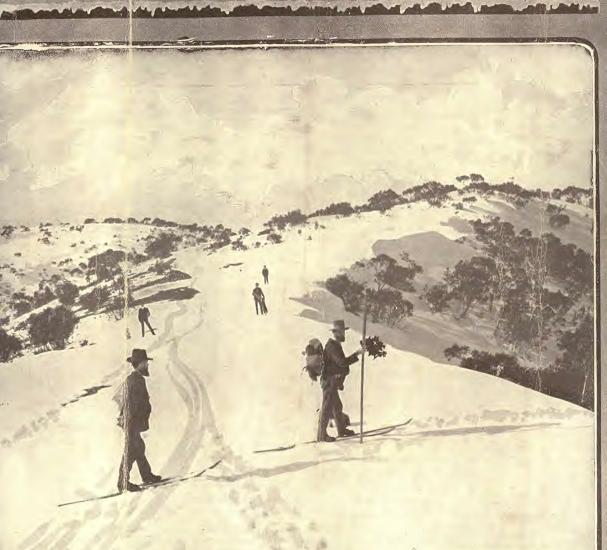
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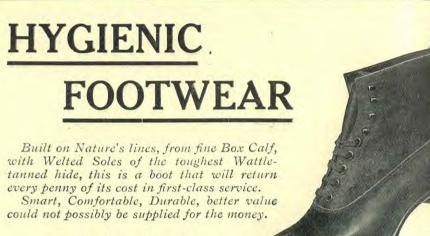
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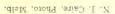
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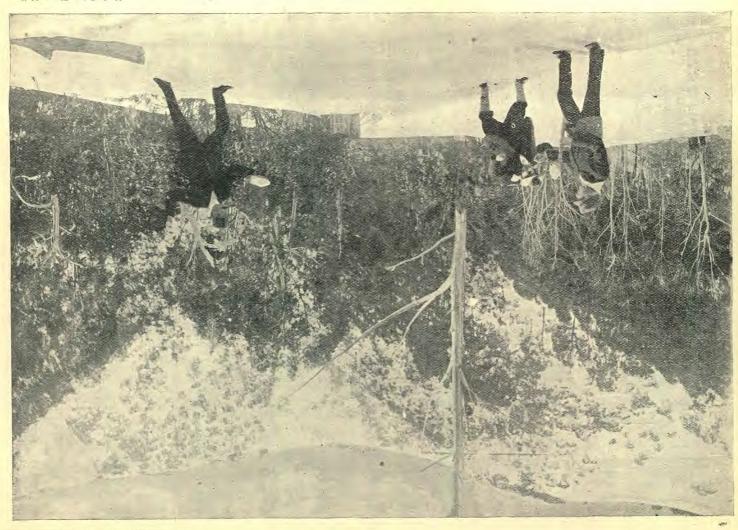
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No. 3

Dyspepsia and Mouth Digestion

W. HOWARD JAMES, M.B., B.S.

YSPEPSIA and indigestion are terms which indicate the same morbid conditions, disturbances of the digestive functions. Dyspepsia is not in itself a disease. It stands for. an array of symptoms which accompany quite a large number of ailments, and signifies either that the food is not being satisfactorily digested, or that the digestion is accompanied by pain, flatulence, and other distressing symptoms. Although the term "dyspepsia" could not form the heading of any disease in a scientific classification, most medical writers deal with it as a special subject. Simple dyspepsia, according to L. Burney Yeo, may be defined as a "disturbed condition of the digestive functions, the existence of which is independent of any structural or inflammatory change in the stomach itself." Simple debility, such as arises from acute illness, fevers, or other disease may give rise to weak digestion, or, as it is frequently termed, "atonic dyspepsia." The stomach, like the rest of the system, is weak, wanting in tone, and consequently it cannot do heavy work. Simple, nourishing, and easily digested food is necessary until the general health is built up. Any complaint

that weakens the general health must lower the power of the digestive organs. Most forms of dyspepsia, however, are due to a disregard of the natural laws of our being, and are the result of improper food, taking food too frequently, overeating, drinking with meals, wrong combinations, too hasty eating—the swallowing of food before it is properly masticated, or, as one writer puts it, "bolting the food in the manner in which one posts These causes, even apart from a lowering of the general health, will give rise to disturbed digestion, and if these irregularities are continued, the simple dyspepsia will develop into gastric catarrh, dilatation or ulcer of stomach, and other actual diseases of the digestive organs, and the symptoms of indigestion will not only be more continuous but more severe.

No one will dispute the fact that digestive disturbances are practically confined to the human race, the lower animals being almost exempt; and we believe the reason to be that while the lower animals have their food prepared for them by nature, man chooses and prepares to a very large extent the food for himself. It is an acknowledged fact that domestic animals, those who eat to some extent

foods cooked by man, are much more subject to ill health than the animals in the natural wild condition. The lower animal is governed by instinct, the higher animal follows the bent of his own mind. The power of the mind, of course, makes the latter a superior being, but it brings added responsibility, and increases his dangers. If he chooses and prepares his food in harmony with the laws of nature, as he should do, all is well; if not, trouble must ensue. Some would go to extremes and argue that as the animals are comparatively free from digestive disturbances that man would be healthier if he followed their example in the matter of diet, and lived only on the food as prepared by nature. Dr. Kellogg writes: "The arguments of the 'natural food' advocates, who insist that man should live upon fruits and nuts, are based, not upon physiological facts, but upon the morbid experiences of the disciples of this doctrine. The writer had an opportunity, a year or two ago, to examine the stomach fluid of one of the most earnest and stalwart advocates of the fruit and nut diet. and the stomach was found greatly dilated and almost completely inert."-" The Stomach," p. 61. We believe that man's reasoning powers, his power of choice, were given him to be used, and that his Creator did not intend that he should live as the unthinking, irresponsible Man cannot digest satisfactory the unprepared grain foods, their starch granules are so well covered with cellulose that the starch digesting ferments cannot act on them. The cereals form the most important part of man's dietary, and cannot be omitted.

The digestion of food occupies, from the time it enters the mouth till it arrives at the colon (which is chiefly a reservoir from which the food is absorbed), about fourteen hours. The five digestive food elements, proteins, starch, sugar, fats, and salts, are acted on by five different digestive fluids, the saliva, the gastric juice, the bile, the pancreatic juice, and the intestinal secretion. These fluids are so arranged as to help one another. The

saliva of the mouth is the best preparation for the digestion in the stomach; the pepsin and acid of the stomach is the best preparation for the digestion of the powerful pancreatic juice and bile; and these again prepare the food for its digestion and absorption into the blood from the intestine. The best cure for consti-

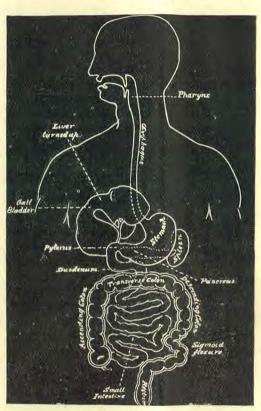


Diagram of the Alimentary Canal
(From Kirke's "Physiology")

pation, inactivity of the bowels, is a proper preparation of the food by the mouth, stomach, and duodenum. Under these conditions the bowels maintain their propulsive power and the fæces their requisite moisture. Constipation thus is but a symptom of imperfect digestion.

Man's digestive troubles are not due to the imperfections of nature, but to the way in which he treats nature. Give nature a chance by a proper selection and preparation of food, and a reasonable treatment of that food in the mouth, the voluntary part of the digestive apparatus, and man's health is assured. A thorough knowledge of mouth digestion and a faithful adherence to that knowledge, would undoubtedly dissipate fully nine-tenths of the diseases from which the human being We obtain all our at present suffers. warmth and energy from the food we digest, the healthiness and impurity of the blood is dependent on the same. With healthy blood, blood freed from impurities absorbed from the alimentary canal, chest troubles, kidney and liver diseases would be impossible; here we have a sure preventive of all diseases. To build a strong, permanent building, good foundations are absolutely necessary. Make a good beginning with thorough mouth digestion, and we can safely leave the rest to nature. We cannot emphasise the fact too strongly that the food that is digested in the mouth is the best possible tonic and stimulant to the general digestion; there is nothing equal to it. cannot improve on the laws of our being, for they are the laws of our Creator. "The commandment," says the apostle, "was ordained to life," and that commandment includes every law brought into action at the creation. The psalmist declares, "For the word [the commandment of the Lord is right; and all His works are done in truth. . . . By the word of the Lord were the heavens made; and all the host of them by the breath of His mouth. . . . For He spake, and it was done: He commanded, and it stood fast."

The teeth were given us to be used. If they are decayed through the disobedience to nature's laws they should be filled, or replaced by artificial ones. A thorough mastication of food is absolutely necessary for the action of the digestive fluids. Foods should be reduced to a pulp in the mouth. Food imperfectly masticated is an irritant to the stomach, and is the beginning point in many dyspepsias. Rough food not only irritates the delicate lining of the stomach by its coarseness, but also by its delay in that organ. Delay always brings liability to fermentation

and the development of foreign products. All our food, for instance, contains a certain proportion of fat. The stomach is not the organ for fat digestion, and its delay causes the production of the irritating fatty acids. It is absolutely necessary to remember that the teeth are the only means we have of finely dividing our food for the action of the digestive juices. The digestive fluids can only reduce coarse food to a pulp by the slower process of gradual solution—a chemical action.

A thorough mastication of food, by fully satisfying the taste, prevents the too common error of over eating, and thus lessens the work of the liver, kidneys, and skin in the elimination of waste products of superfluous foods. Hutchison writes: "Attention has in recent times been called to the great importance of thorough mastication by the experiments and observations of Mr. Horace Fletcher, who has proved not only how greatly very prolonged chewing facilitates digestion, but also that if the process is carried out sufficiently thoroughly, the appetite and requirements of the body are satisfied by much less food than the amount usually This must mean a wonderful saving to the energies of the individual, the energy used up in the elimination of superfluous food would be available for muscular and mental work.

A very large proportion of our food consists of starch. Bread, for instance, contains about sixty per cent of solids; of those solids starch and the products derived from starch (sugar and dextrin) constitute fifty-one per cent. Wheat contains sixty-nine per cent of the eightythree per cent digestible solids. By far the largest portion of our energy and heat is derived from starch products, and consequently, its digestion is of the greatest importance. To be absorbed starch must be converted into dextrin and sugar (maltose). Chew a crust of bread thoroughly, and it develops a sweet taste from the conversion of starch and dextrin into sugar. The starches converted into absorbable sugar in the mouth are not retained for long in the stomach. They

begin to leave the stomach within ten minutes of their ingestion, and in two hours these carbohydrates reach a maximum amount in the small intestine. The other forms of food, the fats and proteids, remain a much longer time in the stomach. It is a well recognised fact that practically no food is absorbed into the system from Thorough mastication means increased flow of saliva, and through nervous influences (reflex actions) the gastric juice is at the same time secreted. Again, it is a general law with alkaline secretions that when coming into contact with glands with acid secretions they increase that secretion, and vice versa. Thus the swallowed saliva which is

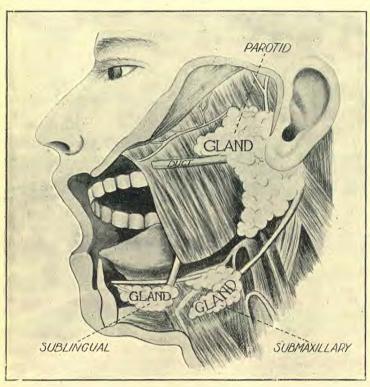
lowed saliva, which is alkaline, increases the flow of gastric juice, which is acid. Similarly the acid secretion of the stomach increases the alkaline secretions from the pancreas and liver in the duodenum-the first part of the small intestine. Thus the statement already made, that the digestive juices are so arranged as to directly help one another, is fully borne out, and if the mouth digestion is carried on thoroughly, the whole digestive process throughout the alimentary canal is benefited.

In order to increase the flow of salivary juice, and to correct the habit of hasty mastication, and prepare suitable nourishment for

reinforcement of digestive glands generally, it is advisable to eat a fair quantity of dry, porous foods. The advantage of dry foods is seen in the following experiments given by Dr. Kellogg:—

"A piece of paraffin chewed for five minutes produced two-thirds of an ounce of saliva.

One ounce of granose, a dry food prepared from wheat, increased in weight to two ounces. The addition of pepper and salt to the granose slightly decreased the amount of saliva produced. The addition of vinegar still further diminished the secretion.



The Salivary Glands

the stomach, but absorption commences immediately the intestines are reached. Thus we obtain energy and strength from starchy foods much more quickly than from proteins or fats. The digested, starchy foods supply energy for the glands of the stomach and duodenum, which have to do with the digestion of the other forms of foods, the fats and proteins, and in this way the starchy food taken with the meal helps in the digestion of that meal. Dextrinised foods are now recognised as great aids to digestion on account of their quick absorption and reinforcement of the digestive secretions.

One ounce of moist bread chewed for five minutes caused the production of one ounce of saliva.

One ounce of raw apple produced one and one-fourth ounces.

An ounce of water produced but onetenth of an ounce of saliva, or about onesixth as much as a piece of paraffin, and one-thirtieth as much as an ounce of granose. One ounce of milk was slightly more active in producing saliva than the same amount of water.

An ounce of pea soup chewed for five minutes produced twice as much saliva as did water, but only one-third as much as paraffin, and one-tenth as much as granose."

Foods should be swallowed by the aid of the moisture it produces in the mouth, and not by the aid of added fluid. ture, both in the mouth and the stomach, recognises the amount of fluid present, and the amount of secretion varies accord-Tea, coffee, cocoa, and alcoholic drinks not only dilute the digestive fluids, but they lessen their flow and prevent their ferments (ptyalin, pepsin, etc.) from acting on the food. Drinking of much fluid, even pure water, with meals should be avoided. A small quantity of hot water, or hot water and milk, may be sipped when found necessary. drinking of a good glassful of water (hot or cold) from one hour to half an hour before meals will frequently remove the desire for fluids with meals. In a future article we will deal with other important points in connection with digestion: from the points already touched on we should be able to see the advantage of thoroughly masticating some dry, porous food at every meal. Physicians often give an alkaline mixture to be taken half an hour before meals, and this temporarily relieves the symptoms of indigestion, but why not produce nature's alkaline tonic. Surely the natural tonic must be better than the expensive, artificial one. Any food thoroughly masticated will produce the alkaline saliva, but the dextrinised foods, such as zwieback (doubly baked bread), crusts of bread, granose, and wheatmeal biscuits

are the best, and these foods have the advantage of being quickly converted into maltose, which, as already shown, begins to be absorbed ten minutes after it is taken, and thus supplies the digestive glands, the stomach, and bowels with material for their work.

Why Give the Children Tuberculosis?

Franklin Richards

WHILE no one would willingly do this, the evidence is strong that many mothers unwittingly give their children tubercu-The writer was impressed with this fact while in Edinburgh ten years ago, for there he saw alarming numbers of children with tuberculosis of bones and joints brought to the Royal Infirmary to be treated. He saw them, too, in the hospitals of London, and in other cities and countries. They may be seen daily in Australia, not only in hospitals, but on the streets, and in the homes one sees them in private practice. How do all these children get tuberculosis? Why should they have the disease? Many of them live in the country, and nearly all have healthy parents. How do the germs gain access to their bodies?

Of a series of cases observed in Edinburgh, ninety per cent had bovine tuberculosis. Here, then, we have a starting point. Nine children in every ten with tuberculosis can trace the disease to their foster-mother, the cow. Of seventy-two of these Edinburgh children, sixty-five had bovine tuberculosis. While it would be obviously impossible in each of these sixty-five cases to trace the disease back to the cow from which it came, this was done in many of these cases, and the cow was proved to be guilty.

In the case of one little patient with tuberculous glands, a brother had a tuberculous abscess. Both children were under treatment in December. From the herd from which the milk came for these children, a cow was removed three

months before for destruction because of advanced tuberculosis of the udder.

Case 26 had a brother who at the age of eighteen months died from tuberculous meningitis in 1909. This patient's glands enlarged in December, 1910. Milk was obtained from a dairyman who confessed that in October, 1910, he had disposed of a very tuberculous cow with the udder involved. This cow had been in the dairy many months.

Another, a country child of nine months, of a healthy family, was found to have bone tuberculosis. This child's milk came from a small herd of six cows, two of which had tuberculous udders, with the milk from both teeming with tubercle bacilli.

Another case of bone tuberculosis occurred in a child of seventeen months who had been bottle-fed with milk from a small dairy farm. The child's grandfather, who worked on this farm, told the mother that soon after the birth of the child one of the cows had "gone wrong." He told how the animal had rapidly wasted until it became too weak to stand. It was then milked lying on the ground, and the milk used for human consumption! By this time it was thought expedient to call in a veterinary surgeon, who, finding the cow in the last stages of tuberculosis ordered its immediate destruction.

While these and other instances which might be cited are so plain as to make unpleasant reading, they are not really of the most importance. The cases of supposedly healthy cows which are sowing the seeds of tuberculosis are far more serious in their power for harm. Even the "family cow" may be suspected. very sad case indeed, which illustrates this fact, was that of a baby who was thought by its mother to be ill of "teething." This child, when examined by the surgeon, was found to be so full of tuberculosis that nothing would be attempted to save its life. Six weeks later this baby died of tuberculous meningitis. parents and all the other children in this family were healthy. Milk was obtained from two cows kept specially for the use of the household. Both cows had been tested six months previously with tuberculin, but as neither reacted they were considered healthy. The surgeon advised that these cows be killed, as he thought them too tuberculous to react. Post mortem, this was found to be the case. Both were suffering from general tuberculosis, and one had a tuberculous udder. Thus the surgeon's suspicion was confirmed, and the infant's death traced to these tuberculin-tested, specially-reserved family cows.

Thus it will be seen that even milk from the tuberculin-tested cow cannot be trusted. No one can positively say that such milk is free from tubercle bacilli. Until a few years ago it was thought these germs were only found in milk from cows with udder tuberculosis. it is known they are often present in milk from cows apparently perfectly healthy. If the tubercle bacilli are not too numerous they may be destroyed when taken into the stomach. But under certain conditions they escape the sterilising action of digestion, and find their way to some point of low resistance, where they multiply and thrive at the expense of some bone, joint, or gland, and too often at the cost of a human life.

What folly, then, to take the risk of swallowing these bovine bacilli alive? Why expose helpless children to such danger? If safety were difficult of attainment, if it took great skill or much time to sterilise the family's milk, apologies might be made for busy mothers, and perhaps for dull domestics as well who fail to see the need for this precaution. But as the milk requires simply boiling or heating in an inner vessel in boiling water, excuses for neglect do not absolve. And in every case, excuses come too late, for they come after funerals and crutches and hospitals and other painful things. why give the children tuberculosis by giving them unsterilised milk which is almost sure to contain the living germs of bovine tuberculosis? Your children may be so healthy that they have fortunately

thus far escaped. But remember, many others have succumbed. Remember, too, that by sterilising all milk nine tenths of the cases of surgical tuberculosis—Pott's

disease, hip and other joint tuberculosis, tuberculous bones and glands and other forms of this devastating disease—will almost surely be prevented.

The Business Man's Lunch

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

THE average business man is obliged through force of circumstances to lead a highly artificial and more or less sedentary life, at least during the working hours of the day. He is often subjected to more or less close confinement and, very frequently, under unhygienic conditions. We must remember that the business man is a brain and not a muscle worker. and therefore he has little or no chance, as far as his work is concerned, to counteract and neutralise the unwholesome conditions under which he is compelled He is often hurried in his to work. work, and worried, too, and as a consequence he is likely to have a less vigorous digestion than the muscle worker. Coming to lunch in a hurry and with limited time, he finds it necessary to make a careful selection of digestible food, and adapt the size of his lunch to the time at his disposal.

To begin with, the business man would do well to provide himself with a substantial breakfast, and allow himself plenty of time to eat it, preferably without the aid of a newspaper. In the morning, after the night's rest, the stomach is quite empty and recuperated, and thus better prepared to deal successfully with a square meal of wholesome victuals. A good breakfast makes an excellent foundation for the day's activities, while a hurriedly eaten meal and a rush to the train or tram car is not infrequently the precursor of dyspepsia and constipation.

A few, like that grand nonagenarian, Lord Strathcona, solve the problem by adopting the two-meal system and doing without lunch. In the case of the high commissioner at least, this plan appears to have worked admirably, and we know

of a very considerable number of persons who follow the same custom. But while it is true, as Mr. Frederic Harrison has been telling a Daily Mail reporter recently, that many eat too much, and he might have added, too often, and while some business men would do well on two meals a day, still we may well question the wisdom of the majority of our business men lunching on nothing but a glass of With no lunch, we fear there would be no break in the business day. and the lunch hour of relaxation, aside from any food partaken, is of itself a safety valve, and is essential to the maintenance of good health.

But we should not advocate a heavy or elaborate lunch with one or more varieties of flesh meats. There is not the slightest doubt but that altogether too much animal flesh is eaten by the majority of business men, and we should suggest that flesh meats be cut out of the lunch. Lord Strathcona also tells us that he eats very little meat, practically none; and this we think is a commendable habit.

A simple, light lunch might well consist of a poached egg on toast, or a glass of fresh milk, or Metchnikoff soured milk, with bread and butter, preferably wholemeal or brown bread, and some fresh or stewed fruit. Those who do not care for the egg or the milk might have a few Few realise the splendid food Professor Thompson of value of nuts. Cornell University, speaking of nuts, tells us that "eaten with fruit they are an excellent form of food, and if carefully selected and thoroughly masticated, their co-efficient of digestibility is high for persons in health, and they furnish very little residue of waste." Their digestion depends very largely upon thorough chewing, and the reason why people sometimes find nuts difficult of digestion is because they fail to masticate them properly. Newman has told us that "no man need starve on a journey who can fill his waist-coat pocket with almonds." A handful of almonds or other nuts, and a handful of raisins, make both a tasty and a nutritious lunch.

In this brief article we can offer only a few suggestions and a bare outline of what an appetising and at the same time health-giving lunch might consist. We must bear in mind that we eat for at least two reasons: not only to gratify a more or less fickle and perverted appetite, but to satisfy hunger, that is, the call of the body, of the vital organs, for fresh supplies of nourishment with which to maintain life and health.

The Moral Problem

WE have to deal with an instinct as insistent as hunger or thirst, and we must teach the young as to the significance of this instinct.

It is an instinct that may be developed by circumstances. Many young women play with fire and do not know it.

In our instruction we must go to the root of the evil. Many things tolerated by the best people and in the best houses are aids to vice.

Many plays are indecent, and should be suppressed. Much of our literature suggests evil thoughts, and thus paves the way for evil deeds.

Women often dress suggestively. When a woman attempts to display by her style of dressing her physical makeup, she is playing into the hand of her fallen sisters.

Young men in order to be safe should establish a household early, and thus reduce the danger of temptation.

Another point, nature abhors a vacuum. It does no good to tell people they must not think of evil. The only effective method of preventing evil thinking is to furnish something good to take its place. The best safeguards are hard work and pure interests.

Another great incentive to vice is alcohol. It is almost a universal experience that alcohol is an accompaniment of vice. Many a young man goes astray because alcohol has blinded his higher moral faculties and sense of caution.

In our campaign of education we should point out to young men and women that in vicious associations they are in danger of contracting diseases far worse than leprosy, tuberculosis, smallpox, or any of the other contagious diseases, because these are hereditary and passed on to the innocent of future generations.—Wm. C. Woodward, M.D.





N. J. Caire, Photo., Melb.

DELIVERING MAILS IN WINTER AT ST. BERNARD HOSPICE, VICTORIAN ALPS



How May We Safeguard Our Boys and Girls

EULALIA RICHARDS

UR boys and girls must be guarded from the perils that surround them. This every thoughtful parent knows, though hundreds are either thoughtless or blind to the conditions which prevail in the social

world to-day.

We are living in a remarkable age, an age characterised by wonderful advancement in science and learning. But unfortunately the present age is also marked by an astonishing increase in crime and immorality. A veritable epidemic of crime is sweeping over our land, and the white slave traffic flourishes. Immoral literature and objectionable pictures are doubtless important factors in bringing about this deplorable state of crime and degeneracy.

No matter how pure our home atmosphere may be, as soon as our boys and girls go out into the world they are certain to come in contact with evil in its most enticing forms. As our young folks go forth to meet the world, how our mother-hearts do tremble! How gladly would we make any sacrifice if only we might guard them from meeting evil and all its allurements. But this is impossible. So long as our youth are in the world and do their share of the world's work, they will be surrounded by evil. Then let us not pray that they may be taken out of the world, but that they may

be kept from the evil that is in the world.

It is possible for parents to so rear their sons and daughters that as they join the great army of the world's workers they may be protected by an almost impenetrable armour, surrounded by a veritable bulwark of defence. This armour is a strong, Christian character coupled with a correct knowledge of the difficulties which must be met and conquered. This is a case in which to be forewarned is to be forearmed.

The words innocence and ignorance are by no means synonymous. We would that this fact might sink deeply into the heart of every parent. An innocent lad from a Christian home may through ignorance plunge headlong into evil on his first contact with the world, and thereby lose his innocence. Correct knowledge is the chief safeguard of purity and virtue.

The task of fortifying our boys and girls should be undertaken in their earliest childhood, and should be ever in our thoughts. We shall be successful in our undertaking only as we maintain the confidence of our children inviolate. What a blessed thing that each parent has the confidence of his child at the beginning. We need not strive to win the child's confidence; it is already ours, a precious gift which we should guard most sacredly. We may keep this confidence unbroken by always speaking truthfully to the child.

We may not always speak the whole truth to a young child, but we must never under any circumstances speak aught that is not truth.

But, asks an anxious mother, "Would you have us answer truthfully the many perplexing questions which baby lips ask us?" Certainly, why not? The story of the origin of life, if clothed in chaste

parents, but naturally the mother has during the earlier years an opportunity for more intimate association with the children than has the father. Happy the mother who maintains her child's confidence from its infant days. As the child grows older there will be no constraint between himself and his mother. Has she not always answered his childish



"Our boys and girls must be guarded from the perils that surround them"

language, is one of the most beautiful stories that may be told a child.

Our children must sooner or later learn the facts concerning human life and social relationships. It lies with us to decide whether we will impart this knowledge in pure, chaste words, or whether we will leave our little ones to gain the information from impure sources and in words replete with unclean suggestions.

The burden of training the children in purity and virtue should be shared by the

questions lovingly, sympathetically, understandingly? More mature problems may now be discussed by mother and son (or daughter), and with no sense of embarrassment. Wisely chosen books may also be called to the mother's aid, books which impart needful knowledge in pure language that the boy or girl can fully understand.

If only the task of training the children in virtue is begun early enough, and is faithfully performed in all sincerity and truth, there is no insurmountable difficulty.

But many difficulties arise to dishearten the parent who has through ignorance or carelessness lost her child's confidence. A child soon loses confidence in a parent who gives evasive or untrue answers to his questions, and who manifests but little interest or sympathy in his work and play, his reading and associations.

Not long since an anxious mother breathed out the sorrow which had long been hidden within her heart. "My daughter no longer confides in me. She keeps her affairs to herself, or discusses them with her intimate girl friend, but never with me. She never seeks my advice or pays any heed to my suggestions. I seem to have lost my daughter, and she was so affectionate and confiding as a little child."

Ah! that is it. All little children, almost without exception, are affectionate and confiding; it is natural for them to be so. But in such sad cases as the foregoing, there usually comes a time when the mother's cheek flushes, and she feels that she cannot summon the courage to answer her child's questions. She thrusts the child away from her, or gives an untruthful answer to a question which the child has every reason to expect will be answered sincerely and truthfully. It is thus the rift begins and widens.

What shall we parents do, we who have drifted away from our children, and now tremble at their peril?

First of all we must study the situation earnestly, not excusing our past neglect or failures. Then by the help of Him with whom all things are possible, we must begin again. We must get close to our children. We must convince them of our loving and sympathetic interest in all that concerns them. It may be necessary for us to humbly confess our failures and our neglects. Such a confession on the part of a parent often touches the heart of a wandering child. It may require patient waiting, faithful praying, and earnest working to win back a child

who has drifted from his parents, for a child is far easier lost than found. But surely we must succeed if we thus earnestly work and patiently wait. And what a reward when a beloved child comes home to find in his parents the wisest counsel, the deepest sympathy, the truest interest, and the warmest love!

The Care of the Baby

James Frederick Rogers, M.D.

FIRST and foremost for the unfolding of brawn and brain, the child must have food, the food must contain all the materials needed by all the different structures of the body, and these materials must be in approximately the proportions



Babies should have every opportunity for exercise

needed. It is astonishing how the body, even an immature body, will adjust itself to ill-proportioned foods; but though it can transmute compounds to a certain extent, it is not prepared to do miracles—it cannot create chemical elements nor make good ill-balanced proportions of elements.

Babies are by no means alike, but differ greatly as to their degree of perfectness of organs and balancing of functions; and while most of them arrive in condition for thriving on the nutriment which nature intended they should receive, none of them are prepared to select their diet from among the foodstuffs in the world about them. Unfortunately, mothers also are not usually ready to make a wise selection for their offspring; and as no other food is quite equal, for baby purposes, to mother's milk, it follows that most, and especially the delicate, are likely to show (by digestive disturbances or slow growth) some disappointment under the process of artificial feeding.

That the baby "gets along" with the food given him may not signify that it is

just what he most needs. On the whole, the average baby is a good sort of fellow, and doesn't complain much unless things are very bad. It would be better for him sometimes if he complained more. The bottle-fed baby is at the mercy of his parents, whose love may not be balanced by their intelligence. When

it comes to food, the best is not too good for the baby, nor is it ever too expensive; for the child demands only substantials and wishes no luxuries in its diet.

Because of her ignorance, and because of the special importance of proper feeding, the mother should not accept the miscellaneous advice tendered by wellmeaning friends and relatives who have been "very successful" in rearing their one, two, or three children on this, that, and the other food preparations. should ask a physician to oversee the feeding in the earliest months, or, at any rate, to see that she is not going wrong in her methods; for the money spent in expert consultation at this time may be more than saved in the general welfare of the child later. Even the physician may have to do some experimenting before finding the most suitable diet.

No physician can set down rules for food and feeding which will fit all infants; and in these pages we can only say that, while not always most suitable, fresh cow's milk, properly modified as to the proportions of protein, fat, and sugar which it contains, most nearly approaches the natural baby diet.

Not only is the quality of food, in these earliest days, of great importance, but the time of feeding and the amount given the child are to be considered. We presume that the well-developed, healthy baby, of well-developed, healthy parents, could be

trusted to indicate his hunger and his repletion; but there are such wide variations in these days. in both parents and babies, that this rule of nature cannot always be followed, even in breast-feeding. Besides, the adjustment of the child to society must begin early, and requires a more or less regular routine

of mealtimes, and therefore of quantity at meals. Here, again, the physician may well be consulted.

Next in importance to the feeding of the child comes its clothing. A baby should be kept from losing its heat too rapidly; in other words, should be kept warm. But of all faults in the care of the child, perhaps the most common is that of keeping him too warm. clothing should not be tight anywhere, and the extremities should always be looked after carefully. Too much clothing is the source of much of the troublesome skin affections, the eczemas of infancy. Moisture from sweating or from wet diapers, adds to the effect of the heat in irritating the skin. The child when strong enough, usually makes an effort to rid itself of superfluous clothing, and, if parents were more mindful of this cause,

HE rapidity of development of the child is greatest in its earliest months, and, save for the brief period of acceleration, from about ten to fourteen years, decreases steadily until the process of general bodily unfolding is complete. This being true, it is evident that the care of the child must be most important at the very beginning of its career.

they would often have less trouble in keeping their children, of all ages, covered when asleep. Of course, this may not be the only cause of restlessness.

A baby should have every opportunity for exercise. Many are so loaded with clothing and constricting bands that they are hampered in their movements. ForA child should never be urged to walk or to exercise in other ways. Bodily movements come spontaneously with the development of the organs concerned. The child should never be unduly excited to play. Play is the result, the outward manifestation, of superfluous nervous and muscular energy. If it does not play of

its own accord, it is an indication of the need of rest or of better nour-

ishment. Rest is as important as exercise, or even more important, because adequate rest must precede exercise. Exercise has been carried too far if the child does not sleep profoundly afterward. Children are especially faulty nowadays in having ill-balanced or damaged nervous systems, and nothing else can prevent or help this condition, aside from plenty of good food, as much as abundant rest. If there is a quiet place about the house, that should be the baby's sleeping quarters, and he should not only have quiet, but freedom from strong light. The lack of poise and constant chatter of some mothers must have a more or less abnormal effect upon the nervous sys-



"Babies are by no means alike, but differ greatly as to their degree of perfectness of organs and balancing of functions"

mal gymnastic exercises, managed by the parent, have been advised for bodily development; but the spontaneous movements of the child are quite sufficient. The parent makes the best kind of "exercise," and in handling and carrying the young infant he serves to benefit its general bodily functions. But woe to the parent who becomes a slave to the infantile desire for passive movement.

tem of the infant in its waking hours.

As the baby grows, it becomes of importance that his bed and his carriage be so made that he can assume a reasonably good posture when lying or sitting. The spine of the young child is wonderfully elastic and recuperative after bad positions, else with our modern condensed vehicles, we should never have any straight backs. It is not merely the back which

may suffer from bad posture, for the digestive, respiratory, and circulatory organs do not work so well in a doubled-up condition of the body as when it is straight.

The child should be kept clean inside and out, and the former cleanliness is of vastly more importance than the latter. Children may be healthy without bathing, but never if the bowels are not normally active. If the food is right in material and amount, the evacuations will be normal; and while laxatives may sometimes be needed, they are the last thing to be thought of, or to be used. Training to regularity in the movements of the bowels is of great importance, saves much work on the part of the mother, and can be begun as early as the third month.

Psychologically the child is thoroughly selfish, and this is necessary for its own survival; but it may be selfish for its own harm later, and for the undoing of its parents. Its cry is either the cry of need or the cry for unnecessary pleasure, and it may be difficult to distinguish which is which, though there is said to be a detectable difference in the tone. The origin of the cry can usually be determined by discovering what checks it. satisfying of actual needs, the giving of its food, the riddance of gas from its stomach, the removal of a pricking pin, or the warming of its feet stops the flow of infantile language, well and good. If the mere taking up, or other superfluous attention, checks the vocal utterance, it may well be allowed to spend its force in a wail of disappointment.

The child is a bundle of possibilities, some of which are to be encouraged, some squelched if possible. The earlier and more accurately both processes are begun, the easier and surer will be the results in later life.

"Some persons take no exercise, others take too much. Some take exercise regularly, others take it spasmodically. If your life is a sedentary one, the exercise problem becomes more serious as cool weather comes on."

Why So Much Sickness in Winter

CERTAIN diseases occur most frequently in summer: others in winter. Among the latter are the acute infectious diseases; that is to say, those that are caused by germs. The most common of these "winter diseases" are affections of the respiratory organs—colds, pneumonia, bronchitis and the like—or the so-called diseases of children, such as scarlet fever, diphtheria, and measles.

Formerly, physicians were puzzled to account for the prevalence of fevers in the winter, but they thought that the respiratory diseases were clearly due to the action of cold and dampness. Now, however, the chief cause of both is known to be the lack of ventilation.

As soon as the summer heat, which obliges us to live in the open air, moderates, we draw back into our houses, shut the windows, light the fires, and stop every crack through which a "draught" may enter.

The germs that cause colds and coughs are everywhere, we carry most of them about with us on the mucous linings of our noses and mouths; but so long as we keep up our vitality with fresh air and healthful outdoor exercise, they cannot multiply enough to cause the symptoms of disease.

If we followed the same course of life in winter, they would still remain powerless, but as we give up out-door exercise, shut out the fresh air, and perhaps bathe less frequently, we steadily lower our powers of resistance.

It is at night that we suffer most from the debilitating effects of bad air. Those who habitually sleep with all the windows of their bedrooms wide open have little reason to fear pneumonia or tuberculosis, though they may be obliged to work during the day in overheated and badly ventilated places.

Tram-cars, too, are mighty spreaders of disease, and the city dweller is fortunate who lives near enough to his office to walk back and forth every day.—Youth's Companion.



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

208. Paraffin Oil

Quite a number of questions have been sent in in reference to paraffin oil. It is known to the chemist as liquid paraffin. We would refer our inquirers to "Chats" in the last issue of LIFE AND HEALTH, where this subject is dealt with. We believe liquid paraffin is a perfectly safe remedy for constipation. It, however, requires regular use every evening or every night and morning, and should be given in from one to two teaspoonful doses. It can do no harm as it is not absorbed, does not in any way stimulate the intestinal muscles or secretions, and is not followed by more troublesome constipation, as is the case with nearly all purgatives. being absorbed it simply keeps the fæces in the colon in a moist condition, and thus renders them more easily expelled. Frequently it has to be used for several days before any beneficial effect is noticed.

209. Throat and Nose Trouble

"Ray" has suffered from childhood from the above. Complains that small white lumps come from his throat and they affect his breath.

Ans.—The offensive "white lumps" are probably thickened secretion from the glands of the tonsils. We would advise the use of Burrough and Wellcome's eucalyptic soloids. Dissolve a soloid in six tablespoonfuls of water, and sniff part up

the nostrils so that it escapes into the pharynx, and also gargle throat. This should be done night and morning. Diet should be simple. Dry, crisp foods should form a part of each meal. Avoid sweets and foods cooked with fats. Breathe through the nostrils. The trouble is brought on by continual colds in conjunction with digestive disorders, and it will remain unless the digestion improves.

210. Eczema of Leg

A.E.A. complains that her legs have broken out in a rash. It is dry and very itchy. Scales are formed on the leg. It gives most trouble at night. Inquirer asks if varicose veins would cause the trouble.

Ans.—Once the trouble arises the varicose veins would keep it going. The bowels should be kept regular by suitable diet and the drinking of water between the meals. The legs should be rested as much as possible during the day. Many varicose veins can be operated on with a good result. We would advise the use of the following ointment made from equal parts of compound mercurial ointment, ointment of subacetate of lead and zinc oxide ointment.

211. Rash on Forehead

"Dunedin" complains of rash on her forehead and face. "It came with a heat

and hard, itchy lumps. After they have gone they leave a white place. I have been suffering for three years."

Ans.—The trouble is probably due to an inactive condition of skin. We do not think as suggested that it is eczema. We would advise a thorough steaming of the face at night; after which sponge with cold water, and rub in a little well-prepared lanoline. The treatment should be continued for some weeks.

212. Psychic Illness

"Help" complains: "I have an inclination to always be left alone. I cannot remain long amongst a crowd of people or walking about the streets. I always imagine I see some very unpleasant things though knowing all the time I really don't see anything. I have been suffering like this for about six years. Doctors don't seem to understand this psychic illness. . . . My digestion is very poor, and has been so for the last six years. Have been a strict vegetarian for the last six months. The diet helps me."

Ans.—It would be difficult to give advice without knowing fully the surroundings of the patient. A complete change would probably help. With a change of surroundings the mind would be diverted into other channels. Probably three or four weeks at a sanitarium would be very helpful.

213. Painful Menstruation

"Urunga" writes concerning her daughter who has suffered from very painful menstruation for years. She has been curetted without beneficial result, and since the operation has developed considerable tenderness and pain in the left side. Her doctor tells her she has an enlarged uterus.

Ans.—Painful menstruation is very frequently associated with a narrowing of the neck of the womb. The difficult menstruation due to this cause brings on

local inflammation, and thus the trouble is aggravated. The pain in the left side is probably due to some ovarian inflammation. We go not think it could be due to an abscess as inquirer suggests, nor would we advise the alum injections she speaks of. We have found a dilation of the cervix on two or three different occasions, after an unwell period, to be very efficacious. After one treatment the cervix again contracts. We could not give much information re pain in left side without a thorough examination. Patient should rest in bed during the time she is unwell, and repeated fomentations should be applied over the seat of the pain. See that the bowels are acting comfortably at this time. Hot hip baths three or four nights before the menses are expected are very helpful.

214. Chronic Rhinitis

A.N. complains: "I have difficulty in breathing through my nose (mainly at night). There is apparently no obstruction, but the excretions seem to dry up and block the passage. I have tried taking snuff, with no result, and have also sniffed up through my nose warm water and salt, but it has not improved matters."

Ans.—Constitutional measures needed to avoid "colds." The whole body should be sponged daily with cold water, or a shower bath taken. Live as much in the open air as possible, and avoid hot and badly ventilated rooms. Cultivate breathing through the nose. As colds are largely due to digestive troubles, diet should be simple; especially avoid rich foods, foods cooked with fats of any kind, all fried dishes. Drink water freely between meals. We would advise as a douche equal parts of bicarbonate of soda, borax, and common salt. Of this powder use one teaspoonful to four ounces of warm water night and morning. Menthol applications give relief. Davis' "Inhalone" is an elegant preparation.

215. Intestinal Flatulence

"L.E.D." complains: "Am troubled continually with gas, or wind, in the stomach, and at times feel like an inflated balloon. . . . Apart from gas and a touch of indigestion I am in fairly good health. Six years ago I suffered with weak stomach and a prolonged attack of gastritis. . . Do you advise the use of enema for auto-intoxication?"

Ans.—There is evidently a catarrhal condition of the small bowel following the prolonged gastritis. The flatulence is due to the decomposition of foods in the small bowel. Inquirer gives his regular menu. For dinner, "Entrée (as at sanitarium café), a plate of vegetables, pudding, and granose biscuit." We would advise the avoidance of all legumes, vegetables, and puddings (except plain rice The meals should consist pudding). largely of dextrinised foods, such as granose biscuits, toasted corn flakes, wheatmeal or oatmeal biscuits, zwieback, bread and butter, fresh fruits (at close of meal). Milk may be taken with these foods, but should be sipped, and not used to moisten the foods. Plain protose or nut meat would be preferable to the complicated "vegetarian roasts." If eggs are taken they should be very lightly cooked. Granola fondu, parched rice, macaroni, and gluten biscuits (cooked in milk and thickened with corn flour) would make good dinner dishes. Do not use the enema if you can get the bowels to act without it. Drink freely of water on rising and going to bed. The water may be flavoured with fruit juice. There can be no objection to crisp toast buttered when cold. Certainly avoid porridge and all mushy foods. Two meals a day would probably answer better than three in this case.

216. Nocturnal Incontinence of Urine

"A.J.," aged sixteen years, complains of "wetting the bed at night." This is a symptom not of one condition but a symptom common to many conditions.

Children are often blamed and punished by their parents. This is a very great mistake, for they are often mortified at this failing, and would be only too glad to avoid it. Sometimes it is due to profound sleep. Children suffering from this symptom should be wakened when the parents retire. This is not only a palliative measure, but often curative. The symptom often continues to puberty, and even up to full adult age.

Sometimes it is due to anæmia and debility. Often the cases are neurotic. It has been ascribed to holding the water too long, and thus weakening the sphincter muscle which controls the flow of urine. Sleeping on the back should be avoided, as it causes the urine to press on the most sensitive part of the bladder. Elevation of the foot of the bed will be helpful in this case. The urine should be examined, as it may be of an irritating nature, and this probably would be the result of some digestive trouble.

Avoid the drinking of large quantities of liquid late in the day. Regular meals and regular habits are necessary. Avoidance of animal food, sweets, and rich diet generally would be helpful. Frequent cold water applications to the lower part of the spine should be made. Attend carefully to digestion, and eat fresh fruit after meals, except when vegetables are taken. Fruit should be considered a part of the meal, and not taken after the appetite is satisfied.

217. Discharge from the Ears

A correspondent from "Red Bluff" writes to know "how to treat a boy's ear which has had a discharge for two years. He is nearly three years old, and is worse when he gets a cold."

Ans.—The ear should be syringed twice daily with equal parts of peroxide of hydrogen and water. While syringing hold the auricle of ear upwards and backwards. Dry the ear with a little cotton wool after each syringing. In all continuous discharges from the ear an ear specialist should be consulted.

218. Thick Growth of Hair on Arms and Legs

"E.C." complains of the above, and asks, "Is electricity a sure means of permanently removing superfluous hair, and is the treatment expensive."

Ans.—We know of no remedy suitable for this case. Electricity is successful for growths of hair on the face, etc., but each hair has to be treated separately. This would be impossible with such a growth as that described by E.C.

219. Displacement of the Womb

"Moreland" writes, "Can you inform me if displacement of the womb can be cured without operation, and whether there is any doctor who is a specialist in treating it?"

Ans.—There are so many forms of displacement of the womb, and the conditions vary so much that it is difficult to give satisfactory information to this inquiry. Frequently pessaries will keep the womb in position, but often an operation is the only cure. Instruments that are worn on the person are only palliative. There are specialists for diseases of women in every large city. We would advise inquirer to consult one.

220. Diarrhoea, Post Nasals, etc.

Sybil asks, "What can be done for diarrhœa? How to treat post nasals? Will eating green fruit cause fever?"

Ans.—Diarrhœa generally speaking is a symptom of some disturbance of digestion. Either abstinence from food, or food of the most digestible form, is necessary. Abstinence gives the bowels a rest, and allows the digestive organs time to recuperate. A day's abstinence and rest in bed will cure most acute diarrhœas. If food be taken, flesh foods of all kinds, foods cooked with eggs, fat and baking powders, should be avoided. Milk is digested readily, and is an excellent food where diarrhœa exists. Bismuth carbonate in twenty grain doses three times a

day is an excellent remedy for diarrhœa. It corrects excessive acidity from any cause, has a local, sedative action on the lining membrane of stomach and alimentary canal, and is not absorbed into the system. The subject of post nasals was treated in the last number of LIFE AND HEALTH. There is no remedy apart from operation. Green fruit may cause rise of temperature on account of its irritant action on the stomach and bowels. We would recommend copious enemata of hot water with a little brown soap or a good dose of castor oil, and fomentations if pain exists.

221. Exhausted Feeling and Palpitation

"E. F." complains of "feeling exhausted after lifting anything heavy, also of pain across the heart, pain in left shoulder, and palpitation of heart, and that she is getting very thin."

Ans.—The particulars are not full enough for a satisfactory answer. Probably these are symptoms of indigestion. Dyspepsia frequently causes all of these symptoms. Of course there is weakness because the food is not fully absorbed into the system. Often the symptom of weakness is not altogether due to actual weakness, but the absorption of byproducts produced in imperfect digestion. The consumption of stimulants, and especially tea, produces an exhausted feeling. Stimulants are used to produce a feeling of health, but the effects are not lasting; they are very temporary, and the depression is greater for having used the stimulant. Palpitation of the heart is very common where stimulants are used freely and the digestion is out of order. Attendance to the principles advocated in this journal for healthy digestion will probably relieve the symptoms complained of.

222. Eczema of Scalp

"E. F." also states: "Mattery sores come over her baby's head, aged twelve

months, and that the child comes out in a perspiration when she goes to sleep and when having a drink."

Ans.—Apply almond or olive oil with one per cent of carbolic or salicylic acid (about five grains to ounce). Another good application is, One drachm Bismuth carbonate to one ounce of vaseline. After the inflammation has subsided, the following ointment will be useful:—

R. Zinci Oxidi 5i (1 dram)
Ung. Picis Liq. aa (of each) 5ii (2 ,,)
Lanoline 5iv (4 ,,)

The perspiration probably shows child wants a change of food. We would advise the addition of granose biscuits to the milk. The child will need no other food for two or three months. Crisp unsweetened biscuits, however, may be given.

223. Dyspepsia

"Eugowra" writes: "Lady friend complains of gnawing, sinking feeling in the stomach, sometimes like a burning sensation, also a throbbing or beating. The stomach seems to be wanting food. She is also troubled with wind and diarrhoea, dizzy headache and ringing in the ears. . . . It is three years since her trouble began."

Ans.—This is a case of irritable dyspepsia. In natural digestion there is more blood in the mucous membrane of the stomach at the time when the meal is due, and consequently there is appetite. In irritable conditions this hyperæmia (natural increase of blood) is continuous, and congestion exists, which keeps up a constant feeling that food is needed. This congestion also makes the pulsation of the blood vessels apparent; under normal conditions we have no sensations whatever of the circulation of the blood in any part of the body. What is needed in this case is to abstain from anything which will in any way irritate the walls of the stomach. No coarse food should

be swallowed; all foods must be thoroughly masticated, and not swallowed till it is absolutely liquid. All meat foods are difficult of digestion, they tend, in delicate state of stomach, to irritate the mucous membrane and cause increased flow of the normal acid of the stomach. consequently flesh food of every kind must be avoided. Coarse vegetables and cereals containing the outer husk of the grain must be avoided. Where this irritability does not exist, whole meal bread. granose biscuit, toasted wheat berries, etc., are excellent foods, but where the lining membrane is in an irritable condition they must be avoided. Similarly, tea, coffee, cocoa, pepper, vinegar, acid fruits, and all fruit that cannot easily be reduced to a pulp, must be strictly avoided. We would recommend the milk foods, gruel, groats, sago, rice, tapioca. Rice may be taken if thoroughly masticated. milk sipped will be beneficial. Milk is very slightly stimulating to the glands of the stomach, and causes but a small flow of acid, consequently it is an excellent food in these conditions. To relieve "feeling" of hunger between meals a little warm water or sips of cold water will give relief. Do not take any food between meals; three meals a day should not be Bismuth is a good drug in these conditions, it soothes the irritable stomach, but is not absorbed into the system. Consequently it cannot be considered a drug in the ordinary sense of the word, for it is always (although in the alimentary canal) outside of the body. The following would be a good form in which to take it:-

Bismuth Carbonate 5iv (4 drams)Pulv. Trag. Co. $5iss (1\frac{1}{2},)$ Spts. Chlorof. $5iiss (2\frac{1}{2},)$ Aqua ad 5viii (8 ounces)Tablespoonful in water $\frac{1}{4}$ hour before meals

Corsets should not be worn as they increase the congestion of the stomach. Repeated cold water applications from a half hour to a quarter of an hour before each meal, and hot fomentations after meals are helpful. Alternate hot and

cold applications to the spine in region of the lower ribs will give relief. The general health should be maintained by gentle outdoor exercise and well ventilated bedrooms. Cold mitten frictions once daily will help the general health and improve the appetite.

224. Nocturnal Emissions

"Reinzi" complains of the above, and states they make him very weak.

Ans.—Do not let the mind dwell on sexual thoughts; cease reading light literature. Avoid flirtation and everything that excites the passions. Flesh foods are better omitted from dietary; the evening meal should be a very light one, and consist of, say, granose biscuits and fruit (fresh). Bathe with cold water the lower part of spine, abdomen, and thighs every morning. Sleep in large, well ventilated

room, and do not have more bedding than absolutely necessary. Keep the feet warm by brisk exercise before retiring. Do not sleep on the back. Some find it necessary to tie something hard on the back to prevent this.

225. Defective Hearing

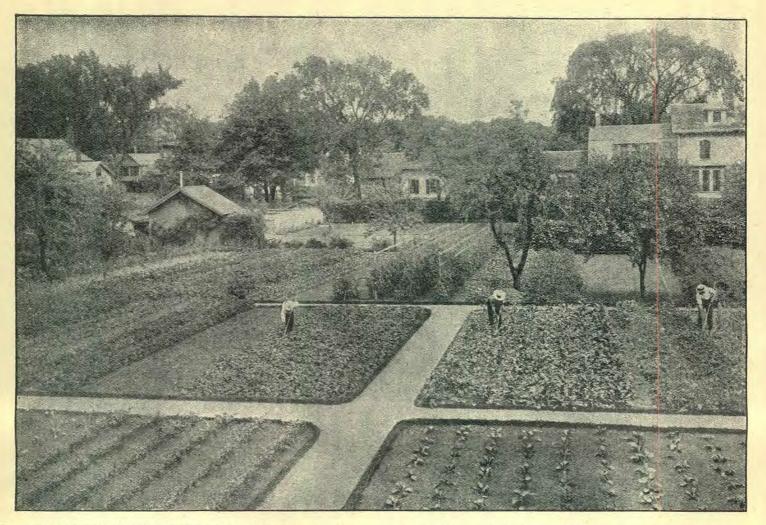
"J. W. W." asks if a certain patent medicine is good for defective hearing.

Ans.—We would not recommend it. It would be much more advisable to see a specialist, a regularly qualified medical man. Very many cases of defective hearing are due to catarrh of the throat, which extends up the Eustachian tube to the middle ear. These cases depend very largely on the digestion, and cannot be permanently benefited while the digestion is faulty.

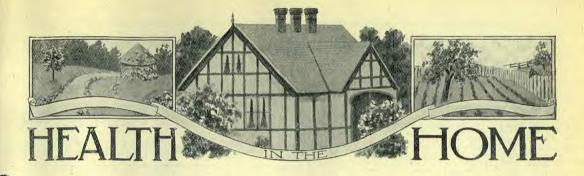
W. H. J.



In Pursuit of Health and Happiness



"Light is essential to the vegetable world. Without it not a plant, not a grain of seed, not a blade of grass could attain its designed perfection"



Importance of Light and Air

A. W. ANDERSON

PON the action of light depends all life on this planet. The beneficent beams of sunlight which diffuse their health-giving properties throughout the ocean of atmosphere which envelops the earth are indispensable to the perfect development of all living things in both the animal and vegetable worlds.

Herbert W. Morris, D.D., writing of the wonderful properties of light, says:—

"Light is the very life-blood of nature; without it every material organ would fade and perish. Where the influence of light is not, there death and silence hold supreme dominion. Light is indispensable to all life: the world was a dead chaos before its creation; and mute disorder would again be the consequence of its annihilation. Every beauty that adorns, every charm which spreads itself over this rolling globe, are directly dependent upon its radiations and luminous powers. It is the fountain of all our knowledge of the external universe, and through it we receive all the indefinable pleasures arising from the features of beauty, the grandeur of the landscape, and the glory of the heavens.

"Light is essential to the vegetable world. Without it not a plant, not a grain of seed, not a blade of grass could attain its designed perfection. It is true, indeed, that the vegetative process will go on in some sort, and to a limited extent, even in absolute darkness: but

light is indispensable to the vigour, and to the useful and ornamental properties of plants. When deprived of light, all plants nearly agree in the qualities of their juices, the most pungent then become insipid, the most fragrant inodorous, and the most variegated of a uniform whiteness; and while vegetation that grows in a natural situation will burn when dry, that which has sprung up in a dark cellar contains nothing inflammable. We see, then, that to the agency of light, vegetation owes its taste, its smell, its colour, and its inflammability, all important properties. So necessary is light toplants, that many of them will spontaneously throw open wide their flowers, and even exert a limited power of locomotion, bending towards it in order to catch its vivifying influences.

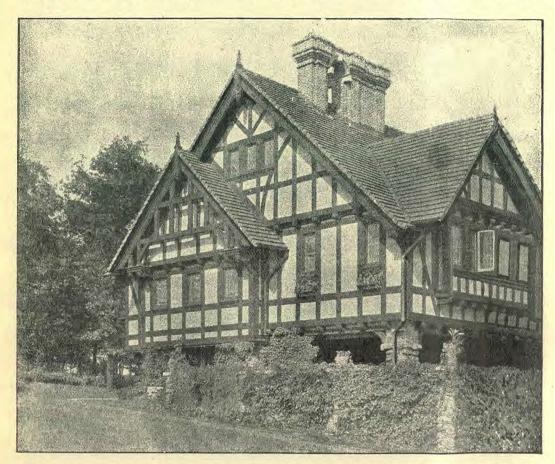
"Equally important is light to animal Experiments of various kinds have proved this in reference to inferior creatures. And the due and constant influences of light are found very favourable to the regular conformation of the human body, and to the vigorous development of the mental faculties. Deformity and idiocy are most frequently found, and frightful diseases commit their most terrible scourges, in the ill-lighted habitations of narrow streets, where the salutary beams of light seldom, or in but scanty measures, shed their beneficial influences. Reliable statistics prove that, in general, the chances of recovery in the well-lighted wards of hospitals are four to one as compared to the chances in dark

or ill-lighted wards."
Dr. Child says: "I

Dr. Child says: "Light is one of the best and cheapest of nature's tonics; and unless it be habitually absorbed, neither animal nor vegetable can permanently prosper. Hence this needful medicament, by Divine arrangement, is poured out in

the treatment of disease, we believe that the old saw is still true, "Prevention is better than cure."

One of the most important things to remember in connection with our daily habits, is the imperative necessity of breathing pure air both night and day. Too much cannot be said of the dangers which lurk in impure air. It is impos-



"In the building of homes it is especially important to secure thorough ventilation and plenty of sunlight"

daily streams upon the face of the whole earth."

The prevention of disease is much more important than its cure. Possibly this statement may seem startling to those who are sick and who think the chief thing in life is to rid themselves of their maladies. Yet, notwithstanding the immense importance which is attached to

sible for us to be well if we live in illventilated rooms. We may eat the best of food, read the best books, follow the best form of religion we know, but if we sleep in badly-ventilated rooms, our good eating and our good reading and our good religion will not save us from the evil results which must naturally follow our disobedience to one of the first laws of nature. Much good advice is given in that excellent book, "Ministry of Healing," upon the question of ventilation and sunlight. Without a plentiful supply of these two health promoters, we must become phys-

ical weaklings, and will thus fail to render that capable service to God which He expects of us.

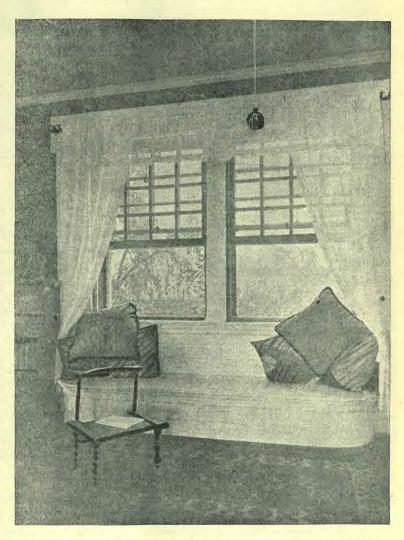
"In the building of houses, it is especially important to secure thorough ventilation and plenty of sunlight. Let there be a current of air and an abundance of light in every room in the house. Sleeping-rooms should be so arranged as to have a free circulation of air day and night. No room is fit to be occupied as a sleeping-room unless it can be thrown open daily to the air and sunshine. . . . Whoever sleeps in a sunless room, or occupies a bed that has not been thoroughly dried and aired, does so at the risk of health, and often of life.

"In building, many make careful provision for their plants and flowers. The greenhouse or window devoted to their

use is warm and sunny; for without warmth, air, and sunshine, plants would not live and flourish. If these conditions are necessary to the life of plants, how much more necessary are they for our own health and that of our families and guests!

"If we would have our homes the

abiding-place of health and happiness, we must place them above the miasma and fog of the lowlands, and give free entrance to heaven's life-giving agencies. Dispense with heavy curtains, open the



"Dispense with heavy curtains, open the windows and the blinds"

windows and the blinds, allow no vines, however beautiful, to shade the windows, and permit no trees to stand so near the house as to shut out the sunshine. The sunlight may fade the drapery and the carpets, and tarnish the picture frames; but it will bring a healthy glow to the cheeks of the children.

"Those who have the aged to provide for should remember that these especially need warm, comfortable rooms. Vigour declines as years advance, leaving less vitality with which to resist unhealthful influences; hence the greater necessity for the aged to have plenty of sunlight, and fresh, pure air."

Clean Living and Character

By J. JOHNSTON, M.D.

I WANT to interest you for a few minutes in one of the most precious things you have got—that is, your health; and to endeavour to help you to become what every boy should try his best to become, viz., a fine man—a true man—a good man; not a goody-goody man, but a good all-round man—a man who cannot only work for his living and so be of use in the world, but who is both able and willing to help those who need his help.

Now, before a man can be a good and useful man, he must first be a healthy one. Health of body and mind is one of the greatest of our earthly blessings, for upon it depends not only our own comfort and our usefulness and our power to help others, but it is one of the principal sources of our happiness, for assuredly do health and happiness go hand in hand. Nay, more, health is wealth—true wealth. Without health how poor is the richest; with it how rich is the poorest?

And one of the ways to become healthy is to become clean. "Cleanliness," we are told, "is next to godliness," which really means "godliness," though not necessarily goody-goodiness. (This axiom, by the way, is not a quotation from the Bible, but from Butler's "Hudibras.")

More than this, cleanliness is one of the great causes and sources of healthiness. And by cleanliness I mean not only skin cleanness—that can be got by the use of soap and water—but cleanness in everything that concerns us: cleanness, that is, purity in the air we breathe, and in our food and water, cleanness in our houses and streets, cleanness in our dress and at our work. It means, too, cleanness in our habits, in our conversation, and in our lives. In a word, it means

purity all round; and it will be found, other things being equal, that the clean man is the really healthy one.

Clean Air

Among the things that we cannot do without in order to live, the most essential is air, for while we can do without everything else, such as food, drink, clothing, shelter, for a time, we cannot do without air for five minutes without being in danger of dying.

Now, what is air?

Well, it is a mixture of two gases called oxygen and nitrogen, in the proportion of some three parts of nitrogen to one part of oxygen, the oxygen being the active constituent in the mixture, the nitrogen acting mainly as a diluent.

This oxygen is the life-giving and lifesustaining principle of nature. Upon it do we live and move and have our being, and without it we surely die. To obtain it we have to breathe, when it is taken into our lungs and thence into our blood, where it oxidises the tissues and is changed into another gas called carbonic acid gas. So that while the air we take into our lungs contains oxygen, the air we put out of them contains not oxygen but carbonic acid gas, which is a deadly poison-how deadly may be illustrated by recalling the fact that in the historic Black Hole of Calcutta-which was a room less than twenty feet square-one hundred and forty-six English soldiers were confined all night. Next morning when the door was opened they were all dead but twenty-three.

Now, what killed these one hundred and twenty-three soldiers? They were all killed by their own breath—poisoned by this carbonic acid gas, which is one of the gases of the choke damp which kills so many of our brave colliers after an explosion.

Moreover, this same gas is produced whenever we burn fires, gas, candles, or lamps; and our houses would therefore soon become full of it if it were not removed in some way.

This is what is meant by ventilation, which is simply the removal of the poisonous carbonic acid gas and the admission

of pure air in its place.

We therefore see something of the necessity of letting in plenty of fresh air into our houses, and especially into our bedrooms where we spend nearly one-third of our lives.

But, it is urged, won't we get cold if we open our bedroom windows and expose ourselves so much to the air when

we are asleep?

Well, I must tell you that whereas it was formerly believed that a "cold" was entirely due to the action of the cold air upon the skin-by lowering its temperature and driving the blood inward-we have of late come to recognise another factor in the causation of the symptoms, and that factor is what are known as germs, or microbes. These microscopical things are regarded as omnipresent in the air, and as being inhaled at every breath. But in the blood they meet the white blood corpuscles—the phagocytes, as they are called-which destroy and so get rid of them, so long as they themselves are in good condition. But if, from any cause, they are unable to kill these disease germs, then will these at once begin to breed in the blood, and so will the disease get hold.

Our immunity from disease, therefore, largely depends upon the integrity and the good health of our phagocytes which, like the police of the blood—which they are—attack and destroy the disease germs, so long as they are active and on the alert; and anything which reduces this alertness lowers our vitality and resistance power, and is therefore the real cause of the disease.

Now among the agents which can do this is bad air; and when we "get cold" after being in a heated and badly ventilated place, the real reason is not so much the cold as the lowering of our resistance power by our having breathed so much impure air before we were exposed to the cold air.

We see, therefore, the necessity of our getting as much pure air as possible at all times.

The one disease which is especially encouraged by bad air is consumption, its most serious form being that of consumption of the lungs, during which the lungs waste away and the patient spits a good deal—the disease being "catching" through this spit, when it is allowed to become dry, and so can be spread in the form of dust. So that no "consumptive" should ever spit in any place where this is likely to result.

But more than that, no person, whether consumptive or not, should spit in any public place. And, in fact, no one should

spit at all.

The human saliva is not only offensive, but it is dangerous; and no one has a right to spit where it may offend or harm anyone.

The greatest offenders in this respect are the smokers; and the following inci-

dent is typical of much.

Sitting beside me on a railway platform one day was a smoker who was spitting on the flags.

"You shouldn't spit there," I ventured

o say.

"Where must I spit, then?" he asked.
"You shouldn't spit anywhere," I replied.

"And how must I do when I'm smoking? I can't smoke without spitting, can

I?" he asked.

"Yes, you can," I returned, and continued, "If a man can't smoke without spitting he shouldn't smoke at all"—a statement which fairly startled him.

But it is quite true. No one has any right to spit in a public place; and spitting ought to be forbidden under a penalty, as it is in some parts of America. Its discontinuance would contribute not a little to the cleanliness of our streets and to the general healthiness of our towns.

You see, therefore, one of the ways in which you may help to keep our streets clean is, by not spitting on them, or anywhere else, as there is no need for it, and at best it is a dirty habit.

The Story of a Cigarette Fiend

FRANK was in an insurance office where his services were much appreciated until cigarettes got in their work and made him forgetful and slow. His presence was obnoxious because of the sickening odour that constantly clung to him, and he was informed that he must quit cigarettes or quit his job. At this time he came to the Anti-Cigarette head-quarters for help. He was the son of a poor woman who needed his help, and he was in desperation over his inability to give up the habit. After a long talk and a prayer to God for help, Frank went out determined not to smoke again if it killed him. He was advised to drink strong lemonade, and eat plentifully of fruit and simple, non-stimulating food, and not to be off his guard for a minute.

For five days he fought heroically and conquered, but on the sixth, getting a whiff of cigarette-smoke full in the face, as he told it afterward: "I was crazy. I could think of nothing but cigarettes, and I bought some tobacco and smoked it all before I stopped." Then a long, hard battle began to recover the lost ground. For a day or two he had the victory, then would

come the yielding to temptation. He lost his position, and began to be a chronic job hunter. One day, in great indignation, he said: "Why are cigarettes allowed to be made and sold when they only ruin us boys? If it hadn't been for cigarettes I would have my job, and my



A Group of Street Boys

Cigarette smoking is ruining more young boys than any amount of hard labour ever did or could

mother would have my money, and we would be so happy." He begged that other boys be told his story, so they would never begin, and "tell the boys," he said, "that they will have to suffer for every bad thing they ever do." The last seen or heard of poor Frank, he was a piece of human driftwood in the great city, of no use to himself, his family, or to society.—The Boy Magazine.



Soups

GEORGE E. CORNFORTH

rather a relish than a food. If they are properly made, however, they are not only nutritious, but they contain elements that are likely to be lacking in the ordinary dietary. Vegetables are rich in certain mineral salts that are needed in the metabolism of the body; but because of their large content of woody fibre, they are to many personsobjectionable, and possibly indigestible. In the form of soups, the most valuable mineral constituents of the vegetables may be obtained without the indigestible residue.

Clear Tomato Soup

One pint of tomatoes, one cup of water, half an onion, sliced, one teaspoonful of sugar, and half a teaspoonful of salt.

Cook all together twenty minutes. Rub through a fine colander. Reheat. Thicken with two teaspoonfuls of flour rubbed smooth with a little cold water. Add two teaspoonfuls of oil

Barley and Tomato Soup

One and a half cups of tomatoes, one and a half cups of water, one small onion, sliced, one table-spoonful of pearl barley, half a tablespoonful of oil, half a teaspoonful of salt.

Cook together all the ingredients except the barley for twenty minutes. Rub through a fine colander. Add water if necessary to make three-fourths quart. Put into a double boiler. Add the barley and cook four or five hours.

Rice might be used instead of barley in this soup, and then only about an hour would be necessary for cooking.

Tomato Macaroni or Vermicelli Soup

One cup of strained tomato, two cups of water, two teaspoonfuls of peanut butter, one and a half tablespoonfuls of fine macaroni or vermicelli, half a teaspoonful of salt.

Rub the nut butter smooth with the water. Add the tomato and salt, and heat in a double boiler. Add the macaroni and cook for from thirty to forty minutes.

To make tomato rice soup use rice instead of macaroni.

Tomato Bisque

One cup strained tomato, two cups of water, onequarter cup of peanut butter, one-half teaspoonful of salt.

Rub the nut butter smooth with the water. Add strained tomato and salt, and cook in a double boiler fifteen minutes.

Lentil Soup

One cup of brown lentils, one teaspoonful of finely chopped onion, one tablespoonful of flour, two tablespoonfuls of oil, three quarters teaspoonful of salt.

Wash the lentils and soak them overnight. In the morning put them to cook in cold water, and cook them slowly for two or three hours, or until thoroughly tender. Rub them through a colander. Brown the onion and flour in the oil. Add these and the salt to the lentil purée and sufficient hot water to make the soup of the proper consistency. This should make about one quart of soup.

The onion, oil, and flour may be omitted, and the soup seasoned with cream or milk.

Split Pea Soup

One cup of split peas, one-quarter cup of peanut butter, one potato about the size of a butternut, one onion about the size of a walnut, three-quarters teaspoonful of salt.

Wash the peas, and soak them overnight. In the morning put them to cook in cold water with the peanut butter, the onion, and the potato, which has been scrubbed and sliced without peeling. Cook slowly four or five hours till the peas are thoroughly softened. The creamy, rich consistency of this soup, as well as of bean and lentil soups, is obtained by long cooking. If the peas or beans or lentils are not sufficiently cooked, they will be mealy and will settle to the bottom of the soup. Rub the whole through a colander. Add salt, and enough water to make of

the proper consistency, and reheat. This should make about one quart of soup. The peanut butter, potato, and onion may be omitted, and the soup seasoned with cream or milk or with one-eighth to onefourth cup of oil.

Bean soup can be made by the same recipe, using any kind of dried beans in

place of the peas.

In making cream tomato soup, it is not necessary, as is usually supposed, to use soda in order to keep it from curdling. It may be made in two ways-first by using cream, second by using milk and taking sufficient care in making the soup.

Cream Tomato Soup, No. 1

Two cups of strained tomato, one cup of water, one cup of cream, one tablespoonful of flour, threequarters teaspoonful of salt, grated yellow rind of

half an orange.

Heat tomato and water to boiling. Stir the flour smooth with the cream, and whip it into the boiling liquid. Add salt and the orange rind, and serve at There is so little casein in the cream that the soup is not likely to curdle when made this way.

Cream Tomato Soup, No. 2

One pint of strained tomato, one pint of milk, two tablespoonfuls of flour, one teaspoonful of salt.

Heat the tomato to boiling, and thicken it with one tablespoonful of the flour stirred smooth with a little cold water. Heat the milk in a double boiler, and thicken it with one tablespoonful of flour. Add the salt to the tomato. Slowly add the thickened tomato to the thickened milk, whipping the milk as the tomato is poured in. Remove from the fire and serve at once. This must not be allowed to heat again after the tomato and milk are mixed, because it will curdle if they are heated together.

Tomato Cream Soup

Three-quarters of a quart of milk, one and a half tablespoonfuls of flour, threequarters to one teaspoon-

ful of salt, tomato-juice

Heat milk in a double boiler. Thicken with the flour rubbed smooth with a little cold milk. Whip in sufficient hot tomato-juice to give the soup a pretty pink colour. Add salt and serve at once.

Dinner for Family of Six at Cost of One Shilling and Sixpence

IF there are those who have the preparing of the food for a hearty and growing family, and have not known the value of beans and rice, it is hoped the following menu will be helpful and suggestive:

> Baked haricot beans, Boiled rice and vegetable gravy, Beetroot salad, Bread.

Pick over and wash one pound, or one pint of haricot beans. Soak overnight in cold water. In the morning drain and put to boil slowly in hot water. Cook from two and a half to three hours or until perfectly tender. Add hot water as they may require, to prevent burning. Avoid stirring only when necessary. When done, add salt to taste, and turn into a pudding dish. Pour over the top of this two tablespoonfuls of nut oil or melted nutter. Bake two hours, or until nicely brown.

This is a most appetising dish, in fact fit "to set before a king." For some, it is improved by the adding of two tablespoonfuls of treacle before baking.

Rice is a more nourishing starch food than the potato. When rice is used in combination with oil, milk, or butter, some bean or nut food, it is satisfying and excellent for the hardest worker at physical labour.

Upon its cooking, however, depends

much of its food value, for it is not thoroughly digestible unless cooked flaky and dry. Those who have visited the rice-grow-

ing countries tell us no one knows how to cook it as they do in the Orient. The East Indian method has been highly recommended. Wash the rice in three waters. Into eight parts of boiling water scatter one part of rice. Do this by spoonfuls so as not to stop the water from boiling. Let it boil hard for ten minutes and drain. This nutritious water should be saved. If possible put the pot in which the rice has been drained on a stand close to an open fire and let it steam twenty minutes, turning the pot round and round. If this is not convenient, empty the rice into a pudding dish, and place in the oven, covered, for twenty minutes. This is to cook the rice more without breaking the grains, and also to let the moisture steam itself out, leaving the kernels dry and whole. When ready to eat serve on a hot plate.

Wash and scrape one pound of mixed carrots and onions, cut into discs and boil in a very little water until tender. To make the gravy, put three tablespoonfuls of oil or melted nutter into a fryingpan and heat, but do not burn. Sprinkle into this two tablespoonfuls of white flour. Stir well so the flour will brown evenly without burning. Into this, pour a little at a time, the rice water, mixing all the time to prevent its being lumpy. If there is more of this water than is needed for the gravy, save for a soup the next day. Now add the cooked vegetables to the gravy with the water in which they have been boiled. should be taken that the gravy be not too thin with the rice and vegetable water. Salt to taste. Use celery salt if desired. Serve this gravy on the rice and bread.

Beetroot Salad

Wash and boil, without breaking the skin, one and a half pounds of beetroot. The beetroot may also be baked in the oven or ashes instead of boiled. When tender, remove the skin and chop fine. Add to this the juice from one lemon.

Cost of Dinner

1 lb. haricot beans,	3d.
1 lb. rice,	3d.
1 lb. onions and carrots	, 3d.
13 lb. beetroot,	2d.
Oil and flour,	2d.
Lemon,	1½d.
Bread,	2½d.
and the same of th	-Good Haalth

Omelette Making

Marie Blanche

THERE are few dishes more appetising, or, I might add, more digestible than a well-made omelette. And since "omelettes cannot be made without breaking eggs," the result is the addition of a very nutritious item to the menu. It is surprising how English cooks ignore the subject of omelette making. Italians and French will, with a couple of eggs and a flavouring of onion and fine herbs, make an omelette fit for a king's table, yet many Australian cooks after elaborate and fussy preparations, serve up a complex and indigestible affair of the glorified pancake family. Either that or their "omelette"

is frankly a souffié masquerading under a false nom de cuisine. The French and the Italians make omelettes much as the Indian makes his curry, or the Scotch housewife makes porridge and oatcake. It is in a sense national. To eat omelettes in perfection, however, it is not necessary to journey either to Italy or to France, for the making of them is really so simple that a mere novice can do it.

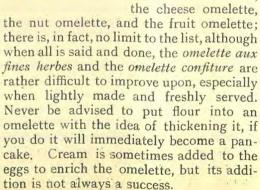
I remember once attending a lecture given by a well-known chef, an authority on omelettes. I secured a front seat, and sat in it for exactly one hour, at the end of which time I came away, the lecturer having got no more forward than the choice and care of a suitable pan and the ingredients. But that hour was well In it I learned much. spent. choice of a proper pan and the care thereof is of great importance. Its size for an omelette for one person should measure about four and a half inches across the bottom, not more; it should be of white enamel for preference, with well-sloped sides, and quite shallow, so that the omelette when finished can be slipped off the pan without breaking. The said pan should be kept solely for omelette making, and never used for anything else, especially as you must not wash it as you do all other kitchen utensils, but must, after use, rub it well with greasy paper, using several fresh pieces to get the enamel quite clean and white. Do not on any account use newspaper for the purpose. When your pan is perfectly clean, put it away in a paper bag where it will not get dusty while out of use. Remember if you wash it, the next omelette you attempt to make in it will probably stick and most likely burn. I have in use myself just such a little pan as I have described, the cost of which was a few pence. I have had it over two years, and countless omelettes have been made in it. Soap and water have never touched it. yet it is as new looking and as spotlessly white as though it had not even seen a kitchen, let alone assisted in producing scores of omelettes.

And now as to the choice of eggs, of

which I have always found ducks' make better omelettes than hens', but in either case the newest laid invariably give the most satisfactory results. The simplest made is the omelette aux fines herbes, and is suitable either for breakfast, luncheon, or supper. To make it, break two eggs into a basin, and add a little grated onion, some chopped parsley, a pinch of salt, and a sprinkling of dried thyme or any

till the whole is a sort of light custard. Do not attempt to stir the omelette with spoon or fork. When it reaches this custardy stage leave off moving it about, and after a few seconds take it off the stove. Slip the knife round the sides to loosen the edges and run it under the whole of the omelette. Now fold one half over the other. The omelette is then finished, and you have only to roll it off onto a

warm plate. A little practice will soon enable you to turn it out quite deftly and neatly without breaking. The sweet omelette, or omelette confiture is the next you may attempt. For this add only to the raw eggs a spoonful of fine white sugar. Make it according to the instructions already given, and before folding over in the pan put a layer of good raspberry jam on one half, fold as before, and roll on to a warm plate, dust a little castor sugar over it and serve. Having learned to make these you will be able to ring the changes on an endless variety. There is the mushroom omelette.





"The great art in cooking is to know how to prepare simple dishes—Yet have them attractive."

other herbs preferred. Do not whisk or whip the mixture with a fork, but break the eggs up well with a sharp knife for about one minute, not, however, bringing them to a frothy state. Put two tablespoonfuls of butter, or any good fat such as you would use for cakes or pastry, into the pan, and when quite hot pour in quickly the mixture, and with the knife keep lifting and moving the eggs from sides to centre, raising them from the bottom and turning them over and about

Cooking

G. H. Heald, M.D., Editor American Life and Health

DIETETIC reform is in the hands of the cooks. An intelligent cook can so prepare food that it is a pleasure to forsake the foods of the ordinary table. But if the cook has not made the proper preparation, there will inevitably be one of two results. Either there will be a hankering after, and finally a return to, the old foods, or if the members of the family are of that firm moral fibre that says, "We will live 'health reform' if it kills us," they will remain firm to what they consider "the principles," while they are pointed out by their neighbours as, perhaps, "these sickly bran-eaters," or some similarly opprobrious title.

In such cases, if the matter will be investigated, it will be found that the cook, whoever she is, has not really learned what it is to cook hygienically. There are doubtless thousands of families trying to live conscientiously in the matter of diet, where there is not a knowledge of the first principles of nutrition and combination and preparation of foods.

We spend four years in making a doctor, and three in making a nurse, and even that is but the beginning. But many a man thinks he can take a girl from the typewriter's desk or from the factory to be a wife.

I hold that no woman is prepared to take charge of a home and attend to the

nutrition of a family until she has had thorough instruction in the principles of nutrition, and the preparation of healthful and attractive dishes. This is especially the case where one is leaving off the use of meats, condiments, tea, and coffee, with which even an indifferent cook, without much knowledge of the principles of nutrition, can get up a meal that satisfies the natural cravings.

For generations we have been carnivorous, and have been trained to depend on artificial stimulants, and when the attempt is made to do without these props, it is especially important that the food be nutritive, that it be healthful, and that it be served in an attractive, appetising manner. No person who considers cooking a drudgery can or will do this. And I feel certain that not a little backsliding, not only in health lines, but in spiritual lines as well (and they usually go together), is the result of indifferent or slovenly so-called "health reform" cooking, which is so only in name.

This is not a plea for a great variety or for complicated dishes. The great art in cooking is to know how to prepare simple dishes and yet have them attractive.

Many foods—the fruits and nuts for example—are usually better without cooking, and we would be better off to eat a larger proportion of such food. But here, there should be an intelligent selection so that the proper nutritive elements are supplied.



Celery, Crisp and Refreshing



Fresh Air a Necessity

Work and Sleep Outdoors as Far as Possible—Value of Deep Breathing and Pure Air—Health and Stuffy Rooms Are Antagonistic

MARY ALICE HARE LOPER, M.S.

ORE 'tand outdoors!' was the urgent plea of a tiny tot who was a dear lover of nature. Every child enjoys outdoor life if the surroundings are pleasant; for the loving Creator made His great outdoors to be the home of the human race, and implanted in the heart of man a love for the beautiful in nature. The Garden of Eden, planted by God Himself, was the ideal home given to man in the beginning; and one of our poets has beautifully said, "The groves were God's first temples."

God created the invigorating atmosphere surrounding our earth, for the purpose of perpetuating life. It is one of those distinctively free blessings bestowed by a loving Heavenly Father, which should be rightly appreciated by all who would possess the priceless boon of health.

We cannot imagine Adam sitting down in a stuffy office in a sky-scraper while seeking to accomplish the great task of giving appropriate names to all the numerous representatives of the animal creation. Adam did his "office work" outdoors, and breathed the life-perpetuating air of heaven while doing it.

Sleep in the Open

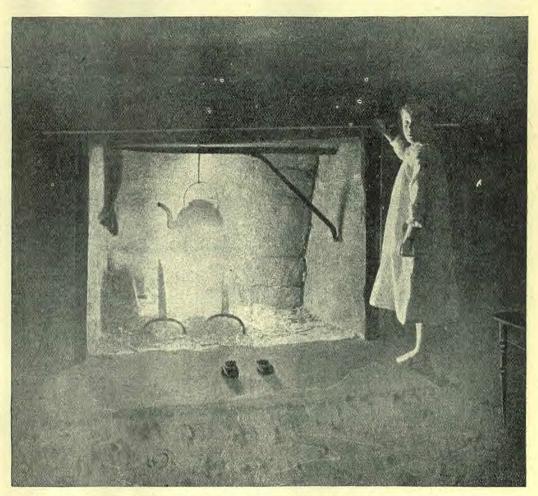
Much has been said and written, during the present century, concerning the importance and necessity of outdoor life; but the world seems slow to heed the advice. It is quite generally admitted that outdoor air is necessary to health while one is asleep. Surely it is high time that the world realise the fact that outdoor air is necessary to health during one's waking hours also. Very many have been laid to rest in untimely graves, whose epitaph might truthfully read, "Died for want of pure air."

Will Not Grow in a Cellar

Anyone who has ever made a success of gardening, knows that it cannot be done in a cellar. Plant life requires sunshine and fresh air; and the human plant is no exception. I once knew a mother who was bereaved of a number of her children while they were yet in their infancy. It would seem that the poor little things slowly smothered to death. They were kept so closely covered, with so little fresh air, that it is highly probable they died of mistaken kindness. Babies, as well as grown people, require pure air; and fortunate is that baby who is permitted to receive his full share of this tonic. The child who early becomes accustomed to plenty of fresh air and sunshine, may overcome hereditary tendencies which otherwise might prove disastrous.

Horticulture and agriculture constituted the regular employment of the first family of the human race—occupations which consist wholly of exercise in the open air. The more man has departed from God's great plan, the less has become his resistance against disease. But while the human race has deteriorated physically, God's laws remain unchanged. It is just

have a tendency to tuberculosis to escape that calamity by taking the precaution found in proper exercise in the open air, without which the disease may be easily contracted. Pure air—how much we need it! Multitudes persist in living apart from the fulness of this great bless-



"During the log cabin days, the huge old-fashioned fireplace served as a sort of life-preserver"

as important now that man should exercise properly in the open air, as it was when the first representatives of the human race lived an outdoor life amid the beauties of nature. By coming into harmony with nature's laws, it is possible for many to find the highway to health who are now treading the dangerous pathway of disease. It is possible for many who

ing of heaven, who are becoming puny and sickly as the result, while pulmonary and bronchial troubles are wide-spread.

The Log Cabin and the Fireplace

During the log cabin days, the huge old-fashioned fireplace served as a sort of life-preserver, as it afforded a means of exit for contaminated air in many an illventilated home. That primitive form of dwelling-house, with its one or two rooms, in time gave place to the spacious mansion, with its darkened parlors and ghost-like spare bedrooms. How many deaths were due to committing guests to these unfrequented haunts of disease germs, no one can tell. But the proverbial spare

bed in time came to be looked upon as a sort of whited sepulchre by those who were aware of the danger lurking in it.

Sweet memories cling round the days of long ago; but the damp, germ-infested spare bed has no place in the list of tender recollections. As a student boarder in a private home, I for some time occupied a precious (?) apartment of this kind myself years ago, and I am still grateful that the experience did not terminate my earthly career.

Blessed thought—
the world is evolving
from death-dealing
rooms to "livingrooms" in the modern
dwelling. The sentiment of the guardians
of home to day is, "Let
the blessed sunshine
in," and along with it
plenty of life-giving air.

The architecture of the home of to-day is fashioned with a view to preserving health rather than for mere beauty of outline, and since the blessed dawn of the era of wire screens, windows have come to be considered more for use than for ornament.

The Sleeping-Porch

The sleeping-porch is surely to be encouraged, for the screened room is the up-to-date sleeping-apartment of the twentieth century. It has come to stay, although some who are still afraid of fresh air, may look upon it with grave apprehensions, imagining that increased bronchial and pulmonary disorders will be the result. But the most thoroughly scientific physicians are prescribing out-



A Modern Bedroom with Plenty of Light and Air

door sleeping for just such patients, and are meeting with gratifying results. Sleeping in the fresh air will tend to cure a fresh cold, rather than increase it. An excellent exercise for one who has weak lung power, is to stand in the fresh air and inhale until the lungs are well filled, then gently percuss them for a few seconds, and then exhale. This simple exercise, if followed for a few minutes twice every day, will be found of great

benefit. Pure air in abundance, with habitual deep breathing, is a great barrier against tuberculosis, and should be rightly appreciated by every one who prizes longevity. To one who is accustomed to sleeping where there is nothing to prevent the free circulation of pure air, a night spent in a close sleeping-room is torture.

Modified in Rigorous Climates

There are climates too severe for outdoor sleeping in midwinter. Good judgment should be exercised upon this point.

It is well to have the screened sleepingroom supplied with adjustable canvas
covers for the screens, which can be
brought into service when necessary to
prevent the influx of too great draughts
of cold air. Each individual should be
"a law unto himself" in this matter, as
some possess much greater resistance
against cold than others. Those who
are especially sensitive to cold, may find
a sleeping-cap of valuable service during
the midwinter season.

The all-wise Creator never intended that human beings should be penned up in sky-scrapers all day, and in stuffy, ill-ventilated flats all night. Pure air is nature's great life promoter in both the animal and the vegetable world; and intelligent human beings should recognise this fact in regard to themselves, and, if possible, cease to work and sleep where plants would surely die.

Slow Suicides

Thousands of people employed in office work are slowly committing suicide because they are out of harmony with nature's laws. Since outdoor exercise was Adam's daily programme, it would be but folly to seek to improve upon God's original plan for the human race. Everyone who is employed in office work is under obligations to take outdoor exercise sufficient to meet the demands of health. A crusade in this direction in our cities is surely greatly needed.

The Small and Harmful Habits of Every-Day Life

Herbert M. Lome

IT is the little thing and not the big thing that counts in both the physical and the moral world. The massiveness of the elephant is impressive, but it is the invisible bacilli, harmful or beneficent, that in a sense control our bodily des-The spasmodic and magnificent charity of a very rich man may excite wonder and perhaps admiration, but it is the hidden self-sacrifice of the wealthless. millions that makes life worth living on the part of those who are benefited by such sacrifices. Likewise, the small habits that one forms make or mar one, and it is with some of these latter that we shall attempt to deal in that which follows.

Many such habits are due to carelessness. Others are symptoms of some physical or mental defects. Still others are the offspring of stupid fashion or the fads of the moment. Not a few are the outcome of that streak of perversity in our natures that prompts us to do wrong when right is equally easy. Many may be traced to a combination of two or more of these causes. All make for the ill health of brain or body.

One of the more common of these habits is that of stooping, either when This habit results walking or sitting. from sheer laziness in some instances. from muscular weakness in others. result of it, the spine is thrown out of alignment and the body out of poise, the circulation of the blood in the head is disarranged, the breathing apparatus is cramped, and the work of the digestive organs is seriously hindered. The round shoulders and sunken chest give an appearance of inferiority and ill health; and the victim, not supplied with a sufficiency of oxygen, becomes anæmic, weakened, and apathetic. As his digestive powers fail to supply him with a proper amount of nutriment, the enfeebled body invites disease.

A literary man, owing to his neglect to maintain a proper position while engaged in his daily labours, was badly afflicted with the "literary stoop." The inevitable ensued, and after a long siege with doctors and specialists, whose ministrations gave him little or no satisfaction, he took the advice of a friend, and rigged up an arrangement of straps by means of which his body was held in an upright position, while his arms and hands remained free. In a week there was a noticeable change for the better in his carriage. The straps were tightened from day to day, and his mental and physical health increased. At the end of two months the stoop had disappeared, and, the lesson having been learned, the harness was given up. To-day, the gentleman is upright and strong.

Another very common habit that may be responsible for much harm is reading when in trains or tram cars. This evil is accentuated when it is accompanied by artificial lighting. The motion of the car calls for a constant readjustment of the optical focus, the strain of which, plus the indifferent lighting, may result in serious injury to the sight.

Certain habits due either to a lack of tone in the nervous system or to want of respect for oneself or the sensibilities of others, are annoying to the onlooker, and call for self-examination on the part of those who practise them.

Thus there is the unpleasant habit of picking, rubbing, or scratching the nose. The first of these may be excused in children, but in the case of an adult it is disgusting, and moreover may lead to maladies of the delicate lining of the nasal cavities, due to irritation. Polypi, lupus (a type of cancer of the milder kind), enlargement of the nasal glands, and the impairment of the sense of smell, are some of the possible consequences of this habit. In order to effect a cure, an inquiry must be made into the cause, and steps taken to shape a fitting remedy, on the basis of the inquiry.

Hawking of the throat is sometimes the result of catarrh or kindred trouble, in which case resort should be made to some appropriate remedy. Often it is due to a selfish nervousness, which ignores the susceptibilities of others. In the latter instance, if no attempt is made to check it, it is liable to breed an irritation of the mucous membrane of the throat that may develop into true catarrh.

As showing the force of habit in connection with clearing of the mouth or bronchial passages, the following is illustrative: An old man, well known to the writer, had, in his youth, worked in a cotton-ginning mill. In those days no precautions were taken to preserve the health of employees as now, and the atmosphere of the mill was, in consequence, full of flying particles of cotton, which were drawn into the nostrils or mouth of the workers by the act of breath-The effort to get rid of them called for a constant spitting from the tip of the tongue, which, in the case of the old man in question, was accompanied by a sound that may be phonetically rendered as, T-r-r-u-u-t!

Finally, he engaged in another business. But he never lost his habit of clearing his mouth of imaginary morsels of cotton at frequent intervals. As a result, his conversation ran something like this: "When I was t-r-r-u-u-t out walking t-r-r-u-u-t to-day, who do you t-r-r-u-u-t, t-r-r-u-u-t think t-r-r-u-u-t I saw coming along t-r-r-u-u-t? Georgie t-r-r-u-u-t Jones!"

In this instance, the habit was not without a touch of unconscious humour. In the case of the ordinary hawker, it is pregnant with revolting possibilities, to say nothing of the spread of disease germs, for which the trousered nuisance is often responsible. The term is used advisedly, for women are rarely guilty of this offense against decency and hygiene.

Biting the nails is usually indicative of an abnormal condition of the nervous system. The medical theory in regard to this and allied habits is that they are instinctive attempts on the part of the sufferer to divert his attention from the trouble that accompanies and causes them. In other words, relief is sought by means of a counter-irritant. The principle involved is a natural one, and recognised in a therapeutic sense. Thus, if we strike or squeeze our finger, we forthwith press or bite it, the pain of the act nullifying that caused by the accident. In the same manner, nail-biting represents an attempt to relieve an unhealthy mental state by an act that causes a bodily sensation.

Here again, a cure can be effected only by treating the cause; this applying to He nearly always suffers from "nailsprings" and tender finger-tips, while indulgence in his minor vice in the presence of others is not calculated to increase their respect for him.

Some physiologists assert that crossing the legs when sitting, interferes with the action of the intestines, and checks the circulation of blood in the abdomen and also in the lower portion of the leg so crossed.

Another unpleasant practice is that of



To avoid infecting food, always cover the mouth when coughing

adults as well as to children. The young, however, may acquire the habit through their strong tendency to imitate. In such cases, the good old remedy of bitter aloes applied to the finger-tips will often prove a sufficient remedy. The nauseous flavour will remind the small nail-nibbler of mother's mandates, and between the two, the habit gets the worst of it. The hand of the nail-biter is never good to look upon. Neither is the thought exactly pleasant that he conveys to his mouth the dirt that has gathered under his nails.

scratching the head. In some instances lack of cleanliness and a failure to use a fine tooth-comb explain this habit; but in others, like nail-biting, it is due to an obscure nervous condition. The clawing of the scalp is not pleasant to witness; and furthermore, it often results in eczema, or what is known as scalp-itch. Sometimes the act is due to an attempt to relieve the irritation caused by dandruff or dirt that has obtained lodgment at the hair roots. In every instance the cause of the habit can be ascertained and elim-

inated; hence there is no excuse for its existence. Some people use the toothpick in public, or "suck" their teeth audibly. No gentleman or gentlewoman-using the terms in the truest sense—would be guilty of either practice, for the reason that a consideration of the feelings of others is the dominant instinct of the well-bred. The tooth-pick has its place in the scheme of hygiene, provided that it is used in moderation and in private. But if it is constantly in action, it enlarges the spaces between the teeth, thereby robbing the bases of the latter of the protection that nature gave them through the medium of the close-fitting gum. The result is that decay is invited, and the services of the dentist are constantly in demand. Incidentally, the big spaces invite the lodgment of food morsels, and increase the need for using the toothpick. The person who practises the tooth-sucking habit should take counsel with his dentist.

Winking the eyes, rapidly and at frequent intervals, twitching the mouth or nose, wrinkling the forehead, twiddling the fingers, etc., are all indicative of some nervous trouble that either exists, or having once existed, has left behind it the habit. In some cases proper treatment is necessary; in others the victim must bring his will-power to bear on the affliction, watching and checking himself per-Let his self-esteem come to his aid in this connection. One who is cursed with a habit of this nature is either an object of pity or ridicule. In social and business life, such habits are grave drawbacks, the loss in personal pleasure and financial profit being serious.

The list of such habits might be greatly extended, and be made to include those that are the result of idiotic fashions. Thus there might be added to the list the use of heels, corsets, tight collars, shoes with pointed toes, and hats that are uncomfortable, one-minute lunches, smoking, the use of alcohol, reading trashy literature, and a hundred and one usages of a like harmful kind. In every instance common sense will indicate and furnish

the cure.

Disease, and How to Avoid It.

THE last century has been the most remarkable that the world has ever witnessed. The mind of man has been abnormally active, and as a result discovery after discovery and invention after invention have followed each other in quick succession right through this wonderful period. We are told that the inventions that have been given to us during the last century are more in number than all those of the preceding centuries put together.

Through thorough and persistent research work, science has been forced ahead by leaps and bounds, and a great flood of light has been thrown upon problems which hitherto were clouded in mystery.

The Science of the Human Body

This human system has received marked attention, including its histology, and also the diet most suitable to nourish and build up its wonderful and intricate structure, so much so that in these greatly enlightened days we have such a host of indisputable facts relating to the welfare of the human body, that there is not a vestige of room left for speculation. Let us take for instance the subject of alcohol, and note the great change that has occurred in medical opinion regarding its use:—

In 1874 the Melbourne Hospital had under treatment 3,594 in-patients, on which were expended for the year £4,382 for alcohol. This works out at an average of £1 4s. 1d. per patient. But as the time went by this amount gradually diminished year by year, until in 1908, with 4,410 inpatients (nearly 1,000 more), it was only £97 8s. 4d., or an average of only $5\frac{1}{2}$ d. per patient. But this diminution did not by any means stop in 1908, for we are informed that in 1911, with in-patients numbering 6,240 (1,830 more than in any previous year), all that was spent on alcohol was £26, or an average of only 1d. per patient. These figures to my mind give a clear cut illustration of the onward

march of the science of physiology, for they distinctly teach us that alcohol is now regarded by medical men as practically useless in the treatment of disease.

The Composition of the Human Body

In 1839, Schwann first advanced the theory that the body was shown to be composed of cells, and as the century advanced it was not long before the theory was shown to be an actual fact. Thousands of scientists in all parts of the world took the matter up, and with the aid of the physiologist's friend, the microscope, they were able to demonstrate by actual sight that the theory was a correct one.

The microscope also revealed that, not only was the body composed of myriads of cells of all shapes and sizes, but also the remarkable fact that each cell was an independent living unit having a digestive and secretive system of its own, and also that it depended entirely for its existence and for its health and strength upon the food that we choose to provide for it. was also discovered that these cells dwelt together in colonies, which we recognise by the names of the muscles, nerves, bones, etc., and that the individual cell has a limit to its existence. For instance. the red cells of the blood live for about six weeks; those of the brain eight weeks; those from the intestines twelve to twentyfour hours; while those of the bones live for years. Draper has estimated the death of cells at the rate of 20,000,000 at every breath. But to meet this loss they have power while alive to reproduce others of their kind at the same ratio.

I shall not attempt to give even an approximate number of these minute dwellers of the body. But the following figures will give a somewhat faint idea:—

The lungs contain about 174,000,000 The brain contains about 300,000,000

One half of a walnut shell filled with blood would contain more cells than there are men, women, and children on the face of the earth to-day.

By the study of biology we may know

for a certainty of what the body is composed; but to intelligently understand the action of disease we must also make ourselves familiar with the composition and characteristics of a disease germ.

The Characteristics of a Disease Germ

To study the characteristics of a disease germ we must go to the vegetable kingdom. Between the animal and vegetable kingdoms there is a difference which is so great that a sharp line of distinction is drawn between them for ever separating the one kingdom from the other. The animal world must have oxygen. out that vitalising, life-giving element the entire animal world would cease to exist. On the other hand, the vegetable depends for its existence upon a poisonous, deadly element, carbonic acid gas, which is developed in the human body by the different processes of life, and breathed out by the mouth, through the skin, and by other means, into the atmosphere. This gas is also developed in greater quantities by sickly weak tissue, and by dead and dying organisms. Upon this poison the vegetable lives and thrives, but to the animal it brings sickness and destruction if the body is not normally relieved of it.

In the great majority of cases the plant collects carbonic acid gas from the atmosphere by a process peculiar to itself. But there is a family of plants which does not possess the power or means for extracting this poisonous element from the atmosphere. This family is therefore compelled to rely for its supply of food upon weak and sickly tissue, or upon dead or decaying matter, upon which the various members may locate themselves. This family is known by the name of "Fungi."

Fungi is never found growing upon the green, living branch of a tree, but always on the dying or dead parts. It thrives on wooden fences or in damp, shaded gullies, where there is an abundance of dead and rank material for its sustenance. It is the same family of fungi that we often find growing on our preserves in the form of blue mould, and there are other members which turn milk sour, or make

the butter rancid, and which produce rottenness in over-ripe fruit. It will be noticed that decay always makes its appearance first where the fruit has been bruised or injured, because the injury has weakened the resisting force.

Disease Germs Are Parasites

Disease germs are parasites, and they belong to the vegetable kingdom, and are classed in the family of fungi. They cannot live on oxygen, but absorb carbonic acid gas, not from the atmosphere, but through weak and sickly animal tissue. They cannot possibly live and thrive on healthy tissue. Their chief work is to endeavour to destroy the tissue, and then take its place, when, if not hindered, they will multiply at an alarming rate.

Summary

To understand how to avoid sickness it is absolutely necessary that the reader should intelligently grasp what I have tried here to explain, and which I shall briefly summarise.

- 1. Our bodies are composed of myriads of independent living organisms called cells which dwell together in colonies.
- 2. Each cell has a digestive and secretive system of its own.
- 3. These cells depend for their existence as well as for their health and strength upon the food that we choose to give them.
- 4. Disease germs are also independent living organisms.
- 5. Disease germs are parasites of the fungoid family, and maintain their existence, not by extracting their food from the atmosphere, but by preying upon weak, decaying, or dead tissue, from which they absorb carbonic acid gas.
- 6. Disease germs cannot possibly exist on healthy tissue.

If these facts are kept in mind the causes of disease and how sickness may be avoided will manifest themselves with startling reality as we proceed with the study.





"COULD" AND "COULDN'T"

"Could" and "Couldn't" were two promising boys
Who lived not a great while ago;

They had just the same playmates and just the same toys,

And just the same chances for winning life's joys

And all that the years may bestow.

And "Could" soon found out he could fashion his life

On lines very much as he planned;

He could cultivate goodness and guard against strife.

He could have all his deeds with good cheer to be rife,

And build him a name that would stand.

But poor little "Couldn't" just couldn't pull through, All the trials he met with a sigh;

When a task needed doing, he couldn't, he knew; And hence, when he couldn't, how could he? Could you,

If you couldn't determine you'd try?

-Selected

What Made the Difference?

THE new boy was sitting on a big stone post at the foot of his driveway, when Peter drove the cows to pasture.

"Hello!" drawled Peter as he walked slowly by.

"Hello!" said the boy, pleasantly. "Come fishin', will you?"

"Can't," drawled Peter. "I've got to work! Wish I was you," he said enviously, "and didn't have nothin' to do but go fishin', an' sit on a post and let my feet hang down."

The new boy laughed. "We have cows," he said shortly; "a whole dozen of them."

"But you don't have to drive them to pasture," declared Peter.

"Don't I?" said the new boy. "I take them away down to Mr. Lane's pastures every morning 'fore breakfast."

Peter eyed him curiously from top to

"Well, you're a queer one," he said. "But perhaps if I only had the cows to drive I'd get up early, too."

The new boy laughed again. "We've got hens," he said quickly, "an' chickens, an' pigs, an' horses, same as you. I guess what makes the difference 'tween you an' me is 'cause you don't do your work by my grandma's rule. I've found it a good one."

"Supposing you tell it to a feller."

"I 'most know that you've heard it," said the new boy, "only you've forgotten. It's 'work while you work, an' play while you play."

"Ho, ho, ho," laughed Peter. "That's not a bad rule, is it? Maybe it does for you, but when a poor feller has to work all the time, same as I do, why, it's only 'work while you work,' an' never any time to 'play while you play' at all."

"Are you working now?" said the new

boy.

"Not 'zactly," answered Peter, becoming interested in the new boy.

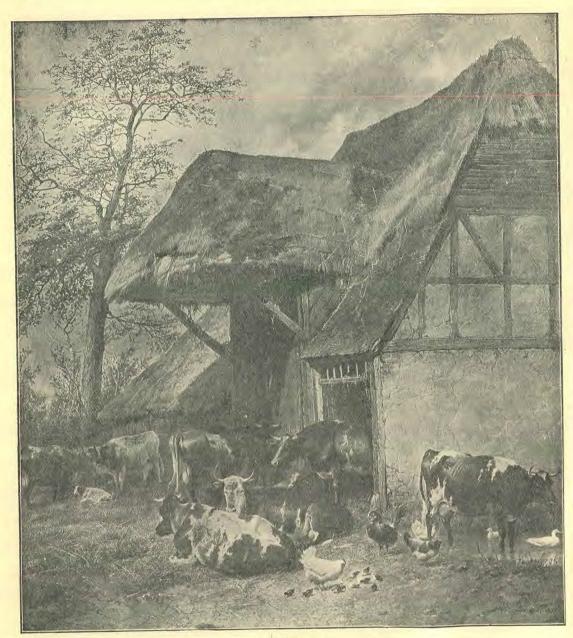
"An' you're not playin,' are you?" he

inquired.

"Then you're doing nothing," declared the new boy.

"Same as you be," said Peter crossly.

He knew that he was lazy, but he didn't enjoy being told about it one single bit.



The Farmyard

The new boy jumped down from the post in a hurry. "You're right," he said, with a laugh. "Supposing you let me drive your cows while you run home and do the rest of your work. An' supposin' you an' I go into partnership an' take my grandma's rule for our motto. An' then every morning after we get our work done, supposin' we go fishin'?"

Peter looked at him in surprise, and then

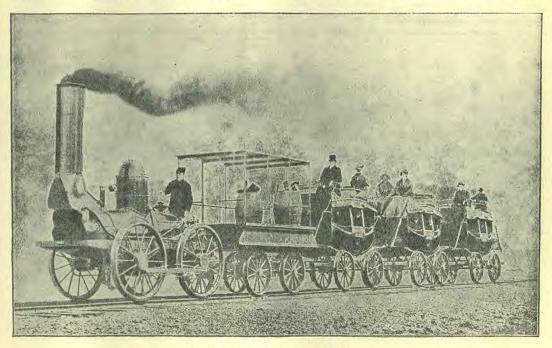
he said earnestly, "Shake hands on it!"
And, oh, dear me, weren't those fishes sorry there was ever such a partnership formed!-Youth's Companion.

A Boy who Wanted to Learn

WHEN we are on a train, rushing along, with the great engine pulling us, we do not often stop to think of the long years of patient work and study it took before men found out how to make the big locomotives that we have nowadays. Nothing worth while is ever accomplished without hard work, and this was true in the life of George Stephenson, who built the first locomotives made in England.

earn more by picking stones from the coal, and after that he drove a horse which drew coal from the pit where it was dug. Finally, when he was eighteen years old, he had learned to run the pumping-engine in the coal-mine.

All this time there had been no chance for Stephenson to go to school. He made up his mind that he wouldn't grow up without being able to read and write.



One of the First Passenger Trains

Stephenson's father was a poor man who worked in a coal-mine. His home had only a clay floor and mud walls and bare rafters.

Most little boys think only of play when they are five years old, but when little George Stephenson was that old he began to work to help make the living. He was big enough to watch cows during the daytime, to see that they did not stray away.

After a while he was big enough to

So he went to see the village school-teacher and told him he would like to attend the evening school. Stephenson's clothes were ragged, and he had no shoes or stockings. The schoolmaster did not treat him politely. When he found out what Stephenson wanted, he said: "Very well, you may attend school, but an awkward, bare-legged laddie like you would better be doing something else than learning his letters." That might have discouraged some boys, but Stephenson kept

on working hard all day and began to study in the evenings. At the end of two years he had learned all that the little school could teach him.

As he grew to be a man, Stephenson kept working away, making his steamengines, and trying to get them perfect enough so that he would feel satisfied with his work. At first people laughed, and said it would be impossible to make an engine that could go ten or twelve miles an hour. But at last Stephenson had made one which could go thirty miles an hour. Then people did not laugh any more. They admired what he had done.

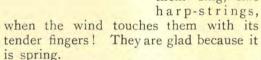
One of Stephenson's engines would look small and very queer if it were placed

The Tree and the Telegraph Pole

WHICH would you rather be, children,—a tree? or a telegraph pole? They seem a good deal alike, in a way; for the telegraph pole looks much like the trunk of a tree. Indeed, it was the trunk of a tree once; and it grew among the trees in the forest. If you cut into it a little with your pocket-knife, you will find the woody fibre there, just as it is in the tree. But there is one thing in which the pole and the tree are very different. The tree knows when spring comes; and the pole doesn't.

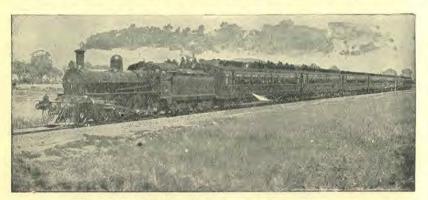
Just look at the trees as you pass them on your way home, and let them tell you

how happy they are. You can see their gladness in the buds they are putting out; in the leaves that are here and there already opening, and in the sap that is dropping from a broken twig. Why, you can almost hear them sing, like



The poor telegraph pole does not know! And it is not glad. It stands in the same rich ground as the tree. The same rains fall upon it, and the sun says, "Goodmorning!" to it every day. Yet it doesn't know that spring has come! And it will know, by and by, that summer is here only because the heat will crack it and dry it up. Oh what a pity not to know about the sweet spring time, with its birds and flowers and gentle rains.

You would rather be a tree, I am sure; for the tree grows, and the pole only rots; the tree bears flowers and fruits, while the pole can only carry weights. Poor thing!



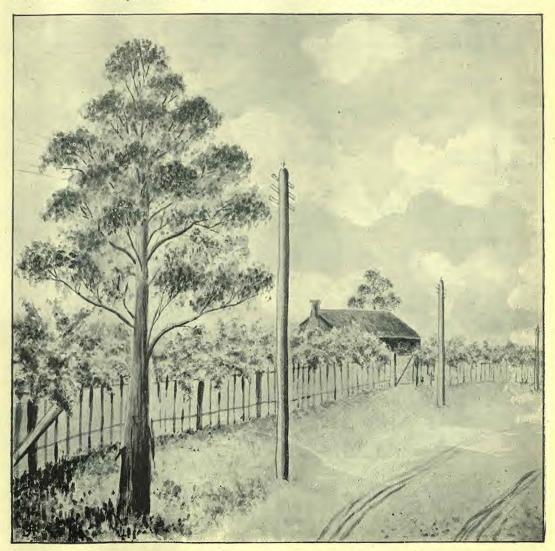
A Modern Express Train

beside a big locomotive such as we have now. Other men have improved Stephenson's steam-engines, but they all honour him for his long years of study and labour that he put into making the first engines. People are very glad now that the "awkward laddie" was determined to learn. They are glad that he did not stop doing what he knew was right just because some people laughed at him.—Our Little Friend.

"My idea of a boy is one who is manly. He will not do a mean thing. He does not think it will make him appear manly to smoke or chew tobacco, or to use rude language. He will not say or do anything that he would not want mother to hear or see."

But how did the telegraph pole, which was once a beautiful tree, lose so much? Why does it stand stark and dead, with never a leaf upon it; and never knowing when it is morning, or when the spring is near? It is a sad story; but I want you to listen to it. You know God gives a tree two things by which it may reach out; its roots and its branches. The roots run far out into the warm mother earth, and bring food for the tree which makes it strong and beautiful. And the branches are always stretching out their

hands, inviting the soft rains to freshen their faces and the sun to kiss them. And that is the reason the tree is growing every day. But the poor pole has lost its branches and its roots. It never reaches beyond itself. It just stands there in a hole, stiff and dead; straight enough, but with no pulse in its heart. It was once as glad as any of the trees in the wood. Song-birds nested in its boughs, and the morning breezes loved to play hide-and-seek among its leaves. But now it never knows when spring has come.



"The tree knows when spring comes; and the pole doesn't."

I think there are the same two kinds of people. Some have taken care of the roots and branches that God gave them. They are always reaching out for light and love; they are always growing in strength and beauty. The tired people who pass along the dusty way love to sit in their shadow and rest when the day is hot; and their fruitful branches hang over the wall.

But there are men who have lost both root and branch; who are like poles by the roadside. Such a man we sometimes call a "business man." A fine, large hole has been dug, far from the green fields and the running brooks; his roots and his branches have gradually dried up; he has gotten into the hole, and there he stays. He is no bigger than he was years ago, for he doesn't grow. They sometimes say he is rich; but nobody thinks he is beautiful. He never hears the birds sing, nor sees a sunset. Spring time is nothing to him; and when summer comes, he only crackles and withers. Like the telegraph pole, he can carry weights; and he usually is heavily burdened. the pole, he is sometimes useful. But he never knows when it is spring; and he doesn't answer when the skies are calling.

You will have to choose, dear children, whether you will be the tree or the telegraph pole. Which shall it be?—Frank T. Bayley, D.D.

The Mistakes of Some Boys

It is always a mistake for a boy to think that he knows it all, or that he knows even half of what his father knows.

It is a mistake for a boy to think that any degree of natural "smartness" can make it unnecessary for a boy to work.

It is a mistake for a boy to fail in respect to his father and mother. The better class of people take note of this disrespect and remember it to the great discredit of the boy.

It is a mistake for a boy to lose an opportunity of securing a good education.

It is a mistake for a boy to think there are better ways of getting a shilling than by honestly earning it. This sort of mistake has put many a boy behind prisonbars in the years of his manhood.

It is a mistake for a boy to start out in life looking for a "soft snap." The "soft snap" never develops the real strength of a boy or a man, and it fails to give him the discipline and the experience that come from hard work.

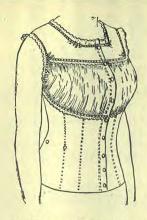
It is a mistake for a boy to spend every penny he earns.

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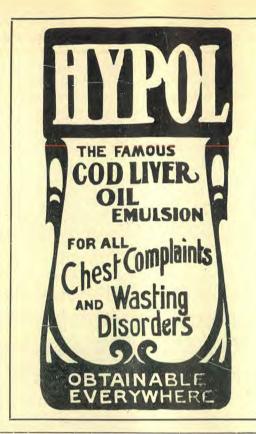
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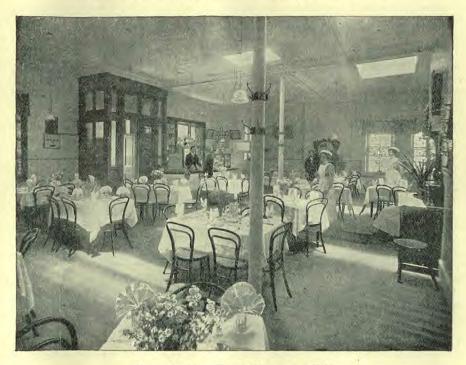
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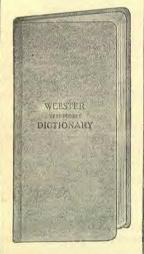
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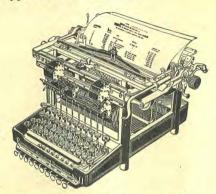
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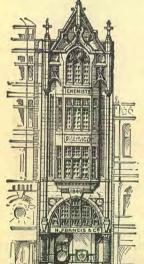
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