl does not lose the important letter she is bringing from the post-office. She does not borrow some rare volume from your library and leave it lying in a public place. It is the dependable girl who makes the best kind of a friend. She does not reveal confidences. She has an instinctive sense of what is proper to speak of, and what should be kept to oneself. She stands up for others where she truthfully can, and keeps silent if she cannot approve. This girl pays her debts. She does not keep a needy person waiting long for the money due her for work.

If an errand has been forgotten, go back and do it, even if you may have to retrace most of the way. You will not forget next time. Be careful about making promises,—think well whether you can perform them,—but once made, fulfil them to the letter.

Many rewards attend on dependableness. A girl possessed of it is likely to be a favourite. She may be called upon to do more than others, but she is everywhere welcome, and the demands are an honour. Perhaps the highest reward is increasing strength of character. As the girl goes on to womanhood the stress of life becomes more apparent. Some day persons in grief or misfortune will need the support of her strength, and she will not disappoint them. It is of the nature of dependableness to become more and more dependable.—*Youth's Companion.*

Perseverance

AFTER a great snowstorm a little fellow began to shovel a path through a large snow bank before his grandmother's door. He had nothing but a small spade to work with.

"How do you expect to get through that drift?" asked a man passing by.

"By keeping at it," said the boy cheerfully. One may go far after he is tired. Perseverance puts new life into the pilgrim.—*Our Little People.*

Kindness

A GREAT man once said, "I sometimes think that nothing in the world is worth while except kindness. It is my creed."

We are justified in making kindness a creed. It has power to make the lives of those among whom we live not only easier, but also happier and richer. However small the act of kindness may be, it is the outward and visible sign of human feeling, of our sympathy with another. Nothing is so truly courteous as a kind act, and all the courtesy in the world is only cold and formal unless kindness is its source.

Kindness has as many ways as love for revealing itself. It is tender to those whom we love or who need our gentleness. It is benevolent to those upon whom we can confer anything. Kindness shows itself in a negative way; in lack of prejudice. It shows itself, too, in acts of forbearance; in patient refusal to see the faults or mistakes of others, when by that refusal we may be more useful to them.

Have you ever realised that for the expression, "find fault," there is no parallel expression of "find good"? Is that not enough to show how much the kindness of forbearance is needed? Have you ever thought how much of a virtue indulgence to others may become? Both in others and in ourselves we regard the strenuous pursuit of duty as a virtue; but how often do we realise that there are times when it is more of a virtue to be indulgent than to insist that another do his duty?

Kindness shows itself in compassion. It refuses to see the deformity that in harelip or lameness or crookedness is hard enough to bear without attracting to itself the careless attention of other eyes or the cruel mockery of playmates or companions. It refuses to laugh at what is old or helpless or unlovely. It sees nothing funny in what is evil or weak. Kindness can never be anything but humane.

Can we do better than to speak kindly, if for no other reason than because we cannot tell how rough, how full of pain, how full of loneliness, another's way may be? Can we do better than to think kindly, if for no other reason than because a kind thought can never come amiss? Can we do better than to act kindly, if for no other reason than because we are certain a kind act can hurt no one and may help?—*Youth's Companion.*

What Smoking Did for Him

MISS S——, a teacher in a high school, became much interested in one of her pupils, not because of his intelligence, but because of his apathy and dullness. She knew that he came from a good family, and that his brothers and sisters, who had preceded him in the high school, had ranked high. She could not understand why this boy, with all his advantages, should do such poor work. To solve the problem, she went to the office of the city superintendent, where are kept filed the records of every child in the public schools year by year. She found that for the first five years of his school life he had ranked "Excellent" in every study. The next year a few "Goods" had replaced the "Excellents" in some studies. The next year there was but one "Good" and many "Fairs." The following years "Fairs" and "Poors" struggled for supremacy, showing a steady downward course year after year. The next day she had a private interview with the boy, and electrified him by saying:—

"George, you began to smoke cigarettes when you were in the sixth grade, didn't you?"

"Who told you?" gasped the astonished boy.

"Nobody."

"Then how did you find out?"

"Was I right? Did you?"

"Yes," confessed the boy. "I began when I was in Miss H——'s room. The boy who sat behind me gave me a package. But how did you find it out?"

Miss S—— then told of her visit to the superintendent's office, where his

whole miserable record of deterioration was filed against him.

The boy seemed roused from his usual apathy, and said, "Well, if that is so, I'll never smoke another cigarette as long as I live."

That was several years ago. He kept his word, and his report cards showed a steady improvement, although he never received an "Excellent" during his high-school course, because his faculties had become irretrievably dulled.

Last year he wrote to Miss S——: "I have kept my word, and have never smoked since the day you showed me my record. I am working in a good position, and am glad to say I am a decent man, thanks to you."—*Selected.*

All Wool

I've noticed how the woolly lamb
Dislikes the rain and dew.
I wonder if he fears to damp
His little garments through?

How very horrid it would be
If they should shrink when wet!
He cannot take his woollies off
And wear another set.

His legs would be so bare and cold,
An ugly sight to see!
The flock would bleat, "Bah! Bah!" at him.
How sheepish he would be!

—*Abbie Farwell Brown.*

A Quarrel at Marbles and What Stopped It

I REMEMBER that when a lad, the first tokens of spring always made me think of a game of which I was very fond,—the game of marbles.

Boys of all generations are just alike. No one can pass on a spring day along any footpath that is digable without seeing boys at marbles; the same marked line, a circle or a crack in the soil; the same making of little holes; the same marbles,—I think they must be identically the same with which I used to play! the boys' faces shining as they used to shine when I was one of them. The whole of childhood comes back again to us whenever we see it.

I would like to tell the children of something that once happened in connection with a game of marbles. It was played close under the windows of the home; and by the second story window, which was open because the day was balmy and bright, sat the mother of the children. That mother had a peculiar way of breaking up her children's quarrels. Perhaps some mother here would like to know what her plan was. She almost always succeeded, if she was near enough, in making them ashamed of themselves when they began to quarrel; and that by a single word.

Well, as the game went on, the mother, sitting at the window, heard one boy say: "You cheated." The other boy said: "I didn't." "You did," was the reply. And then the mother came into the game! The advice was new to them. She said: "Sing it, children, sing it." And while they were yet looking a little queer, there poured out from the window a voice which was, I am sure, as sweet as an angel's. I wonder if I dare try it! I know what the tune was. "Oh, Willie, you cheated! Oh, Willie, you cheated! Oh, Willie, you cheated! but I didn't cheat you." The quarrelling stopped. "Sing it, boys," she said again. They couldn't sing it. When they looked into each other's faces, they smiled; they looked ashamed, and they felt ashamed, and they stopped quarrelling.

You know, girls and boys, there are some things we can't sing. There are some things that are not singable. When you are angry, you can't sing your anger. Just try some time to sing a threat and tell that other boy what you are going to do to him! You can't do it; and things which we can't sing are sometimes, perhaps most always, better not said.

I hope the girls and boys will try this little plan when they are inclined to have a quarrel over a game of marbles or over their dolls or over anything. When you are wanting to speak some bitter, ugly, accusing, sharp word, just sing it; sing it!—*Frank T. Bayley, D.D.*

Chats with the Doctor

[Send questions for this department to the Medical Superintendent, Sydney Sanitarium, Wahroonga, N.S.W.]

NOTICE.—Subscribers sending questions to this department 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.

61. Catarrh of the Stomach.—"Would you kindly prescribe through LIFE AND HEALTH home treatment for catarrh of the stomach? I have to thank you for the benefit I have received by following your instructions and prescription in the December-January number for nasal catarrh."

Ans.—You should practise drinking hot salt solution, a teaspoonful of salt to the pint. One hour before meals one or two glasses should be drunk, followed in about half an hour by a half-glass of very cold water. You should also take a hot foot-bath and apply a fomentation over the stomach for a half hour immediately after each meal. Take a warm bath twice weekly, followed by a tonic cold sponge bath. Practise deep breathing, and take exercise daily out of doors. Eat simple, nourishing foods, and do not think about your stomach except to think that it is getting better. Report progress in about a month.

62. Flatulency.—"Will you be good enough to prescribe a simple remedy for wind in the stomach during meals? I am engaged in teaching, and take the ordinary diet of meat, tea, fresh bread, etc."

Ans.—Though flatulency is such a common trouble it is one which is easily prevented. It is due to the production of gases usually from soft, starchy foods, which are not thoroughly cooked, and but imperfectly masticated. The taking of tea with bread and other starchy foods greatly increases gas production by interfering with starch digestion.

Preventive measures consist in discarding tea altogether, in substituting crisp, toasted cereals, which encourage thorough mastication, for imperfectly cooked porridges and soft bread. The most suitable cereal preparations are toasted granose biscuits and flakes, toasted corn and rice flakes, home-made zwieback, grainut, etc.

In the way of home treatment fomentations to the abdomen may be applied with advantage, also the heating girdle compress. Regular outdoor exercise is beneficial. Constipation, if present, should be relieved by appropriate treatment.

63. Nature of Cancer.—"There is a very common belief that cancer has several long, fibrous roots, which are sometimes cut or broken by the surgeon when using the knife for surgical operation, thus causing a new and rapid growth of the cancer in some other part. Is that so, or is it not rather as Dr. Kellogg has it in his "Home Hand-Book," that the depraved, infected condition of the blood-stream causes the same kind of morbid growth to appear without any direct relation to the previous growth which was operated upon?"

Ans.—The common belief that cancer has roots is in a certain sense true, as some kinds of cancer tend to spread to adjacent parts along the lymphatic ducts and glands.

Thus the roots of a cancer in the breast may ramify into the axilla during the process of growth. If, however, the cancer is removed at an early stage, there could be no such spread along lymph channels, and the surgeon's knife would remove it. Not only so, but even after the cancer has struck its roots, or prolongations, into parts as far distant as the axilla, the surgeon's knife may remove these ramifications, glands, lymph channels, and all, along with the original tumor, and so the patient be kept from a recurrence of the cancerous growth in adjacent parts.

While the blood condition is, of course, responsible to some extent for the appearance of a cancer, the statement as you have expressed it is not quite up to the hour, and was likely written many years ago.

64. Diseased Finger Nails.—" Could you suggest a good treatment for a little girl who is suffering from some sort of a disease of the finger nails? The symptoms are as follows: The fingers keep on swelling from time to time, a kind of pus forms under the nails, and the nails fall off.

Ans.—I would advise you to give the child only wholesome, nourishing food at regular meal hours, with nothing between meals. She should have plenty of milk, cream, eggs, fresh ripe fruit, and cereal foods, such as granola, granose, corn flakes, grainut, etc. Bromose and malted nuts are also foods which will build her up and increase her resistance to germ troubles. She should live a healthy, active life in the open air, and should be cared for in harmony with the laws of health in all respects. When these instructions have been given due attention, local treatment, which will cure the nail disease, consists in thoroughly cleansing the hands and nails with a brush, tar soap, and hot water. Follow by rinsing in cold water, ice cold if this can be obtained. After cleansing, apply along the nails, pressing well in with a small silver knife or handle of a silver teaspoon, a germicidal paste. The grooves from which the pus comes should be packed with this paste till pus ceases to form, and for a week or more thereafter. The cleansing and packing with paste should be repeated at least once daily, and oftener if necessary. Under this antiseptic treatment the germ disease will soon disappear. I think I should also remind you to take every care of your child's mouth and teeth, as the chances are she may have developed, or is likely to develop, a similar germ trouble around her teeth. The paste should not be used in the mouth, as too much would likely be swallowed. Instead, the teeth should be well cleansed, brushing in every direction with a clean, new tooth brush and Calox tooth-powder, which your chemist may have or could obtain.

65. Oil in the Hair.—" For some time I have been troubled with oil in my hair. My hair is always wet with it; even after it has just been washed, it may be all right for two days, then it is just as bad again. My hair falls out a lot, too, although I am only seventeen years old, and I do not know whether the oil is the cause of it or not. Would you please tell me what to do for it?"

Ans.—I would advise you to shampoo your head quite frequently, every few days if necessary. I know it is a trouble to do this for one who wears their hair long, and yet unless you keep the scalp free from excessive oil, I fear it will continue to fall out. You will derive benefit from the daily use of the following: Rectified spirit, 6 oz.; rose water, 2 oz.; resorcin, 1½ drams, distilled water up to 12 oz.

66. Feeding Babies.—" Would you please tell me the right proportion of milk, milk-sugar, and lime water to mix with granose to give to babies, sick and well; also the age to increase the strength of granose and milk?"

Ans.—First make a granose gruel thin enough to be strained. Mix this with rich Jersey milk or top milk, which has been sterilised in a double boiler, in such proportion as suits the infant's digestion. For sick or young infants this may be as little as one part milk to three or four of gruel. Infants with stronger digestion, that is, healthy babies, and those past the age of three months, are usually able to take one part of such milk to three of granose gruel. The proportion of milk may be gradually increased in the case of older, healthy babies, until at the age of six months equal parts may generally be given. At the age of nine months or a year, the average healthy child will take pure milk, though it is well to put something in it to keep it from curdling; for

example, a few corn or granose flakes, or a little crushed zwieback. In all cases the liquid food is best given with a spoon rather than from a feeding bottle.

67. Combinations of Foods to Be Avoided.—"Should cocoa and cheese be avoided by anyone whose liver is often out of order?

"Should olive oil be avoided by anyone who suffers from intestinal indigestion, or would it be well to take a little in such food as pea soup?

"I have several times read of raisins as being a very excellent thing to eat, that they are very good for the heart, the sugar in them being just what the heart requires, and for that reason a handful may be eaten three times a day after food."

Ans.—Cocoa and cheese are best avoided by one whose liver is inactive. Olive oil may be used in moderation, but ripe olives are better. Regarding raisins, they have no special effect on the heart. They are a perfectly wholesome food when clean, but should always be washed before using. Raisins ought not to be eaten between meals, but may be eaten at the close of a meal.

68. Chronic Indigestion.—"I will be glad of your advice for the following: A bloated frothy feeling in the stomach and throat accompanied with sickness and headache when rising in the morning. Windy spasms directly after meals, a sharp pain occasionally in the chest, sometimes lasting several hours and affecting the breath, extending under left breast. Sometimes a giddy feeling, sometimes a feeling of suppressed excitement, at others overpowering drowsiness."

Ans.—You are evidently troubled with chronic indigestion, or dyspepsia, and should change your diet to conform to the teachings of LIFE AND HEALTH. This means you should stop drinking tea, and leave off flesh foods, taking, instead, dairy products—plenty of milk, cream, butter, and eggs. With this take twice baked bread, zwieback, which you can make at home. Other well cooked, dry cereal foods are granose biscuits and flakes, corn flakes, granola, and grainut. You will be better without soft breads, pastries, cakes, porridges, etc.

In the way of home treatment, apply a hot fomentation over the stomach immediately after meals, and follow this with a heating compress, which is left on one or two hours; or apply a heating compress fifteen or twenty minutes before the meal, placing a hot water bag over the stomach, the whole to be left in place for about an hour.

Constipation should be carefully avoided. This can generally be done through the free use of fresh and stewed fruits.

69. Nervous Dyspepsia.—"Kindly give information and advice in LIFE AND HEALTH regarding the above. It affects the heart, causing a jerking palpitation which is very distressing. The trouble has lasted several months, and the attacks are now more frequent; even the lightest food causes flatulence and discomfort.

Ans.—In the treatment of nervous dyspepsia it is necessary to give due attention both to diet and the patient's state of mind. Nervous dyspeptics invariably worry and think too much about their food and its digestion. They frequently become most despondent, and feel that their ailments are incurable. They also generally imagine they are suffering from a variety of ills, none of which they have ever had or are likely to get. With this plain statement of the psychic side of neurotic indigestion, it should be apparent that treatment includes more than attention to the diet.

The nervous dyspeptic must first learn to master his moods and his mind. He must train his thoughts into helpful channels instead of letting them run riot upon his imaginary ills. Helpful, encouraging reading, and talking with optimistic folk; walking, gardening, golfing, and other forms of out-door games and recreation; sunshiny religion and philosophy: these, and many other open ways which lead the thoughts away from one's own self,

are all worth the nervous dyspeptic's attention. But if the mind affects the body, and especially the digestive function, inversely the mind is affected, and the nerves irritated and unstrung by a tumult in the digestive department. Hence the nervous dyspeptic must take care, without unduly worrying about it, of what, and when, and how he eats.

First, his food should be plain but appetising. He should thoroughly enjoy what he eats. To try to get a sour dyspeptic to cheer up on tasteless, sawdust-like porridge, is to expect a modern miracle to be worked. Starchy porridges invariably ferment, and make the sour dyspeptic still more sour. Hence, prepare something savoury yet simple, something which looks nice and tastes good instead of insipid, pappy foods.

This may be prepared from eggs, milk, fruits, nut and cereal foods.

As to when the nervous dyspeptic ought to eat, only a word need be written: Regular meals at regular times should be taken, and either two or three meals a day. Few dyspeptics need more than three, and some dyspeptics do best on two, but the number can only be determined by the kind and quantity of food eaten.

As to the manner of eating, the dyspeptic should be cheerful at his meals; not only should his mind be free from worry, but table conversation should conduce to lead the thoughts away from food and stomachs. He should not bolt his food, neither should he spend two hours at table unduly masticating or "Fletcherising." This latter habit is by no means unheard of in the nervous dyspeptic, who takes undue concern about his food.

In the way of simple treatments, helpful methods are fomentations to the stomach and liver once or twice daily after meals. The cold mitten friction before rising, administered by an attendant. A short rest before and after meals. Deep breathing after meals is also helpful, and a short walk in the open air.

F. C. R.

Triplets Reared on Faliere's Phosphatine Food

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The Triplets at Eight Months *Photo. Swiss Studio*

THE MOTHER'S TESTIMONY

74 Darling Street, Moonee Ponds, Vic., 1st January, 1912.

Messrs. Joubert and Joubert, Flinders St., Melbourne.

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