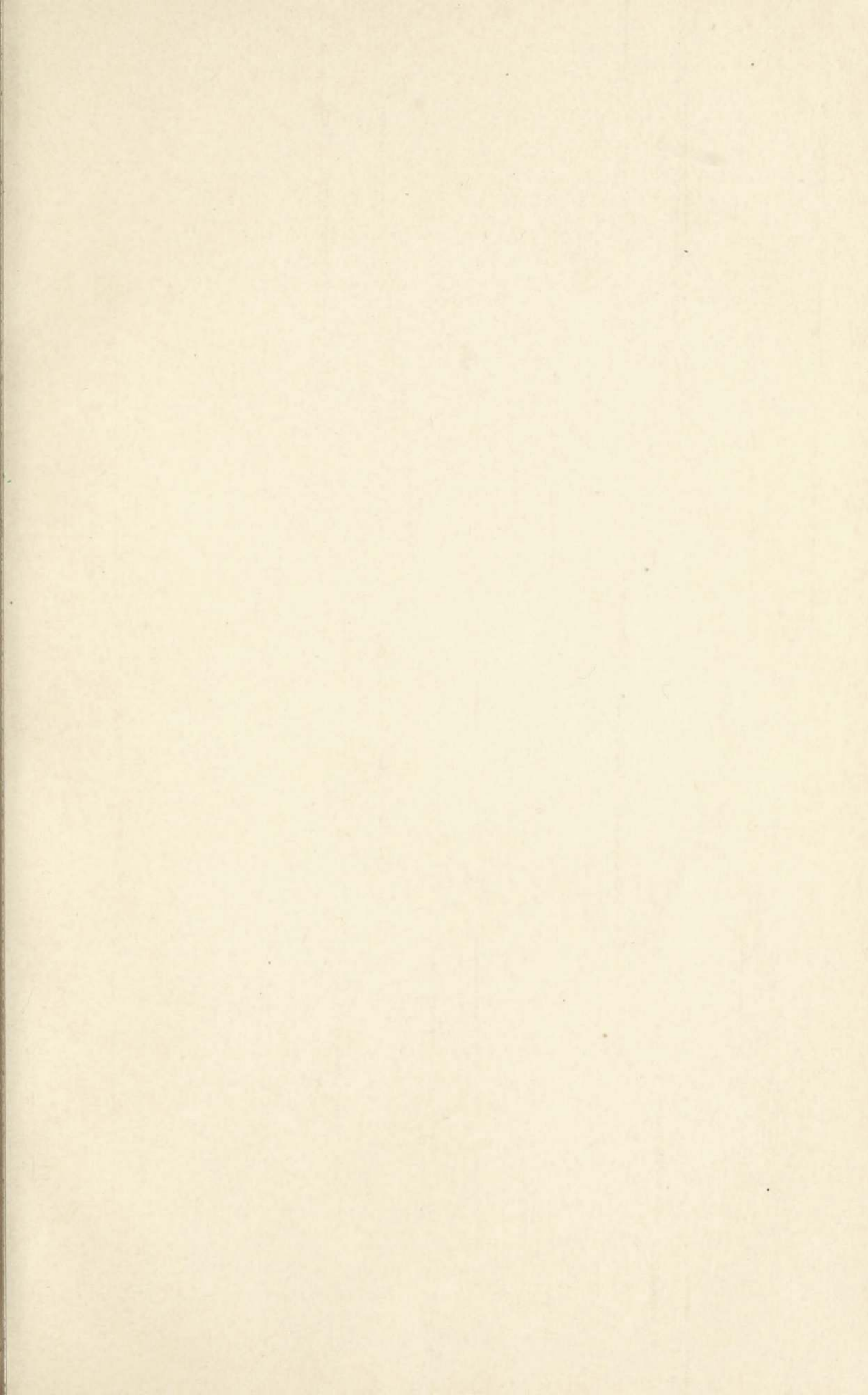




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Printed in Great Britain by
The Stanhope Press Ltd.
Rochester : : Kent

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AUTHOR'S NOTE

IN all the wide range of temperance effort there is surely nothing so worth while as to give to boys and girls sound scientific reasons for total abstinence and to present these in a form that will appeal to them. All will agree that stories are apt to be remembered when plain facts are forgotten. In this manual basic facts are wrapped up in incidents from history, biography and literature.

It is sometimes objected that stories should not be used for propaganda purposes and that nothing even remotely suggestive of a "moral" should be drawn from them. Yet, on the other hand, no one will dream of saying that in a lesson or an address which frankly aims at imparting some truth, one may not use anecdotes in illustration of one's point. If the latter is permissible, why not the former?

In the six temperance manuals of this series, each chapter is to be regarded as a definite lesson, illuminated by a story; it is the moral principle or the scientific truth that is the main thing, the story being simply a means to an end.

While the above objection might hold good in regard to tales put into the hands of children, it should be understood that these manuals are not intended to be so used. They are meant for the teacher, and they offer her concrete illustrations of the points she will wish to emphasize in connection with alcohol education.

CHRISTINE I. TINLING.

I

DAVID'S DINNER

DAVID COPPERFIELD was off to boarding-school. He was a very small boy, only eight years old, and had never left home before. He would not have been going then but for his cruel stepfather. The carrier's cart called for him, and the lazy old horse jogged along to Yarmouth. David had a good cry after he had left his mother, and then he lay down on a sack in the cart and fell fast asleep. He only woke up when they drove into the yard of the inn, and the carter lifted his little box down and set it on the pavement.

The coach was standing there, shining all over, but without any horses to it as yet. David was to go to London in it, for in the days of this old tale there were no trains or motor-cars.

First, however, he was to have his dinner at the inn. The waiter showed him into the coffee room. It was a very long room, with big maps on the walls, and if they had been real foreign countries the little chap would not have felt any more strange and lonely than he did. He sat down on the corner of the chair nearest the door, and when the waiter laid a cloth on purpose for him and put the castors on it, he turned red all over with bashfulness.

The waiter was a chatty sort of man, with twinkling eyes, a pimply face and hair that stood straight up all over his head. He brought in a dish of chops and another of vegetables and took off the covers in such a bouncing way that David thought he must be cross with him for some reason. But it wasn't so, for the next moment he said pleasantly, "Now, six foot, come on." The small boy drew his chair up to the table, but found it very hard to manage his knife and fork, or to keep from splashing himself with the

gravy, while the man was standing opposite him and staring so hard.

"Here's half a pint of beer for you," he said. He poured it out of a jug into a big tumbler and held it up to the light, so that it sparkled and looked quite pretty. It does seem a queer thing that anyone should offer beer to a little boy of eight, but this was an hotel and "one dinner" was ordered and paid for. So it was just the same as they would have set before a big man.

"My eye!" said the waiter as he held the glass in his hand. "It seems a good deal, don't it?" "It does seem a good deal," said David, who was pleased to find him so friendly and jolly.

"There was a gentleman here yesterday," the waiter went on, "by the name of Topsawyer. Perhaps you know him?" No, David couldn't say he did. "He wore breeches and gaiters, and a broad-brimmed hat, a grey coat and a spotted tie." "No," said David again, rather shyly. "I don't think . . ."

"He came in here," continued the waiter, "and ordered a glass of this beer. He *would* have it. I told him not to. He drank it and then he fell dead. It really isn't fit to drink."

Little David was very shocked at this sad story and said he thought he wouldn't take any; he would rather have some water. "But, you see," said the waiter, "our people don't like things being ordered and left. It offends 'em. But I'll drink it if you like. I'm used to it, and use is everything. I don't think it'll hurt me, if I throw my head back and take it off quick. Shall I?"

David said he would be very thankful if he could do it without hurting himself. But when the man did throw back his head and toss off the glass at one go, he had a horrible fear that he was going to fall down dead. But he didn't. In fact, he seemed all the fresher and livelier for his drink. Then he seized a chop in one hand, holding it by the bone, and a potato in the other, and ate them up "to take off the bad effects of the beer." Then another chop and another potato, and after that a third chop and a third potato.

Next he brought in the pudding; a batter pudding it was, and very nice. "Come on, little 'un, let's see who'll get most," he cried. He took a tablespoon while David had a teaspoon. Needless to say, the big man with his big spoon easily got the lion's share.

After dinner the boy asked for a sheet of paper that he might write to his dear Peggotty, the servant who had been so kind to him when he was in trouble. The waiter charged him threepence for the paper and hinted that he would like a tip besides, as he had to support "an aged pairint." So generous little David gave him one of his precious shillings. Then he climbed up on the coach and off they started for London town.

Some day you should read the rest of this story by Charles Dickens, for you would enjoy it very much. But now let us think about the waiter and the beer. You know very well that he made up that tale on purpose to frighten David, so that he might get the drink himself. Half a pint of ordinary beer never killed Mr. Topsawyer or any other man. Beer has poison in it called alcohol, but not enough to make anyone fall down dead after one glass. Whisky is a much stronger drink. It is about half poison and half water. Gin and rum are also very strong; they contain about as much alcohol as whisky does. Foolish men have sometimes drunk a lot of spirits, as they are called, at one go, to show what they could do, and they really have fallen down dead. Whisky contains about ten times as much poison as the same amount of beer.

Is there, then, no harm in drinking beer, after all? Indeed, there is a great deal of harm in it for several reasons. (1) Although there is only a little poison in it, it is the very same kind that we find in the whisky and gin. (2) People who drink beer often take several glasses, one after another, so in the long run they get as much poison into their bodies as those who take a tiny glass of whisky. (3) Whether the poison alcohol is taken in beer or whisky or cider, it does the same thing to those who drink it. It makes them want more.

When people make wine or cider at home they often

say there is no poison in it because they did not put any there. This shows they do not understand how alcohol is formed. Even when wine is made in quantities in a wine-press and when beer is manufactured in a brewery, they do not pour poison into the drink. It just comes there. But the wine-maker and brewer know exactly how to make it come.

We often hear of people being made ill by bad food. Sometimes a whole family is poisoned in this way. Yet nobody put poison into the food; it simply went bad. That is, tiny germs floating about in the air fell into it and changed it and made a poison which was not there before.

The poison of intoxicating drink is formed from sugar going bad. There are tiny little things in the air called yeast germs. They are oval in shape and they grow in chains, one sprouting out of another. They settle like fine dust on the skins of fruit such as apples and grapes. They eat sugar, but as long as the grapes and apples are whole they cannot get at the sugar that is inside them. When the fruit is crushed the little yeast germ finds plenty of food. It lives and flourishes in the fruit-juice and at the same time it forms this poison which we call alcohol. It is thus that wine is made.

Beer is manufactured from barley. Like all the cereals, this is mostly starch and what the brewer needs is sugar. If you were to chew any grain thoroughly you would find it tasted sweet after a while, and this shows that starch can be turned into sugar. The brewer has machinery for changing starch into sugar on a large scale. Next he must have yeast, but he does not depend on the wild yeast that is abundant in the open air, in orchards and vineyards. He cultivates his yeast and puts it into his sugary mixture. Then it does what yeast will do every time, whether in a wine-press, a factory or a kitchen at home, it uses up sugar and makes the poison alcohol.

After a while the yeast germ stops making alcohol for this very good reason, that it is itself killed by the poison it has made. This happens when the alcohol has come to be about fifteen parts in a hundred. Then, the distiller says, "If you

want a stronger drink I can make it, by removing a large part of the water." In this way he makes whisky and gin and rum.

So there are three distinct classes of intoxicating drinks, namely wines, malt liquors such as ale and beer, and spirits. They all contain the same thing, alcohol, some more, some less. David was wise when he said he had better drink water. That is safe and wholesome, and it is the drink that our Heavenly Father has provided for men and women and children, and for the plants and animals besides. Water-drinkers live longer than liquor-drinkers and they enjoy better health.

II

THE TALKING TIGER

IN one of the ancient books of India there is a story about a tiger. You will see at once that it is not true but is a fable, something like one of *Æsop's*.

One day this tiger was sitting quietly on the bank of a pool in the forest. He had just taken a bath and looked very sleek and clean, and between his paws he held some kus-kus grass, just as "holy men" do among the Hindus. He wanted everyone to think he was exceedingly good.

An Indian forest is quite different from an English one. Here the trees were so close together in some places that their trunks looked like a wall. There were many bamboos and palms and dates, and strange things whose roots seemed to drop down from the air, and tall silk-cotton trees. Rattans were climbing everywhere; their tough stems are used to make the seats of chairs in our country, so very likely you have sat upon them though you have not seen them grow. Here and there were bright scarlet flowers and sweet-smelling clusters of purple blossoms. Beautiful birds, red and yellow and blue and green, flew about among the trees. Rugged rocks and steep crags were there, and dark caves

overhung with creepers. In the pool below the tiger the reeds and jujubes grew thickly, and the lotus plants, which are a kind of water-lily, lay upon the surface.

The tiger sat patiently on the bank. On his forepaw hung a beautiful bracelet and he kept calling out to every person who came within reach of his voice, "Ho, ho! ye traveller, take this golden bangle." But they were too wise to go near him. As soon as they saw him they ran for their lives.

At last a certain man passed by and then paused, for he coveted the golden bangle. "It is very lucky," he thought, "to be able to get such a prize for nothing, and yet it will be a great risk to go and take it from the tiger." He stood still at a distance, wondering what to do. Some words he had read in his sacred book came into his head:

"Good things come not out of bad things;
Wisely leave a longed-for ill;
Nectar, being mixed with poison,
Serves no purpose but to kill."

"That is true," he thought, "but I do very much want the bangle." So he began to talk to the tiger from a safe distance.

"I see you are afraid of me," the tiger said, "but you need not be. It is true that when I was young I was very wicked and cruel. I have killed many men and cows. But some time ago I changed my ways. I met a virtuous man and I have tried to follow his teaching. I don't eat people any more, but instead of that I give alms to those who need. That is why I offer this bangle to whomsoever will take it. I could not eat you now even if I wished, for I am old and feeble and my nails and fangs are gone. So come and take my bangle. Wade over the pool and get it." On hearing this the traveller took him at his word and did as he was told. A few moments later the tiger made a meal of him.

No doubt you think this man was very foolish, and so indeed he was. Take care that you are not foolish in just the same way.

There are some things more dangerous than wild beasts,

and Alcohol is one of them. If the traveller had not stopped to listen he would not have been eaten up. Very often when people are tempted to take a drink, instead of firmly saying "No," they stop and listen, until they begin to think there is not so much harm in it after all. This is dangerous.

The words of the old Indian book are true, "Good things come not out of bad things." Alcohol is a bad thing and no good can come of using it.

I wonder if you know what "nectar" means? It was supposed to be the drink of the gods and the very nicest thing that you can possibly imagine. But even nectar, if it be "mixed with poison, serves no purpose but to kill." Alcohol hardly ever kills people all at once. They do not often drink it strong enough to do that. It kills slowly; let us see how it does this.

Our bodies are made of millions of tiny particles called cells. They are of many different shapes. Some are like fine threads woven together. Some look like the blocks in a pavement and fit one into another. All the work of the body is done by them. They carry the messages which the busy brain sends to every part. They make the juices that digest our food. They build up the body's walls and make it strong.

When our cells are working properly we are well. If they are weak or diseased our whole body is ill. Alcohol is harmful to cells. The doctors call it a cell poison. Even small quantities of it, made weak with water, will always hurt them more or less.

All intoxicating drink is "mixed with poison." Beer and home-made wine, and whisky and claret all contain the same poison, alcohol. Alcohol is useful for cleaning and lighting, and it is valuable in many manufactures, but as a drink it is dangerous.

Tobacco, too, is "mixed with poison." Some kinds contain more than others, but you cannot have tobacco without the poison nicotine, so it is best to leave it alone.

The wily old tiger said he was harmless; his nails and fangs were gone. The traveller found out too late that this was not true. People sometimes tell us there is "no harm" in a glass of cider. "It won't hurt you," they say. But we

must not believe all we hear. As soon as cider begins to ferment the poison is there, and it is more dangerous than any wild beast. Of all intoxicating liquors it may be said they "serve no purpose but to kill."

III

THE PRINTER'S PORRIDGE

THERE was once a time when people in England were not allowed to read the Bible. Some loved their Bibles too much to give them up, so they hid them and read them in secret. A family named Franklin did this. They kept the precious book inside a stool, and put a cover over it. Every day the father read aloud, and while he did so one of the children stood by the door to keep watch.

Many years later one of them thought he would like to live in a country where no one would be punished for his religion, so he took a ship and sailed away to America.

There he had a very big family, no fewer than seventeen boys and girls. The whole seventeen were never at home at once; but sometimes thirteen of them were there, and they made a jolly party. The youngest boy was named Benjamin, and he became a famous man.

Ben was a clever little fellow. He learned to read without any trouble at all, and when he was eight he was sent to the Grammar School. He was at the head of his class and was moved into the next one, and was ready to enter the third, all in one year. But before that happy year was out he had to leave school and go to work!

Mr. Franklin was a tallow chandler, that is, he made candles and soap. They did not have any gas or electric light in those days, and even oil lamps were not very common. Ben, though only a small boy, was a real help to his father. He cut the wicks for the candles and ran errands, and sometimes minded the shop. But he did not much like this kind of work and often wished he could be a sailor. His home was near the water, and he was very fond

of swimming and knew how to paddle his own canoe. But his father and mother would not hear of his going to sea and told him to put that idea out of his head. A sailor's life was a dangerous one, they said, and very hard.

Sometimes Ben and his father used to take a walk together and watch men at their various trades. They visited joiners at their carpentry, and saw bricklayers building walls and houses, and brass-workers making things useful and ornamental. Mr. Franklin wanted Ben to see them all and find out what he would like best to be, for he would soon be big enough to do something better than cut wicks and run errands.

The boy was very fond of reading and used to save up his pennies to buy books. He borrowed them also from his friends and always took care to keep them clean and return them soon. About this time his brother James set up as a printer, and Ben made up his mind to learn that trade and make books himself. He went and lived with his brother and worked for him, but James was not very kind. In fact, sometimes he even beat Ben, and the lad was very glad when his time was up and he was able to leave.

He had now learned the business and wanted to have a shop of his own. He had to go all the way back to England, across the sea, to buy the machines he needed. In London he found a job at a big printer's shop. Here, of course, he was called "Franklin," so we must call him "Franklin," too.

There were nearly fifty men working there. They seemed to be always drinking beer. They wanted it so often, that they kept a boy busy running backwards and forwards to the ale-house.

They did their printing in pairs, two and two together. The man who worked with Franklin had two mugs of beer every day before breakfast and two at breakfast with his bread and cheese, and two in the middle of the morning and two at dinner time, and two more later in the afternoon and two at supper time. A dozen a day!

"Why do you drink so much beer?" asked Franklin. "Because I have to work hard," the man said. "Good strong beer makes you strong to work." Franklin knew better.

"There is nothing in it to make anybody strong," he said. "Now a pennyworth of bread would be of some use, for it is good food. If you ate a thick slice of bread and drank pure water with it, that would do you more good than a whole quart of beer." But the man would not listen; he was quite sure that strong drink makes you strong. Every Saturday when he got his wages he had to pay about five shillings for beer drunk during the week.

The printers teased Franklin a good bit at first. If he went out of the room for a few minutes his work would be upset and the letters thrown higgledy piggledy, and he would have to do it all over again. They said a ghost had done the mischief.

No matter what they said or did, Franklin never drank beer. At his home, his father and mother and the seventeen children drank water; so in London he drank water still. They laughed at him and nicknamed him the Water-American. That did not hurt him; he laughed back.

Printers use letters made of little bits of lead. A box of these letters is sometimes very heavy. When those men had to carry a box up and downstairs, they found it about as much as they could do. They would take both hands to it, and get red in the face and sit down when they reached the top of the stairs. Franklin carried the heavy weight far more easily. He even took two boxes at once, one in each hand, and went up without any trouble at all. The others thought this very queer. "Why, the Water-American is stronger than we are," they said.

By degrees they began to think that Franklin was not so far wrong after all. He seemed to get more for his money than they did. They all had breakfast at the shop. The boy brought them their beer and they paid three halfpence for it each time and had it with their bread and cheese. Franklin used to get a big bowl of porridge from a lunch-room nearby. It was nice and hot, and he had a slice of bread and butter with it. Altogether it cost him three halfpence, just the same as his mate's beer. It was a nicer breakfast and much cheaper and more wholesome than theirs. Beer has nothing in it to do anyone any good. It is just water, with

a little poison and a little sugar. After a while some of the men followed Franklin's example and bought good, nourishing porridge instead of bad, poisonous beer.

Franklin was a good workman and could pick out the letters and print the pages at a quick rate. The men who drank beer got so muddled that they could not work nearly so fast as he. Often they drank so much on Saturday and Sunday that they could not come to work on Monday, for they were too stupid. So they took a holiday and called it St. Monday. Franklin was always in his place, so the master liked him. When there was some important work to be done in a hurry, he gave it to the water-drinker, and he paid him extra wages for it.

So Franklin found it was a good thing to drink water. He was stronger than the beer-drinkers and had more money in his pocket. His head and his hands both worked faster. So he went on as he had begun, and in time he became an author, a scientist and an inventor. Though he lived two hundred years ago, he is still remembered on both sides of the Atlantic.

In our own days careful experiments have been made to find out whether or not alcohol hinders work. Printers have sometimes been chosen for these tests. A German professor took four typesetters and allowed them on some days a little wine and on other days none. He found that, on the whole, their power to work was reduced by nearly ten per cent. when they had the drink, although he only allowed them a little with their meals. Typesetters are usually paid according to the amount they do, so if they drink they earn less money.

There have been many improvements in the art of printing since Franklin's day. Much is now done by linotype, that is, by a machine which sets a line of type at a time. It is worked something like a typewriter, and the efficient man is the one whose eyes can rapidly take in the words he has to copy and whose fingers can travel quickly over the keys.

Experiments with typists have proved that strong drink makes the eyes less quick to see and the fingers less quick to

strike. In addition to this, the man who has had his glass makes more mistakes, for the alcohol dulls his brain just a little every time.

Exact experiments such as these were not known when Franklin lived. He was guided simply by his own common-sense, and happily he had plenty of that. As an author he was noted for many wise maxims. Here is one of them: "Temperance puts wood on the fire, flour in the barrel, money in the purse and intelligence in the brain."

IV

A GREAT INVENTOR

WE all owe a great deal to Thomas Alva Edison. He gave us the phonograph and moving pictures and numerous other wonderful inventions.

When Thomas Alva was a boy the Edisons lived in a little town on the Ohio River. It was a busy place, for much grain was shipped there for other points. "Al," as he was called for short, was very fond of watching all that went on by the canal. Once he tumbled into the water and was nearly drowned. Another time he fell into a pile of wheat in a grain elevator and barely escaped being smothered.

As he grew older he learned to love his books, and of all his studies he liked chemistry best. He collected as many bottles as he could find and managed to get about two hundred of them. He filled them with his precious chemicals, labelled them all "Poison" and arranged them neatly on shelves in the cellar.

His parents were comfortably off, but he begged them to let him sell newspapers on a train so as to earn more pocket money for his experiments. As he had plenty of spare time he carried a little printing-press and brought out a newspaper of his very own. It sold for three cents a copy, which is three-halfpence in our money, and sometimes

he issued four hundred copies at a time. It was the first newspaper in the world to be printed on a train in motion.

He had some chemicals on board, too. One day they were running along a rough bit of road when a stick of phosphorus fell off the shelf. It burst into flame and set the car alight. The conductor soon put the fire out, but he put Al out, too, and all his belongings with him. He gave him such a box on the ears that the boy was made deaf for life.

However, nothing could discourage him from doing the scientific work he so dearly loved. He and his chum built a telegraph line between their homes and talked over it quite successfully until at last a cow broke down the wire.

Soon afterwards Edison went seriously into telegraphy and became an operator. He was bound to win success, for he worked hard and was careful about details, and he also knew how to take care of his health. Some of the young operators indulged pretty freely in strong drink. Their work was hard and kept them on the strain for hours together and they took to alcohol as a relief. But Edison had more sense. His brain might be very tired receiving telegraphic messages hour after hour, but he knew drink would do it no good. Miss Willard asked him many years later why he had never used liquor and he said, "I suppose because I had a better use for my brains."

When he was working on night duty he found the cockroaches a great pest and he devised an electric killer for them. But there were big things in his mind, too. One proud day he went to Washington to introduce his new machine, the phonograph. Members of Congress and other influential people came all day long to see it. They could hardly believe that a machine could be made to talk. But they listened and heard it say:

"There was a little girl who had a little curl,
Right in the middle of her forehead;
When she was good, she was very, very good,
But when she was bad she was horrid."

The moving picture machine was invented later, and that seems more wonderful still. Edison did a great deal to provide interesting pictures for boys and girls, such as would make learning easy and delightful to them. It would be impossible to tell about even a tenth of the inventions of this wonderful man. He took out more than a thousand patents.

We cannot have brains like Edison, but at least we can take care of those we have and do nothing to injure them. Alcohol is specially harmful to the brain. Shakespeare knew this three hundred years ago and said: "Oh, that men should put an enemy in their mouths to steal away their brains."

The brain consists of millions of delicate cells which are star-shaped and have arms running out from them like the branches of a tree. There are short arms that carry messages to the brain cell, and there is a long arm that carries the messages away from it. There is also a sort of packing material which keeps the cells in place. Alcohol does two things. If taken in sufficient quantity it kills many of the brain cells and, on the other hand, makes the packing material grow. Now this packing stuff, or connective tissue, is of no use for thinking purposes, and a person who is all the time reducing the brain cells and increasing the stuffing is in a bad way. This result is only found in those whom we call "excessive drinkers." But even the smallest quantity of alcohol taken regularly will hurt the brain.

The finer a man's brain, and the more delicate his work, the less can he afford to touch this poison. Helmholtz was a distinguished German scientist of the last century, and when he celebrated his seventieth birthday a banquet was held in his honour. He made a speech and told his hearers how his scientific ideas came to him. Some of them were surprised when he said, "The smallest quantity of alcohol seemed to scare them away."

Strong drink also hinders the most commonplace kind of brain work. Students in a Heidelberg university carried out an experiment which proved this. For half an hour every day they added up columns of figures. Some days they had beer with their meals, on other days none. The professors

kept count of the results. When they drank beer they always accomplished less work and made more mistakes. Many other tests have been made showing that even a little alcohol makes it harder to calculate and memorize.

Smoking also may be very injurious to the brain, especially if the habit is begun early in life. Mr. Edison was much opposed to cigarettes. He analysed at least twenty different kinds and found that besides the nicotine they contained other poisonous matter. He said that a poison is often formed during the burning of the paper wrapper. It is peculiarly harmful and is called acrolein.

Nearly seven thousand men and boys were employed in the Edison shops. One morning when they went to work they saw this notice: "Cigarettes not to be tolerated. They dull the brain."

Once Mr. Edison picked up a packet of cigarette papers outside his office door and nailed it on the wall with this inscription: "A degenerate who is retrograding towards the lower animal life has lost his packet."

These are long words, but not so very hard after all. The prefix "de" means "down" and a degenerate is a person who is on the downward way. "Retro" means "back" and to retrograde is to go backward. The lad who is a slave to the cigarette habit is going down instead of up, backward instead of forward, and is injuring the wonderful brain which makes us different from the beasts.

It is quite true that many men smoke without seeming at all the worse for doing so. Whether they are really hurting themselves or not, they may not know for years. Sometimes the damage is not discovered until it is too late. The special thing for young folks to understand is this: a boy's brain is different from a man's and can't stand nearly so much. Even after you have stopped growing your brain will not have fully developed, so it would be wise to wait until your twenty-fifth birthday before tampering with tobacco.

V

CIRCE THE ENCHANTRESS

ULYSSES and his men in the course of their long wanderings had many narrow escapes. Once all the winds broke loose together and drove them hither and thither over the sea. Then they fell among giants who devoured many of them. But some escaped and they sailed on with heavy hearts. They were thankful to be left alive, but could not bear to think of the fate of their dear companions.

At last they came to an island named *Aeæa*, and silently they ran their ship into the sheltering harbour. They were all worn out and for two days they could do nothing but lie and rest their weary limbs beside the sea. Early on the third day Ulysses seized his spear and his sharp sword and went alone to spy out the land. He climbed up a craggy hill from whose top he could see in every direction. He saw "the circle of the endless sea" surrounding the little island. At some distance he noticed a bit of beautiful woodland and from the midst of it saw smoke rising. So he said to himself that someone must live there, but who the inhabitants might be he had no idea. He went no farther that day. On his way back to the ship a great stag crossed his path. He shot it with his brazen arrow, slung it over his shoulder and carried it to the company. They feasted till the sun went down and all slept on the seashore again that night.

Next morning Ulysses determined to explore the island. For safety's sake he decided to divide his men into two bands and leave one to guard the ship. He gave the command of one party to the brave Eurylochus and he himself took charge of the other. Then they cast lots to find which should go and which should stay. They shook the lots in a helmet and it fell to Eurylochus to lead the expedition.

Off they started, twenty-two stalwart heroes, towards the wood of which Ulysses had told them. In the glades of the

forest they found a splendid palace of polished stone. It was more beautiful than words could tell and the gardens and grounds around it were lovely, too. Wolves and lions roamed about among the trees, but they did not attack the heroes. They were all tame, for they had been bewitched.

This was the home of the goddess Circe, the strange enchantress. She was the daughter of the Sun and was very fair to look upon. When the heroes reached the palace they saw her passing to and fro before an immense web that she was weaving. As she worked she sang a lovely song and the marble halls echoed the music of it.

When Circe saw this band of men she quickly opened the shining doors and bade them enter in. The great poet Homer, who told the story, says, "They all went in with her in their heedlessness," except Eurylochus. He stayed behind, for he was not sure that all was well.

The palace of Circe was as beautiful inside as out. There were carved chairs, with footstools for the weary travellers, polished tables, draperies of purple and fine linen, ornaments of silver and gold, bright brazen vessels to wash in and all manner of lovely things. There were beautiful women to wait on the visitors, nymphs of the wells and the woods and the rivers. Circe speedily brought refreshments to the heroes, cheese and barley meal and delicious yellow honey. She also brought them wine. She mixed this wine herself in a golden cup. It looked very attractive and the heroes suspected no harm, but "she put a charm therein, in the evil counsel of her heart." It made them forget their own country and their duty as heroes and altogether changed their nature. When they had drunk it Circe smote them with her magic wand and suddenly all of them were transformed into swine. They had bristles and snouts and were altogether just like pigs, except that they had sense enough to know what had happened to them. Circe shut them up in her pigstyes and threw acorns to them. The heroes of many battles who had come safely through scores of terrible adventures were overcome and miserably degraded by a drugged wine-cup and a magic wand.

"Well, that is only a made-up tale," you say. "Of course

it could never happen." No, there is no such witch in all the world. There is no wand that could enchant any one of us. But the wine is enough to do it alone if only we give it the chance. Many take it "in their heedlessness" because they do not stop to think. Alcohol has the power of changing a person's very nature. This is the most dreadful thing about it. It can change heroes into cowards and good men into bad. Circe's wine-cup made the Greeks forget their country. Alcohol makes people forget their duty as citizens and even their homes and dear ones. Those who once get into its power forget everything except their own evil appetite.

How strange it seems that anything taken into the stomach should change a person's character! The reason alcohol can do this is because it hurts the brain. The Bible says we are "fearfully and wonderfully made" and the brain is the most wonderful part of us. It controls all the rest. It regulates the beating of the heart and the breathing of the lungs. It enables the muscles to act properly together. Now and then someone is born with a brain which fails to do this. Though he has arms and legs and all other parts complete, he cannot throw a ball or hold a teacup because the brain does not "co-ordinate" the muscles and they are all at sixes and sevens.

Then, of course, the brain does the thinking; it is the home of our intellect. But even the power of thought is not the highest power we have. More important still is the power of self-control, which is sometimes called "inhibition."

The brain does not reach perfection suddenly; like the rest of us it has to grow and its powers come by degrees. The last to be developed is self-control and upon this our character depends.

Alcohol when it is taken into the body attacks the brain, but not all of it at once. It first hurts those youngest and most delicate cells in which there resides that strange power of self-control. After a while it damages the thinking cells and a man gets muddled and says silly things. Later on, if he drinks enough, he may hurt the part that controls the muscles and then he will not be able to walk straight. At

last the brain may become so deadened that it will not keep the heart and lungs at work and then he will die.

Of all these bad effects, the first one is really the worst, for to lose self-control is to lose character, and character is the most precious thing we have. Here is a puzzling proverb; see what you can make of it:

“Last to come is first to go;
First to go is most to go;
First to come is last to go;
Last to go is least to go.”

Beasts have brains, but theirs are very simple compared with ours. While their brains perfectly control their bodies, they do not have intellectual powers like those of man, neither do they develop character by the exercise of self-control. A pig is simply a pig and we can't expect much from him.

When a man sends the higher part of his brain to sleep by using alcohol, he lets himself down to the same level as the beasts, which do not possess this higher part at all. So it is true to say that wine can change men into animals, or at least it does something very much like it.

Eurylochus fled back to Ulysses when he learned what had befallen his friends. The great warrior hastened to the spot and by the help of the gods he forced Circe to remove the spell. “The bristles dropped away and they became men again,” Ulysses said afterwards, “and they all knew me and each one took my hands, and wistful was the lament that sank into their souls.” Poor men! Their hearts were full of shame to think what they had been. We cannot possibly understand how dreadful it is to come under the spell of alcohol. Let us be kind and gentle towards those who have fallen, and let us never touch the first glass, for only thus shall we be safe.

VI

ORLANDO'S LOYAL SERVANT

IN one of Shakespeare's plays we have the story of three brothers named Oliver, Jaques, and Orlando. Their father died and left his house and lands to Oliver because he was the oldest. But in his will he said that the big brother must take good care of the younger ones and see that they had a thorough education. Jaques was sent away to school, but for some reason Oliver hated Orlando and treated him very cruelly. Probably it was because the boy was a great favourite and this made his older brother jealous. He was handsome and strong, yet at the same time gentle. He was brave, too, and there was no feat that he was afraid to undertake.

The one thing Orlando desired above all else was an education. Some boys would have been glad to be left alone to play all day, but what he wanted was to go to school like Jaques. He said he was no better off than the oxen, for they had enough to eat and a place to sleep and he had nothing more. The horses, he said, were treated far better than he, for there was a man employed to train them, but there was no teacher for him. However, he picked up all the knowledge he could from time to time and succeeded in learning a good deal.

The ruler of the country was a wicked duke who had driven his own brother from the throne that he might reign in his stead. He had a daughter Celia who was just as sweet and good as her father was bad and cruel. The old duke had a daughter, too, whose name was Rosalind. She and Celia were great friends, so she stayed behind at the court when her father had to leave. The two girls slept together every night and they studied and played and had their meals together. In fact, people hardly ever saw them apart.

One day there came to the court a wrestler who boasted of his strength and challenged all the brave men to come

out against him. Some did so and were conquered by him. Then to everybody's surprise young Orlando stepped forth. He did not look strong enough to go against such a champion. His cruel brother hoped he would get his neck broken, but instead of that Orlando overthrew the wrestler, who had to be carried out. Celia and Rosalind were watching, and after the match was over Rosalind gave him the gold chain from her neck because she admired him so much for his courage and skill.

Oliver continued to plot against his brother and tried to kill him in another way. When he reached home after the wrestling match his faithful old servant, Adam, told him it was no safe place for him, and advised him to flee to the woods.

Adam was nearly eighty years old and he had lived in the same little cottage and worked on the same land since he was a lad of seventeen. But he said he would gladly go with his young master, to be company for him and to serve him in every way he could. Orlando felt that it would be too hard for Adam to start out on a journey of adventure at his great age. He feared he could not stand all the hardships they would meet in the forest.

But Adam told him he was much stronger than he looked. He had always taken good care of himself even when he was a boy. He had worked hard, it is true, but hard work is a fine thing for everybody—it makes people tough and strong. Adam had never spoiled his health by using strong drink. His blood was pure, he said, because he had never poisoned it with alcohol. These were his words:

“Though I look old, yet am I strong and lusty,
For in my youth I never did apply
Hot and rebellious liquors in my blood;
Therefore my age is as a lusty winter,
Frosty but kindly.”

We see from these lines that Shakespeare knew that alcohol is bad for the blood. To-day we understand far more about it than he did, for the microscope has been

invented since his time. It shows us millions of tiny, round, red discs in each drop of blood. They are called red corpuscles and their business is to carry oxygen to every part. They are like little boats. They fill up in the lungs with their precious cargo of oxygen and take it to the tissues. Then they reload with the waste material, carbon dioxide, and carry that back to the lungs. Alcohol seizes upon oxygen and robs the boats of part of their cargo. It sometimes hurts the boats or corpuscles themselves, making them shrivel up. They are then smaller and cannot carry so much oxygen.

Besides carrying oxygen to every part the blood-stream also carries food, for every little cell must have nourishment. It removes the waste material, too, the worn-out cells that have done their work and have been broken up and are thrown back into the stream to be carried away. So the blood has a three-fold work to do in the body and every part of this work is exceedingly important. Alcohol, as we have just seen, steals oxygen from the blood. More than this, it makes it harder for the food to reach the cells and harder for the waste material to pass out. This you cannot understand yet. You can see, however, that in several different ways alcohol has a bad effect on the blood and that if we want to be well and strong we must follow the example of old Adam and drink water.

Orlando had no money with which to start out on his journey. He was wondering what to do, when to his surprise the good old servant brought him a great heap of golden crowns, five hundred of them. All the years of his faithful service he had been saving them up for his old age. But when he saw his young master in trouble he was more than glad to help him by giving all that he had. He knew that God, who feeds the ravens and "caters for the sparrow," would not let him come to want.

Orlando was very grateful to the old man and accepted his present, saying that before the money was gone they would find a place where they could make a home together. So they put a few needful things in a bundle and Adam said:

“Master, go on, and I will follow thee
To the last gasp with truth and loyalty.”

How glad Adam must have been that he had saved up all that money! If he had spent his spare time in the tavern, as they called the public-house in those days, he would have had no savings to give. One of our proverbs says, “You can’t eat your cake and keep it,” which means that if you spend your money on one thing you will not have it for another when you need it.

It was a wonderful joy to Adam to be able to help his young master, for he had loved and served his father before him. It gave him far more pleasure than spending it on himself would have done. It is a grand thing to learn to save and to have a bank account that grows bigger and bigger every year. We may want at any time to buy something for ourselves, or we may wish in some special way to help other people. The habits of drinking and smoking run away with a great deal of money. It is all pure waste. It robs people of what one of the poets has called “the luxury of doing good.” You can’t puff your money away in smoke or pour it away in beer and then have the luxury of doing kindnesses with it besides.

When Orlando and Adam were trudging through the forest, Rosalind and Celia were in trouble, too. The cruel duke ordered Rosalind to go away because he hated her father. Her dear friend Celia would not let her go alone, so they made a plan to escape together. Rosalind dressed like a boy and Celia disguised herself as a shepherdess and smirched her face to hide her schoolgirl complexion that she might not be recognised. The clown of the court, who was devoted to his mistress, went with them. He was an ugly little fellow, but that did not matter, for he was most faithful and full of fun.

In the forest there lived the good duke who had been driven from his dominions. Many friends were with him and they were very happy together. They liked the woods better than the city. They slept out of doors in the sweet fresh air, and the birds woke them in the morning with their

songs. They had plenty of fruit to eat and it tasted all the better because they gathered it themselves. They also went hunting and obtained many a good dinner that way. Instead of poisonous wine to drink they had the pure, sparkling water of the little brook. They learned many pleasant things as they lived month after month in the woods, and it seemed to the old duke that there was "good in everything."

One day Orlando and Adam could find nothing to eat, and while Adam lay down to rest the boy pushed forward in search of food. Suddenly he came on this happy company sitting down to dinner among the trees, and they invited him to join them. He soon brought Adam to the spot and they enjoyed a good meal and a long talk. There were songs, too, and the chorus of one of them ran thus:

"Then heigh ho, the holly!
This life is most jolly!"

They had every right to say so. The jolly boys are those who are strong and athletic and can do things, who excel in games and can skate and cycle and row. There is nothing jolly in lolling idly around puffing at a cigarette or going with a set who drink beer and cider. That is a very stupid way of trying to enjoy one's self.

As the days passed by these friends grew more and more jolly, for they discovered Rosalind and Celia and their clown in the woods, and that was a grand surprise.

Later the cruel Oliver found his way there, too, but he was changed and became a kind brother. He married Celia and Orlando married Rosalind and they all lived happily ever after.

VII

A YOUNG JAPANESE

WHEN Japan and Russia were at war, at the beginning of this century, two young Japanese officers lay side by side in hospital. One was wounded in one lung and the other in both.

Each had the same kind care from doctors and nurses. They supposed that the one who was only slightly hurt would soon be well and his friend would have to stay much longer in the hospital. But a strange thing happened. The fellow who had two injuries got well first and went back to the army, and his chum was very slow in recovering. In fact, he was a whole month behind. He couldn't make it out at all so one day he asked the doctor about it. "Why am I still lying here in bed," he enquired, "when my friend is well and strong again? He was twice as badly hurt as I was."

"My dear boy," the doctor said, "he got well quickly because his blood was healthy. When people have healthy blood their wounds heal without delay. Your blood is not in a good state, for you have poisoned it with sake and tobacco." Sake is the name of an alcoholic drink which is made from rice and is popular with the Japanese.

When the officer heard this it set him thinking. He had nothing to do but think, lying there in bed all day, and he did more thinking than he had ever done before. He wanted to have a good, strong body that would be able to resist disease and recover quickly from all kinds of hurts. He had not known before this that strong drink and tobacco are harmful to the blood.

The Japanese are very patriotic; they are eager to serve their country. After what the doctor said, this young officer clearly saw that he could do this better if he would give up alcohol and tobacco. So he made up his mind that no more sake and no more cigarettes should ever pass his lips.

He did get well and strong at last, and went back to his

place in the army. His soldiers were glad to see their officer once more. He told them all about his stay in the hospital and what he had learned there, and all the men in his company decided that if sake and tobacco were bad for him they were just as bad for them. So they one and all gave up those two things because they wanted to have strong bodies.

There are many ways of serving our country much better than by fighting, and whatever kind of work we do we need to be healthy to do it well.

One day in the streets of Paris a dog was seen behaving very strangely. Before a policeman could lock him up he had bitten a man and a boy and it seemed pretty certain that he was mad. So they took the two to the Pasteur Institute, where they give a special treatment for hydrophobia.

The doctor in charge examined them both and thought that the man had a fair chance of recovery but the lad would probably die. The man was thirty years old and the boy was thirteen. The man had one bite and the boy had two. The man was bitten on the hand, but the boy was bitten on his head and face, which was a more serious matter.

Both were treated at once, in the same way and with the greatest care. To the doctor's surprise the man died but the boy got well. When trying to discover the reason for this result he learned that the man was in the habit of using strong drink. He could not be sure that this was the explanation, but he set to work to find out. After making careful experiments he at last concluded that alcohol undoes the good of the Pasteur treatment. It hinders the body in any fight against disease and spoils a man's chances of recovery.

When a person takes a drink the alcohol very quickly find its way from the stomach into the blood-stream. We have already seen that it there damages the red corpuscles, but that is only half the story.

If we look at a drop of blood carefully under the microscope we may see among many red corpuscles a few white ones. These white corpuscles are rather bigger than the red

and they are very queer and interesting, for they change their shape every little while. The red ones go where the blood carries them, they float down the stream; but the white ones behave quite independently. They go up and down, back and forth and even in and out of the river of blood. They have a special work to do.

You know that very often when people get ill it is because some tiny little enemies called germs or microbes have found a way into their bodies. Diphtheria and typhoid fever and pneumonia are all caused by these minute enemies, and many other diseases besides are due to them. The white corpuscles are our little soldiers that fight against these foes. They hurry to the germs when these get into our bodies and they gobble them up as fast as they can. When our white corpuscles are strong we are not likely to "catch" disease, but when they are weak and tired the germs get the better of them and make us sick. Alcohol sends these little white soldiers to sleep and then, of course, they cannot do their duty, and before we know it our foes have found their way in. Sometimes the white corpuscles are only half asleep but that is bad enough. They go to the place where they are needed but they are too stupid and tired to fight much and the germs conquer them. If we want to have a really strong army of white corpuscles to guard us against sickness we must never take any kind of intoxicating drink.

Tobacco is hurtful to the blood as well as alcohol. You know that the blood is pumped by the heart. Every trip it takes around the body, it is made fresh and pure as it passes through the lungs. If it were not kept pure we should die. Tobacco often hurts the heart so that it does not pump properly and then the blood does not have a chance to be as pure as it ought.

That Japanese officer and his men, after learning these things, made a wise decision. Shall we not prove that we have as much common sense as they?

VIII

THE LIVE ENGINE

A NOTICE was given out one day in the Chicago schools which caused great excitement. There was to be a grand athletic contest open to pupils of all the city schools. There would be a variety of races and jumping matches and many other trials of strength and skill. Girls as well as boys were to be allowed to compete. Everybody who was well and strong and wanted to try might enter the lists. But first of all they must be examined by the doctor, for the Superintendent did not want any illness or trouble to result from this day of fun.

Boys and girls filed in before the school physicians and were examined. The girls came off very well. Strange to say, out of every hundred boys, twenty-one were found unfit. Most of these had weak hearts. They were told they could not enter the athletic contest. They would have to be content to look on.

It is a great hindrance to have a weak heart. Life itself depends on this little organ, which is only about as large as your closed fist. Once I went with a friend into a shop where a great deal of work was being done. There were many different machines, all busy, and they made so much noise that we could hardly hear ourselves speak. We saw a great many wheels turning and a great many bands going round all at the same time, but could not see what made them move. After a while a gentleman took us into another room and there we saw an engine, and he said this engine made all the wheels go round. Later on, the engine stopped working and immediately the wheels slowed down and the bands ceased to move and everything was still.

There are ever so many wonderful machines in the world these days, and clever men are inventing new ones all the time. But there isn't anything so marvellous as the machinery of our bodies, for they are the work of God and

not man. As the Psalmist says, "Thy hands have made me and fashioned me."

How many things can you do at one time, do you think? Suppose you are running after a ball. Your eyes see it, your feet carry you swiftly where it is, your hands reach out towards it, and your brain is thinking about it, all at the same time. Your eyes, your feet, your hands, your brain are four different parts of the machinery of your body that are all working together. There are at least four other parts that are working, too, but so quietly that you don't think about them. Now, just as that shop had one engine that made all the wheels go round, so we have one engine, the heart, that keeps every part at work. When that stops everything stops, and we are dead.

The heart is stowed away where it is very unlikely to get hurt. The backbone, breastbone, and ribs form a strong box for it. Large tubes or vessels carry blood to the heart and others carry it thence to all parts of the body. In one way the heart is like a rubber ball, for it is hollow. But instead of the one empty space that we see in the ball when it splits, the heart has four divisions or chambers. If you squeeze the rubber ball the sides come together and the ball looks smaller. Then if you let it go, it returns to its own shape of its own accord. The heart squeezes itself in the most wonderful way, and when it does so its walls come closer together and the blood that is in the heart gets pumped out into the tubes. Then after each squeeze it lets itself go again. All day and all night it keeps on doing the same thing—squeeze, let go; squeeze, let go; squeeze, let go. And every squeeze sends some blood on its journey around the body, to carry food and precious oxygen to every part.

As our hearts work so hard and keep on all the time, we certainly ought to treat them well and not do anything that will hurt them. Most machinery has to be cleaned and oiled and continually cared for, but this little engine is so wonderful that we don't have to do anything to it except leave it alone. It takes care of itself. We must only remember not to work it too hard and not to take into our bodies anything that will injure it.

It will stand a great deal of work. When we run and jump and play it works harder than when we sit still in school, but that is all right. In fact it is good for it and hard work makes it stronger. But we ought not to run hard enough to hurt ourselves. Sometimes boys want so badly to win a race that they strain their hearts, and that is a very unwise thing to do. Sometimes they lift weights that are too heavy for them, to show how strong they are, and that also strains the little engine. There are some poisons, too, that hurt it. When people have diphtheria a poison is formed in their bodies which injures the heart.

You would never think anybody would of his own accord take anything that would harm his heart and upset his machinery. But some do, perhaps because they don't understand the little engine. Alcohol, as you already know, is a poison. People who drink beer and wine and whisky are not taking good care of their hearts. This poison makes the heart beat faster; it whips it up as some hard-hearted people whip a poor horse which is already doing its best. Whipping never makes a horse strong to work. Good food and plenty of water, and time enough to rest and sleep, all these help to make a horse strong. A whipping may make it go faster, but it is not any better for that.

Because alcohol makes the heart go faster, people are apt to think it a good thing to take. But it is really hurtful, and though the little engine may beat more times in a minute it is not so strong and cannot put force enough into each stroke to drive the blood along properly.

Alcohol takes away part of the heart's resting time. Everybody must rest some time, even the people who work the hardest. Some men work all night, but they have to go to bed in the day. Our little engine never stops working altogether as long as we live; the only way it gets any rest is to work a little less hard. When we are in bed and asleep it does not beat so often as when we are running about. Those who take intoxicating drink make the poor little thing work faster when it needs a bit of rest.

A gentleman went one day to consult Sir Benjamin Ward Richardson. The famous doctor asked him a number of

questions and learned that he took some toddy every night before going to bed. That is a hot drink of spirits and water and sugar. The patient said he could not get along without it. Then the doctor did a queer thing. Instead of feeling the man's pulse in the usual way, he stood up and made the man feel *his* pulse. He counted carefully and found it seventy-four. That meant that the heart was beating seventy-four times a minute. Then the doctor sat down and made the gentleman count again. To his surprise it was only seventy. Then Dr. Richardson lay down on the couch and made him count a third time, and now it was only sixty-four. The patient could not make it out. But Dr. Richardson explained to him that the heart does not beat so fast when we lie down. It goes slowly then, and this is its only way of taking a rest. As his heart beat seventy-four times when he stood up and sixty-four when he lay down, that was ten beats less every minute.

The doctor then made that gentleman do some arithmetic. If the heart is saved the trouble of ten beats every minute, how many beats is it saved in an hour? There are sixty minutes in an hour, and ten times sixty is just six hundred. "Now," the doctor said, "I stay in bed about eight hours. How many beats is my heart saved in that time?" "Eight times six hundred are four thousand eight hundred," the patient replied. "That isn't far from five thousand," said the doctor. "So my heart is saved the work of making nearly five thousand beats, and that is how it takes its rest every night. But your toddy makes your heart work extra hard instead of having a rest. Very likely it has to make about fifteen thousand extra beats in the night, poor thing."

This was a private lesson that the famous doctor gave to his patient in his consulting-room in London, and no doubt the gentleman gave him a good fee for it. We, however, can have the advice of this great man for nothing, and now that we know alcohol is bad for the heart of course we will not touch it.

Another poison that upsets the live engine is nicotine. Boys who smoke cigarettes often have weak hearts. This

explains why so many boys in Chicago could not take part in the athletic contest. The doctors said cigarettes were the cause of the trouble in most cases.

When an engine wears out the manufacturer buys another to put in its place. That is what we cannot do. This one little engine must last us all our lives, so let us treat it well and be sure never to injure it with alcohol and nicotine. Let us eat good food and drink pure water and get plenty of sleep, and the heart will faithfully do its work without our thinking about it at all.

IX

A MIDNIGHT MARCH

NOT very long after America was discovered the Spanish general Cortez landed in Mexico. He conquered the Indians in battle, made their Emperor prisoner, and took possession of their capital city. But after a while they summoned up all their courage and determined to drive the foreign invaders away. The Spaniards found themselves hemmed round by foes, and they were unable to obtain enough to eat. They saw that the only thing to do was to retreat. This was, however, more easily said than done.

The City of Mexico was on an island in the middle of a large lake. The roads that led into it all passed through this lake. They were built on causeways of earth and were not very wide, and were broken in several places. Usually there were bridges across these spaces, but at the time of our story the bridges had been taken away. Cortez knew it would be a difficult thing to retreat, for the Indians would pursue them and attack them on the narrow road. So he decided to get away in the dark.

It was on a July night, nearly four hundred years ago, that this retreat was made. The little army started out from the palace. First they packed up the things that they needed for the journey, and the treasures that they wanted to take

home. There was a great deal of gold in Mexico and the invaders had robbed the natives of all they could find. It was piled up in the palace fortress. Cortez packed a quantity of it on a strong horse. He told some of his soldiers to guard it carefully, for it was to go to the king of Spain. He kept a large share for himself. The generals each received a goodly amount of gold also. Still there was more left and it was lying in heaps on the floor of the palace. The common soldiers begged Cortez to allow them to take it, and he gave them free permission. He warned them to be careful, however, and not carry too much because they were starting out on a perilous journey. "Don't overload yourselves," he said; "remember, he travels safest in the dark night who travels lightest."

But they were so eager for the gold that they did not pay much attention to the warning. They took as much as they could manage and fastened it securely to their persons, for they thought it would be a fine thing to carry a fortune home.

It was, as Cortez had reminded them, a dark night, and the rain was coming down. The Spaniards opened the gates of the fortress, crept out, and passed along the streets, trying to make as little noise as possible. They hoped to get away without being heard. They carried a bridge with them to throw across the gaps. As they were marching down the causeway, however, some sentinels saw them and gave the alarm, and soon their enemies came pouring out of the city. The Indians jumped into canoes and rushed up on to the narrow causeway, attacking the Spaniards with great fury.

They fought their way as far as the first gap and crossed it on the bridge which they had brought. They meant to carry this on, for they knew there were two more deep and dangerous breaches ahead. But it would not budge. The weight of men and horses passing over it had driven it firmly into the earth. They had to leave it behind and trust to getting over the next gap as best they could.

On they marched, with their desperate foes attacking them on both sides from hundreds of canoes. They came to the second gap. Those behind pressed the front ones into

the water, which was deep. The cavaliers put spurs to their horses and they swam across, but the bank was steep on the other side and they did not all succeed in landing. Some of the men were dressed in armour, and when they fell from their horses they could not get up again. The foot-soldiers had a terrible struggle to get across. Those who could not swim held on to the horses' manes and tails. It was hard enough even for those who were good swimmers. Many of them had fastened their precious gold so securely about them that it would not readily come off, and they were handicapped by its weight. In that dreadful scrimmage in the deep water they would gladly have thrown it away, but they could not do so. They remembered too late what their general had said, "He travels safest who travels lightest." Struggling vainly, they sank to the bottom and were drowned.

Cortez was not at all a good man, but he said a wise thing that time. "He travels safest who travels lightest." Of course you do not want to be soldiers. War is barbarous at best, and in these civilised days it ought to come to an end. This is a motto, though, for all sorts of people, and not especially for soldiers.

Many persons form habits when they are young which are a heavy burden to them all through life and hinder them from getting on. Bad habits are always a handicap. As the gold weighed the Spaniards down, so that they were worsted in the fray, so the alcohol habit may handicap one in the struggle of life.

This is because alcohol hinders the body in all the work it has to do. Whether we are awake or asleep, whether we are lazy or industrious, there are some things our bodies are doing all the time. Our hearts are beating constantly, our lungs are taking in air, our brains, too, are working, for it is the brain that controls both heart and lungs. The busy doings of this trio—heart, lungs and brain—are sometimes spoken of as "the vital processes." This means the work of the body that is necessary for life. Alcohol interferes with every one of the vital processes—the working of heart and lungs and brain. The people who use it cannot succeed so

well as otherwise they might. Alcohol is always a hinderer, never a helper. So is tobacco, especially when used by young people. It is best to leave them alone, for "He travels safest who travels lightest."

We have already considered the work of the heart and the brain. Let us now think how alcohol and tobacco hinder the work of the lungs.

Breathing seems so very simple; we all breathe every moment of our lives, and we do it without thinking. But the machinery for breathing is most wonderful. When we breathe we take in the precious gas, oxygen, without which we could not live, and we give out the harmful carbon dioxide that is formed in our bodies. When we studied the blood we learned that the red corpuscles do the work of picking up oxygen. The lungs consist of thousands on thousands of tiny pouches called air cells. All over these there is a network of very fine blood-vessels. When we breathe, oxygen gets into the little pouches and, as they are very thin indeed, it finds its way through them into the blood-vessels. The corpuscles pick it up and carry it all over the body.

Alcohol and nicotine both irritate the delicate air cells. When tobacco smoke is inhaled the poison nicotine passes through these little pouches into the blood, and as it circulates round the body it is liable to damage the heart. Alcohol has an affinity, or liking, for oxygen, as we have already learned. The lungs do their best to take in oxygen that we may be well and strong. Alcohol hinders them from taking up as much as they should. The passages which lead down to the lungs are covered with a tender skin called the mucous membrane. It is easily irritated and may then become inflamed. Alcohol and tobacco both irritate it.

One great thing to remember is this: because these two poisons are narcotics, they may injure the brain so that it will not properly govern the working of the other parts. Heart, lungs and brain are sometimes called "the tripod of life." In a three-legged stool, if one leg gives way, down goes the stool. So in our bodies, if the brain is damaged this is likely to upset everything.

On that summer night which the Spaniards have called the "Noche Triste," or the "Doleful Night," there was one man who greatly distinguished himself. His name was Alvarado. He was one of the leaders in Cortez' army and he had command of the rear. They were in a worse case than the van, for the enemy were crowding thick and fast upon them. Alvarado's noble horse, which had gone through many a battle with him, was killed. He pressed forward on foot till he reached the gap. It looked as if death lay before him. He paused a moment, then struck his long lance firmly into the ground and, summoning all his strength, gave one tremendous leap. We are not told how wide the gap was; we know just this, that though others failed to get across by swimming Alvarado cleared it at a bound. Everyone was amazed. They could hardly believe their eyes, and the natives cried out, "The child of the Sun! The child of the Sun!" They thought he must be more than mortal man. He was able to do it because he had a very strong body and he had perfect control over it. Besides he was not weighed down like some of the others by a heavy load. Ever since that night the gap has been known as "Alvarado's Leap."

There are hard places of various kinds in all our lives. Some people get over them triumphantly. They conquer their difficulties and get through their troubles with flying colours. They are ready to meet them, for they have strength to spare. Others fail completely at these difficult times because in some way or other they are handicapped.

Those soldiers might have carried their burden safely enough along an easy road. It was when they came to a hard place that they learned their mistake. When we speak of the hard places in life we mean the illnesses and accidents and troubles that may come to any of us. Many a man uses alcohol and tobacco for years and years and feels no harm from them as long as all goes smoothly. But when an illness or an accident comes he finds these things are a hindrance in getting well and may even cause him to lose his life. At such times the doctor says: "This man has been drinking beer and smoking tobacco so long that his heart is not strong enough to fight against the disease and he will have to die."

Another man, perhaps, is just as ill, but he surprises everybody by recovering quickly, and the doctor says: "It is because he has never used strong drink or tobacco."

If we want to be thoroughly fit and ready for anything that can happen to us, if we want to get over our hard places in an Alvarado kind of way, we must not handicap ourselves with bad habits. We must remember and put in practice that saying of Cortez, "He travels safest who travels lightest."

X

ACROSS THE DESERT

IN a little village in far-away Africa all the people were wishing for one thing—rain. If it would only rain! The cruel sun beat down on them day after day, and it was so hot in their queer little round huts that they could hardly breathe. It was hot out-of-doors, too, even under the trees. It was hot underneath the ground, for the good white doctor put his thermometer down there and found it so.

The native people had taken trouble to make nice gardens, but everything in them died. They were short of food. The women went out to hunt for locusts. A dinner of insects does not sound attractive but they are not bad, after all; they taste something like vegetables when cooked.

The little rivers dried up and the fish were left dead upon the banks. Then the hyenas came round and had a feast upon them.

One day a queer man appeared in the village. He was dressed in skins and wore some big feathers. He said he was the rain-maker and knew how to cause the precious showers to come down from the sky. He had a mixture of all sorts of strange things, lions' hearts and rare roots and serpents' skins, and he burned them and told the people the rain would come. But it did not.

Then the good white doctor spoke up. The natives

called him Nyaka, but to the friends in his distant home he was David Livingstone. He had come all the way from Scotland to tell the African tribes about the love of God, and to help them to live happily without fighting and killing each other as they had always done. He said, "Let us go to the big river. Everybody find a stout stick and sharpen it." So they went, though it was a long way and very hot. The doctor took his old spade; it had no handle, but he managed to use it. The other men dug with their sticks, and the boys and girls carried the dirt away. They made a deep ditch all the way from the river to the village and the water flowed into it. Then they were able to water their gardens and the things began to grow again and they had enough to eat and drink.

Nothing can live without water. People need it and plants need it and all animals. Without it we should soon die.

Dr. Livingstone often wished they could live in a place where there was plenty of water. Once he heard men talking about a beautiful lake far, far away. He asked the Chief about it, but he said the trail lay across a terrible desert and no white man could ever cross it in safety. But the doctor was very brave and he was also so kind that the fiercest people were ready to be friends with him and to help him when he was in need. So he did succeed in crossing the desert and reaching the beautiful lake. He had to travel in the mornings and evenings when it was not quite so hot. The wheels of the wagons used to sink deep into the sand and it was a very dangerous journey. But he did it successfully.

When he had learned the way he decided to take Mrs. Livingstone and his three little children to the lovely spot he had found. So they packed up their belongings, climbed into the wagons, and started off. An English gentleman who was a brave hunter went to help them and he kept ahead of them all the way. He dug wells so that when the children arrived at each stopping-place they would have water to drink.

There are no rivers in this Kalahari desert, as it is called, and but little water in the wells. Sometimes, after they had

taken the trouble to dig a well, there was not enough to go round. The men and the lady and the children and the little dog and oxen and all craved for nothing so much as water.

The desert looks like a great sea. There are ups and downs in it that remind one of waves, only they are not waves of water, but waves of sand. It is not all sand, however. A good deal of rough, tough grass grows there. Strange to say, there are many animals on the desert, lions and jackals and great herds of antelopes. You will wonder where they get water to drink, as they cannot dig wells. They eat watermelons. What a funny sight it must be, to see a lion enjoying his dessert after dinner! A great many watermelons grow on the desert. They get their moisture from deep down underground, and men and animals alike are very fond of them. Then there are also plants that have roots something like turnips. They are full of water and as big as a boy's head. The animals dig for them with their hoofs.

A few tribes live on the desert. They are funny, merry little people called Bushmen. They have an odd way of getting the precious water that everyone is bound to have. They know there is a good deal of it down under the sand. The women take a long, hollow reed and push it deep down and then suck the water up through this tube. They put an ostrich shell down on the ground beside them, and make a little hole in it about as large as your finger; then as they suck up the water they squirt it into the ostrich shell. When they have filled about a dozen shells thus they hide them in the sand. When the good white doctor passed their way the Bushmen were kind to him and gave him some of the precious water. He must have been very thirsty indeed before he could drink it. In our country we do not know what it is to be really thirsty. People in Africa often die for want of water. The doctor's party came near doing so on this trip.

They called Mrs. Livingstone Ma-Robert because Robert was the name of her oldest boy. That is the way they do in Central Africa. Ma-Robert and little Robert and Agnes and baby sat in the wagons while the oxen pulled them very

slowly over the plain. They came to a part that was drier and more dreadful than any. There were no wells, no watermelons, no Bushmen to give them a drink. The guide lost his way. They had only a little water left and one of the servants spilt it by accident. It is nothing at all to us to spill a little water. We can easily draw some more from the tap or the pump. But when theirs was spilt it looked as if they would all die. The doctor sent out some native men as a search party. But day after day passed and no water was found. The children were ill. Even the oxen moaned with thirst. The father and mother felt so sad about the children that they could hardly think of their own suffering. They feared Agnes and Robert and baby could not live another day without water. Just then, when they had nearly given up hope, the native servants came running back crying, "Water, water!" So their lives were saved just in time. Livingstone said he had never known the value of water before. At last this difficult journey was at an end and the doctor and Ma-Robert and the three children reached the big lake in safety.

The doctor wrote in his journal, "*No one knows the value of water till he is deprived of it.*" This is true of us. We have all we want, so we do not stop to think how precious it is.

Some people spoil good water by mixing it with alcohol. They pay a great deal for poisoned water when they might have pure water for nothing. On hot days some men drink beer, thinking it will cool them. This is a dangerous thing to do. Beer hurts the head; too much sun may hurt it also. When the sun and the beer work together a man is very apt to get sunstroke, so it is dangerous to drink alcohol in hot weather and in hot climates.

It is a wonderful thing that whether the weather be cold or hot our bodies remain at the same temperature—that is, they have the same degree of heat—so long as we are well. More strange still is the fact that people living in the tropics and those exploring the Arctic regions show the same temperature. This is because the body has a marvellous arrangement for regulating the heat. In hot climates it is

able to throw off the extra heat by means of perspiration; as the water dries it helps to cool the skin. In cold climates, as we shall see later on, the warmth of the body is preserved; it is prevented from escaping. All this perfect and beautiful arrangement is under the control of the brain. Since alcohol is a brain poison, it upsets the heat-regulating machinery, and it does this in hot and cold countries alike.

Sometimes travellers, when they find the water is not very good, will drink wine, although probably they never use it at home. They say it is safer than the water. Dr. Livingstone did not feel that way. He said he had drunk water of all sorts in his travels through Africa. Sometimes it was full of insects and sometimes it was thick with mud, but however bad it was, he thought it was better than whisky. Of course, we should be careful to drink pure water because serious illness may be caused by drinking water that is not pure. But it is a great mistake to drink wine or beer when the water is not good. If we are not certain of the water we can always boil it and then it will be safe. While water is sometimes bad, intoxicants are always bad. Water seldom has poison in it. Strong drink always has poison in it.

We may be glad we live in a country where there is plenty of good, wholesome water. Some poet has said:

“Sink in despair on the red, parchèd earth,
And then ye may reckon what water is worth.”

It is only those who have crossed a desert, like Robert and Agnes and their parents, and have nearly died of thirst, who know how to value God's great gift of water.

XI

CAUGHT IN THE ICE-PACK

IN the far north near the Pole a little ship lay hemmed in by the ice. Her name was "The Fram," and she was manned by twelve brave explorers under their leader, Dr. Nansen. They saw many strange sights during the months they spent in the frozen sea. Nothing was stranger than the ice. It was not still, as you would suppose; it travelled fast and far. It was not silent; it made the most extraordinary noises. Sometimes the travellers heard a sound as of distant thunder; it came nearer and grew louder till it was like a discharge from a cannon or the roaring of an enormous waterfall. Then they saw the ice piling itself up, heap upon heap, or forming long, high walls. They remembered the old tales they had heard of the battles of the gods, when rocks were split and crags were hurled about. They used to stand on deck in the moonlight and watch the great ridges moving in the distance. When these drew near it became very dangerous and looked as if the little "Fram" would be crushed to bits. But she was built to withstand the ice-pack, and though it closed around her and even reached to the rigging she managed to hold her own.

Often, however, uncertain what might happen next, the crew put all their food and furs out on the ice and made ready to escape for their lives.

Dr. Nansen wished to go further north, so when the ship was frozen in he took one companion and started off over the great waste. It needed wonderful courage to do this, for he knew he could never find the "Fram" again. She would have drifted away before he could return. There was not even any land to go back to. This was a journey over the frozen ocean in the face of tremendous dangers.

Dr. Nansen and his friend Johansen planned the trip with great care and carried all they would need for several months. They had sledges drawn by dogs and a silk tent

that could be folded up very small and only weighed about three pounds. They had canoes of bamboo for crossing over the channels between the fields of ice. At night they crept into a bag of reindeer skin. The two friends got in together and buckled the flap over their heads and kept each other warm. They had a little stove to cook their food and a camera that they might take back pictures of this unknown region. They had to plan carefully what they should carry because they needed to make their burden as light as possible. They took dried meat, and powder to make soup, and biscuits and sugar and chocolate. They knew they would often have a dinner of bear's flesh for a change. Many people, if they had to pack a supply of food, would put in a few bottles of wine or a flask of whisky. But Nansen knew better. He had learned that there is no value in strong drink.

It is true that beer and whisky are made from barley and rye, and wine is made from grapes, and all the grains and fruits are rich in nourishment. But when these foods are changed into alcoholic drinks the good in them is almost entirely lost. A noted German chemist named Liebig once carefully analysed beer and said that if a man drank eight or ten quarts of it every day for a year, at the end of that time he would have had only as much food as there is in one loaf of bread. So of course Nansen did not carry anything of that sort with him. He wanted real food that would make him strong for the struggle he had undertaken.

The two friends had a wonderful time. Night after night they saw the bright-coloured streamers of the aurora darting in the sky. Sometimes the heavens seemed to be one mass of fire. Then again all would change and they half fancied the fairies must be dancing there. There were seals on the ice and they killed them and ate sealsteak; they saw a whole school of whales one day, and often the walrus would swim by, huge and ugly with great tusks. Once a big one jumped on the canoe and nearly swamped it.

The hardest trial they had to bear was the awful cold. Their clothes were so stiff with ice that they could have stood up alone. They cracked every time the men moved.

Nansen's coat sleeve, being frozen hard, rubbed deep sores on his wrist and he bore the scars to his dying day.

It was often so misty that they could not see their way and sometimes they fell into the icy water, not knowing it was there. One day the canoe went adrift with all their possessions on board. Nansen jumped into the water with his clothes on and managed to save it. But he came near losing his life.

A good many people still think that if you take a chill, whisky is the best remedy. They say it will warm you up again. But Dr. Nansen did not carry any on this dangerous journey for a very good reason. Alcohol does not give heat but takes it away.

Our bodies are kept warm by a very wonderful arrangement. As houses are sometimes heated by hot water pipes, so the body also has its pipes. They are not filled with warm water but with warm blood instead, and we call the pipes our blood-vessels. They are far more perfect than the pipes that are put into a house, for they can change their size at need and become larger or smaller. There are many thousands of these little pipes in the skin. If the weather is warm they get larger. Many tiny nerves are connected with them and tell them to increase their size. Then much blood passes through the skin and we give off some of the heat we do not want. When the weather is cold these little nerves tell the blood-vessels to close up and become smaller. Then there is not room for so much blood to flow through the skin, and thus less heat is given off. Though the surface of the body feels cold because there is less blood in the skin, and because of the cold air that is in contact with it, the body's heat is really being preserved in this way.

Strong drink upsets all this wonderful arrangement. It sends the nerves to sleep so that they do not give the message to the blood-vessels. When it is very cold and a man takes whisky to warm himself, the surface blood-vessels do not get smaller as they ought to do. Therefore much blood passes through the skin and he feels warm and comfortable, but he is losing more and more heat every minute. Many a drinking man has frozen to death on a cold night because his heating apparatus did not work properly.

Dr. Nansen did not take whisky when he suffered from the cold or fell into the icy water of the Polar Sea. He and his chum drank hot water mixed with powdered milk. They found it wonderfully comforting and it seemed to warm them to the very ends of their toes.

After a long time and many strange adventures the brave explorers reached home again, and Nansen and his friend met once more the companions they had left in the "Fram." One day he was telling about the sledge journey over the ice and a lady said, "Doctor, didn't you take some whisky with you when you left the ship on that perilous trip?" "Madam," he replied, "if I had done so I should never have returned." Like other noted explorers Dr. Nansen did not believe in strong drink. He considered it is not a help but a hindrance if one has a stiff piece of work to do, hardship to bear and perils to face.

XII

A NOBLE DOCTOR

A HUNDRED years ago, in a village of Rutlandshire, our smallest English county, there lived a little boy by the name of Benjamin Ward Richardson. His was a quiet home, for he had no brothers or sisters to play with and his mother was very ill. One day she told him that she would soon have to leave him and he must be a brave lad and study hard and make his way in the world. She wanted him to grow up to be a doctor and "not only make sick people well but keep people who were well from becoming sick."

This he determined to do, and when he was seventeen he went to Glasgow University and studied in the same College as David Livingstone. Those were thrilling days for medical men, for it had just been discovered that people could be sent to sleep by the use of chloroform and ether and could be operated upon without their feeling anything.

One day when the students had assembled for a lecture, they were told that instead of this, they were to go to the

Royal Infirmary and see an operation performed under an anæsthetic, that is, under one of the sleep-producing drugs. This was an event that none of them could ever forget. A new chapter in the science of medicine had thus been opened.

At that time little was known of hygiene, and diseases spread very rapidly. The "Irish fever" epidemic visited Glasgow, and doctors had all they could do to cope with it, so the medical students helped them. Young Richardson did his "bit" and went in and out of the alleys in the worst of the slums, caring for the people. When one of the doctors died at his post, he took his place and came very near doing the same. He caught this plague and for fourteen weeks lay very ill.

When he had recovered and had become a fully-fledged physician, he gave much thought to the prevention of disease. One day, when visiting a child who had scarlet fever, he found that the father, a tailor, was stitching away in the same room and some of the cloth was thrown over the patient in place of a blanket. No wonder disease spread quickly when people were so ignorant.

Dr. Richardson worked hard to get proper work-shops provided and better homes built for the people. They called him a "dreamer" and said he always had some hobby on hand, and they used to smile when they spoke of him. Really, though, he had far more sense than any of them; he could see farther and knew that things might be greatly improved. Since his time the reforms that he urged have largely been carried out.

Although he was sneered at for his "dreams," medical men could not fail to see that he was exceedingly clever, for he made discoveries which were useful to them all. Because of this they presented him with a handsome microscope to help him to make still more discoveries and along with it a purse of a thousand guineas. Later in life he was knighted for his services to medicine.

He spent much time working in his laboratory and testing various things which were brought to him. Once he was asked to make experiments with alcohol, and among other

things he found that it lowers the temperature of the body, that is, it makes one colder instead of warmer. He was greatly puzzled because like everyone else he had supposed that "a little drop of drink" would warm one up and was therefore useful in cold weather. It certainly does make one *feel* warmer. But facts are hard things and the doctor could not get away from them. When feelings and facts contradict each other, untrained people trust to their feelings and shut their eyes to the facts. But scientific men usually trust to the facts and let the feelings go.

Dr. Richardson had to report to the British Association, a famous society for searching out scientific truth. But its members were accustomed to drinking wine and thought it did them good, and although they were learned men they could not put aside their feelings. So they did not believe what Dr. Richardson told them, in spite of all his proofs. They handed him back his paper and asked him to correct it! As time went by, however, other scientists came forward to endorse what he had said and it is now known that he was perfectly right.

Dr. Richardson found that all sorts of animals are injured by alcohol because it is poisonous to the stuff of which living things are made, namely, protoplasm. He kept fresh-water jelly-fish in jars where they swam about in a lively way. Then he put into their water a very small amount of alcohol, one drop in a thousand. Within two minutes the little things stopped swimming, and began to sink to the bottom of the jar. In about five minutes they were dead.

The doctor himself had been in the habit of using wine with his meals, but his experiments showed him that all drinks containing alcohol are bad for living things. Much alcohol, as everyone knows, does much harm; but hitherto people had supposed that a little would not hurt anybody. Benjamin Ward Richardson, from his own scientific studies, found that a little does a little harm every time, and if you would do yourself no harm, you must take no intoxicating drink. So he gave it up entirely.

Now here comes a surprising thing. Instead of admiring him for discovering new truth, instead of respecting him for

acting upon it, the "medical fraternity" turned against him. Those words mean "the brotherhood of doctors," but they did not behave in a brotherly way. They would have nothing to do with him; they treated him like a stranger.

What happened can best be told in his own words: "In a city where I once gave a demonstration, a grand supper was spread for me, an eminent medical citizen was in the chair and I was toasted with the highest honours by one of the largest assemblies I have ever seen. A few months later I happened to be present at an important ceremony in the same city, meeting the same men, and was known by only one friend. I was no longer one of them. Such has been the effect of my altered views." Because he had taken his stand against strong drink, his fellow doctors cut him in the street and even his old chums looked the other way. Only one friend remained true. This was surely hard to bear.

How did he meet it, do you suppose? Did he get angry, did he get bitter, did he give up his principles? Not at all. He said, "It was no more than might have been expected and no more than had to be gently tolerated." In other words, he quietly bore all the unkindness and made no fuss about it. What a noble man!

A certain doctor was particularly horrid to him and attacked him in a meeting in a very rude speech. Some time afterwards this man found himself in trouble and needed a friend. He knew that one who had courage to stand alone was the sort of person to plead his cause. So he actually went to Dr. Richardson and asked for his help. It was willingly given, for this Greatheart had never harboured a thought of unkindness towards his enemies.

Sir Benjamin was fond of boys and girls and was anxious that they should know the truth about alcohol. He wrote for them "The Temperance Lesson Book," which was read and prized on both sides of the Atlantic. Here are some of his closing words:

"You will be told that alcohol is a food because it warms the body. You know that alcohol only makes the body feel warm because it calls more warm blood to the surface, there to lose its heat and leave the body colder.

"You will be told that if alcohol be not a food it is a luxury, that it is necessary for mirth and pleasure. You know what that is worth. You know that young people like yourselves can laugh and play and be happy as the day is long without ever tasting a drop of alcohol.

"You know, moreover, that after men and women have been cheered, as they call it, by alcohol they suffer a corresponding depression, and are often made so miserable that life is a burden to them."

In this book the doctor told of a narrow escape he had when he was a young man. One cold winter's day he set out with a friend on a walk of several miles. The snow was deep on the ground and a cutting wind blew in their faces, but they tramped on cheerfully, knowing they would have a good time with their friends when they reached the end of their journey. They were within about four miles of it when they came upon a neat little wayside inn whose landlord was on the watch for travellers. He offered them something to keep out the cold, a special drink called "mulled ale," sweetened, spicy and hot.

Young Richardson "had breakfasted well and devoured a pasty on the journey, but the temptation was too great to be resisted" and in he went with his companion and had a pint of "the perilous stuff." After getting warmed up, as they thought, they started afresh, but they had not been going ten minutes before they realized that something was wrong. To continue the story in the doctor's own words:

"We both stood as if we were smitten, or spell-bound. The cold, cutting breeze and sleet came across us as though it would bar our passage. The sense of chill was as if my very bones were cold. We were both active enough happily to fight out the struggle and at last we got to our journey's end. I have since learned that the symptoms I felt were the precise symptoms felt by those who go through Arctic service 'armed' as is so absurdly said, against the cold by a ration of grog.

"A youth I knew did die in that manner. He lost his way one bitter cold night and called at a lonely house, a rectory, to ask direction to a village only two miles off. The

rector's housekeeper told him the way and with the best intention gave him a glass of brandy and water to help him on. He got about 400 yards from the house and there he lay down and in the early morning a shepherd found him dead from cold and alcohol."

Strong drink is a great deceiver. It makes people think they are gaining warmth when they are losing it; it makes them think they are witty when they are only silly; it makes them think they are working quickly when they are really slow. The Bible says, "Wine is a mocker; whosoever is deceived thereby is not wise."

Those words were written ages and ages ago, but it is only in the last century that people have understood just what alcohol is and what it does to the body and the mind. Sir Benjamin Ward Richardson was one of those who blazed the trail, as it were, for others to follow. He was a great leader, for he had a splendid intellect and was thus able to discover new scientific truth, and when he had discovered it, he was not afraid to acknowledge it and to act upon it.

He started a Health Journal, the first of its kind, to teach people how to keep well. One day he was sitting in his study, trying to design a cover for it. He had a picture but wanted a motto to go under it. Then suddenly this short sentence flashed into his mind, "National Health is National Wealth" and he seized upon that. Through his long life he nobly served his country, by doing what his mother had hoped he would do, not only curing sick people but keeping well people from becoming sick. He saw that many thousands of men and women were made ill through the alcohol habit; and many more who were quite respectable moderate drinkers were only half well, because they were taking a little poison all the time. So he used his great talents to teach his fellow-countrymen the better way.

"National Health is National Wealth." It is better to have health and energy and good spirits than to have mere money without these things. If we live wisely, trying to obey the laws of God, we shall not only be happy ourselves, we shall also be adding to the wealth and prosperity of our country, and thus we shall be worthy citizens.

QUESTIONS

I. DAVID'S DINNER

1. Who wrote "David Copperfield"?
 2. Tell about David's dinner at the inn.
 3. Give the sad story of Mr. Topsywayer.
 4. Why did the waiter make that up?
 5. What is the harm in beer?
 6. What other drinks contain the same poison?
 7. Tell what you know of the yeast germ.
 8. What two things are needed for the making of alcohol?
 9. When does the yeast germ stop making alcohol and why?
 10. Name the three classes of intoxicating drink.
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II. THE TALKING TIGER

1. Describe the home of the tiger.
2. How did the tiger deceive the traveller?
3. What wise saying did the traveller remember when the tiger tempted him?
4. What is the meaning of "nectar"?
5. What are cells?
6. Describe some of them and tell what they do.
7. What is the effect of alcohol on cells? What do the doctors therefore call it?
8. Is cider a safe thing to drink?
9. Mention some of the good uses of alcohol.
10. In what ways was that traveller foolish?

III. THE PRINTER'S PORRIDGE

1. Why did the Franklin family go to America?
 2. How did Mr. Franklin earn his living?
 3. What do you know about Benjamin's boyhood?
 4. How did he become a printer?
 5. Why did he go to London?
 6. How did his fellow-workmen waste their money?
 7. What nickname did Franklin get?
 8. What did he buy with the same money as they paid for their beer?
 9. How did he show that total abstainers are stronger than drinkers?
 10. Describe an experiment done with printers of our own time.
 11. In what three ways does alcohol hinder such workers as type-setters and typists?
 12. Quote one of the wise maxims of Benjamin Franklin.
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IV. A GREAT INVENTOR

1. Give some account of Edison's boyhood.
2. Explain why some brain workers get into the way of drinking.
3. What reason did Edison give to Miss Willard for his habit of total abstinence?
4. Describe the brain cells.
5. How does alcohol affect them and what does it do to the packing material?
6. What did Shakespeare say about alcohol and the brain?
7. Tell what you know of Helmholtz and his birthday speech.
8. Describe an experiment carried out to prove the effect of beer on brain work.
9. What did Edison say about the use of cigarettes by his employees?
10. What did he find from his analysis of cigarettes?

V. CIRCE THE ENCHANTRESS

1. Tell the story of Circe.
 2. In what two ways does the wine of to-day remind us of Circe's drugged cup?
 3. How is it that alcohol when taken into the body may damage the character, too?
 4. Mention five things the brain does.
 5. Describe the gradual harm which drink may do to the brain.
 6. Which of these bad effects is the worst, and why?
 7. Quote a saying on this point and explain it.
 8. Compare a beast's brain with a man's.
 9. How may a man sink to the level of the lower animals?
 10. What is the right way to feel and act towards those who have thus lost their manhood?
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VI. ORLANDO'S LOYAL SERVANT

1. Give some account of Shakespeare's Orlando.
 2. Describe the character of old Adam.
 3. Quote the lines beginning "Though I look old."
 4. What is the three-fold work of the blood?
 5. Describe the red corpuscles. Of what use are they?
 6. What does alcohol do to the red corpuscles?
 7. What did Adam do with his money instead of spending it in drink?
 8. What is the greatest of all luxuries?
 9. Tell about the good Duke and his friends and their life in the forest.
 10. How did they feel when they lived in that simple way?
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VII. A YOUNG JAPANESE

1. Tell what you remember about the two Japanese officers who were wounded.

2. Why did the one who was only slightly wounded take so long to get well?
 3. What did he do and what did his soldiers do after the doctor had explained things to him?
 4. What is meant by "sake"?
 5. What does a drop of blood look like under the microscope?
 6. How do white corpuscles behave as compared with red ones?
 7. How do they keep us from getting ill?
 8. Tell how strong drink hinders them in their work.
 9. Give the story of the man and boy who were bitten by the mad dog.
 10. How is tobacco harmful to the blood?
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VIII. THE LIVE ENGINE

1. Tell about the athletic contest in the Chicago schools.
 2. How is the heart like an engine?
 3. What bones form the box in which the heart lies?
 4. Describe the heart.
 5. In what ways may it be injured?
 6. How does alcohol hurt it?
 7. Tell the story of Sir Benjamin Ward Richardson and his patient. (This might with advantage be dramatized.)
 8. How was that gentleman hurting his heart?
 9. Why did people formerly suppose that alcohol was good for the heart?
 10. Why is it that boys who smoke are sometimes unable to run fast?
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IX. A MIDNIGHT MARCH

1. Give an account of the retreat of Cortez and the Spaniards from Mexico City.
2. What wise advice did Cortez give to his soldiers?

3. What is meant by "the vital processes"?
 4. What do we take into the lungs when we breathe and what do we give out?
 5. Describe the air cells.
 6. What is the mucous membrane?
 7. How does smoking affect the air passages and air cells?
 8. Explain what is meant by "the tripod of life."
 9. Tell the story of Alvarado's Leap.
 10. Explain how total abstinence will help a man successfully to get through the hard places in life.
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X. ACROSS THE DESERT

1. How did Livingstone help the African natives to get water during a great drought?
 2. Tell about his journey across the Kalahari Desert.
 3. How do the people and animals on the desert obtain water?
 4. What did Livingstone say about the value of water?
 5. What is the difference between a man's temperature in Central Africa and his temperature in Lapland?
 6. How is the heat of the body regulated?
 7. Why is it dangerous to use alcohol in hot countries?
 8. Why should not travellers drink wine when they fear the water is not good?
 9. What should we do when we are uncertain about the drinking water?
 10. Quote two lines of poetry about the preciousness of water.
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XI. CAUGHT IN THE ICE-PACK

1. Describe the ice-pack and the strange sights Nansen saw.
2. Name some of the foods that he carried on his sledge expedition. Why did he not carry beer or wine?

3. If someone told you beer is "nourishing" what would you reply?
 4. What did the noted German chemist, Liebig, say about the food value of beer?
 5. Tell how Nansen suffered from the cold.
 6. Describe the body's heating apparatus.
 7. How does alcohol affect its working?
 8. Why does a man feel more comfortable after he has taken a drink on a cold day?
 9. What did Nansen take to warm himself?
 10. What question did a lady ask him on his return and what did he reply?
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XII. A NOBLE DOCTOR

1. What do you know of the boyhood of Sir Benjamin Ward Richardson?
2. Tell about his College days and the discovery which was made at that time.
3. As a doctor, how did he try to make living conditions better for the poor?
4. What two events in his life show that he rendered important service to the science of medicine?
5. What made him turn his attention to alcohol?
6. What did he learn from his own experiments?
7. How did he test the effect of alcohol on living stuff, and what is this stuff called?
8. When Dr. Richardson made known his discoveries, how was he treated by other doctors?
9. What did he say about their behaviour and how did he act towards his enemies?
10. How did he show his interest in boys and girls?
11. Tell his story of the "mulled ale."
12. What motto did he choose for his health magazine?



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