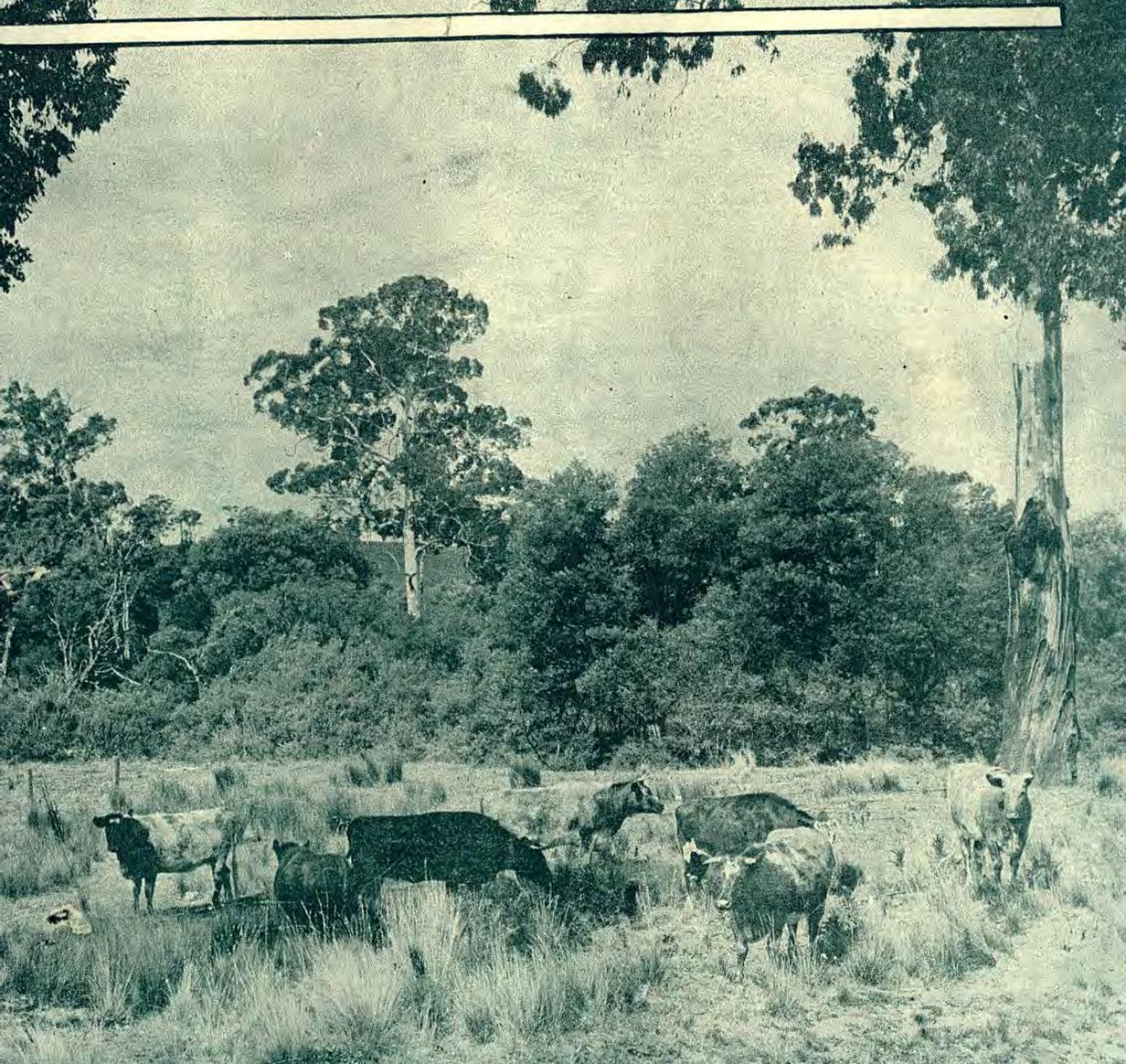


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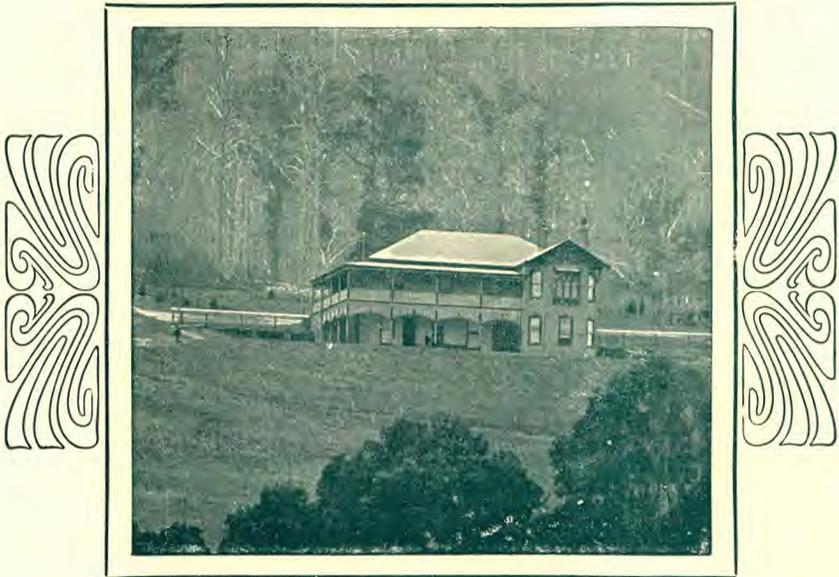
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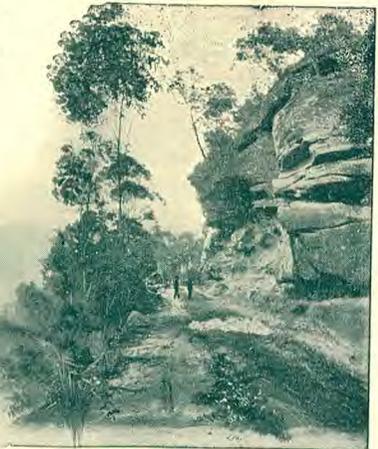
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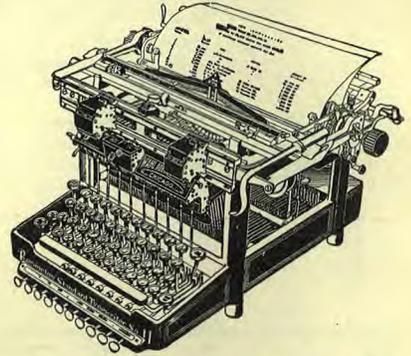
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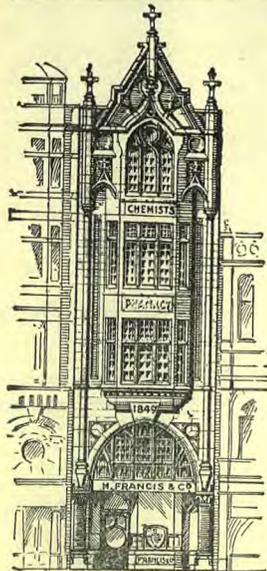
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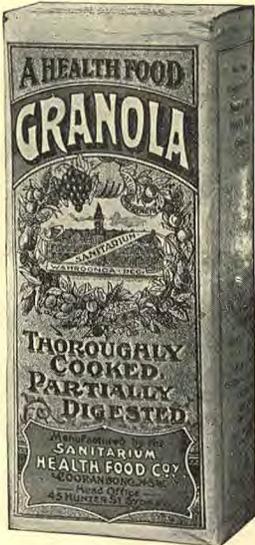


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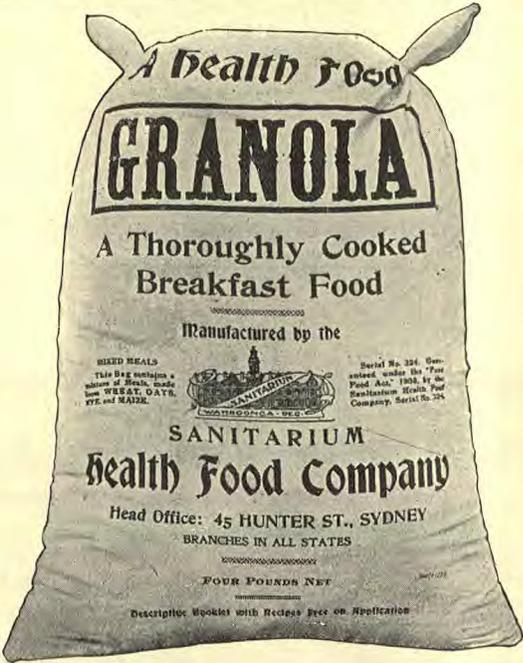
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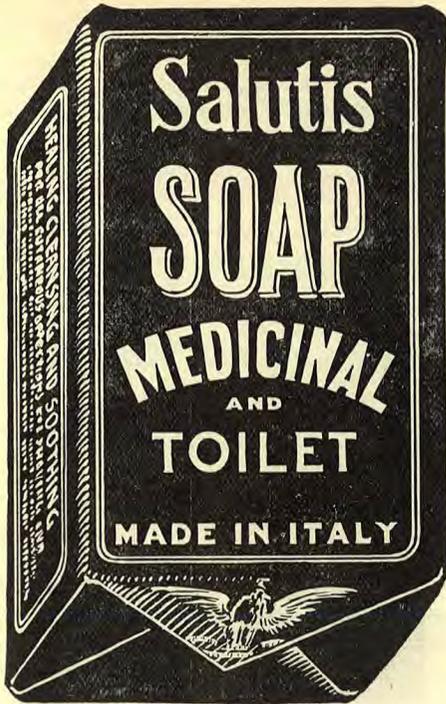
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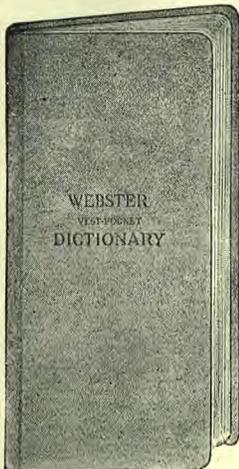
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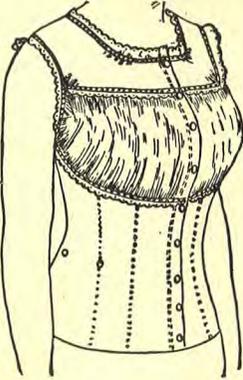
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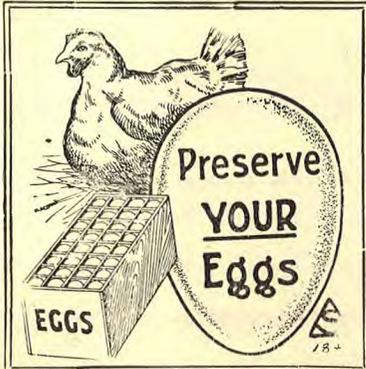
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wider and plainer the more it is travelled. It is hard to keep people from going across paddocks after a path is once made; and so it is hard to stop doing what we have fallen into the habit of doing. It will not be easy for you to "do well" after you have once learned to do wrong.

Bad habits are like ruts made by carriage wheels in country roads; they hold people fast. I once read of an old man who had crooked fingers. When a boy, his hand was as limp as yours; he could open it easily. But for fifty years he drove a cart, and his fingers got so in the habit of shutting down on the lines and whip that they finally stayed shut. The old man can never open his hand again.

Boys, if you do not wish to fall into the habit of swearing, refuse to swear at all. If you do not wish to become the slaves of tobacco, let cigarettes alone. If you do not wish to die drunkards, never begin to drink. If you do these things even a few times, they may become habits and hold you fast. You would then smoke and swear and drink almost without knowing it, or knowing why.—*Selected.*

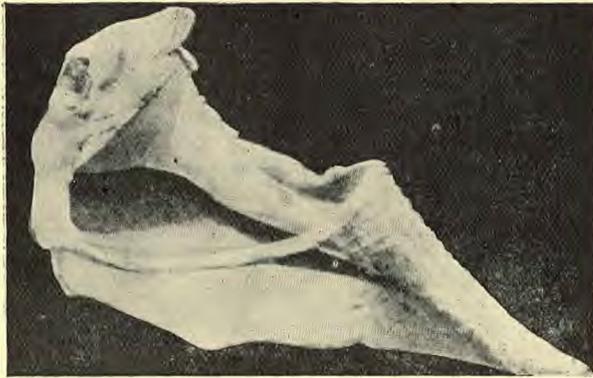
Better Whistle than Whine

AS I was taking a walk early in September, I noticed two little boys on their way to school. The smaller one tumbled and fell; and though he was not very much hurt, he began to whine in a babyish way, not a regular roaring boy cry as though he were half killed, but a little cross whine. The older boy took his hand in a kind, fatherly way, and said: "Oh, never mind, Jimmy, don't whine; it's a great deal better to whistle." And he began in the merriest way a cheerful boy whistle. Jimmy tried to join in the whistle. "I can't whistle as nice as you, Charlie," said he. "My lips won't pucker up good." "Oh, that is because you have not got all the whine out yet," said Charlie; "but you try a minute, and the whistle will drive the whine away." So it did; and the last I saw or heard of the little fellows they were whistling away as earnestly as though that was the chief end of life.— *Northwestern Christian Advocate.*

"THE big head is the worst disease that ever attacked a young man."



a liquid from which the shell is made, and through the pores this liquid is deposited, line after line, at the edge of the body whorl, hardening as it is exposed,



A Fulgur, showing structure

thus gradually building up a new whorl beginning where the last left off.

In among these glands containing the carbonate of lime and other organic substances composing the body of the shell, are small pigment cells secreting colouring matter. As the new whorl is being built up, the little animal adds from these cells the colours with which it wishes to ornament its shell home, depositing the colouring matter in dots or splashes or great sweeps of colour, or in clean-cut, fine lines, as accurate in drawing and in spacing, often, as an artist could accomplish with a rule and a drawing-pen to aid him.

All this description, however, concerns only the outward framework of the shell home, so to speak. When a man builds a house, after constructing the walls and putting on the roof, he turns his attention to the inside and plasters, or otherwise finishes the interior. So does the little mollusk; but the outer work and the inner work are carried on simultaneously and in conjunction; as one progresses so does the other. Just back of the glands

on the margin of the mantle (the ones secreting the fluids and pigments out of which the shell is formed), lies another series of glands which secrete the fluid that produces the interior two layers of shell, one, as it were, the body coat and the last a putty or finishing layer.

The illustrations show shells sawed and filed away so as to show the interior arrangements of shells and how the successive whorls are formed. The fasciolaria is presented to show the wonderful accuracy in both lining and spacing of the mollusks that create markings on their homes.

Habits

A HABIT is some way that you have. The meaning of the word is "to have." Sometimes it is something that *has you* so firmly that you cannot get rid of it without help.

Habits are formed in the same way that paths are made across the grass. A path



Nautilus broken to reveal structure

is made by walking over the same track again and again, till the grass is beaten down and the ground becomes hard.

You can soon get into a habit of doing a thing if you will do it over and over many times. The more you do it the easier it will become, just as a path grows

When he told his grandfather, the old gentleman said, "Well, Grant, you have earned your calf. But you have done something a great deal bigger."

"Why, grandpa, what do you mean?"
 "He that ruleth his spirit is better than he that taketh a city," his grandfather answered.—*Youth's Companion*.

The Structure of Shells

W. S. CHAPMAN

ALL shells, even the very ordinary looking, are marvellously beautiful when intelligently examined. And the wonder



Cone shell cut to show structure

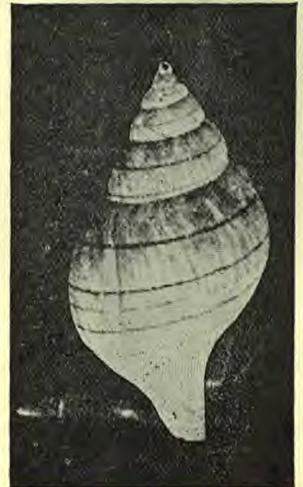
grows at the dexterity of the little animals, who, using the apparently crude tools and the material at their command, produce results so immeasurably beyond the seeming possibility of accomplishment. When the animal leaves the egg from which it is hatched, its shell consists of two turns, or folds, called whorls. The last whorl, as it adds whorl after whorl in growing, is called the body whorl, and is always the largest because it is the one in which the animal lives. These new whorls are added, generally, each year to accommodate the increased growth of the animal's body, and continue to be supplied until increase in growth ceases, the animal vacating whorl after whorl, always living in the last formation, or body whorl. The top of the first whorl, which is sometimes pointed, often obtuse or rounded, is called the apex.

Shells differ greatly in their structure. The more common form is of a soft, chalky composition. A large number, and among them those highly coloured shells of southern seas, are porcelanous, like china, and others are altogether glassy. When a shell is of a chalky nature it is easily decomposed by the acids

in the water of the seas, and is liable to irreparable injuries through contact with rough substances; therefore the little animals cover their shell homes with a thick, membranous skin as a protecting envelope.

Many other shells, mostly among the beautiful "show shells" of warm seas, have an ugly outer skin, covering the entire shell. It is often quite thick and heavy, and of a greenish-yellow colour, making the shells appear very unattractive. When this covering is dissolved away by treating with acid, and the beautiful colouring and markings of the real shell are brought to view, the transformation is a great surprise.

Along the edge in the opening of shells runs a thin, fleshy substance, called the mantle, the animal having the power to extend this outwardly or to retract it at pleasure. On the extreme tip of the edge of this mantle lies a series of glands that secrete the fluid from which the outer covering or epidermis, of the shell is produced. This is the first part of the shell formed. Just back of these glands lies another series of exceedingly complicated glands and pores. These glands secrete



Example of *Fasciolaria distans*

These glands secrete

no horns. When he was within reach, he put the bucket under the calf's nose, dipped his finger in the milk, and placed it in the calf's mouth. He was half afraid that she would bite, after all.

But the calf did not bite. For a moment she did nothing but hold Grant's finger. She stood with all four feet spread wide apart, and her tail stood out straight like a ramrod. Then the tail kinked up, the fore legs moved back, and with a glad leap, the calf thrust half of her head into the bucket.

moved. They went up into the air, and her head went down, but only far enough to hit Grant fair in the pit of the stomach and knock him flat on his back, with the milk-bucket on top.

When Grant went back to the house, his grandfather, still laughing, said, "Well, my boy, going to give it up?"

"No, sir," said Grant, "I came after some more milk."

It was not that day or the next, or even the first or the second week, that Grant earned his calf. It took a long



"The calf braced her feet stubbornly when he tried to get her into the orchard."

The head came out white to the eyes with milk. Then, looking Grant square in the face, the calf blew a mighty "Whoosh!" that completely spattered him from head to foot.

Grant set the bucket down to wipe the milk out of his eyes, and hearing a low laugh, turned, and saw that the whole family were watching him.

He dipped his finger again into the milk, and held it toward the calf's mouth. This time it was the calf's hind legs that

time and cost much hard work. One day the calf stepped in the bucket, and sent all the milk splashing over Grant's feet and legs. Sometimes she would slap him across the face with her tail, sometimes try to swallow his whole hand, and at other times run round him two or three times, until the chain bound both of them tight to the iron stake.

Then one day the calf began to drink as soon as he put the bucket under her nose, and there was no more trouble.



The

CHILDREN'S HOUR

TEA-PARTIES

I should enjoy, if I were let,
 Tea-parties nearly ev'ry day.
 It is my fav'rite kind of play—
 With dishes from the kitchen set,
 And all the cookies we can get,
 And tea that's made the cambric way.
 I usually like to stay
 Until the food has all been et.
 And then, although I'm really glad
 To leave, it's more polite, you know,
 To say, "My dear, it makes me sad,
 But I must call my dolls and go."
 (I'm glad my manners ain't as bad
 As them of certain folks I know!)
Burges Johnson, in "Everybody's."

How Grant Earned His Calf

GRANT NORCROSS had come with his father and mother to spend a month in Tilton on his grandfather's farm.

Strange sounds met his ears on the first morning. The roosters wakened him. From the edge of the woods a crow was calling, and somewhere near the barn a cow was bellowing at the top of her voice. Close under the window was still another noise that Grant could not quite make out until he got up. Then he saw that on the other side of the orchard wall there was a calf tied to an iron stake driven into the ground. Every time the cow called, the calf tried to answer. What the cow said was hard to understand, but what the calf said was, "Ma-a, when will breakfast be ready?"

Grant hurried down to the yard to see his grandfather feed the stock. His two cousins, boys about his own age, were already up and busy at the milking.

"Why does the cow keep making such a noise?" asked Grant.

"Because I've just taken her calf away from her," his grandfather answered. "We have got to teach the calf to drink."
 "Can't I do it?"

His two cousins, George and Frank, laughed, and even his grandfather smiled. "I'm afraid you wouldn't find it a very easy job, or a very pleasant one, at first," he answered. "It takes a great deal of patience and not a little grit."

"But I can be patient, and I know I've got grit. Do let me try, grandfather."

The old man turned a kindly eye on Grant's eager face. There was something about it that he liked—a good, clean chin and a well-shaped mouth. "Well," he said, at length, "I'll tell you what I will do. If you can teach the calf to drink without beating her or losing control of your temper, I will give her to you for your own, to keep or to sell, or do anything else with that you please."

Grant rushed joyfully into the house and asked his grandmother to tell him what to do. The next morning he got a milk-bucket, put about two quarts of milk into it, and started for the barn-yard.

"You had better put on an old apron!" his grandmother called; but that seemed too girlish, and Grant kept on as if he had not heard. The calf braced her feet stubbornly when he tried to get her into the orchard. He set the pail down, and called, "So, Boss! Here, Boss!" as he had heard his cousins do. But the calf did not move.

Grant crept nearer. His grandmother had told him not to be afraid; that a calf was a gentle little creature that would not bite, and could not hook, since she had

achs. One who is accustomed to over-eating is never satisfied in the true sense. There is always a craving for more food. He does not get sufficient nourishment from his food, due to the fact that much of it is wasted by fermentation; and although he may consume large quantities, he always remains thin and emaciated.

Perseverance Required

As a rule, persons suffering with indigestion feel weaker and less fit for their regular work as soon as they make a change for the better in their diet. This may be due to the fact that with the fermentation there are always poisons produced which act as stimulants to some extent to the individual. When this process ceases for a time, energy and tone seem to depart. However, with perseverance along right lines a permanent improvement soon takes place.

Too Frequent Eating

Many dyspeptics make the mistake of eating too frequently. When the digestive organs are weak, rest is a wonderful help to a cure. A safe rule for nearly all is never to eat more than three times daily;

and for many with weak digestive organs two meals are likely to be better than three. When only two meals are taken, it is always best to dispense with the evening meal, which is often responsible for the morning headache, coated tongue, and foul breath, as well as lack of appetite for breakfast.

Thorough Mastication Essential

Too much stress cannot be laid on mouth digestion, or mastication, as this is frequently neglected by all classes of people. Slow and prolonged chewing prepares the food for the stomach, and prepares the stomach for the food. The digestive juices all flow freely as the result of chewing.

Happy Effect of Outdoor Exercise

The effect of exercise in the open air on the digestion is wonderful. A walk in the fresh air, following a meal, is a great aid to its digestion. Violent exercise should not be engaged in soon after eating. But gentle exercise produces a balancing of the circulation as well as an increase in respiration, which have a happy effect on the digestive process.



Weak Digestive Organs

J. J. BELL, M.D.

WEAK digestion is perhaps more prevalent than any other abnormal condition to which the human body is subject. From the infant to the hoary-headed may be found those thus afflicted.

Knowledge of Foods Necessary

In order to be able to select the right kind of food, it is necessary that we should understand something about the chemical elements that the food contains.



"The effect of exercise in the open air on the digestion is wonderful."

What the Dyspeptic Can Do for Himself

Yet there is possibly no condition of ill-health for which more can be done by each individual himself, if he knows how to select his bill of fare, eating well-cooked, easily digested foods in moderate quantities, at proper times, and exercising due care in regard to thorough mastication. In addition, we should mention as of great importance exercise in the open air.

We must also know something about the right preparation of food. In other words, everybody ought to be a cook, at least as far as knowing how to prepare simple foods in a simple, easily digestible, palatable manner.

Overloading the Stomach

The quantity of food eaten is just as important as the quality. Often individuals suffer greatly from digestive disturbance simply from overloading their stom-

we have a much larger variety to select from. Although pleasant and wholesome salads can be prepared from a number of greens and vegetables, still, most of these additional foods require cooking in order to make them wholly digestible. By careful selection and combination, on such a diet it is possible to obtain wholesome and palatable, as well as nutritious, food.

The Milk-Vegetarian Diet

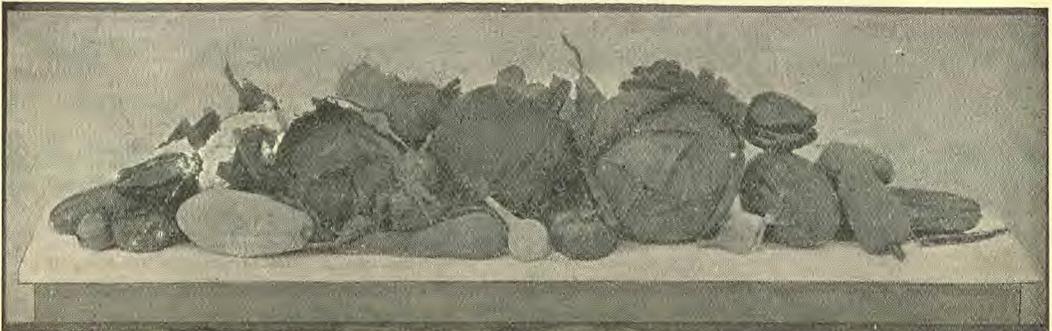
What is sometimes called the milk or lac-vegetarian diet is one that includes all the dairy products, such as milk, cream, butter, cheese, and eggs. Milk and eggs are both animal products, and in many ways partake of the character of animal flesh itself. When they are obtained pure and clean from healthy animals, it is only fair to say that they do not possess all the disadvantages of flesh, fowl, and fish; and most people who adopt food reform find it an advantage to use these animal products moderately. That they are essential to the maintenance of the health of the average man and woman is very doubtful, but that they add both nutrition and pleasing flavours to the diet must be granted. Eggs are generally rightly regarded as "bilious" foods, and many can take them only very sparingly. Pure milk from a healthy animal is preferable to eggs, although it is prone to undergo fermentation and produce acidity and flatulence.

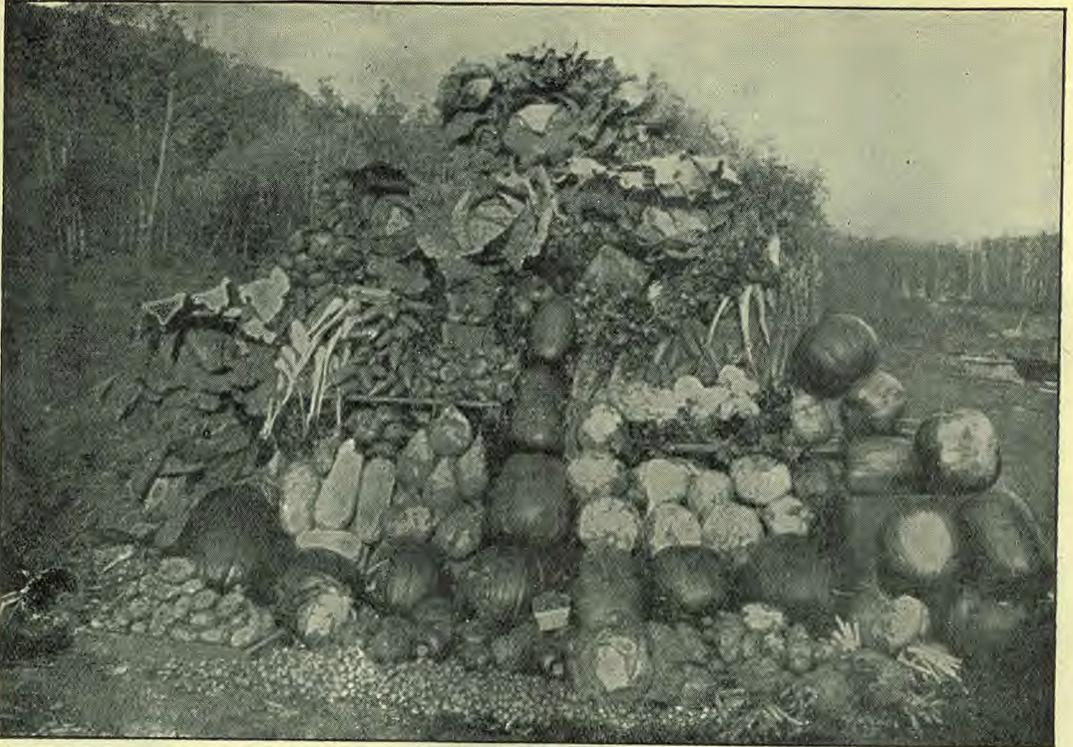
Table Worries

After adopting the natural diet of pure, wholesome, and nourishing food, after making the food digestible by proper

cooking, and after giving the food thorough mastication, the next step is to forget all about the meal. Many food reformers are liable to make the fatal mistake of analysing the food they eat, and worrying about nearly every mouthful they swallow. Will this suit? Will that cause trouble? Is this the right combination? Am I eating enough? These, and a thousand and one other questions are rapidly passing through their minds, and it is small wonder that they are conscious of a stomach, and perhaps also of a liver, most of their waking hours. In most cases it would be both safer and better to eat an ordinary diet, chewing the food well, and then think no more of it, than to set up a state of worry about each meal, and anticipate what effect it is going to have upon the digestive organs. The counsel of the apostle to "let your moderation be known unto all men," applies most emphatically to our daily food. It is a safe rule in most cases to arise from the table with an appetite, for there is little doubt that the majority of persons are more inclined to eat too much than too little.

"ONE of the most attractive old ladies we have ever known was asked how she kept young, and this was her answer: 'I knew how to forget disagreeable things. I tried to master the art of saying pleasant things. I did not expect too much of my friends. I kept my nerves well in hand, and did not allow them to bore other people. I tried to find the work that came to hand congenial.'"





"Plant foods contain all the elements required for the building and nourishment of the human body"



"Owing to the constant presence of various poisonous waste matters, the flesh of animals when eaten produces a di-tinct stimulating and narcotising effect, which is anything but wholesome and beneficial"

They reason that animal flesh is more readily and also more perfectly and more completely digested, assimilated, and converted into human tissue than is the flesh of plants. Many scientists and doctors go so far as to contend that although a few, a small minority, might be able for a time to subsist reasonably well on a non-flesh diet, the vast majority, indeed the great bulk of our population, require a mixed diet.

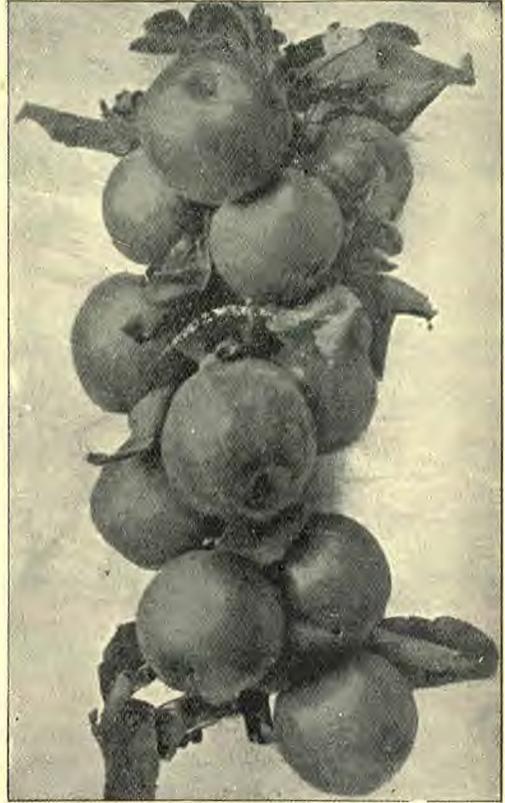
While from the scientific standpoint there is a modicum of truth in this contention about the advantage of animal flesh, we contend that the associated disadvantages of the flesh diet, more than neutralise this small apparent advantage; and we also contend that the eating of dead animals is but one small step removed from out-and-out cannibalism. A flesh eater is in reality a semicannibal; for the structure and chemical composition of the flesh of a sheep, for example, is almost identical with that of human flesh; and when placed under the microscope, it would be difficult and oftentimes impossible to differentiate the one from the other.

The Source of Our Food

All men recognise that the vegetable kingdom is the final and ultimate source of the food of all animals, including man. It is in the plants and their fruit that we find food material in its cleanest and purest state. And there is no doubt that plant foods contain all the elements, including sugar, starch, oil, and proteins, and all the various salts, required for the building and nourishment of the human body. There can be no question with regard to carbonaceous foods, such as sugar, starch, and oils; so the crux of the problem rests with the nitrogenous element, that is, the protein or albumen, which is the chief and by far the most important ingredient of animal flesh; but we have already shown by various tables that this important food element is found equally abundant, and in some cases more abundant, in nuts and pulses, and it is never entirely absent from any plant foods.

The Fruitarian Diet

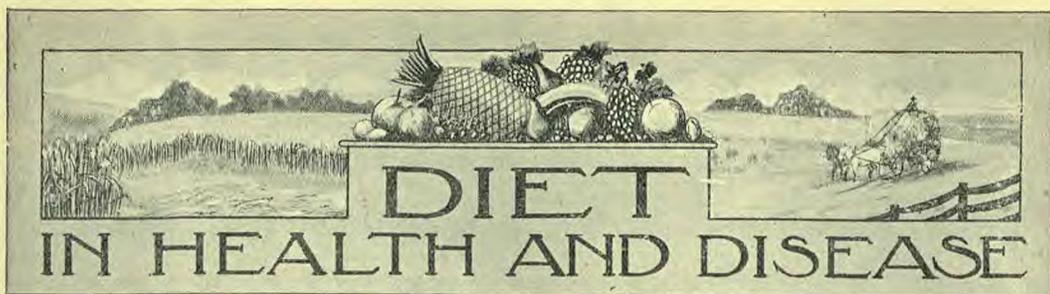
The strict fruitarian diet would naturally consist of fruits and nuts only, which many might regard as a limited diet, and more or less difficult to obtain, as well as expensive. There seems to be no reason why a person in average health ought not to be able to obtain the necessary nutri-



Fresh fruits are our typical "pure foods."

tion, and also maintain sound health, strength, and vitality on a diet of nuts and fruits, for they contain all the elements required for the sustenance of the human body. There seems good reason to believe that such was the original diet of man, and it is certainly quite in harmony with his physical development and anatomical structure. There are those who follow the strict fruitarian diet very closely, and with most excellent results.

When we add to the fruits and nuts the numerous cereals, pulses, vegetables, and greens of almost endless description,



The Common Sense Diet

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

THE modern man uniformly abuses his stomach. He eats and drinks as appetite dictates, paying little or no attention to the laws of nutrition or the requirements of the living machine which he controls. It is true, as Walker tells us, that "anybody can dine, but few know how to dine so as to insure the greatest quantity of health and enjoyment."

The Orthodox Diet

The diet that prevails almost universally in our country, as well as in some other civilised lands, includes both animal flesh and plant foods, and is usually spoken of as a mixed diet. Animal foods, whether flesh, fowl, or fish, are usually taken once, twice, or even three times a day. There is no doubt that people readily become fond of the savoury flavours of flesh foods in much the same way that they become addicted to such habit-drugs as coffee or tea, and greatly miss the beefsteak, mutton chop, or bacon when it has been dispensed with. Owing to the constant presence of various poisonous waste matters, the flesh of animals when eaten, however tasty and appetising it may be to the perverted appetite, produces a distinct stimulating and narcotising effect, which is anything but wholesome and beneficial. There is a great deal of ignorance with regard to the supposed preeminent value of animal foods; and, as a consequence, many think it quite impossible to get a square meal

without including one or more varieties of flesh. But why eat the flesh of dead animals?

The Scientific Ideal (!)

It is usually claimed for flesh foods that they are more readily utilised by the body than similar elements obtained from the vegetable kingdom. Some recent experiments upon dogs would seem to confirm this belief. Dogs were fed upon various diets, and it was found that those animals had developed and thriven best which were fed not on a diet of beef or mutton, but on the flesh of other dogs. It appears that dog flesh is more readily digested and assimilated by dogs than other flesh-meats, because its physical structure and chemical composition are identical with those of the animal consuming it. From this fact of similarity of composition and from the results of the above experiment, they conclude that the diet of dead dog flesh is more easily and speedily changed into living dog flesh. If this contention is true, then the ideal diet for man is healthy human flesh, and the savage cannibal of Africa or the farmyard hog that eats her young, are the best dietitians.

Semicannibal Diet

Of course these scientists do not advocate man-eating, but they do claim that animal flesh furnishes a better supply of tissue food, that is, protein, than can be obtained from the vegetable kingdom.

The little one who has slept well wakes up with a smile, ready for a frolic; the poor little sufferer who is exhausted from want of sleep gets up in the morning a living exponent and object lesson of the doctrine of total depravity, laying the foundation for bodily diseases which may soon end its life, or if it grows up, to be at war with itself as well as mankind, ready to proclaim life a failure. To have the children avoid summer disorders, let them have plenty of sleep during the heated term. Take the little one tired with morning play, when the midday heat is wilting the grass and trees, into a cool place; give it a cool bath, and then put on it some clean, light, cool garments, and let it rest where it is quiet and screened from flies. It will take less time than to nurse it through a spell of sickness. It is always better and more economical to prevent disease than to try to cure it.

The cool bath is a very useful method of toning up the infantile system to withstand summer heat. It may be taken several times a day in very hot weather, and in its simplest form needs only a quart of water, a wash cloth, and towel. It will take but a few minutes to go over the little one's body and wipe it dry before putting on the loose gown in which it is to take its midday nap. A wash-tub will make a good baby's bathtub, and it will enjoy a frolic in the cool water after its hard play in the warm weather, and clean and cool, sleep away the hot summer midday, being strengthened and refreshed instead of debilitated by trying to exercise during the hot hours of the day.

As the digestive organs are most likely to become diseased in the summer, every child should be carefully watched, and the first symptoms of disorder of these organs treated at once. Most disorders of the alimentary canal begin with disturbance of the stomach and bowels, sickness at the stomach, vomiting, and purging. This shows that there are poisons and spoiled food in the digestive tract.

Food should be stopped at once, and an effort made to remove these dangerous materials as soon as possible. Stop giving food, wash out the intestines by enemas and free water drinking. Sometimes a mild laxative will be needed to still further remove the waste. Water should be given freely either hot or cold, and boiled or distilled. A warm bath will sometimes give much relief by increasing surface circulation. When there are cramps and much pain, warm fomentations often bring great relief. When the bowels are hot and sore, cool compresses will be grateful, relieve the congestion, and often stop the catarrhal discharge. In the warm weather, looseness of the bowels should never be neglected. It is a tradition among mothers and old nurses that a diarrhoea is a useful accompaniment of teething. This tradition has led to the death of many children; the looseness of the bowels, being neglected, has soon developed into cholera infantum, dysentery, or some serious digestive disorder.

To sum up the whole subject of the care of children during the hot season: It means that unspoiled food suitable to their ages should be fed them, they should wear clothing suited to the temperature, and everything should be done to promote good sleep. That during the heat of the day and whenever they show evidence of languor or overheating, they should be cooled by the cold, cool, or tepid bath in some form, and put to rest in a cool, airy place where they can sleep. In other words, use prevention rather than seek after cure for infantile summer disorders, and thus greatly lessen the summer juvenile death rate.

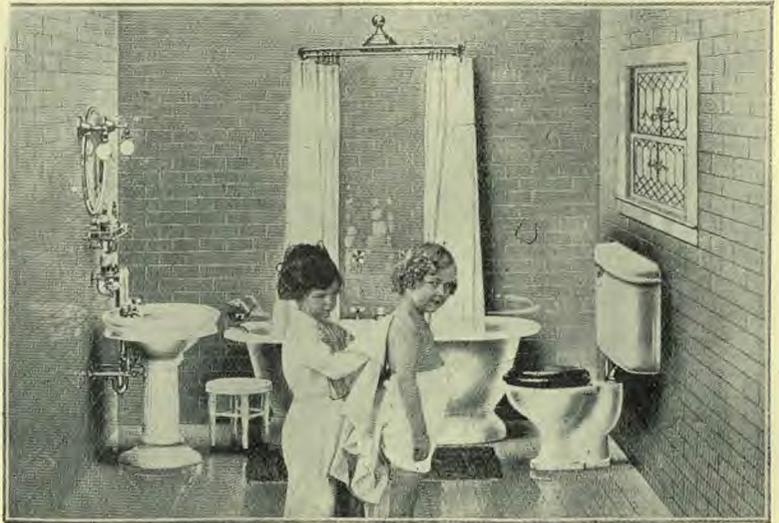
“GET a Worry Book. Put down in it to-day everything that worries you. Look at it a week from to-day. How many of the things you are worrying about will happen? The longer you keep a worry book the shorter will grow the entries.”

All children, and especially the infant, need much more sleep than the adult. Infants from birth until six months old need from fifteen to twenty hours' sleep out of the twenty-four. Indigestion, heat, and insect bites, as well as lack of cleanliness and overheating from excess of bedding and clothing, often deprive the children of so much sleep that they become nervous and worn out for want of rest. This condition alone will often predispose to convulsions and other nervous disorders. When the baby has spent a restless, fretful night, it has no nerve energy left to digest its food. Given to it at this time when every nerve in its body is calling for rest, its food is often swallowed ravenously and in great quantities. There are no digestive fluids in the stomach to take care of it, so it spoils, and a severe colic, convulsion, or inflammation of the stomach and bowels may follow.

It should be the aim of all having the care of children during the summer months, to try to surround them with such conditions as will insure plenty of rest. Should the infant or the young child be restless and fretful, find out the cause; then remove it at once. It may be that it is mosquitoes or other parasitic insects; if so, destroy those which are already in the room, and keep all the others out with screens. It may be the rough, hot flannel band or tight dress, or the over amount of bedding that is to blame for the little one's discomfort. Take them all off, give it a cool bath, and put on some soft, light cotton or linen material. It may be that the room is close and unventilated, the air foul and stagnant; try to create a current, either

by opening doors and windows, or should the room be so situated that this is impossible, move the little one to some other room, or even take it out of doors on the porch, where, in a crib protected by netting, it may sleep without suffering from the exhausting heat. Should the stomach or bowels be at fault, an enema, or rubbing the stomach and bowels gently with hot water, may relieve the pain by expelling the foul gases.

Often infants and young children suffer for want of water in hot weather. The



"The cool bath is a very useful method of toning up the infantile system to withstand summer heat"

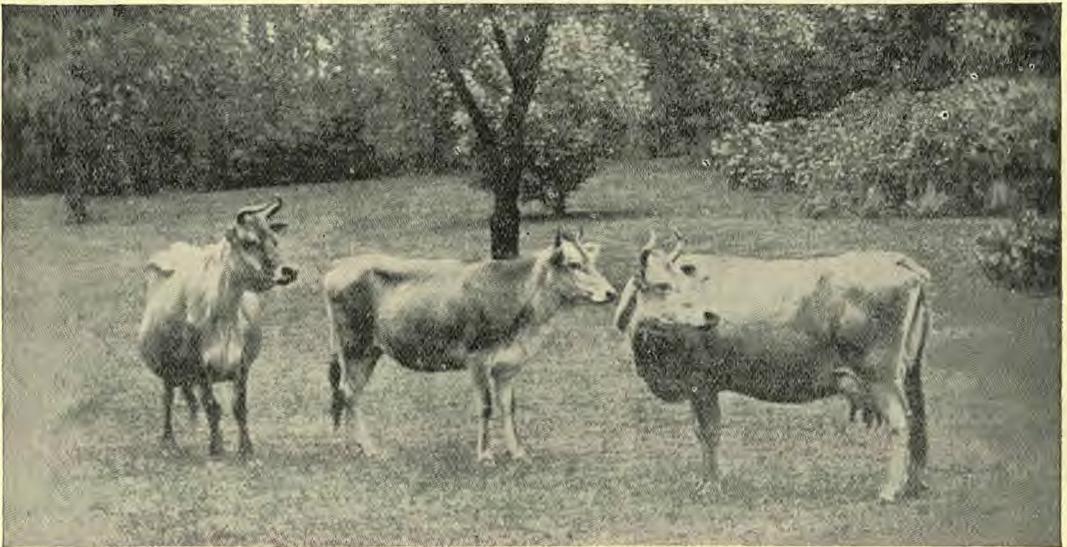
writer has seen many a fretful infant sink into a quiet slumber after a drink of cold water, and when the water was given instead of the food at night, to continue to sleep every night, instead of keeping father and mother walking the floor with it hour after hour. The soothing syrups which were the main dependence for stilling the little one's complaining, were thrown out of the window, and quiet and peace reigned where all was restlessness and nervous excitement before. The temper of the whole family was sweetened because the baby slept. The child who has quiet nerves, and who sleeps well, is likely to grow up sound in mind, and body, and morals.

power, it will grow up with crippled digestive organs, entailing much suffering, and hampering in all its life work.

To feed an infant properly in hot weather, and keep all it eats and drinks germ free, requires more skill and care than to command an army. Heat, cold, and cleanliness are the main reliance; cleanliness to keep out infecting matter, heat to destroy what is already present, cold to keep the germs from increasing and multiplying. Where cow's milk is to be used, the cows should be clean, and

summer heat may start them growing very rapidly.

Sudden changes of temperature often prepare the way for disease microbes to work more rapidly. In the morning it may be cool, and the little ones run out barefooted in thin clothing, and become thoroughly chilled, thus setting up a catarrhal inflammation of the internal mucous surfaces. Food taken into the stomach at this time will readily ferment. Spoiled food means indigestion and diarrhoea. The little one may, in the heat of



"Where cow's milk is to be used, the cows should be clean"

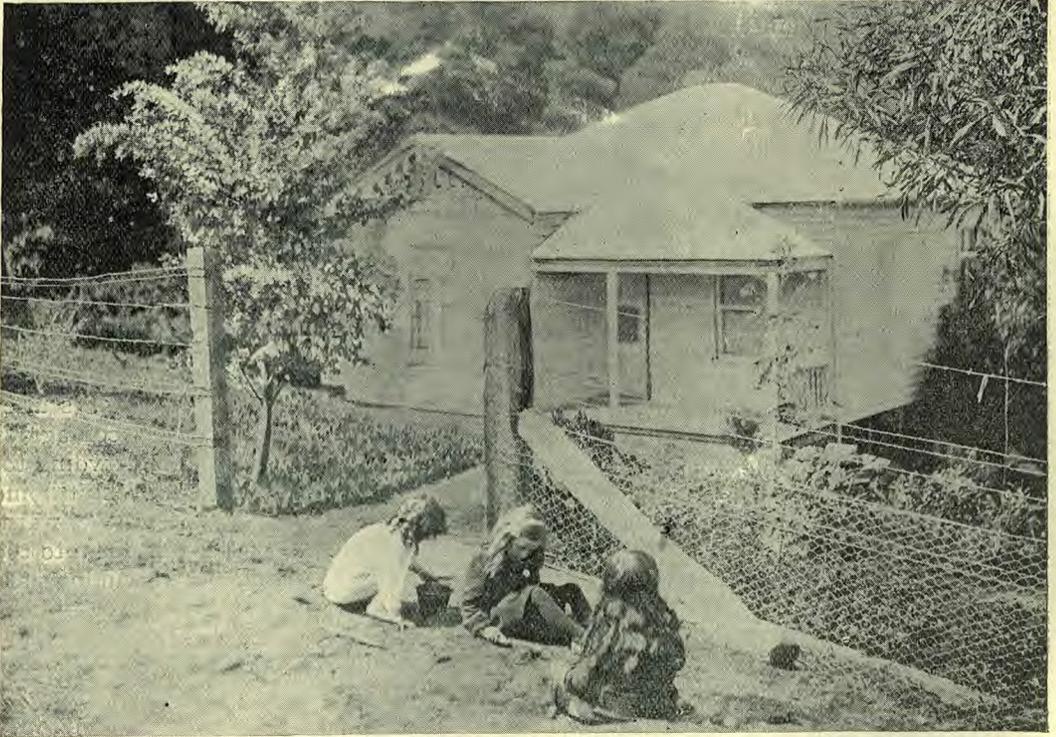
the milker should have clean hands and clean clothes. Heating ever so thoroughly will never clean milk full of barnyard dirt and kept in dirty vessels. A foul bottle, nipple, or tube will often in hot weather prove as deadly to the little one as a dose of morphine or strychnine. Cholera infantum is, in almost all cases, due to unclean, infected milk. This deadly disorder often takes the life of the little one in a few short hours. A fly in the milk from which the baby is fed, may cause milk infection in a few hours, which will start a severe bowel complaint or a severe case of typhoid fever. The wind may fill the milk vessels and the milk itself with all kinds of foul-infected matter, and the

day, be swathed in flannel, and become overheated, its underwear wet with perspiration. It may be allowed to stay out in the chill damp evening, when the relaxed skin, poorly prepared to resist the sudden cooling of the surface, becomes cold and bloodless, and the same condition occurs. Catarrh of the mucous surfaces of the internal organs, also severe congestion of the lungs or some other important vital structures result. Keeping the surface of the little body properly warm in cold weather, by proper clothing and toning up the skin by cold bathing, and keeping it cool in the debilitating summer, will do much toward insuring freedom from disease.

ing the food and drink of both young and old, as well as directly infecting the blood with disease germs by their bites. The common mosquito, house-fly, and bedbug, all more or less increase summer disorders, by infecting food and drink, or the body by their bites, as well as depriving both old and young of proper rest.

The debilitating effects of the intense heat lessen the tone of the organs of the

ideal food for infants under a year old; that is, healthful mother's milk. This is free from germs, is safe from infection from any outside sources, and has just the proper proportion of each food element to meet the demands of the infant organism for nutritive supplies, and it does not overtax the undeveloped digestive organs. No other food can be put together so as to be a perfect imitation of



"When the warm days come, the little ones get out into the sunshine"

body, and decrease their power to resist disease. To lessen the infantile death rate in hot weather, it is needful that those having the care of children know how to provide them with pure air and food free from disease germs and any form of fermentation. This means that the food must be unspoiled, that it must be sterilised, and then kept in a clean, cold place, well covered, and never, even then, should fluid foods, such as milk, be kept more than twenty-four hours.

In the heated season, there is only one

the natural infant food. The little one fed on artificial food is in danger everywhere. Dirty bottles, foul tubes, the unclean hands of the milkers, the barnyard dust, germ-laden insects, especially the house fly, all combine to infect the already imperfect food of the little one. Instead of a nourishing fluid suitable for building the tissues of the body, the nursing bottle often contains a virulent poison which takes the life of the poor innocent in a few short hours. Should it survive by reason of more than average vital resistive

Our hearts breathe our longings and desires for them in the last watches of the night, and with the light of the dawning day their names spring to our lips. Let us again thank God and take courage. If we can teach and mould our children for the first seven years of their lives, we can give them up to other influences after that, but the effect of the early training will never be eradicated. They may seemingly forget in the flush of adolescence, but the first taught principles will finally assert themselves.

I remember once reading that, "If even the whole world should be dried up and parched with the fervid heat of lust; if even the church should become empty of power; yet the tide of life kept flowing through the home of a faithful few, may irrigate the whole field and quench the thirst of every soul that is longing after God. Keep the channel of the home pure, and better men, and better women will live to bless the world. There are many special principles in the homelife which require delicate handling because they occupy those precincts where God is. There is a sacred circle, the confidences between husband and wife, which should not be made food for unsanctified conversation." Then, too, many are the burning questions of our children. We must not allow a mystery of whispered things to gather around those hallowed truths that are sacred and near to the heart of God. There is a way to answer all the earnest questions of our children. We can fill their minds with pure and proper thoughts before the whispered insinuations of wrong can stain them. They will then turn in indignation from every impure suggestion. I fancy I hear some mother say, "It is too late. My child is getting away from me. He is making his own associates. He no longer consults me. It is too late." Mother, it is not too late,

The sunset burns across the sky;
 Upon the air its warning cry
 The curfew tolls from tower to tower;
 O children; 'tis the last, last hour!
 The work that centuries might have done
 Must crowd the hour of setting sun.

This is the hour in which our children must be saved. If they are wandering from us and centring their interests elsewhere, "let us first look to the cause, 'Is it I?'" If some canker is eating out our souls and undermining our trust in God, such an influence will affect our children. As we treat our Heavenly Father and His Spirit, so will our children treat us and our pleadings. Fathers and mothers must become united in the great principles which make our home life."

Hot-Weather Hygiene of Infancy and Childhood

Kate Lindsay, M.D.

EVERY season has its special dangers and disorders, which are more prevalent at that season than at other times of the year. In winter, when life is largely spent indoors, air-borne germs are more prevalent; so, nasal catarrh, bronchitis, tonsillitis, pharyngitis, pneumonia, influenza, measles, whooping-cough, scarlet fever, diphtheria, and other contagious disorders increase from the crowding together of children indoors, both at home and in schoolrooms. When the warm days come, the little ones get out into the sunshine, and the doors and windows are opened, and sunlight and fresh air are allowed to enter the home and schoolroom; so the children begin to lose the nagging coughs, and the mortality due to respiratory disorders becomes much less. But new dangers come on with the hot summer weather. The disease-producing germs which multiply in fermenting food and foul water, and which had been held in check by the low temperature, now begin to grow and multiply, and disorders of the digestive organs increase. Cholera infantum, cholera morbus, diarrhoea, dysentery, and the various forms of digestive disorders increase the infantile mortality, until in some crowded parts in the tenement districts of the large cities, as high as eighty per cent of the children under one year old die.

Insects contribute their part by infect-



Mother's Influence

LILY M. THORPE

THERE never was greater need for consecrated service on the part of mothers. There are heavy hearts in many a home circle owing to various causes, but, as a rule, these causes can be overcome. I know of a lady who was very unhappy because her home was very distasteful to her. After much suffering this lady faced the fact that, if she did not alter the pernicious conditions, no one else would. By a simple act of will she decided that a new domestic life must begin, and a marvellous change took place in that home. Some things appear harder to do when we simply contemplate them. But when we take hold of them with both hands, and a determined heart, the monster disappears.

We may find our children wayward and hard to manage, and wonder why this is so, when they were so sweet and pliable in their baby days. There may be many causes for this. Prenatal influences and improper dietary should be taken into consideration. If the sullen, chafing disposition, bad temper and other characteristics of the child are attributable to the first named cause, then we must see to it that he or she is lovingly trained to resist these prenatal tendencies. Speak to your boy and girl somewhat in this manner: "My child, I understand your feelings, I used to feel as you do, and I do now at times, but I am trying very hard to overcome these bad things, and you will try too, will you not?"

Let us work together. I am not angry with you, because I know you inherited these things from me, just as I received them from my parents. But now let us conquer them, you and I together." Such a loving position on the part of the parent cannot fail of reaping its reward. It is manifestly better than all the hot reproofs, and changes the trend of the child's thoughts, decidedly widening his mental outlook.

The second cause mentioned is also an important one and plays a large part in assisting to overcome inherited tendencies to waywardness and wrong. Eating at irregular times, or between the proper meal hours; drinking with meals; eating wrong combinations of food; using flesh foods, and too many eggs. Dieting a child in this way causes fermentation of the stomach. Thus alcohol is made in the body, and this poison circulating in the blood, naturally causes waywardness and disobedience. The child is not to be blamed. We as parents are to blame, and must remove every obstacle in the way of the well-being of our children.

"A woman's work is never done!" How beautifully true this is, and what a far reaching truth is in it. If we would always realise this, no woman would ever again peevishly say "a woman's work is never done." The young hearts committed to our care ever need our tender watchfulness and moulding influence.

Our Baby Girl



A winsome little wee thing
Our baby came one day
Eight years ago, but do you know,
That baby came to stay!

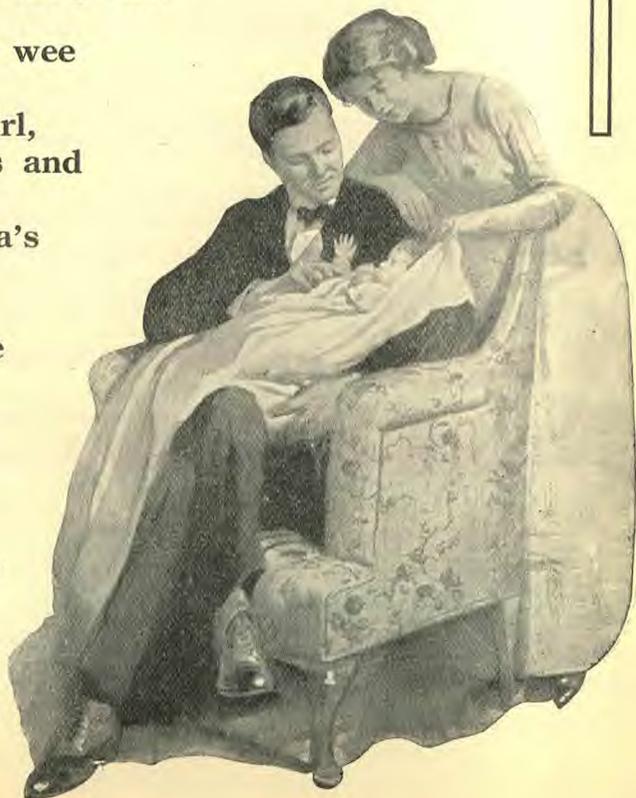
We dressed her out in fashion,
With napkin, hood, and gown,
In robes of silk, all white as milk,
The "Queen of Baby Town."

Her eyes were blue and sunny,
Her features full of grace,
And ringlets bright in glad delight
Twined round her baby face.

She was a winsome wee
thing,
That little baby girl,
But eight long years and
many tears
Have shaded mama's
Pearl.

But ringlets still are
plenty,
And bright with
sunny hue;
God ever bless our
little lass,
And keep our baby
true.

—R. Hare.



temperature; hence mothers and others caring for children should know whether the bowels are regular. The writer has seen cases in youth and children which were diagnosed as tumour. In one case, when inquiry was made of the mother as to how long it had been since the bowels moved regularly, she could not tell, and by inquiry of the twelve-year-old girl herself it was ascertained that at least a week had passed without any action, the child meanwhile eating heartily of all foods found at a farmer's table. It was not until she was taken suddenly ill with chill and fever, that the case was looked into, and a course of mild cathartics, enemas, fasting, and fomentations prescribed, which finally dispersed the swelling, but the moving off of the impacted mass was the work of many days; and after it was over, the child was so weak and emaciated that it took weeks to recover her usual health.

Infectious Diseases

The next inquiry should be as to the possibility of infectious diseases, as typhoid fever, or any of the eruptive fevers. Children are often victims of typhoid fever, and this should be borne in mind, especially if the disease is in the neigh-

bourhood, or if there has been any danger of an infected water-supply in travelling or otherwise. In small towns and villages without water-works, there are likely to be numerous cesspools, and also many wells, shallow or deep; and it is only a matter of time, modified by the porous nature of the soil, and the depth and location of the well, when the contents of the cesspool will drain into the well; or, worse still, the contents of the privy vault may contaminate the water, and whole families be thus poisoned with filth. There are always children who are running around the neighbourhood, visiting other children, so that a case of typhoid fever may occur in a home possessing a faultless water-supply.

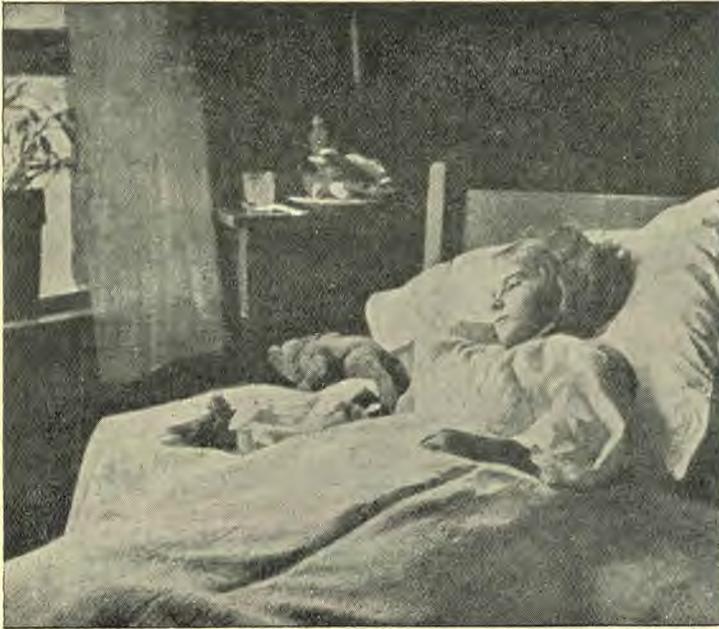
“No one should be discouraged because he had a weakly and sickly childhood. There are thousands of cases of feeble children who have grown up to be vigorous and useful men and women. Just as a poor man's son may become a millionaire, so the sick man's son may become rich in health and strength, although in either case the man concerned will have to work hard and fight many battles.”



ordinary adult rate of respiration. The pulse at birth is usually one hundred and twenty to one hundred and forty, at one year one hundred and ten to one hundred and twenty, and gradually declines until fifteen, when it is about eighty or eighty-five. In adult life the normal rate is seventy or seventy-five. The pulse and the respirations are difficult to count and very variable. In small children any ex-

ness, swelling, or white patches, which may indicate either tonsillitis or diphtheria. Hundreds of children have contracted the last-named disease and died because of a neglect of these measures. Perhaps a child with an apparently slight sore throat was permitted to go to some child's party, or some one in the family where the party was held had a sore throat. I know of a case where about

twenty-five children were exposed to tonsillitis by being allowed to take a ride with a child suffering with it. As the child's temperature had not been taken, no symptoms of the disease had been discovered, and no danger was apprehended. Hence, not only were the other children exposed, but the little one itself was made much worse.



"Whether the indisposition is serious or not is what those having the care of children should seek to discern at once."

ercise or other excitement may cause a rise of from ten to fifteen or twenty beats a minute, and the rate of breathing is increased in proportion. So a baby's pulse and respirations are of value only when they are observed while it is sleeping; the temperature, not being specially affected by outside influences, is the most reliable indication.

Examining the Throat

After testing the temperature, pulse, and respiration, the next most important measure is to examine the throat for red-

ness, swelling, or white patches, which may indicate either tonsillitis or diphtheria. Hundreds of children have contracted the last-named disease and died because of a neglect of these measures. Perhaps a child with an apparently slight sore throat was permitted to go to some child's party, or some one in the family where the party was held had a sore throat. I know of a case where about twenty-five children were exposed to tonsillitis by being allowed to take a ride with a child suffering with it. As the child's temperature had not been taken, no symptoms of the disease had been discovered, and no danger was apprehended. Hence, not only were the other children exposed, but the little one itself was made much worse.

Condition of the Stomach

After the examination of the throat and nose, the next inquiry should be as to the condition of the stomach. Many patients, especially children and young persons,

owe all their trouble to a disordered condition of the stomach, due to a surfeit. The fever, headache, and boneache may all disappear with the emptying of the stomach and bowels. Often such cases have an alarmingly high temperature for a short time, but the symptoms soon become less marked, and disappear when once the decaying food has been unloaded from the system.

The Bowels

Constipation and accumulation of fecal matter in the bowels often cause a rise of

utes to two hours. General sweating should not result. Before taking the patient out, rub the parts covered by the pack with cold water.

This hot and heating trunk pack is also beneficial to those who are troubled with starchy indigestion and flatulence. For them somewhat the same results may be secured by a hot foot-bath and fomentations to the abdomen, given at the same time. Three fomentations should be used, and the treatment concluded by rubbing the body with cold water, treating one part at a time.

Constipation and flatulence are both benefited by wearing at night a moist girdle about the abdomen. The girdle consists of two parts. The inner is made of one thickness of linen, or three or four of cheese-cloth, eight or nine inches wide, and a little more than one and one-half times the circumference of the body. The outer part is of flannel, and should be about twelve inches wide and of the same length as the inner piece. The girdle should be applied on retiring. The dry flannel is placed across the bed, and the cheese-cloth or linen, wrung nearly dry from cold water, placed over it. The patient lies down on this so that the top of the hip bones will come to about the middle of the girdle. Each end of the wet linen is pulled tightly across the abdomen, and tucked in on the opposite side. The flannel is now folded tightly over, and securely fastened with safetypins, so as to exclude the entrance of air under it. The girdle should be dry on removal in the morning.

These simple means, if persisted in, will prove of inestimable value in remedying the ills of indigestion and dyspepsia. While much relief may be obtained by a few treatments, one must not expect permanent results too early, as perverted habits of digestion require some time for their correction. These treatments are also far superior to drug stimulation, as they do not over-stimulate and so wear out the response of the digestive func-

tions. They promote healthy action of the organs of digestion, and leave them in normal tone, ready to perform better the work of digestion at the next meal.

Treating the Sick Child in Time

Kate Lindsay, M.D.

EVERY year hundreds and thousands of persons, especially children, lose their lives because the disease was not treated in time. A child is ailing, seems feverish at night, chilly in the morning, is peevish and irritable, and has a capricious appetite. In the words of the mother, "Johnny is not like himself." And truly he is not like his ordinary, healthy, happy self. Some poison is working mischief somewhere in the little body, deranging and upsetting the nervous system, and making him feel generally uncomfortable and out of sorts.

Taking a Child's Temperature

Whether the indisposition is serious or not is what mothers, nurses, and all having the care of children should seek to discern at once. A clinical thermometer, or a thermometer for testing the temperature of the body, should be a part of every household outfit; and whenever a child is ailing, its temperature should be taken, and its pulse and respirations counted. The temperature of a child in health is slightly above that of the adult, it being 98.5° to 99.5°, while that of the average adult is from 98° to 98.5°. The temperature should be taken three times a day; when it reaches 101° or above for two days, it is an indication of something serious.

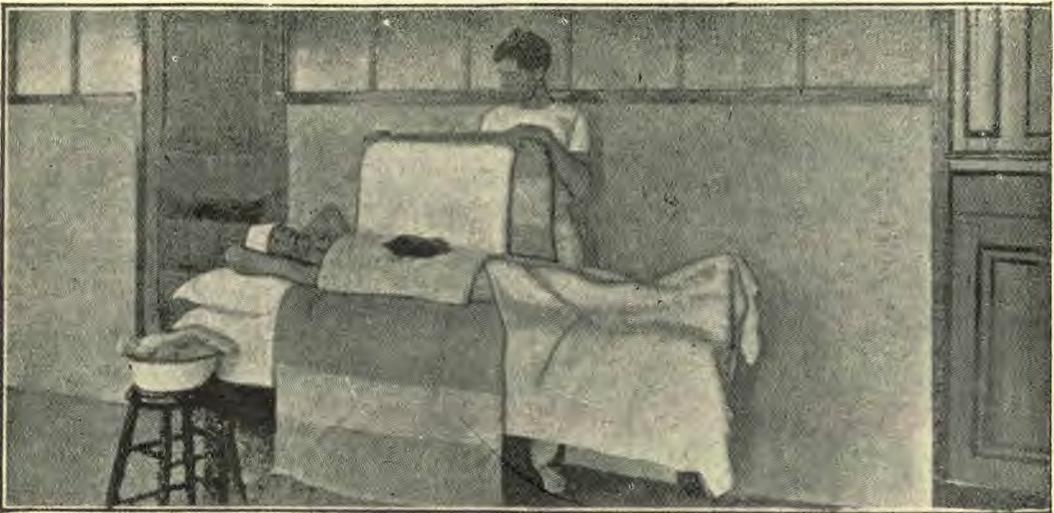
Respiration and Pulse

The respirations of a new-born baby are forty a minute, and usually decline to thirty or thirty-five by the end of the first month, continuing to decline until the child is four or five years old, when they are twenty to twenty-five a minute. They still further decline to sixteen or eighteen at fourteen or fifteen years, which is the

twenty minutes before the meal. The water soon passes out of the stomach, so it does not interfere with digestion. The reaction to this "dash of cold" comes on just as the meal is eaten, and increases the amount of the gastric juice secreted upon the food. This fact has been very conclusively demonstrated by Prof. I. P. Pavlov, of St. Petersburg, in experimenting upon dogs. He found not only that the amount of gastric juice was increased by the reaction to cold, but that its secretion continued for a longer time than usual. Those who are very anæmic will

least trouble by means of a hot-water bottle placed over an undergarment, or with one or two thicknesses of other cloth intervening. It should be left on for from twenty to thirty minutes, or longer if necessary. This will not be sufficient in persons who have great discomfort after eating, or who are troubled with vomiting of the food soon after it is eaten. In such cases a treatment known as the hot and heating trunk pack has been found an almost never-failing remedy.

To administer this, a single blanket is placed crosswise of a bed so that the



Hot and Heating Trunk Pack for Digestive Disturbances

find it best to take a small amount of a hot soup at the beginning of the meal, as the deficiency of blood prevents proper reaction to the cold.

In some persons, the eating of the juice of an orange or half a grapefruit just preceding the meal, serves as an effectual and harmless stimulant to the secretion of hydrochloric acid. Nearly all fruit acids and other organic acids such as the lactic acid of artificially soured milks, have this same effect.

Those who have slow digestion or discomfort following the meal should use some hot application over the stomach after eating. This may be done with the

upper edge will reach well up under the patient's arms. A sheet doubled to a width which will reach from the armpits to below the hips, is wrung from cold water and placed over the blanket. The patient lies down on this, and while both arms are raised, one end of the wet sheet is pulled tightly across and around the trunk. Over the stomach outside of the sheet, place a three-quart hot-water bottle half filled with water at 135° F. Wrap the other end of the sheet about the trunk over the hot-water bottle, and cover snugly with the dry blanket, folding one end over at a time. This treatment should continue from thirty or forty min-



The Treatment of Dyspepsia

GEO. K. ABBOTT, M.D.

STRICTLY speaking, the term dyspepsia means painful digestion; but as it is popularly used, it applies to a great variety of digestive troubles, or indigestion. Not all of these are associated with pain, or even with marked discomfort. However, if any great change in digestion has occurred, or there is marked discomfort, a physician should be consulted without delay. Many of the simpler forms of indigestion may be successfully treated at home with only the occasional advice of a physician.

The most common form of indigestion is associated with a deficiency in the formation of hydrochloric acid in the stomach, moderate dilation and prolapse of the stomach, slow or defective movements of the stomach wall, starchy indigestion, and biliousness. These are all manifestations of decreased activity, or the wearing out of functions that have been overtaxed or over-stimulated by such things as rapid eating, over-eating, eating between meals or late at night, bad combinations of food, worry, nerve exhaustion, and many other minor causes. Because these conditions have been brought about by over-stimulation, it is not only useless, but productive of further harm to resort to the use of bitters, stomachic drugs, etc. The use of pepsin and other digestants can result in only temporary benefit. The organs of digestion themselves are not strengthened by such means. It is necessary to tone up the muscles, glands,

and nerves of the stomach and intestines, and the glandular activity of the liver and pancreas. The effects must be those of a true tonic; that is, of a restorer of energy. A stimulant cannot build up, but is capable only of calling forth the expenditure of energy.

Because of these last-stated facts, a certain amount of rest for the body generally, and especially for the stomach, is an absolute necessity in the treatment of indigestion. The meals should be not less than five or six hours apart, and a longer time is better in case of very slow digestion. The evening meal should be omitted or be very light, and taken not later than three hours before retiring. Those who are engaged in taxing mental work, especially if indoor, should rest a half-hour before the noon meal. This is especially necessary in those who are nervous or inclined to worry. The digestive glands act very imperfectly when the nervous system is on a tension. It has been shown that digestion and digestive movements are completely arrested in a cat when it is worried by a dog. Nothing is so helpful in relaxing nerve tension as a few minutes' sleep before the meal. After dinner, unless some special treatment is necessary, a half-hour of light work is highly beneficial.

There are a number of very simple means of toning up the glands and muscles of the stomach and intestines. One of these is to drink cold water ten to

In the one case there is precision and satisfaction. In the other case one's experience is like trying to carry water in a leaky bucket.

Many housekeepers are obliged to put up with crude facilities and inconvenient devices, because someone says that is "more economical;" "it costs less" to live in a certain style, or "that costs too much;" so they trudge on as slaves, merely existing, so to speak, because of a lack of what, with a little ingenuity, would often revolutionise things entirely, making home pleasant and life a charm.

System in housework will enable one so to utilise her time as to reduce the amount of energy expended from its maximum to at least its normal quantity, thus preserving strength and vitality.

IN Paris a campaign against the house-fly has been instituted. Half a million leaflets stating how to protect foods from the pests, and how to attack breeding centres have been distributed in the schools, and the streets are placarded with illustrations of how the flies live upon disease and propagate it.

A Woman's Best Compliment

THE finest compliment we have ever heard told of a woman was by her husband, who said in speaking of her: "We always think of her as a morning-glory, because she looks so bright and cheery and pretty at the breakfast-table." How many breakfast-tables are presided over by women who make an effort to be dainty? And there are a great number who are at once untidy and even uncleanly to look at.

The claim that household duties keep women from looking well in the morning is easily disproved, for in many a household where the lady gives a helping hand in the kitchen a big apron will thoroughly protect her dress; and then, too, cooking, unless one makes it so, is never dirty work. That woman commits an error who looks uncared for in the morning.

The other woman, who wears any old thing to the breakfast-table, is also making a mistake; for that is the time when the men of the household ought to see a woman at her best, and not specially rely on her appearance in the evening, when the soft and charitable light of the gas will hide many defects.—*Selected.*



Bread Sauce

One-third cup of dried breadcrumbs, one tablespoonful of toasted breadcrumbs, one pint of milk, half an onion, sliced, one-half teaspoonful of salt.

Steep the onion in the milk in a double boiler for twenty minutes, remove the onion, add crumbs and salt, and cook till thickened. If it becomes too thick, add a little more milk.

Walnut Croquettes

One-half cup of chopped walnuts, one-half cup of mashed potato, one-half cup of fresh breadcrumbs (that is, not so stale as to be dried), two tablespoonfuls of water, one egg, white and yolk beaten separately, one-third teaspoonful of salt.

Combine ingredients, folding stiffly beaten white in last. Form into croquettes with the hands. Dip in

Lentil and Rice Cakes

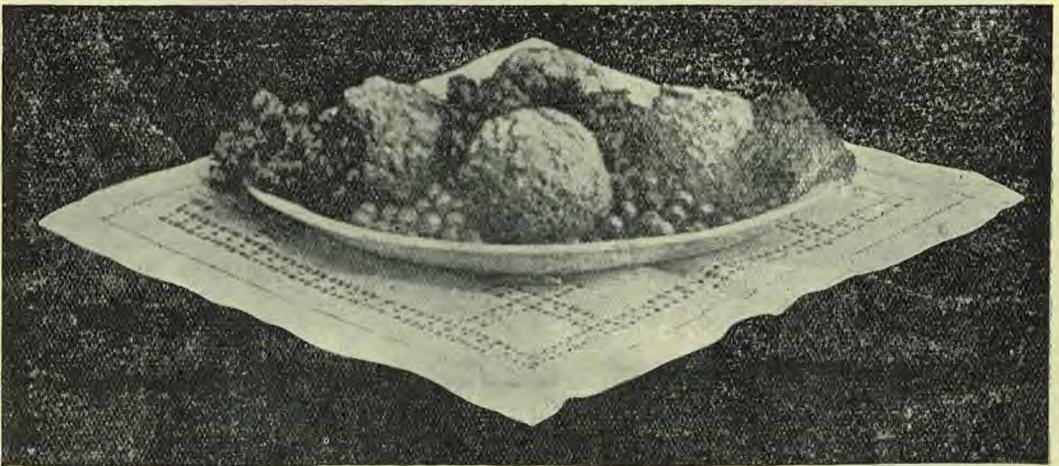
One cup of dry lentil purée, one cup of boiled rice, one small onion, chopped very fine and cooked in a little oil, half a teaspoonful of salt.

Combine ingredients, and form into flat cakes. Put these onto an oiled pan, and bake ten minutes in a hot oven. The onion may be omitted.

A System to Follow

Arthur C. Logan

IN a fruit-packing house a few years ago I chanced to hear a woman remark: "In housekeeping I find the work much easier by having a system to follow."



Walnut Croquettes with Peas

beaten egg (one egg and one tablespoonful of water beaten together), roll in zwieback crumbs, or shape in a croquette mould. Bake in a hot oven fifteen minutes.

Walnut Loaf

One cup of milk, one-third cup of flour, one-half teaspoonful of salt, one cup of stale breadcrumbs, one cup of chopped walnuts, one beaten egg.

Stir the flour smooth with part of the milk. Heat the rest of the milk to boiling, and stir into it the flour mixture. Cook till thick. Add to this the remaining ingredients, put into an oiled bread tin, and bake one-half hour. Serve with—

Asparagus Sauce

One pint of liquid, part milk and part water in which asparagus was cooked; one-quarter cup of flour, two tablespoonfuls of oil, one half teaspoonful of salt, asparagus tips.

Stir flour smooth with part of the milk. Heat remainder of the milk and water to boiling, stir flour mixture into it, and cook till thickened. Add oil, salt, and some asparagus tips cut into small pieces.

I wonder how many of those who are trying to keep house realise the force of this simple yet significant statement. A system, or plan, is a necessary business policy in any vocation, and must be followed at all times. Having a system to follow will relieve one of what would otherwise be considered drudgery. Drudgery produces worry, and is sure to lead to slipshod, slack ways, sooner or later.

"Have a system to follow, and follow it." This is only another way of saying, "Have a place for everything, and everything in its place." The writer has seen examples enough to convince him that no person can have a regular system in anything without first having a place for everything, and everything in its place.

and shake occasionally. When cooked this way, they are not so liable to burn, and they retain their flavour better. When they have cooked sufficiently, spread out at once. When they have become quite cool, blanch as follows: This can be done by rubbing them in the hands, or what is better, a coarse bag, or take a piece of cloth and fold the ends together, forming a bag. Another good device is a screen made of coarse wire. Rub them until the skins are loose. The chaff can be removed by using a fan or by pouring them from one dish to another where the wind is blowing. Look them over carefully, removing defective nuts and foreign substances.

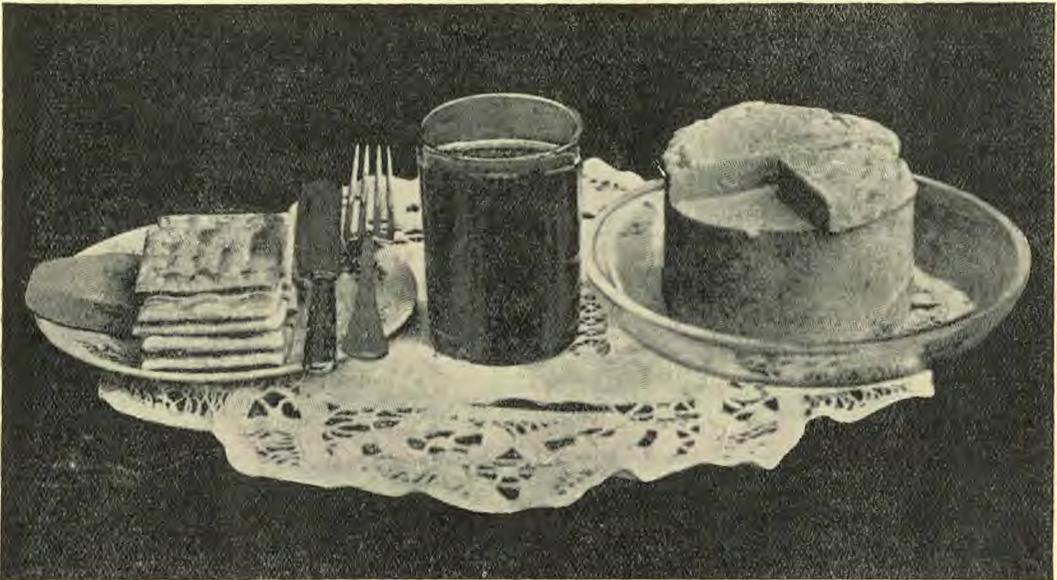
The next step is to grind them. A cheap grinding mill can be used to advantage.

Always grind freshly cooked nuts, as they do not make good butter when left a day or two after being cooked.

by putting the filled can into a saucepan which contains boiling water to one-half the height of the can, covering the saucepan, and cooking the required length of time, adding boiling water as may be necessary.

When cold, this is ready for use. It may be eaten like cheese, or may be broiled, or baked in tomato, or cut into dice and stewed, or stewed with peas, adding a little chopped mint, or may be made into hash with potato, or used in salads, or in making sandwich filling.

Another nut food, which more nearly resembles those made by the food factories, may be made if you can obtain



No-Soda Biscuits, Grape Juice, and Nut Cheese

I could give recipes for nut foods that are very close imitations of the foods that are made by the health food factories, but it is so much bother to make them, and they require so long cooking, that probably few if any of my readers would care to try making them. There is one simple recipe that some might like to try, which might be called—

Nut Cheese

One cup of peanut butter, two cups of water, half a cup of flour, threequarters teaspoonful of salt.

Stir the nut butter smooth with the water, adding the water a little at a time; stir in the flour and salt; put into a tin can that has a tightly fitting cover, and steam from three to five hours. Or it may be cooked

raw peanut butter, or if you have a mill with which you can grind raw blanched peanuts into butter. The proportion of material used is—

One cup of raw peanut butter, one pint of water, half a cup of rice-flour or corn starch, one level teaspoonful of salt.

Combine the ingredients and cook according to directions in preceding recipe.

Walnut Timbales

Threequarters cup of milk, one quarter cup of cream, one-third teaspoonful of salt, one third teaspoonful of celery salt, one egg, beaten, one cup stale breadcrumbs.

Mix ingredients well together, put into oiled timbale moulds or cups, set in a pan of hot water, and bake till set. Serve with peas, or with peas in cream sauce.



Meat Substitutes

GEORGE E. CORNFORTH

I AM not very enthusiastic in my recommendation of the mixtures which vegetarians make for meat substitutes, and call "roasts." My mind frequently goes back to an incident that happened in a vegetarian restaurant. A stranger came into the restaurant supposing it was no different from other restaurants. He did not leave, however, when he found that no meat was served, but ordered a dinner. When his dishes came back to the kitchen, there was a note on the meat substitute, which we called "roast," saying, "This is certainly a roast!" I think that it is often quite true that the dish that is served as the *pièce de résistance* of a vegetarian meal is "certainly a roast."

But perhaps people do get tired of the simplest things served in the simplest way, and for the benefit of any who may wish something different occasionally, we will give recipes for a few of the least formidable of these mixtures.

I do not like the idea of giving meat names to any vegetable mixtures, because they do not taste like the meat after which they are named, and are a disappointment to those who expect them to have meat flavours. And, if we would not eat the meat, why should we try to imitate it? or why should we use names that would suggest the eating of it? Why not get entirely away from that barbarianism in thought as well as in act? For

meat is really a poor substitute for the foods which nature supplies us at first hand.

Nut Butter

Nut butter can be easily made in the home, but nearly all the prepared nut foods on sale require expensive machinery and a steam plant to produce, hence cannot be made in the home.

Peanuts and almonds are the nuts most suitable for making nut butter. The other varieties are difficult to blanch, and do not make good butter. Removing the skins from the nuts after they are shelled is called blanching. Peanuts cannot be blanched unless they have been thoroughly heated.

To properly cook peanuts is the essential thing to produce a healthful, palatable nut butter. This can be accomplished if care is exercised. There are three ways of cooking them; namely, baking or roasting, boiling, and steaming. The baking process is the easiest way, but care should be used not to scorch them. Scorched or burnt peanuts are unfit to use in any form.

Put a layer of peanuts about one-half inch deep in a dripping-pan and place on perforated shelf in a moderate oven. Allow them to bake slowly for about one hour. Cook them until they are a light brown or straw colour. Shake the pan or stir the peanuts every few minutes. When the kernels begin to crack and pop they brown very quickly and should be watched closely.

A splendid way to cook them is to fill a tight-covered dish about two-thirds full, place in the oven,

as I have been getting it now for three years in the spring, and it is worse each time. I sneeze a great deal, and get so stuffed in the nose and throat with discharge, and my eyes ache that I can scarcely read or sew at night, and feel I must always shade my eyes from the light."

Ans.—We have written in one of the recent issues (under "Chats") on this subject. It is now generally agreed that this disease is due to emanations from certain plants, which irritate the nasal passages of susceptible persons. The only certain cure is a thorough change of climate. A dry, cold, bracing mountainous climate will mostly bring relief. Residence at the seaside and sea bathing in the summer months will cure the attack. The sea bathing should be of short duration, repeated plunges are better than a long, continuous bath; it is the bracing shock to the surface of the body that does so much good. A sea trip will dissipate an attack. If a change cannot be managed, a light plug of absorbent cotton wool should be worn in each nostril; these should be frequently changed. One of the numerous inhalers advertised may also be used. The most efficacious inhalations are those containing camphor and menthol. These drugs when rubbed together in equal quantities form a liquid. A few drops of this liquid may be applied to absorbent cotton wool, and placed in the inhaler, and inhaled frequently during the day. Abstinence from the evening meal, and a good sweating in a steam or hot-air bath are helpful procedures. A hot salt water bath at bedtime may be substituted for these. Use about seven pounds of sea salt to thirty gallons of hot water.

188. Dyspepsia

"Exeter" complains of "pains in the stomach, not severe or sharp, but a dull pain, and my stomach feels a stiffness below the ribs, and sometimes a burning under the shoulder, which sometimes depresses me. I have bad teeth, . . . my appetite is good, in fact I think I have a

false appetite. I have a bad taste in my mouth in the morning, and my sleep is not always refreshing."

Ans.—This is probably a case of duodenal dyspepsia; there is no discomfort while the food is in the stomach, but there is something faulty in the digestion in the first part of the small bowel—that part into which the pancreas and the liver pour their secretion. We would advise the two meal a day system in this case, that the evening meal be omitted, or that some fresh fruit be taken in its place. The teeth should be attended to so that the food may be thoroughly masticated. It should be remembered that the saliva is Nature's tonic for the stomach, and that the more the food is masticated, the more saliva is secreted. Similarly the gastric juice is a tonic for the small bowel. The digestion in the small bowel differs from that in the mouth and stomach in that it emulsifies and prepares fatty foods for absorption into the system. We would advise that fatty foods should be avoided, and also foods cooked with fat, such as pastry and cakes. Even butter should be used sparingly. Avoid all fried foods. Eggs should be lightly cooked. "Exeter" states that being away from home he is compelled to use meat foods. The meat should be fresh, not salted or tinned or recooked, and should not be partaken of more than once daily. Avoid tea, coffee, and cocoa, and do not drink with meals.

189. Kuhne's Teachings

R.H.F. writes a good deal in favour of Kuhne's treatments, and asks if we have read his book, and do we advocate his system.

Ans.—We have read the book, and believe that some of his treatments do good; but we certainly cannot endorse his theories. His explanations of physiology might do for the middle ages, but they could not possibly be even seriously mentioned in any work that has any pretensions whatever to scientific knowledge.

W. H. J.

likely would agree well with the bread and butter. A small quantity of good lentil soup might be taken occasionally with granose biscuit. A cold compress over the abdomen half an hour before the meals helps the appetite and digestion; it should be changed frequently during the quarter of an hour of its application. A hot water bag or hot foment after the meals is also a great aid to the digestion. We only recommend these treatments in exceptional cases, for often the treatments cause the mind to dwell too much on the trouble. It is better to eat what is healthful, and then have the mind so occupied as to forget about the digestion. We certainly would advise that the stomach tube be discontinued. We would not recommend any abdominal support for the "lost sort of feeling about the abdomen," it would do much more harm than good. Live out-of-doors as much as possible, sleep in a good airy bedroom, and have a cold sponge morning and night.

185. Insomnia, General Debility, etc.

W.P., of New Zealand, writes: "Would you kindly let me know in your next number the value of Sanatogen as a nerve food. Do you consider Fellow's Syrup to have equal value? Four years ago I had a nervous breakdown following an operation for bleeding piles. I have been a martyr to insomnia ever since, and, of course, general debility."

Ans.—We believe that Fellow's Syrup largely owes its tonic properties to the quinine and strychnine which it contains. Its tonic effects are of a temporary nature, and if any good is to be obtained, it will be only for the first few days of its administration; it is certainly not advisable to continue it for any lengthened period. Sanatogen is a quickly assimilated food, and has certainly some tonic properties; but it is very expensive, and we believe more permanent benefit can be obtained from raw eggs, sterilised milk, malted nuts, grape juice, gluten, protose, and similar preparations. W. P. would prob-

ably greatly benefit by a month's treatment at one of the sanitariums.

186. Baldness

"Distress" writes that he is completely bald as the result of "typhoid and slow fevers," and that he has used various advertised remedies without success. He asks if the condition is due to poverty of the blood, and for a remedy. We do not believe that poverty of blood has anything to do with the condition, for baldness often occurs when the general health is apparently perfect. Many have advocated that baldness is due to a parasite, but no germ has been discovered, and the different sorts of germicides employed are only helpful when of sufficient strength to produce irritation. Irritation about the parts brings blood to the atrophied hair bulbs, and if the atrophy is not complete, restoration may thereby take place. Probably the primary cause for baldness is some obscure nerve condition. In baldness due to old age treatment is useless, but in a recent case such as the one in question, there is some prospect of recovery. The best remedy is galvanism. The daily use of a slow continuous current, applied to the scalp by brush electrodes, has a powerful influence over the nutrition of the hair bulbs, when used at an early stage before complete atrophy takes place. Among local applications cantharides hold a prominent place. Whitla recommends the following:—

R̄	Olei Rosmarini	ʒiv (4 drams)
	Liquor Epispastici	ʒii
	Olei Amygdal. Dulc.	ʒii (2 ounces)
	Spts. Camphoræ	ʒii
	Glycerin Boracis	ʒi
	Otto de Rosæ	gtt. viii (8 drops)
	Tinct. Jaborandi	ʒi
	Mix.	

To be well rubbed into the roots of the hair morning and night.

This prescription contains almost all the favourite remedies used for baldness.

187. Hay Fever

"Anxious" writes: "Could you kindly tell me if there is any cure for hay fever,

its vicinity would be good localities. Great help would be obtained by a daily cold sponge followed by a thorough rubbing with a good, rough towel. We are constantly recommending this procedure, for we know it to be a splendid tonic, and have known life to be prolonged considerably by its use. The cold shower of a morning is good in many cases, but it is rather severe treatment for weak people.

182 Biliary Attacks during Menstruation

"Country, N. S. W." asks for advice re severe biliary attacks at menstrual periods. This is quite a common trouble and mostly is due to some abnormality in connection with the uterus or its appendages, consequently a thorough examination is advisable. To mitigate the bilious attacks a warm hip bath should be taken every night for three or four nights before the menses are expected. The bowels should be freely opened during this time. Great care should be exercised in the diet during the week preceding the expected attack. Avoid tea, coffee, cocoa, pastry, cakes, scalded cream, tinned fish, preserved meats of any kind, and use butter or raw cream sparingly. It would be of great advantage to take fresh fruit with every meal, and two meals daily would be better than three. This treatment is palliative, but if persevered in may avoid operative procedure. If relief is not obtained, some treatment for the abnormal uterine condition will be necessary.

183. Cold in Head

F.B. writes: "My girl aged eleven years always seems to have a cold in the head, cannot breathe through the nose, consequently always has her mouth open, and seems dull and poorly when she ought to be full of health and spirits."

Ans.—Your daughter is probably suffering from post nasal growths, and needs an operation. The operation is a simple one, and is not at all likely to be followed by any complications. The results of the operation are generally very gratifying;

if delayed, permanent deafness may supervene.

184. Atonic Dyspepsia

S.J. complains: "As soon as I take any food, no matter how small, I have a full feeling at the stomach, pain in the left side just at the border of the ribs, pain across the front of the head, food repeats, and bowels are inactive. I only eat two meals daily; they consist of granola or gluten for breakfast, with a little bromose; and for the evening meal, granose with bromose. Sometimes I use a little grainut. Twelve months ago I weighed nine stone, I now only weigh six stone ten pounds. I use the stomach tube; I have been using it for the last three months. Would the natural abdominal supporter be of any use to me, as I often feel a lost sort of feeling about the abdomen.

Ans.—Our correspondent is evidently suffering from atonic dyspepsia. He has not been taking enough food to keep the stomach in good working order. The foods mentioned are excellent, but to live entirely on them for months at a time is a great mistake. It is good not to take many kinds of food at a meal, two different courses usually being sufficient; but the meals should vary. Variety in meals improves the appetite, and an improved appetite means an improved digestion. If only small quantities of food can be taken at a time, the number of meals should be increased. The food may repeat for a time, but in this case this symptom should be disregarded to a large extent. What is wanted is more nourishment. We would recommend an uncooked egg twice daily; this may be beaten up with unfermented wine, or swallowed with a little salt after being broken into a cup. Some cannot take eggs beaten up with milk, and in that case they may be beaten up with water. We would also recommend rice cooked with milk and slightly sweetened, junket, lactosa, zwieback and milk, Benger's food, groats, toasted corn flakes with sterilised cream, malted nuts, walnuts, bread and sterilised cream or good butter. A mashed ripe banana very

Ry Boric Acid 4 drams
Distilled Extract of Hamamelis 1 pint

"Worried and Disturbed" also complains of a "shiny skin," and also that there is "discolouration of all white clothing worn next my body. . . . I have long been troubled with constipation, for which I am trying the boiled wheat as recommended in your last issue. The face is oily, with large open pores, rather sallow and very sensitive. . . ."

Ans.—We have found the electric light bath very efficacious in these cases. The skin, it should be remembered, is an organ of excretion. Waste products formed in the body are largely got rid of by the skin. The bowels being constipated the by-products of digestion are absorbed by the blood, and these discolour the skin and the excretions from the skin. The digestion should be carefully attended to. Avoid tea, coffee, and cocoa, and drinking with meals, also all foods cooked with fat, such as pastry, cakes, and fried dishes. Use butter sparingly. Fresh fruit should be used at the close of the meals of which vegetables do not form a part. Where the electric light bath cannot be obtained, the vapour bath may be used twice weekly, but it should always be followed by the cold shower. A sponging with cold water of the whole body, and thorough rubbing of the skin with a rough towel, should be employed daily.

180. Paralysis Agitans

A. C., New Zealand, asks for information concerning the above disease.

Ans.—This disease of the nervous system is sometimes called Parkinson's Disease, or Shaking Palsy. It is most frequently met between the ages of fifty and sixty, and is more common in males than females. The predisposing causes are great anxiety and prolonged overwork, and the exciting cause; those which usher in the disease are great mental suffering, fright, injury, exposure to wet and cold. Sometimes the disease is precipitated by some fever, such as acute rheumatism, or

by sudden severe muscular strain. There is generally, at first, an aching in the arm (mostly left), and this is followed by tremor in the fingers of the same hand. The tremor usually extends to the foot of the same side, and finally to the other side of the body. After this a stiffness of the whole body is developed, the head and body are bent forward, the fingers are flexed, and the knees bent. The patient walks slowly with short, shuffling steps. The tremor of paralysis agitans is peculiar in that it ceases upon voluntary movements, and continues when the limbs are at rest. The disease sometimes affects only one limb, or one side of the body. Those affected may live a long time, but the prospects of recovery are very small. The best results are obtained from the continuous galvanic current. The current from eight to sixteen Leclanché cells may be sent through the affected region daily for ten to twenty minutes.

181. Bronchitis

"Bronchitis" writes: "I am a sufferer from bronchial catarrh or bronchitis, . . . constant coughing and spitting of phlegm, some of it a yellow colour. I have had above symptoms for two years. I get a cold about twice yearly, and have to take to bed for ten or twelve days to keep the temperature normal. Am farming on plains near Geelong. I have been wearing a tanned hare skin on my chest for three months, but have not felt any benefit, and cannot throw it off now without feeling the cold. I have had the spittle examined for germs, but fortunately they are not present. Kindly advise which would be a good locality for me to live in."

Ans.—We would certainly advise that the hare skin be left off. A piece of flannel may be used for a time; after a while substitute a thinner piece and eventually leave the chest protector (?) off altogether. Sleep in a well ventilated bedroom, without curtains or drapery of any kind, and where the sunlight can penetrate freely. A warm dry climate would be beneficial. The Wimmera, Echuca, or Bendigo and

176. Consumption

J. H. W. writes: "Consumption.—Lady supposed to be suffering from this complaint for fifteen years, seems to remain about the same. For the last twelve months she has been taking Waterbury's cod liver oil with creosote and guaiacol. The patient thinks this medicine keeps her up, and gets through a half dozen bottles or more in the month. I wish to find out whether the medicine is worth the cost (5/- a bottle), or could you tell me of a cheaper remedy to answer the same purpose?"

Ans.—Creosote (Beechwood) and guaiacol have for years been very favourite remedies with the medical profession. If they do not interfere with the digestion they are worth a trial. We believe sterilised cream would be just as serviceable as the cod oil. Uncooked eggs and abundance of good milk are also very helpful. The hard boiled yolks of two or three eggs may be taken with two meals in the day. We would prefer guaiacol to the creosote, and it may be taken in the following formula:—

R	Guaiacol	ʒi (1 dram)
	Glycerine	ʒiiss (1½ ounces)
	Spirits of Wine	ʒiiss
	Aquæ (water) up to	ʒiv (4 ounces)

Take one teaspoonful three times a day. Guaiacol and creosote probably act by disinfecting the secretions in the air passages. The action of these drugs, however, should be watched by a medical man.

177 Chronic Constipation

J. A. writes: "I have suffered from chronic constipation for two years. . . . My tongue is always coated, and I feel languid, and have no energy at all. . . . I often have wind, and my motions are dry and hard. . . ."

Ans.—Much has been written in the last three or four issues of this paper which we would advise our correspondent to read. We would recommend the free drinking of water between meals, and es-

pecially on retiring at night and the first thing in the morning. A slightly acid fruit directly after meals would help in this case, especially pine apple, or a teaspoonful of lemon juice and water. Another correspondent asks how much boiled wheat should be used at each meal. The amount varies with the individual. Two or three tablespoonfuls of the boiled wheat would be an average amount. It should not be used in quantities that will cause indigestion. The wheat should be very thoroughly masticated. It is certainly very helpful in constipation. Dates, prunes, figs, and stewed rhubarb would also be found useful.

178 Worms

"Anxious" asks: "Are the existence of worms in the body dangerous to one's health? Is irritation of the anus a symptom that worms are present? Is an enema the only way of getting rid of worms, and if so, is self administration advisable?"

Ans.—This question has been fully answered in a recent issue of LIFE AND HEALTH. Irritation about the anus is certainly a pronounced symptom of worms (thread). These are injurious to the health purely from the annoyance they create. Boil a handful of quassia chips in a couple of quarts of water, and inject the whole quantity into the bowel twice weekly. Two drams of Castile soap may be dissolved in the water instead of the quassia chips. In obstinate cases both remedies may be used. Follow the soap enema by the quassia injection.

179. Shiny Skin

A. P. complains: "My skin is shiny, especially after washing. I know it is not the soap, as I use very little on my face."

Ans.—This symptom does not denote ill health; it is simply a peculiarity of the constitution, and is due to excessive secretion of fat by the glands of the skin. Dr. Kellogg recommends the following lotion:



[Send questions for this department to the Editor, LIFE AND HEALTH, Warburton, Victoria.]

NOTICE.—Subscribers sending questions to this department should invariably give their full name and address, not for publication, but in order that the Editor may reply by personal letter if he so desires. Because of this omission several questions have not been answered.

173. Hot Water Bottles

Subscriber asks: "Do you recommend the use of hot water bottles for cold feet?"

Ans.—We certainly would not recommend them for general use. If the feet and knees can be kept warm without them it is a mistake to use artificial heat. If you do the work for Nature, then there is no necessity for her to work. Keep the horse constantly rugged through the cold winter, and the hair will not grow so thickly; similarly if the feet are constantly warmed with artificial heat there is no need for increased production of heat in the system. It is very much better to warm the feet by a good walk, a run, or other exercise, before retiring, than to supply the heat with a hot water bottle. Some, however, have not sufficient vitality to keep the feet warm in bed, and the hot water bottle is a necessity, for sleep is impossible in the majority of cases when the feet are cold. We believe it is better to use artificial heat than to put on an excessive amount of clothing. Bathing the feet in hot water and then douching well with cold water will often do away with the necessity for the hot water bottle. It should, however, always be remembered it is very unwise to do work artificially for Nature which she with a little persuasion is willing to do for herself.

174. Noises in the Ears

E. J. F. complains: "For the past few weeks I have been suffering from a

buzzing in the ears exactly like the skirling of the cicada or like crickets. It is not very loud as yet, but I fear it may get worse."

Ans.—The cause is probably hardened wax in the ear. Drop some warm oil in the ear at bedtime, and syringe with warm water and baking soda (teaspoonful to half a pint) in the morning. In syringing hold the auricle of ear upwards and backwards so that the fluid may enter the canal more freely. The nozzle of the syringe should not be introduced within the meatus, but held within a few lines of the orifice. If relief is not obtained, a specialist should be consulted, as the trouble may be due to middle ear disease, inflammation of the drum, or disease of the nerve of hearing.

175. Gall Stones

J. H. W. writes: "Lady about fifty suffers from sudden attacks of gall stones. What treatment would you advise? Also best diet. Can the complaint be cured without an operation?"

Ans.—The treatment of gall stones has been given in a very recent issue of this paper under "Chats." If the attacks are persistent we would certainly recommend an operation. It is far better to operate early before there is much inflammatory mischief. When left for years and inflammatory lesions are formed the danger of operation is greatly increased. We do not believe there is any other satisfactory treatment for this complaint.

ised this method, along with antitoxin, in treating an outbreak of diphtheria in that institution. A five-minute exposure of typhoid bacilli to the light of an iron electrode lamp destroyed them completely. It is the blue and ultraviolet light which accomplishes this result. The red or heat rays have little effect. It is these active rays that are made use of in treating lupus (tuberculosis of the skin) by the method of Finsen. This disease, so common in the northern countries of Europe, where sunlight is not so abundant as in southern Europe, has lost much of its terrors, thanks to the labours of Nels Finsen.

It has been shown that the concentrated sunlight may influence a bit of sensitive chemical, even after passing through the entire thickness of the chest. The use of sunlight concentrated upon the chest by a large concave mirror of blue or violet glass is an approved method in the treatment of tuberculosis of the lungs.

The bactericidal action of sunlight is greatly enhanced by the presence of an abundant supply of oxygen. In fact, this action is very feeble without oxygen, hence the importance of much fresh air in tuberculosis and other germ-diseases as well as of sunlight.

Animals

Frog spawn kept under opaque glass die, while spawn under a transparent glass develop normally. Of three tadpoles kept for a month in a red aquarium, one had feet feebly developed but retained its tail, the other two had no limbs at all, and still breathed by the fish method instead of the lungs. On the other hand, three tadpoles raised in blue-violet light showed only a little disappearing stump of tail, they had each two pairs of completely formed feet, and breathed by the lungs. This greater growth is due to the fact that violet light stimulates cell multiplication, as shown by the following observation: The larvæ of a certain tadpole were kept in blue and red aquariums for three weeks, at the end of which time cross sections of the tails were made and

examined microscopically. In those raised under the blue glass, 4,154 cells were counted, fifty-two of which were in the active process of dividing, while in those raised under red glass, 2,613 cells were counted, only fourteen of which were found dividing. Such is the influence of the active or chemical rays of light upon animal growth.

Blue light has also been shown to stimulate muscular activity, while red depresses it. One experimenter found that muscles already fatigued were, after exposure to blue light, not only able to perform a normal amount of work, but actually accomplished more than normal. Light enhances digestion and assimilation. It stimulates glandular activity. Nerve force is increased by proper degrees of light. One of the most interesting and useful effects of light in the treatment of disease is its ability to stimulate the process of the formation of red blood-cells and increase the amount of colouring-matter they contain. It is thus a great boon to the anæmic and to chronic invalids. This effect is doubled by the greater cheerfulness of those who live out of doors in the sunshine, and thus in another way nutrition is promoted.

In a brief article like this I have not the space to even mention all the beneficial effects of light upon the human body, either physically or mentally. While sunlight fades the carpets, it brings roses into the cheeks of the children. Perhaps the few facts here recited may give us a greater appreciation of the value of sunlight in the treatment and especially in the prevention of disease, so that we shall think more of the colour of our children's faces than of the colour of our carpets.

Clear the darkened windows,
Open wide the door,
Let a little sunshine in.

THE business of those who believe in eugenics, or race-culture, is to regard alcoholism as a flag of warning which declares the individual to be unworthy for parenthood.—*Dr. Saleeby.*

Sunlight

G. K. ABBOTT, M. D.

LIGHT—that marvellous medium of energy, the symbol of truth, morality, intellectual advancement, and of life itself, that form of energy which has been most studied and about which most is known—is after all the thing about which most remains yet to be discovered as to its ultimate nature and workings. It is truly a marvellous thing. No wonder the sun, the great luminary, was deified by the heathen who had lost all knowledge of the origin of things.

The Creator has seen fit to sustain the life of plants and animals by the material things and appreciable forms of energy whose workings we often find it impossible to separate from the matter in which they are manifested. Indeed, in the last few years scientists have been led to doubt the essential distinction between matter and energy, which every schoolboy learns as his first lesson in natural philosophy. This has come about through investigation of the phenomena displayed by the X-ray and by that wonderful form of matter, radium.

But it is not our purpose to treat of this phase of the subject of light. It is rather to call attention to the benefits to be derived from living in the sunshine. Much has been said along this line, and in a general way everyone knows that sunshine is better than shade and darkness, and that light is essential to the highest development of life. However, if one may judge by the way in which we build our houses, with windows small and few, and with heavy lace curtains, not to mention heavier shades, hung over even these, it must be confessed that the great importance of sunlight has not made an adequate impression upon us. Let us for a few minutes consider in some definite, concrete way a few of the effects of sunshine and of other forms of light.

Vegetation

It is only in the sunlight that plants take up carbon dioxide from the air and

manufacture it into plant tissue. This is done by the green colouring-matter of the leaves and stems, which itself is dependent upon sunlight for its rich green colour, and in the absence of which soon becomes pale and sickly in appearance. The carbon dioxide, which as a poison is exhaled by animals, thus becomes the food of plants, which they in turn make over into food for animals.

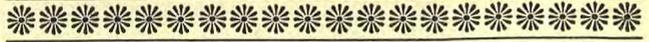
Some plants display such an affinity for light that they become veritable sundials; such is the case with the sunflower. Even certain of the minute plants which make up the green scum on stagnant water are able to turn themselves about toward the sunlight, executing a pirouette upon one extremity. Certain small plants by a feeble light may be called to the surface of a ditch and by a sudden increase of the brilliancy made to rebury themselves. By electric light plants may be made to grow by night, and so by a twenty-four-hour period of growth attain a greater size than other plants. An electric centre of light equal to fourteen-hundred-candlepower, six and one-half feet from growing plants, appears to be equal in effect to average daylight in March. Certain plants turn their leaves broadside to ordinary sunlight, but if it is too strong, they turn edgewise as a means of protection. Strawberries exposed to strong electric light twelve nights showed, after fourteen days, a rich colouring, while the fruit on plants exposed to sunlight only, had hardly begun to show a sign of redness.

Bacteria

By means of an ordinary arc lamp bacteria may be killed in from five to eight hours, and by arc light concentrated through condensing lenses of quartz, they may be killed in as many minutes. A French observer has shown that exposure to sunlight checks the growth of the diphtheria germ. The physician to the Sherman Institute (an Indian school) has util-



ews that are Really Worth While



Don'ts for Walkers

Don't handle plants unless reasonably certain that they are not poisonous.



Don't forget to rub a little vaseline into the lips before starting upon a walk. It will prevent chapping, cracking, and cold-sores. It is also well to safeguard the complexion by carefully dusting talcum powder over the face from time to time.



Don't neglect to make careful notes of anything that particularly attracts your notice.



Don't step upon old logs or boughs unless certain that they will support the weight of the body.



Don't run down steep hills. One is apt to strain an ankle or be seriously injured by a fall.

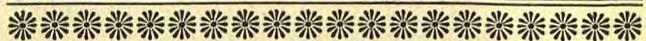


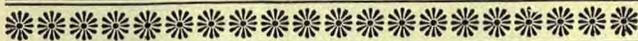
Don't eat too many cherries or berries or any other dainties that may be found upon the route.



Don't forget to apply towels wrung from hot water to the face immediately upon the return home if the face has been burned by the sun, or if there is a feeling of fatigue. After walking in the hot sun or dust, the hot towel process is a most desirable treatment for the improvement of the complexion. Follow the hot towels by the application of cold ones, after which, some good cold-cream should be well rubbed into the skin.

—*Mary Alden Carver.*





Don'ts for Walkers

If the most pleasure and profit is to result from attempts as a pedestrian, the following "don'ts" should be remembered:—



Don't eat too much before starting upon an expedition.



Don't attempt to walk five miles until positive that two are not unduly fatiguing.



Don't try to walk when short of breath. Halt every time there is the slightest difficulty in respiration, especially when climbing slopes.



Don't start upon a walk while wearing untried shoes; be sure the shoes will not chafe nor otherwise hurt the feet.



Don't depend on instinct for directions, nor venture into the woods without a reliable compass.



Don't bring forth a kodak and begin to take snap shots at the very beginning of an expedition. Save the films or plates for views that are really worth while.



Don't gather up a worthless accumulation of souvenirs, nor become cumbered with perishable material.



Don't forget to observe closely any particular object or landscape that makes a particular appeal.



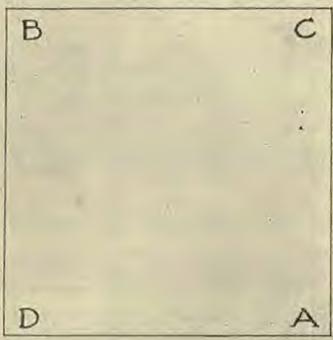
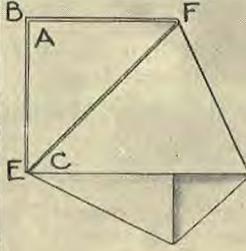
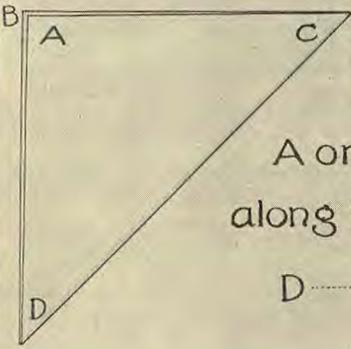
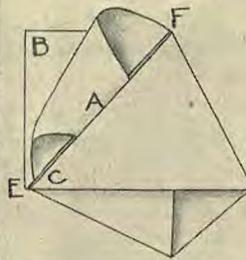
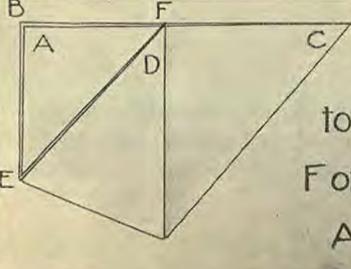
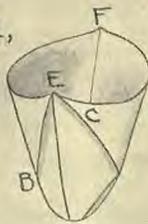
Don't venture into a field or meadow without positive assurance that no vicious animals are pastured there.



The Paper Drinking-Cup

THE common drinking-cup has been shown again and again to be a real menace to health, and has undoubtedly been the cause of communicating infection and sometimes dire disease with fatal effects. We seem to be very slow in learning lessons of sanitation and hygiene, but it is satisfactory to know that there is a little progress on the right side even though it is small. We shall welcome the day when individual towels will do away with the common roller towels, and individual cups with the common drinking-cup. We

here give directions for making a satisfactory cup. All that is necessary is a piece of *clean* paper seven inches square. If the paper is glazed it will be all the more satisfactory, but that is not absolutely necessary. A good quality of writing paper will serve the purpose, and the ordinary double sheet letter head is very satisfactory. Of course the paper does not have to be absolutely seven inches square. Seven and a half or eight inches will do, or even a little less than seven. With a few sheets of paper it is possible to provide oneself with an individual drinking-cup at any time.—*Good Health.*

 <p>A piece of paper 7 inches square</p>	 <p>Fold C to the point E, over D</p>
 <p>Fold A on to B along the line D.....C</p>	 <p>Insert A in double fold of C</p>
 <p>Fold D to the point F on the line A.....C</p>	<p>Fold B back, open along the line E.....F and there's your sanitary DRINKING CUP</p> 

you before beginning the meal, then eat accordingly; and when you leave the table, think no more about it. At all events, leave the food alone after you have eaten it; it will digest better, even if a mistake has been made in its selection or in the quantity eaten.

I have sometimes thought that those who are well-to-do and are constantly worrying about what they will eat or drink would greatly improve if more thought could be given by them to the poor who are worrying because they have not sufficient to eat. The satisfaction which comes by supplying the needs of the poor and afflicted is a wonderful tonic to the organs of digestion.

Care of the Teeth

ONE should remember that clean teeth and a beautiful, clean mouth will do much to make one friends, and help one to get on in the world. The care of the teeth will preserve one from toothache until a ripe old age. It will prevent the wearing of false teeth; it will help digestion; it will help one to be well, to be successful in business. Such care of the teeth will enable one to wear the beautiful white crowns of one's own teeth, and not the gold crowns of the dentist. Gold crowns are going out of fashion; but the white crowns of beautiful teeth firmly fixed in healthy gums in a setting of red lips will never go out of fashion. But teeth and jaws will not be strong and well unless one chews the food well.

It is not necessary to use tooth-powder. Water made salty to the taste is good enough, or plain precipitated chalk and water will answer. If you want a tooth-powder, go to a chemist and get it in quantity. There is no tooth-powder nor any tooth-brush that will do your teeth good if you let the powder remain in the bottle and the tooth-brush hang on a nail.

How to Brush the Teeth

Even the savage brushed his teeth with a stick for a tooth-brush. Brush the

teeth. Brush them carefully. Spend at least a minute in brushing them—when you get up in the morning, when you go to bed at night. Divide up the minute, and be sure to give at least part of it to the back of all the teeth, especially the lower ones that lie just behind the tip of the tongue. If you want to preserve your teeth very well, and wish to keep from wearing false teeth, brush them after meals also. Get a brush, neither too soft nor too hard, dip it in salt and water, or use some good tooth-powder. Don't spend all the minute in brushing just across the teeth, but give the brush a little quarter turn, so that the bristles will get in between the teeth.

Tartar on the Teeth

Look at the back part of the lower front teeth,—those which lie against the tip of the tongue,—you may see a dark substance, known as tartar, upon the teeth. If you clean the teeth and use dental floss or a rubber band between the teeth, you will do much to prevent this collection of tartar, and you will do much to prevent your teeth from decaying. If possible, go to a dentist at least twice a year, and have your teeth cleaned. The dentist will scrape the tartar off the crowns and around the necks of the teeth.

By cleaning the tartar off the teeth the dentist will prevent your teeth from getting loose, especially if you join with him and keep your teeth clean by daily brushing and by the use of dental floss or the elastic band. Such care of the teeth will prevent them from falling out; will prevent the oncoming of Riggs's disease, which makes the teeth loose, the looseness usually beginning in the two lower front teeth.—*George W. Goler, M. D.*

“IT is almost impossible for a healthy man who takes reasonable care of himself to work too hard. The bad habits, the bad food, and the inattention to rest and sleep, break down constitutions, and not work.”

When the gastric juice is deficient, it will be indicated by the coated tongue, bad breath, and symptoms of auto-intoxication, as headaches, insomnia, and nervousness.

Foods that are rich in protein material and foods that really undergo decay should be guarded against. Among these may be mentioned meats of all kinds, fats, especially butter, free use of eggs, nuts, beans and peas. The foods which are especially recommended are, well-baked cereal foods; sweet fruits, as figs, prunes, raisins, grapes, well ripened bananas, dates, also subacid and acid fruits (these are best taken at or near the close of the meal); baked potatoes, string-beans, green peas, corn, raw celery, cabbage slaw, lettuce. It is best to use the vegetables at one meal and the fruits, cereals, and breads at another. A day occasionally given up to the exclusive use of fresh fruits is helpful in these cases. It is important that foods should be relished; for a keen relish is one of the best means of stimulating the production of a superior quality of gastric juice. More attention should be given to attractiveness than to the use of coarse foods, which merely cause local irritation and the production of an inferior quality of gastric juice at best.

When there is an excessive amount of gastric juice due to the stomach irritation a certain amount of liquid at meals is beneficial, since it dilutes the acid and lessens irritation. There is no liquid better than cold water. When there is a deficiency of gastric juice and digestion is slow, it is best to drink very little at meal-time.

The use of an orange, some pineapple, or some other subacid or acid fruit at or near the close of the meal quenches the thirst and at the same time supplies the acid which in the presence of the pepsin is an aid in the digestion of the proteins.

In all forms of indigestion or dyspepsia time must be taken thoroughly to masticate the food. The saliva is a valuable digestive agent. It aids in the digestion

of starchy foods and also neutralises the acidity of the stomach contents in cases where there exists an excessive production of gastric juice. Improper mastication is probably a chief dietetic cause of all forms of indigestion and dyspepsia. It causes mechanical irritation of the walls of the stomach, delays digestion, and favours fermentation and putrefaction. It is also responsible for over eating. Without proper mastication there is insufficient digestive stimulus.

Food should not be eaten between meals. If three meals are taken, the evening meal should be light. Two meals, with merely a little fruit in the evening, are better than three hearty meals. Many would be benefited by eating but two meals a day, if suitable times for the meals could be arranged for. Food is frequently taken when there is not sufficient energy to carry forward the process of digestion. When fatigued or tired, it is best to rest and recuperate before eating, or else eat only that which will be a very little tax to the organs of digestion. When exhausted after a hard day's physical or mental work, it would be wiser to give the system the rest needed by retiring than to force upon it a load which it is in no condition to utilise. The dull headaches and other ill feelings experienced on rising in the morning, resulting from the decay of undigested food, may thus be avoided. Moderate exercise in the open air is an aid to digestion, but violent exercise should be avoided. Care should be taken to keep the extremities warm at all times, but especially at meal-time.

It is a duty to cultivate cheerfulness. When seated around the table spread with the bounties of life, thanks should be offered, not merely at the beginning of the meal, but all the way through. Nothing of a depressing nature should be discussed. It should be the most enjoyable occasion of the day. If you are inclined to worry after meals lest you have eaten too much, overcome this by making a mental selection of the food that is before



Digestive Disorders—Their Treatment

D. H. KRESS, M.D.

THE chief thing in the treatment of digestive diseases is *diet*. With proper diet, suited to the condition existing, nine-tenths of the digestive disturbances disappear without medicinal treatment.

Without a correct diet, medicines and other treatments accomplish nothing permanent. This is evidently recognised by the venders of patent medicines. On the labels of the bottles, directions regarding the diet are usually given, which, if followed, will often result in a cure. If recovery takes place, the glory, instead of being given to these wise directions, is given to the contents of the bottle.

Many of these preparations afford temporary relief from the disagreeable symptoms which may exist. They do so, not by lessening the irritation, but by their narcotic influence on the walls of the stomach. When the local narcosis passes away, the nerve terminals shriek out louder than before. This makes necessary a second dose. It is a very easy matter to establish the patent medicine habit. Many are as virtually slaves to patent medicines as others are to whisky. In fact, it is usually the whisky in the patent medicines that these patients crave. If the changes in diet demanded on the label of the patent medicine bottles are made, recovery is more rapid and more permanent by placing the bottle on the shelf and keeping it corked.

When ulceration of the stomach exists, complete rest of that organ is indicated. Food should be withheld for from three days to that many weeks, depending upon the severity of the case. Later, non-irritating foods should be given. It is unwise to wait until an ulcer is formed and absolute rest of the organ is a matter of necessity for a period of two weeks or longer. The better way is to take this rest on the instalment plan, before this advanced stage of the disease is reached. As stated before, there are premonitory symptoms, which appear anywhere from one month to ten years before ulceration occurs. I refer to the gnawing sensation in the pit of the stomach, the voracious appetite, and later the pain which appears from one to two hours after meals. All these indicate local irritation which, if unheeded, ultimately may lead to ulceration. When these symptoms exist, foods that stimulate the production of gastric juice should be guarded against or used sparingly, also foods that tend to irritate the walls of the stomach. Among these may be mentioned the free use of salt, sugar, jellies, coarse vegetables, and wheatmeal. Vinegar, mustard, pepper, and such irritants must be avoided. The following foods may be used: Eggs, baked potatoes, cottage cheese, milk, cream, white bread (in form of zwieback preferably), ripe olives, nuts (if well masticated). Olive-oil is more beneficial than butter.

same time as other businesses. If this reform is adopted, it will do more to restrict drinking than anything which has yet been tried here. We wish the effort all the success it deserves, and while we would desire that total prohibition might be secured, yet we are pleased in the meantime to accept any modification of the business, keeping our eye, nevertheless, steadily fixed on the one objective which will banish the hateful traffic, viz., **THE TOTAL PROHIBITION OF THE MANUFACTURE AND SALE OF ALCOHOLIC DRINKS.**

Concerning Sleep

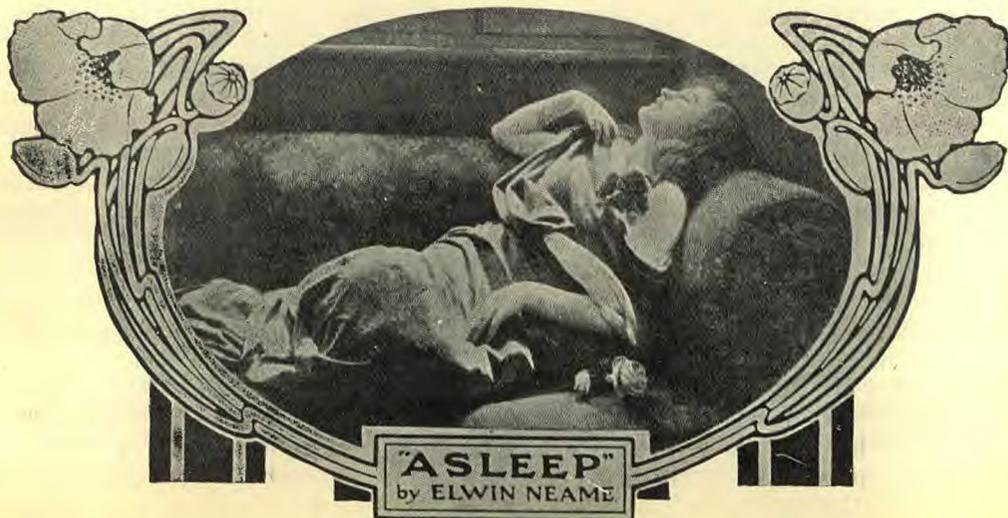
THE food that nourishes us is essential to life, but it is no more essential than the form of rest we call sleep, says the *Youth's Companion*. Sleep is a mysterious thing; very little is really known about the physical processes that cause it. It comes and goes like a rising and falling tide; we abandon ourselves with glad relief to it at the end of the day; it renews our vigour both of mind and of body, and if it fails us for any cause, we speedily fail also in health and strength.

The question is often asked, "How

much sleep do I need?" The answer is not simple, for people differ greatly in this respect. Infants should sleep nearly all the time; children need more sleep than adults, and the young need more than the old. There are, however, some aged persons in whom a form of cerebral anemia causes an almost constant drowsiness that doubtless helps to prolong life. In general, seven hours for men and eight or more for women is a safe allowance.

More important than the exact time you spend in bed is the regularity and soundness of the sleep you get. Many people are astonishingly indifferent to these matters. Young people who wish to enjoy social dissipation until late at night often refer to the case of some famous men who lived for years on four hours' sleep and accomplished marvels, but such young people themselves rarely achieve anything except irritability, bad complexion, and laziness.

It is a wise plan to go to bed at a regular and seasonable hour every night. The bedroom should be dark, quiet, and flooded with fresh, outdoor air. The bed-clothing should be light in weight, but sufficient to keep the sleeper warm. Never draw the blankets over your head.



the actual results of these two systems, the latter has been the most successful in reducing the number of licensed hotels. Each of these systems, however, possesses advantages. Under the local option system the people of a certain district may vote out the drink traffic entirely, irrespective of what the neighbouring district may be doing; but while they may abolish the liquor trade from their midst, their nearest neighbours may vote for the retention of the traffic to the constant temptation of the old toppers and moderate drinkers who may live in their community. It is an easy matter under these circumstances for such poor deluded victims of the craving for alcohol to take a short walk in order to satisfy their thirst, and, if they so desire, to carry back to their homes a small supply of liquor. From actual experience in some places it has been shown that under such circumstances this class of men actually drink *more* liquor than they did before the introduction of local option. Furthermore, it has also been found that those districts where there are far too many hotels, are the very places where it is almost impossible to secure a local option victory; whereas in those districts where hotels are found few and far between, it is comparatively easy to win a victory either for reduction or total prohibition. Under the Victorian system the Licenses Reduction Board carries on its work without any reference whatever to the opinion of the residents. The board investigates the surrounding conditions of the liquor traffic in a certain district where the hotels are in excess of the statutory number, and then it is determined which licenses shall be cancelled. Liberal compensation is awarded to the de-licensed publican, the amount of the compensation being drawn not from the general revenue but from the liquor business itself. Under this system more hotels have been closed in Victoria during the last three years than in New South Wales or New Zealand under local option; and, moreover, there is this advantage—the hotels which have been closed in Victoria have been

situated in districts where there was an excess of saloons, while in New South Wales and New Zealand the hotels which have been closed up have been situated largely in districts where there are but few hotels and where the temperance vote is strong.

While we rejoice in seeing the diminution of the liquor traffic in Australasia, what is really required is the total prohibition of the iniquitous business throughout these British States. But we must exercise patience, and rest content to move no faster than we can take the people with us. In order to secure public sympathy with the temperance movement we must educate all the people upon the evils of *moderate* drinking, for if there were no moderate drinkers, there would never be any drunkards. Every moderate drinker will not necessarily become a drunkard, but every drunkard was at one time only a *moderate drinker*.

Progress of the Temperance Cause

Great progress has been made in the cause of temperance, for which we should be profoundly thankful. The mere fact that the liquor traffic is compelled to undergo more restrictions than any other line of business is sufficient in itself to show that public sentiment is against it. More than four hundred years have elapsed since alcohol was first brought under the supervision of the British Government. In the eleventh year of Henry VII. (1496), an Act was passed against "vagabonds and beggars," which contained a clause empowering two justices to "reject and put away common ale-selling in towns and places where they shall think convenient, and to take security of the keepers of ale-houses of their good behaviour." From that time until now public houses have been regulated by Acts of Parliament, and the regulations have been growing stricter.

One of the latest efforts which is being made to restrict the liquor trade, and which should receive our hearty support, is the endeavour to induce Parliament to compel hotels to close up at the

Restrictions of the Liquor Traffic

A. W. ANDERSON

OF all the various industries which men carry on, the sale and manufacture of alcoholic liquors is the most restricted by law. Almost every other trade and calling may be entered upon without any special permission by the government, but the liquor business has proved itself such a curse that it has come to be regarded as one which must be severely restricted, if not absolutely prohibited.

We hope the time may soon come in Australia when a majority of the community will become so enlightened upon the evils of this traffic that its total prohibition will be demanded. Already this happy condition has been reached in some parts of the world, particularly in some of the American States and in certain portions of the Dominion of New Zealand. But it is useless to attempt to bring about drastic reforms until the public is educated sufficiently to support the reform.

In the general opinion of temperance people the total abolition of the manufacture and sale of alcoholic drinks would be of vast benefit to the whole Commonwealth, but in all probability such a sweeping reform would be altogether too drastic to introduce at present. Before complete success can be secured for a prohibition campaign it will be necessary to create a strong public sentiment in favour of such a measure, and to thoroughly educate all the people, and particularly the rising generation, upon the evils and perils which are associated with alcoholic drinks.

While vast numbers of nursing mothers think it is necessary for their health that they should drink porter and stout, or keep a little brandy, gin, rum, or whisky in the house for "emergencies," it will be difficult to secure a sure and certain victory for total prohibition. These women must be made intelligent upon the nature

of the delusion which has deceived them concerning the supposed value of spirituous liquors. The best medical authorities now declare that not only are these drinks of no value as medicine to the human organism, but that they are positively harmful, rather adding to the difficulties of the physician in his endeavour to eradicate disease from the system, instead of assisting nature as hitherto they have fallaciously been supposed to do.

The Women's Vote and Influence

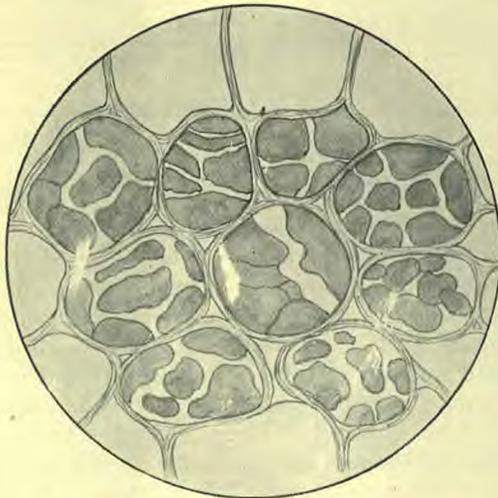
By the vote of the women the men may be saved from the temptation of the ale-house, but if the country is to be freed from the shackles of Bacchus, and the people emancipated from the thralldom of drink, let women who are enlightened upon the evils of strong drink educate their sisters and their husbands and sons, and win them over to the temperance cause; for notwithstanding all that may be said in favour of legislative restrictions, the very best kind of prohibition is that which is self-imposed upon the individual himself voluntarily. To obtain prohibition by Act of Parliament is a good thing, and one to be much desired, but to secure the voluntary prohibition of indulgence in alcoholic liquors from each individual is far better. Let us, then, work for both these objects: (1) Legal prohibition for the good of the man who cannot say "No" to a glass of drink; and (2) Voluntary prohibition for all who have not yet lost the power to govern self.

How Can the Liquor Traffic be Diminished?

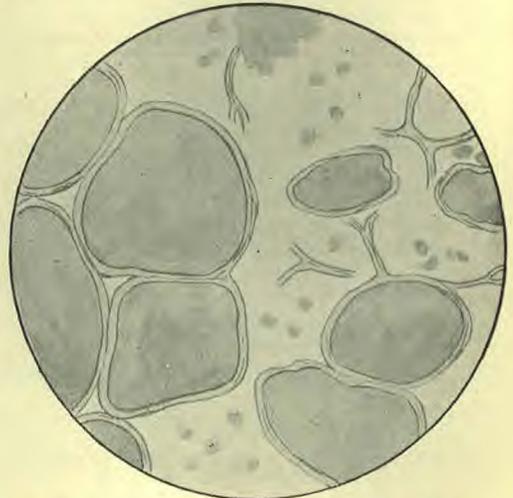
Until total prohibition can be secured the question arises, What is the best way by which the liquor traffic can be diminished? By local option, as followed in New South Wales and New Zealand, or by the Licenses Reduction Board system, as carried on in Victoria? Comparing

complicated dishes, would quickly succumb under the exceedingly insanitary conditions of the Chinese. China would not maintain its hundreds of millions if their diet had not been so simple; their frugality is their salvation. The dejecta of men who live on animal and complicated cooked dishes are exceedingly offensive, and so it is with the domestic animals, the fowls, and the pigs which live on the offals from his table. Says Dr. Abramowski, "There is certainly no animal in the whole world, excepting our domestic animals sharing our cooking,

There is altogether too much cooking and too many mixtures. Eggs are good and milk is good, but a mixture of cereal food with sugar, eggs, and milk is very disturbing to the digestion. It will abound in germ life right throughout the alimentary canal. Nature secretes digestive fluids which vary according to the food taken. Milk requires a different strength of gastric secretion to the egg, and the egg to flesh foods or bread; but what is nature to do when so many complicated mixtures are presented to her powers. If we cooked our food without grease of any



Cells of a Partially Cooked Potato, the Starch Grains Ruptured



Cells of a Thoroughly Boiled Potato; Cellulose Framework Broken Down

whose dejections smell nearly so bad as those of civilised man. You may follow a mob of cattle or a drove of sheep for days and days, and your sense of smell will never be offended; but follow an army of soldiers, as I have done, and you will be surrounded by an atmosphere of the most obnoxious smells imaginable. This circumstance alone should have warned the custodians of our health long ago that the food eaten by these soldiers is not right, especially when it might be known that the dejecta of fruit-eating man smell as little as those of the above animals."

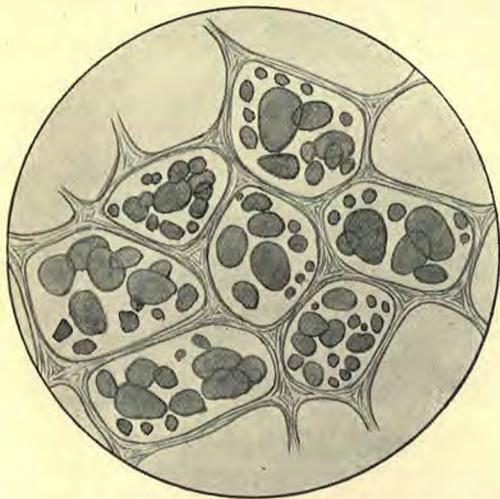
The modern diet of the civilised nations is undoubtedly too complicated.

kind, without the use of baking powders, spices, etc., not only would the slavery of the kitchen be done away with, but the slavery of the poor overworked stomach would also disappear. Cooking would thus certainly be very much simplified. Pastry, cakes, and scones would all disappear, and in a short time the normal appetite would return, and with it healthy digestion, a clear mind, and a strong body.

DRINKING two to four glasses of lemon water daily is an excellent means of reducing weight, provided one also cuts down his rations and engages in a reasonable amount of physical exertion.

has mostly to be cooked on account of the disease-producing germs which it mostly contains. Boiled milk, scalded cream, and hard-boiled or fried eggs to many are veritable poisons. Milk need not be boiled in order to sterilise it. If it be brought to a temperature of 150° F. for twenty minutes all disease-producing bacteria will be destroyed. Cream may be similarly treated. Families who have their own cow and who know it is free from disease are certainly fortunate in

mutton and beef fat, and even olive oil, are more or less indigestible. It should be remembered that fat is not digested until the food reaches the small bowel. Toast buttered hot is indigestible on account of the particles of bread being surrounded by an envelope of fat, and thus the digestion, both in the mouth and the stomach, is greatly retarded, resulting in fermentation, acidity, and other distressing symptoms. For a similar reason pastry, cakes, and scones cannot be included in a healthful dietary.



Cells of a Raw Potato, with Unruptured Starch Grains and Cellulose Framework

being able to do away with even this precaution. There is no better food for the weak and the debilitated than the raw egg. They can with advantage be beaten up with unfermented wine. If they are to be cooked they are better not even brought to the boiling point, and the high temperature reached in frying should be altogether avoided. Eggs fried in bacon or fat are an abomination.

Cooking of Fats

If digestibility and not mere appetite is considered, fats should never be brought to a high temperature. At temperatures above boiling point some of the fat undergoes partial decomposition with the liberation of fatty acids which prove very irritating to the stomach. On this account all foods baked or fried with butter,

The Cooking of Vegetable Foods

In the vegetable kingdom, unlike the animal kingdom, proper cooking does increase the digestibility as well as the flavour of the food. Cooking, however, is not necessary to sterilise fresh vegetable foods, for they, unlike animal foods, contain no harmful micro-organisms. All foods containing raw starch need special preparation before they can be used for human consumption. From an economic standpoint we cannot give all our grain foods and green vegetables to the birds and animals. They must be utilised for human consumption, they are needed also to form variety. The cooking of grains, vegetables, and green fruits should, however, be intelligently carried out. It is certainly important to make the food appetising, for a good appetite means improved digestion. Our taste, however, is to a very large extent what we make it, a matter of habit. The poor man enjoys his simple menu, equally if not better than the man of means his luxuries. With simple food the digestion remains good and the appetite keen; with the mixtures and the fancy cooking the digestion becomes impaired and the appetite depraved. It is marvellous that the Chinese maintain such health, strength, and endurance on their simple rice and vegetable soup, notwithstanding the very insanitary conditions under which they live. They are vegetarians by compulsion, as they are too poor to indulge in flesh foods. The European, living as he does on his very mixed diet and with his

There are, undoubtedly, some abnormal conditions where even ripe fruit disagrees.

It should be remembered that it is possible to destroy not only the digestibility but also the nutritive value of food by cooking. Bread, when properly prepared, is digestible and nutritive. Zwieback or bread baked in a slow oven till it is formed in dextrin is more easily digested still, but that part of the bread which is scorched and is partly converted into carbon has lost its nutritive value, even though the mere elements of which it is composed still remain. The simple elements, the carbon, hydrogen, nitrogen, and oxygen in our food are merely agents by which the energies of the sun are stored up. Apart from that stored up energy the mere elements are irritants and not foods. Bringing food to a prolonged high temperature by breaking down its organisation, that which has been built up by the life of the plant, will thus materially lessen its nutritive value. High temperatures lessen the digestibility and nutritive value of all kinds of meat, of eggs, and of many vegetable foods. Nature prepares our food by a low temperature through a comparatively long period of time. The various kinds of starch are brought by warmth and moisture to a digestible point by a temperature much below boiling. Sykes, in "Principles and Practice of Brewing," p. 70, gives the following table, showing the gelatinization-points of different kinds of starch:—

Oats	185° F.	Barley	176° F.
Rye	176° F.	Wheat	176° F.
Rice	176° F.	Maize	167° F.
Potato	149° F.		

Prolonged cooking at a low temperature is certainly preferable to quick cooking at a high temperature.

Cooking of Animal Foods

Robert Hutchison, in his recent work on "Food and the Principles of Dietetics," writes, "The object of cooking food is twofold: (1) *Æsthetic*—to improve its appearance and to develop in it new flavours. (2) *Hygienic*—to sterilise it to

some extent, and to enable it to keep longer. It is an error to suppose that cooking increases the digestibility of food. That is only true of vegetable foods. The digestibility of animal foods is diminished rather than increased by cooking. This is true at least of the chemical processes of digestion, though the increased attractiveness of well-cooked food may render it indirectly more capable of digestion by calling forth a more profuse flow of psychical gastric juice," p. 396. The second reason for cooking food, viz., to sterilise it to some extent can only apply to animal foods. A temperature of about 160° F. will destroy all animal parasites found in meat, but the ordinary temperatures employed in cooking do not destroy the many different forms of disease-producing germs. If flesh foods are brought to a temperature to destroy all pathogenic bacteria both their digestibility and their nutrient qualities are gravely interfered with. Dr. J. H. Salisbury, of New York, obtained a world-wide distinction by treating his patients on almost raw flesh foods. He engaged men at a dollar a day and nearly killed them by feeding them on baked beans, oatmeal porridge, and other vegetable foods wrongly prepared, wrongly combined, and given in too large quantities; then he restored them quickly to health by giving them only underdone beef and mutton. It is now generally recognised that a quick temporary gain can be obtained by the raw-meat diet, but this gain is not permanently maintained, for the poisons always present in these flesh foods soon assert themselves and develop rheumatism, gout, and other uric acid diseases, and occasionally some parasitic or microbic trouble. Almost all animal foods have their digestibility and nutritive value lessened by cooking. The more they are cooked the less value they have as foods. Eggs and milk are certainly more easily digested in their uncooked condition. Cooking hardens or coagulates the proteid matter, the most important part of our food, and thus lessens its nutrition and digestibility. Milk, like flesh foods,

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HEALTH



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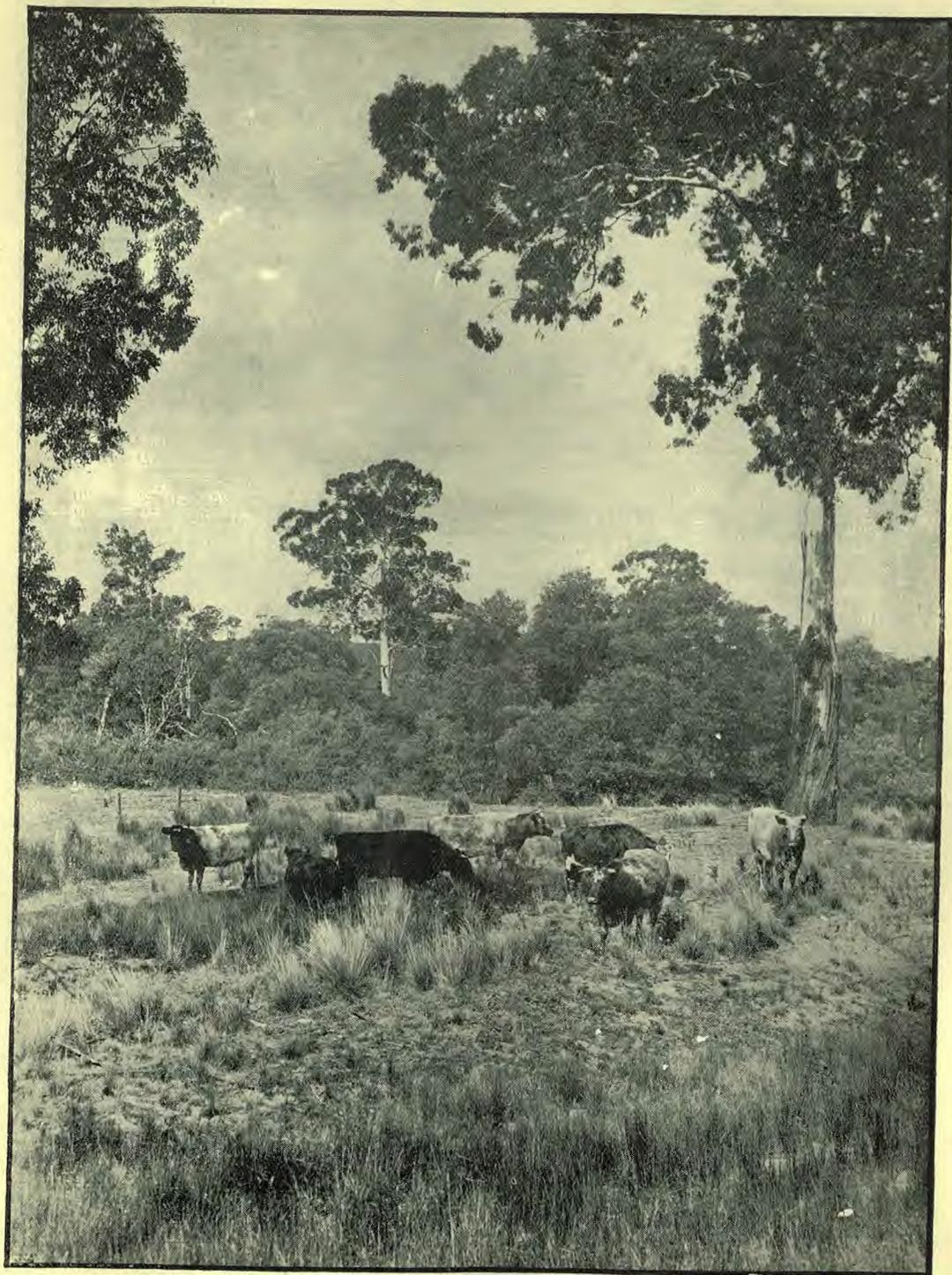
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Cooking

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

MAN has been defined as an animal who cooks his food. This definition would certainly distinguish man from every other animal, for all the lower animals in their natural condition live on uncooked food, on food prepared in the laboratory of nature. The definition, however, fails in that it does not deal with any essential characteristic of man, for man can live on uncooked foods equally as well as the other animals. Nature's food as consumed by the non-carnivorous animals is undoubtedly a pure and, compared with the complex cooked dishes of man, a simple food. It is free from the poisons, the parasites, and the microbes which cause so much trouble in the human being and in all animals which partake of a meat or cooked dietary. Disease is very much more prevalent in domesticated animals who share with man the cooked dietary, than among the animals who live on the unaltered food of nature. We believe man also would be healthy if he confined himself to such foods as dates, raisins, bananas, the varied varieties of fruit and the wonderfully sustaining nuts. All these foods are free from poisons of any kind. From an eco-

nomie point of view we cannot very well omit the grain foods from man's dietary, and these all require cooking. In unripened fruit, in vegetables, and in the grains the raw starch granules are enclosed in more or less hardened envelopes of cellulose. Neither the raw starch nor the cellulose can be digested by the digestive system of the human being. Appropriate cooking softens the cellulose, and converts the starch into dextrin or other compound which can be really digested. In ripening green fruit nature, by the action of the acids and moisture in conjunction with the heat from the sun, converts the raw starch into fruit sugar, and the fruit instead of being sour and indigestible becomes ripe, sweet, and an aid to digestion. The cooking of green fruit brings about a similar action, but it is certainly not to be compared to the work of nature. The matured fruit of nature is certainly more nourishing and health-giving than that artificially prepared by some form of cooking. To cook ripe fruit is a great mistake except, perhaps, where the skin is tough and indigestible. The skin of fruit is for its protection, and is not meant for food. We are speaking, of course, of the average normal digestion.



Sears, photo., Melbourne

All green and fair the summer lies,
Just budded from the bud of Spring,
With tender blue of wistful skies,
And winds which softly sing.—Susan Coolidge.



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WITH this issue of LIFE AND HEALTH a new volume of the magazine is commenced. A new leaf, as it were, is opened in the history of the journal, and it is the publishers' desire that this leaf shall contain even better things than those that have preceded. The object aimed at is to make the magazine of the greatest practical value in the home—giving simple instruction in healthful living, so that common errors in living may be shunned, and sickness thereby avoided and the best health consistently maintained; and giving also much good, sound, practical advice for sickness, as well as much other information and instruction that will make for better, healthier, more enlightened, and happier homes. Every home should contain this magazine; and it is not too much to say that the excellent matter contained in each issue is worth many times the price of a whole subscription. To the readers of LIFE AND HEALTH the publishers say, Follow the simple principles set forth in this journal, and note the difference in health and in the zest and joy of living.

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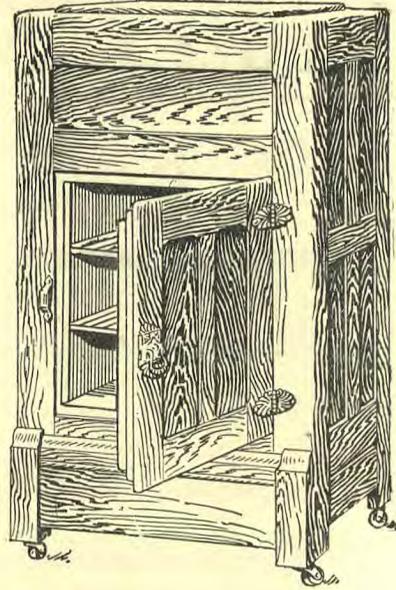
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<i>Women's Combinations, all-wool and Cellular from - - - -</i>	<i>8/6</i>
<i>Women's Vests, short sleeves - - - -</i>	<i>5/6</i>
<i>Women's Vests, O.S. - -</i>	<i>6/6</i>
<i>Women's Vests, all wool</i>	<i>2/6</i>
<i>Children's Vests from</i>	<i>1/6</i>
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