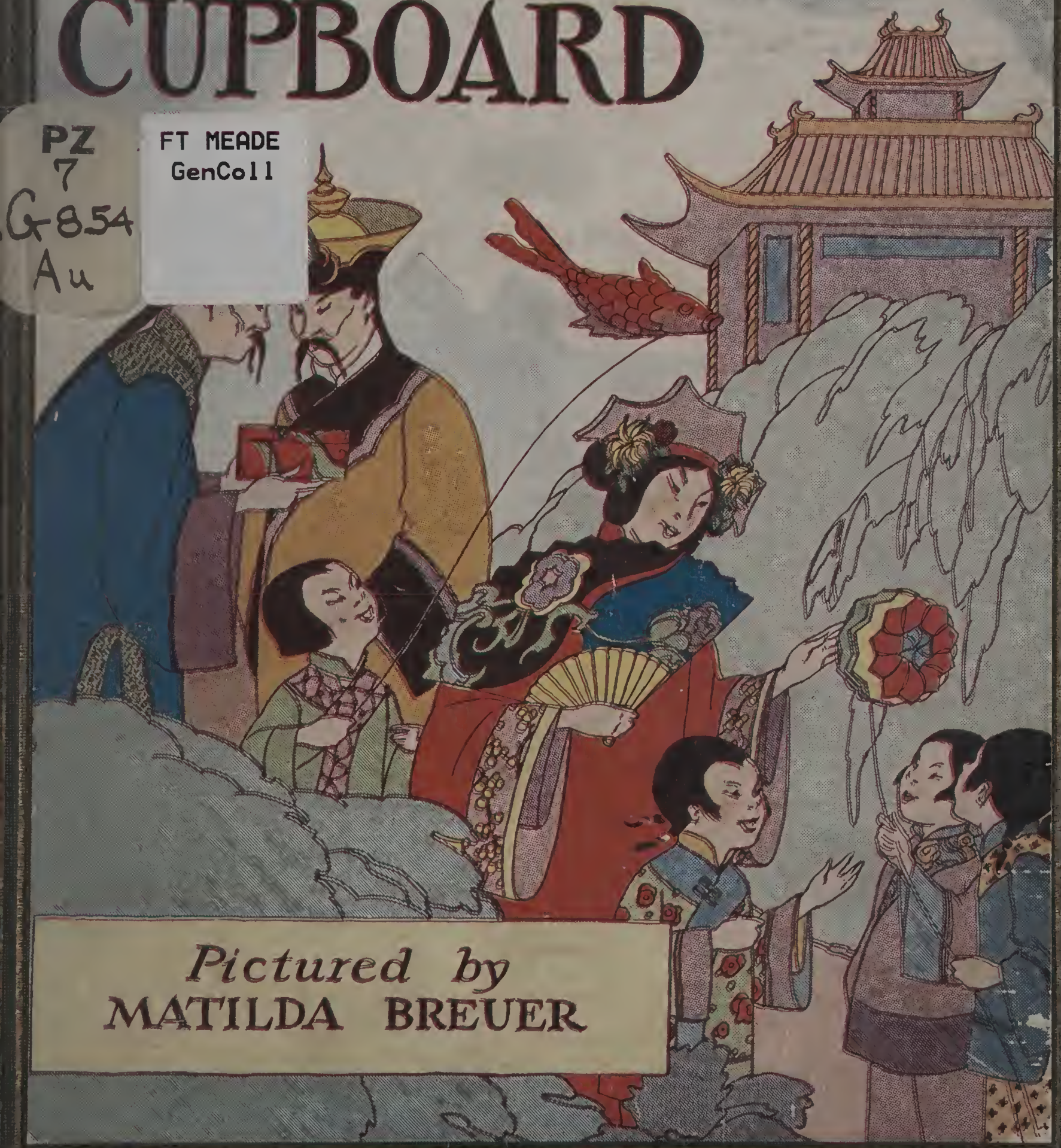
AUNT MARTHA'S CORNER CUPBOARD



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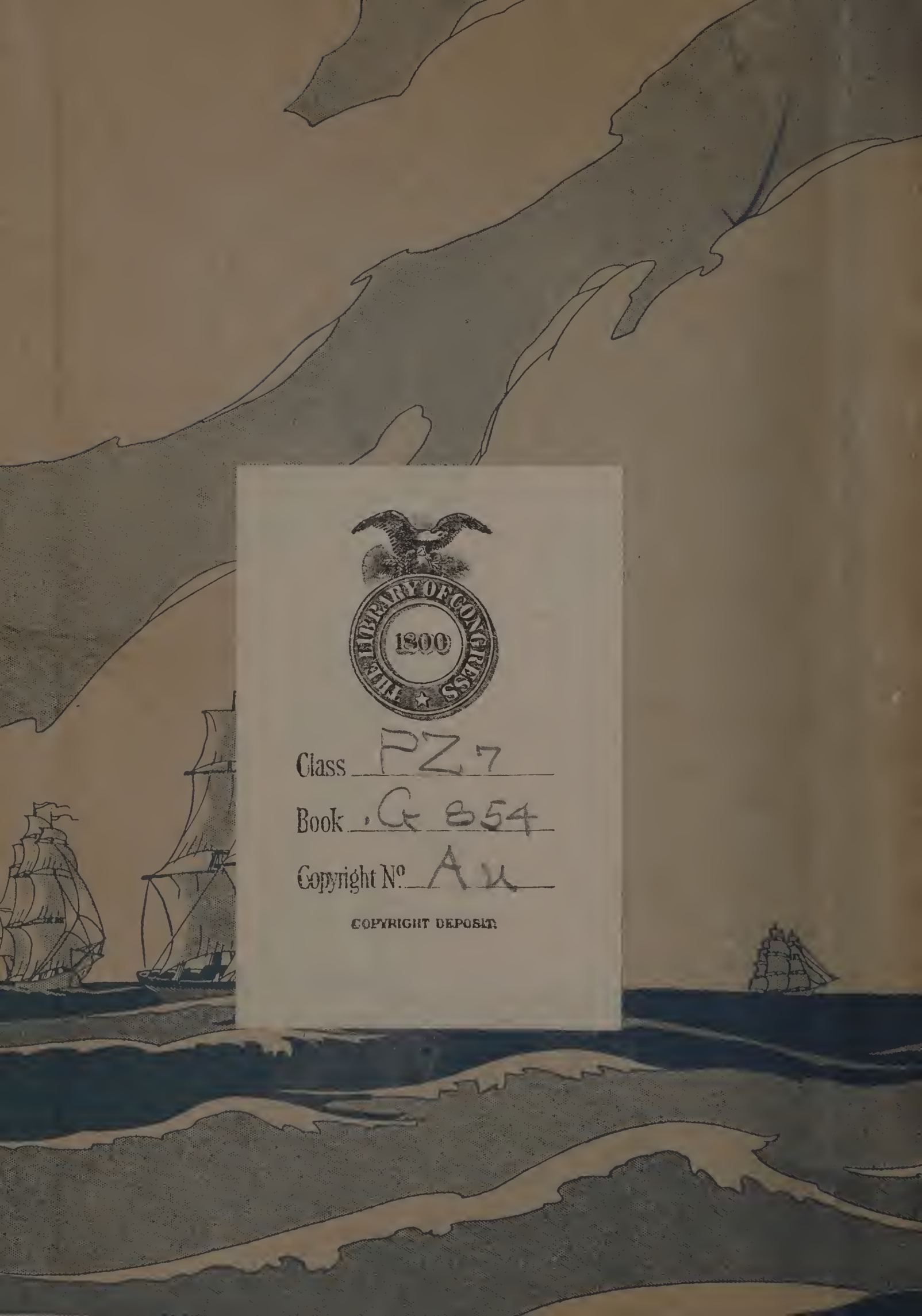


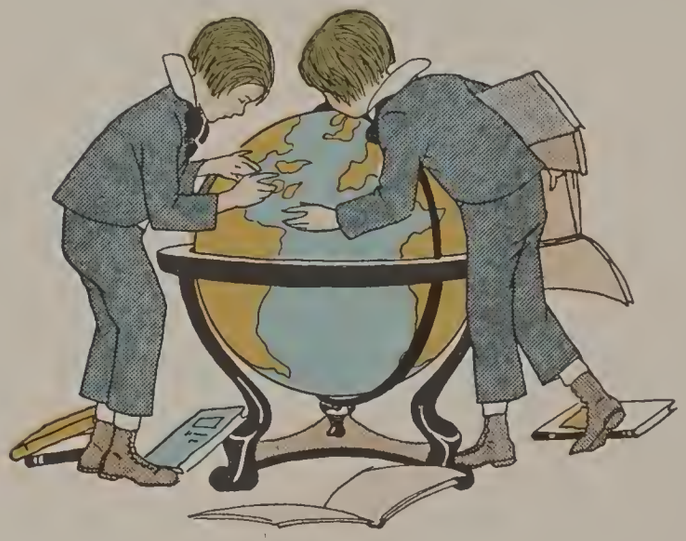
Aunt Martha's Corner Cupboard

Five grave Senators, dressed in their robes, used to meet to decide what the price of the currants was to be.

AUNT MARTHA'S CORNER CUPBOARD

by MARY & ELIZABETH KIRBY

American Version Edited by
CAROL WILFORD



Illustrated by
MATILDA BREUER

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AUNT MARTHA'S CORNER CUPBOARD

ILLUSTRATED
"JUST RIGHT EDITIONS"
OF CHILDREN'S CLASSICS

Man Without A Country
Pied Piper of Hamelin
Little Lame Prince
Dog of Flanders
King of The Golden River

"Just Right Book"
Made in the U. S. A.

INTRODUCTION

"Aunt Martha's Corner Cupboard" seems a singularly happy title for a book. One immediately thinks of a kindly, white-haired old lady in the type of pleasant, old-fashioned house which would have a corner cupboard full of interesting and perhaps even delectable things. Reading of the book will confirm this idea. Aunt Martha is indeed a kindly old lady, and, not only that, but is an extremely interesting and well-informed and sprightly old lady with a wide knowledge of many subjects and a generous desire to share it in a delightful way with two nephews who are spending a vacation with her.

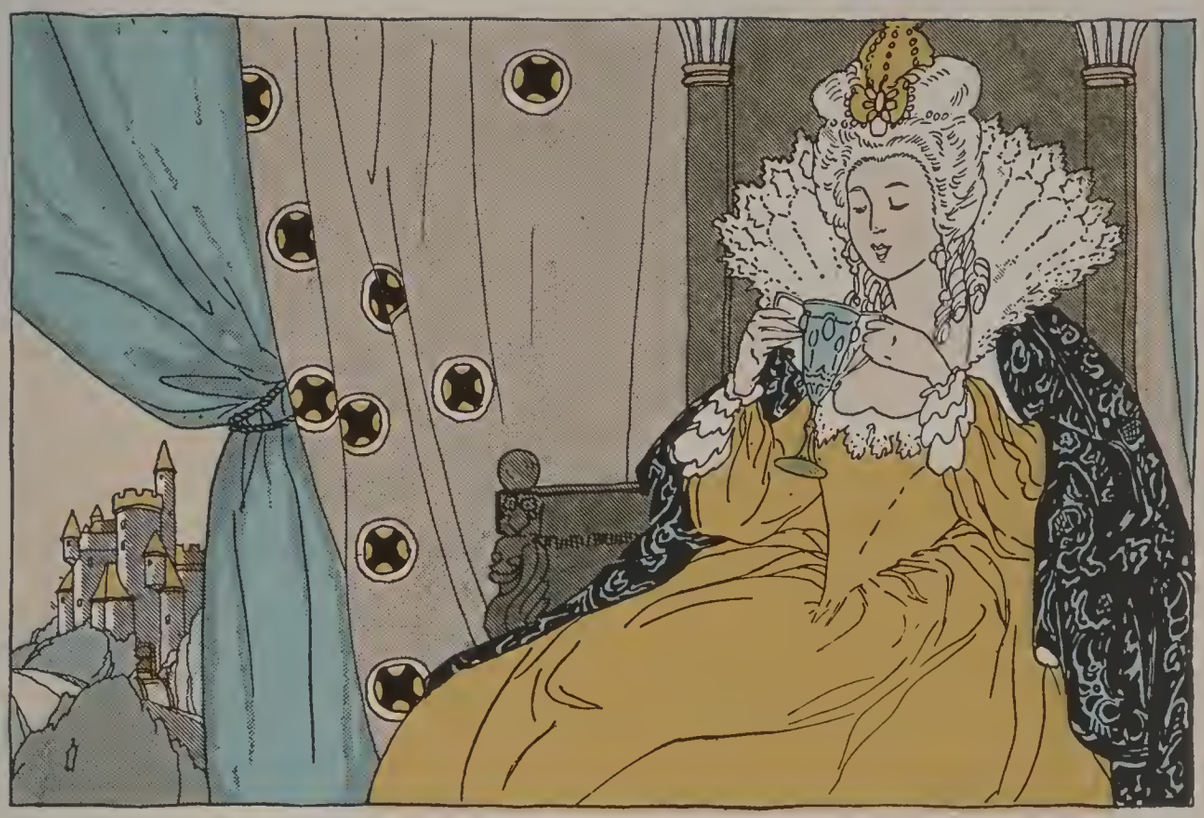
These boys, much to their father's dismay, have brought home poor marks from school. Aunt Martha discerns the important fact that they are neither more lazy, nor more indifferent, nor more stupid than other boys of

their age. They have simply never been taught to observe things at hand, to feel a wondering curiosity about the origin or history or development of countless things seen, eaten, handled or worn by them every day of their lives. She conceives the idea of attempting to awaken such a curiosity, knowing that it will be accompanied by a quickening of interest in any kind of learning.

The boys are accustomed to settle down by the fire late in the day for a story from Aunt Martha. On one such day, instead of telling one of the oft-repeated tales, of which they have confessed themselves a little weary, she tries a new form of story. Taking from her cupboard a tea-cup, she proceeds to tell them its history from the first use of it in China, down through the experiments of Palissy, to the elaborately decorated cups and saucers in use today. The story is a complete success, the boys are interested, and the scene is set for stories dealing with the other things contained in the cupboard. Tea, coffee, sugar, salt, pepper, flax, honey, raisins, glass, and many other things are brought out and explained for the boys' entertainment. By the time they leave, they not only know something about many of the common things of their every-day life, but are eager to know of many others.

Not every boy or girl is so fortunate as to have an "Aunt Martha" with a "corner cupboard." By reading this little book, however, every boy or girl can feel for a time that he has. Not every boy or girl is blessed with a wondering curiosity, but the ones who are will find the answers to some of their questions in this book. As for the ones who are not, they may, like the two boys in the book, be entertained by an entirely different kind of "story."

CAROL WILFORD.



CONTENTS

She lived in a house with gable ends.

The Corner Cupboard

I AM afraid that Charley and Richard Knight gave their teacher a great deal of trouble.

The school they attended had just broken up for the Christmas holidays, and neither of them had received good marks. Indeed, they were never likely to do so, judging from the way in which they went on.

They were good-tempered lads, and favorites with their playmates. If they had a cake sent them from home, they always shared it with the rest of the school. And they were first and foremost at every game that was played. Their blue eyes were always twinkling with fun; and if they had been sent to Mr. Birch's Academy merely to enjoy themselves it would have been all very well.

But there is no use mincing the matter; they were the most idle lads in the school. Nobody could make them learn their lessons—not even Mr. Birch, though he was very strict, and now and then gave them a caning.

It was a pity they were so idle. Their father was a learned man, and wished them to follow in his steps. It made him very unhappy when they came home with poor marks; and always by the next post, a long letter from the teacher to complain that he could not make them work.

Their mother tried to excuse them and said, "There is time enough yet." But their father was of another opinion, now that Richard was twelve years old; and he used to shake his head, and look very sad.

This cold, snowy Christmas the boys were not going home. They had been promised that they should spend the holidays with their Aunt Martha; and her old-fashioned car was at the door to take them.

They had not the least objection, for they were very fond of Aunt Martha, as indeed was everybody that had ever seen her.

She lived in a house with gable ends, just as you turn into the village. It was a very old house, and was said to have been built in Revolutionary Days. It was quite covered with ivy; and there was a large

garden, but the snow had hidden everything in it.

The rooms were large, but very low. The one Aunt Martha liked the best had the morning sun upon it, and looked into the garden. And here she had her work-table, and her basket of knitting, for her eyes were not very good, now that she was getting old. And here she sat all the day long.

Close by was her corner cupboard, that she kept locked, and the key was on a bunch that she carried in her pocket. She never left her cupboard open, because it had so many things in it.

The boys knew the cupboard by heart. Out of it came sweet cakes, and honey and sugar, and tops and marbles, and all the things they liked. And there were no tiresome spelling-books, or grammars, or anything of the kind to plague them.

But you must not suppose that Aunt Martha was an ignorant lady. Far from it. She knew many things indeed, and she did not like the thought that her nephews might grow up to be dunces, which was likely to be the case.

Of course, she did not presume to think that she could teach them as well as Mr. Birch, who understood Latin and Greek, and had kept a school twenty years. But she had a scheme in her head to teach them something.

Not that she intended them to learn lessons in the holidays,—that would have been extremely un-

kind. The knowledge that she meant to give them was not to be found in their lesson-books, thumbed and dog-eared as they were; for an idle boy can wear his book out without using it. No; the lore she was thinking about was contained close by, in her corner cupboard.

It seemed to Aunt Martha—for she was a lady of a lively imagination—as if everything in that cupboard,— her china, her tea, her coffee, her sugar, even her needle,—had a story to tell, and a most entertaining one too. Had not many of the things been in foreign parts, where there are great palm-trees, and monkeys, and black men, and lions, and tigers?

And if they had not been abroad, they were sure to have something to relate that the boys had never heard.

The boys loved to hear stories told them, just when it got dusk, before the lamp was lighted. They would play about all day long, and pelt each other with snow-balls, and make slides on the pond, and scamper up and down the lane, till their legs, young as they were, began to feel tired. And then it was nice to sit on the hearth-rug before the fire, and hear Aunt Martha tell a tale.

Now, Aunt Martha had prepared a great many tales, and had them, so to say, at her finger-ends. She did not have to make them up as she went on,

for that would have spoilt everything. Indeed, I almost think she had learned them by heart.

She hoped that when her boys had heard all the curious things she was about to relate, it would make them want to read for themselves.

Charley and Richard had no idea of the trouble their good aunt was taking on their account, and they did just as they had always done. They rolled their hoops, and threw snow-balls, and scampered about to their heart's content. And when, at last, their legs began to ache, good old Sally, who had lived with Aunt Martha for nearly thirty years, brought them in, took off their wet boots and put on dry ones, and brushed their hair, and washed their faces, and sent them into the parlor to their aunt.

"She'll have a story to tell, I warrant," said old Sally, who was a little in the secret.

Now, everything happened just as it should have.

The boys wanted a story as much as ever, but, like the rest of the world, they wished for something new.

They were thoroughly acquainted with "Jack the Giant-killer," and entertaining as he had once been, they were by this time a little tired of him.

They knew "Cinderella" and "Little Red Riding Hood" by heart, and they did not want to hear them over again. Not that they could get really tired of such delightful stories, but they "might lie

by," Charley said, "for one Christmas, and something else come out."

Aunt Martha was quite willing—indeed, this was just what she had been planning for. Her dear old face brightened up and looked as pleased as could be, when Charley settled himself on the rug, and Richard brought a stool and sat close by, their merry blue eyes fixed intently upon her.

Then Aunt Martha began to relate her first story —"The Story of a Tea-Cup."

The Story of the Tea-cup

OME," as I daresay you have heard, "was not built in a day."

People who use the expression, mean by it that nothing of any value can be done without a great deal of time and trouble.

The tea-cup seems a simple thing, and you use and handle it very often, and drink your tea out of it every afternoon. But perhaps you have never been told its whole history, and do not know that it takes a vast amount of labor, and sets numbers of persons to work, before it can become a cup at all.

I will speak of the best china, that is kept on the top shelf in the cupboard, and only comes out on high days and holidays. It is very superior, let me tell you, to the blue and white cups and saucers in the kitchen, that have no gold rim round them.

The word china will remind you of a country a

long way off, where the gentlemen have long braids of hair hanging down their backs, and the ladies hobble about in little shoes turned up at the toes.

The Chinaman drinks a great deal of tea, because he likes it, and the tea grows in his country. And the tea-cups are always being handed about on little trays, that everybody may have some. So the Chinaman has a great deal of practice in making tea-cups, and can do it remarkably well.

I am sorry to say that he is not of an open disposition, and likes to keep everything he knows to himself.

He would not tell the people who lived in other countries how he made his cups, though they were very curious to know, and asked him over and over again.

There is a town in China where a great many potters lived, and made their beautiful cups. The streets were quite crowded with the potters, and boat-loads of rice came every day for them to eat.

There was a river close by the town; and when the cups and pots were finished, they were packed and sent away in the boats. The potter's furnaces were always burning to bake the cups, so that at night the town looked as if it were on fire.

The potters would not let a stranger stay all night in the place, for fear he should find out the secret of cup-making. He was obliged either to

The Chinaman drinks a great deal of tea.

sleep in one of the boats, or to go away till the next morning.

But it happened that two strangers had been on the watch for a long time, and at last they thought they had found out the secret.

One day they bought some great squares, or bricks, that were being sold in the market and carried off by the potters. They felt quite sure that this was the stuff of which the cups were made. Now the bricks were sold to be used in the potteries.

They were made of a kind of flint called petunse, which looks bright and glittering, as if it had been sprinkled with something to make it shine. And the Chinaman collects it with great care, and grinds it to powder, and makes the bricks of it.

The two strangers carried the bricks home to their own country, and set to work to make cups.

But, alas! they could do nothing.

They were like a workman who had left half his tools behind him. For they needed another substance to mix with the petunse, and that was called kaolin.

Now kaolin was dug by the Chinaman out of some deep mines, that he knew very well and often visited.

It lay about in little lumps, and he picked it out, and made it into bricks just as he had done the other.

And he laughed very much when he heard what the "barbarians," as he called them, had been trying to do. For he did not pity them in the least.

"They think themselves very clever," he said, "to make a body that shall be all flesh and no bones.

He meant that the kaolin was hard, and could not turn to powder when it was burnt as the petunse did; so that it was like bones to the cup, and made it firm. Indeed, without it the cup was too soft, and did not hold together.

I should not have told you this long story if it had nothing to do with the best china. But people can get a kind of clay out of our own country that does quite as well as the Chinaman's bricks, and the best china is always made of it. People come a long way to look for the "porcelain clay," as it is called; and they dig it out of the earth, and carry it to a great building that is, in fact, a porcelain manufactory, where all kinds of cups and saucers, and jugs and basins are constantly being made.

And as soon as the clay gets there, it is thrust into a machine, where it runs upon a number of sharp knives that work round and round, and have been set there on purpose to chop it to pieces. When it has been chopped long enough, it is turned into a kind of churn, and churned as though it were going to be made into butter. Indeed, when the churning is over, the person who has churned it calls it "clay-cream."

Other matters, such as flint and bone, are now mixed with it. But, in order that they might work in harmony one with the other, the flint and the bone each have to be ground to a fine powder, and then made like itself into "clay-cream."

The two creams in two separate vessels, are carried to a room called "mixing-room," and put into a pan of water and stirred well.

They are stirred until they are quite smooth, and without an atom of grit.

But as cups can not be made of the clay-cream, it has to be made solid again. And it is boiled over a fire until the moisture is dried up, and it is very much like dough. A man now begins to slap and beat it, and cut it into pieces, and to fling the pieces one on the other with all his might. And when he has slapped it long enough, it is "ready for the potter."

The potter is called "a thrower,"—and it is a good name for him.

He flings a ball of clay on the little round table before him, with such force that it sticks quite fast.

The table is called a whirling table; and well it might, for it begins to whirl round and round very swiftly.

The reason why it whirls is because a long strap goes from it to a wheel in the corner, that a boy is turning. When the boy turns his wheel, the table turns as well. And as the table goes round, the potter begins to pinch and pat, and work the clay about with his fingers and thumb, and give it what he calls "a shape."

He can do just what he likes with the clay, and can make it into any shape he pleases.

He has some tools to help him, such as little pegs and bits of wood, with which he scrapes it on the

As the table goes round, the potter begins to pinch and pat, and work the clay about with his fingers.

outside and presses it on the inside, until he has brought it into the form of a cup. And all the while the wheel keeps going round and round, until it is enough to make you giddy.

At last the wheel stops and so does the table. And the clay is taken off looking very much like a cup.

Aunt Martha had scarcely time to finish the last sentence before there was a tap at the door, and old Sally came in with the tea-things.

Now the best china had been taken down and carefully dusted; for Christmas was looked upon as a high day and a holiday, and Charley and Richard were company, as a matter of course. As their heads were still running upon cups and saucers, they jumped up and began to look at them, and talk about "flint," and "clay," and "kilns," in a very learned manner, and one that made old Sally smile.

Aunt Martha was very much pleased, for she saw that her story had been carefully listened to, and had not gone in at one ear and out at the other, as such instructive stories do sometimes.

And she was more pleased still, when her little nephews asked her a great many questions, and wanted to know more about the "tea-cup."

She did not tell them any more just then for she was a wise old lady, and she wished to keep their curiosity awake, and not let them have too much of the subject at once.

So she talked about something else all tea-time, and then she got out puzzles and other games, to make the evening pass pleasantly. But old Sally told her that when the boys went to bed, and she turned out their light, they were still talking about the "tea-cup."

And the next afternoon, when they had finished running about, and their hair had been brushed, and their faces washed, they ran into the parlor where their aunt was sitting, and asked her to go on with her story, for they wanted to know a great deal more.

Now it was rather early, and Aunt Martha had hardly finished her afternoon's nap. But she did not like to keep the boys waiting. So she roused herself up, put a log of wood on the fire,— for it was very cold,—and when Charley and Richard had settled themselves, she began, or rather went on with—"The Story of the Tea-Cup."

How the Tea-cup was finished

THE cup is, as I told you, taken off the wheel. It is then set aside to dry; and very soon it reaches what the potter calls "the green state"—though he might better say the hard state—for it is getting gradually harder. It is next taken to the turning-table, and has all its roughness smoothed away, and its appearance is very much improved. Still, it is by no means so handsome as cups are now; and it has no handle.

The Chinaman makes his cup without a handle; and when tea-cups were first used in this country, they had no handles, and were very much smaller than they are now. People in those days could not afford to drink much tea at a time, it was so dear and so scarce.

But fashions are always changing, and in our days every cup must have a handle.

The handle was made separate from the cup, and fitted on afterwards. It was nothing but a strip of clay cut the proper length, and pressed into a mould to make it the right shape. The man who has to do it, takes a great deal of pains to make it fit very neatly.

The parts where the handle is to join the cup are wetted with a certain mixture of clay and water, to make them stick; and they do so at once.

The cup is now put into a square box, or case, with sand at the bottom. Other cups are placed in with it, though care is taken to prevent them from touching each other. Another box, just like it, and full of cups, is set over it, so that the bottom of one box makes a lid for the other. All the boxes, piled up in this way, are put into an oven, called "the potter's kiln." It is in the shape of a cone, and with a hole at the top to let the smoke out.

The Chinaman takes the trouble of putting each cup into a separate box, in order, as he says, that its delicate complexion may not be spoilt by the fire!

When the cup is taken from the box, it is pure white, and nearly transparent. It is not yet thought worthy of the name of porcelain, and is merely called "biscuit china."

It was a long time before people found out how to

paint pictures on the cup, or to give it its beautiful gloss.

The surface of the cup was not hard enough to hold the colors, and needed a coating upon it that is called "enamel."

No one knew how to make the enamel, except the Chinaman. But a potter named Bernard Pallissy tried again and again to make it.

He made cup after cup and coated them over with what he thought was the right thing; but not one of them would do. And at last he became so poor that he had no wood left to heat his furnace—just at the time, too, when more cups were ready to go into it.

He wanted wood to such a degree that he became quite frantic, and felt that he must put something into his furnace, he did not care what. And he ran into the room where his wife was sitting, and snatched up the chairs and tables as if he were crazy and ran with them to his furnace.

Poor Madame Pallissy wrote a book about her troubles, at which I do not wonder. It is a comfort to know that he succeeded at last, and earned a great deal of money. But many improvements have been made in tea-cups since his time.

Before the pictures are painted on the cup, it is nicely cleaned, to remove any atom of dust; and then it has to be glossed, or, as it is called, "glazed." The stuff that give it its gloss, and makes it shine, looks

A man dips the cup into the trough.

like thick cream, and is kept in wooden troughs in a room called "the dipping-room."

A man dips the cup into the trough and turns it about in such a way that every part shall be coated, and yet every drop drained out.

It is now put on a board, and, with other cups, again baked, but in a cooler oven than before. When it comes out of the oven it shines with the beautiful gloss you see.

But it is not finished; for it is a bare cup, without any pictures of flowers or fruit, or figures like those on the best china.

It is taken to a room where there are long tables, and a great many windows to let in the light.

People sit at the tables, with brushes and colors before them, and paint the cups.

In China one man paints nothing but red, another nothing but blue, and so on. But here, in the painting-room, there is a little difference. One man paints flowers, another leaves, another fruit, and another figures.

The colors they use are made of metals—such as gold, iron, and tin—for nothing else can stand the heat of the furnace, in which the cups must once more be baked. Indeed, the painter now and then pops his cup or his saucer into the kiln to see how the colors will stand, before it is quite finished.

When the cup has been painted, and baked for the last time, it is taken to another room still, where there are a great many women and girls at work.

Each girl sits with her face to the light, and takes a cup in one hand, and a stone called an agate in the other. She rubs the parts of the cup that are intended to look like gold with the stone until they become of a brilliant gloss, and shine as if they were gold.

There is a place in Staffordshire called "the Potteries," where cups and pots have always been made.

In olden times they were very rough-looking things, and had neither gilding nor gloss. But the

People sit at the tables with brushes and colors before them, and paint the cups.

people who used them were just as rough, and so was the country round.

The roads were very bad indeed, and full of deep ruts, so that no carriage could go over them. There were no towns or factories, and the potter lived in a little thatched cottage like a hovel.

He had a shed where he worked at his wheel and baked his pots. He dug the clay out himself, and his boys helped him to "throw" and "press," and do all that was wanted to be done.

When he had finished making his pots, his wife used to bring up the asses from the common, where

they were grazing, and get them ready for a journey. She put panniers on their backs, filled with her husband's pots; and then she set off, over the bad, rutty roads, to the towns and villages to sell them.

That part of Staffordshire is still called "the Potteries"; but it is very much improved—and has great towns, and factories, and good roads, and is not at all what it used to be.

One of the towns is called Burslem; and a potter named Mr. Wedgwood lived there. He spent all his life in making the cups of a more beautiful kind than had ever been made before. They were of a cream color; and instead of the ugly figures that were in fashion then, he painted them with flowers and fruit, as we see them now.

One reason why he got on so well was because he took so much pains, and would not let anything pass unless it was perfect. If a cup came off the wheel with the slightest fault in it, he would break it to pieces with his stick, and say, "This will not do for me."

Charley and Richard were so interested in what Aunt Martha had been telling them, that old Sally tapped at the door twice before they heard her. And then, when she had brought in the tea, and the muffins hot out of the oven, they could neither eat nor drink for talking about "the tea-cups." And Richard began to wonder what Aunt Martha's next story would be about, and tried to make her tell him. But

She put panniers on their backs, filled with her husband's pots.

he did not think this would be wise; and all he could ascertain was that the subject of it would come out of her corner cupboard.

It was clear, however, that the story had done them good; for the next morning, Charley and Richard, instead of spending every moment in play, walked up and down the garden-walk, talking about the clay, and the glaze, and the enamel—things they had known nothing about before.

But their greatest pleasure was to come; for strolling out by the gate into the lane, they spied, all at once, some bits of broken pot. You would have thought they had found something very precious, indeed, they were so pleased. They picked them up,

and carried them off in triumph into the old tool-house, where Charley at once set to work with a great stone to pound them to powder. He had nearly broken them up, to mix with some clay that Richard brought out of the ditch, when the thought struck him that these blue and white pieces of pot were not like Aunt Martha's best china. He would go in and ask her if they were.

Aunt Martha was seated at her work-table, in the parlor, when the boys came running in. She told them that Charley was right. Her best cups and saucers had the patterns painted on them, and required more skill to make than these.

Common blue and white cups—such as Charley had a bit of in his hand—were managed in quite another way. A paper, with the pattern printed on it, was wrapped round each cup. The cup was rubbed for a long time, and then set in water. The paper soon peeled off, but the blue marks were left behind.

Richard and Charley wanted to know a great deal more; but Aunt Martha would not answer any of their questions. So they went back to the tool-house again, to play at potters. What delightful work it was! So delightful, that Charley made up his mind to be a potter as soon as he was old enough,—and if his father would let him.

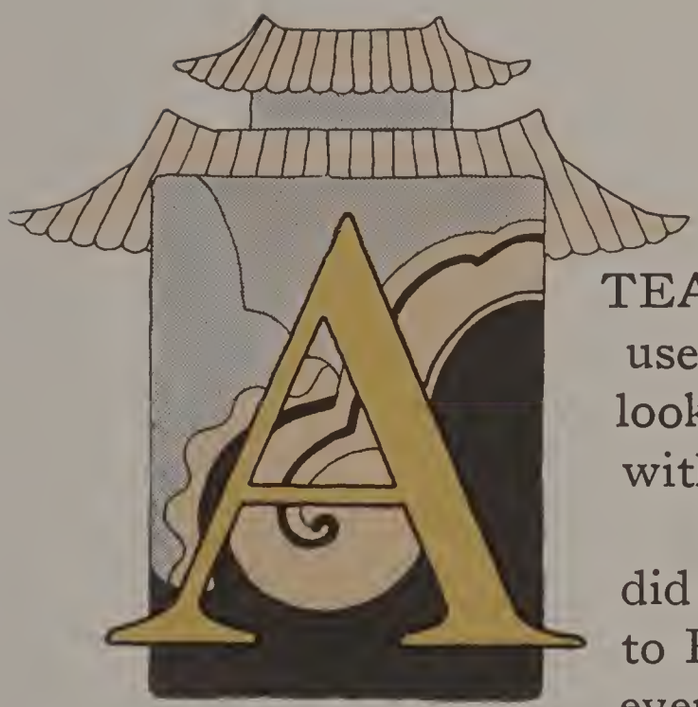
Richard said, if he were a potter he ought to go to China; and then he remembered his dog's-eared geog-

raphy in his desk at school, and thought when he got back he would look into it, and see if it said anything about China. He should like to know a little more than Aunt Martha had told them.

That afternoon old Sally had to keep the boys from going into the parlor too soon; for they were ready half an hour before the usual time.

But good Aunt Martha was ready; and when she heard their feet pattering along the hall, she got up and opened the door. Then Charley settled himself on the hearth-rug, and Richard fetched a stool; and the boys were as still as mice while Aunt Martha told them—"The Story of the Tea."

The Story of the Tea



A TEA-CUP is not of much use, if it is kept only to look at. It needs to be filled with good strong tea.

I wonder what people did before tea was brought to England; for it is not, as everybody knows, a native of this climate. It grows in China, where the beautiful cups are made on purpose to hold it. And it was sipped by emperors on their thrones, and by their grand mandarins, many years before we knew anything about it. And even now, the best of the tea is kept at home for the benefit of the Court, and it is only the next best that finds its way into our tea-pots.

About two hundred and fifty years ago, there was

no tea in England except what people made of their herbs that grew in their gardens, such as mint, and thyme, and sage; no one, not even their majesties the kings and queens, had ever tasted a cup of real Chinese tea.

But it happened in the year 1610—for I daresay you would like to know the date—some Dutch ships brought a little tea to Holland; and then a little more was brought home to England, and people talked about it as "a new drink that came from China."

Everybody would have liked to taste some of it, but it was very difficult to get; and when a present of two pounds of tea was made to the king, he thought it a very handsome gift indeed.

Not many people could buy tea in those days; and even when they did get it, they hardly knew whether it was to be eaten or drunk.

There is a funny story of two old people, who had an ounce of tea sent to them, and who were quite at a loss what to do with it. At last, the old lady proposed to her husband that they should sprinkle it on their bacon, and eat it; which they accordingly did—and very nasty it must have been.

By slow degrees, however, tea found its way to every home in England; and in these days every one can afford to buy it. It is welcomed in the palace of the King, and it affords refreshment to the poorest cottager. A cup of tea is equally grateful to all.

It must be confessed that the tea makes its appearance under great disadvantages. No one who has seen it growing in the Flowery Land of its birth can, suppose it to be the same thing. And it is rather whimsical as to where it does grow. The north is too cold, and the south is too hot; but there is a middle tract country neither too hot nor too cold, that suits it the best.

It is called by the Chinaman Thea or Tha, and from this word comes our English name, tea.

It has white flowers, a little like the wild rose; and when the flowers are gone there come some green pods, that contain the seed.

The Chinaman is very careful how he sows his seeds, because his next crop is to come from them. And he sows six or seven seeds in one hole, to be quite sure that some of them will come up.

The leaves are, as you may suppose, the most important part of the plant. They are very handsome and glossy, like the leaves of the camelia that lives in the hothouse. But it is not on account of their beauty they are so much valued; they have some good qualities that no other leaves possess.

When a person drinks a cup of tea, how refreshed he feels! That is because of the reviving and strengthening quality in the leaf. The leaf also has in it a bitter substance called Thein—or, as it might be styled, pure extract of tea; and this has a great effect

It was sipped by emperors on their high thrones
and by their grand mandarins.

in taking away the feeling of being wearied.

The Chinaman has his tea-plantation, just as we have our vegetable-garden, or the Irishman has his potato-ground. It is called "tea-farm"; and the farmer lives close by, in a funny little house, like a pagoda, with long-pointed eaves to it.

He and his wife are always busy in the plantation, for she helps him weed and water, and her feet have no little shoes to pinch them. She could not afford to hobble about as the fine ladies do, or to be carried in a sedan.

In the early spring, when the young leaves are newly put forth, and have a delicious flavor, the family begins to be very busy. The children come into the plantation and strip them off, until the branches are nearly bare. But they leave enough for another gathering by-and-by.

Of course, the young tender leaves are the best, and make the nicest tea. The Chinaman calls it Souchong. When the leaves that are left get older, they are gathered; but they are not so delicate, and people do not like them so well.

There is still a third gathering, but this is worse than the last, and makes very poor tea.

When the leaves are stripped off, they are thrown into some shallow baskets, and set in the sun, where the wind can blow on them to dry them. They are then put in a pan, and placed on a stove with a

The children strip the leaves off.

fire under it, to be dried still more. While they are over the fire they are stirred about with a brush until they are quite dry.

You may see that the tea-leaf is rolled up and crumpled, and that it comes straight when it is put into the water. The Chinaman takes the trouble to roll it in this way. He does it at a board, and rolls the leaf between his fingers. After this has been done, he again dries the leaves over the fire.

He takes pains to pick out all the bad leaves and throw them away. He knows his tea will be looked

at, before it can be sold to a person who knows good tea from bad.

This person is a tea-merchant and lives in the next town. All day long, the farmers keep coming into the office where he sits, with chests of tea slung over their shoulders. They want him to buy, and he is quite willing. Indeed, the more he can get the better, for he wants to send it in a ship to Europe.

But he always makes the farmer open his chest and spread his tea out before him. He looks at it very sharply, and takes it in his hand and smells it; and he would find out in a minute if any bad leaves were left in it. But if it is really good tea, he gives the farmer some money for it, and sends him away.

The farmer goes to the market and lays out some of his money,—though he is very saving and thrifty, or he would not be a Chinaman.

It was a good thing that old Sally just then came in with the tea, for that was what Charley and Richard wanted. Not that they were either hungry or thirsty; but it was delightful to jump up and look at the tea in the caddy, as Aunt Martha took it out with a scoop.

It was better still to watch the water being poured on it, and to see the tea-leaves begin to unroll themselves and to get quite flat. Charley clapped his hands with glee, and they both skipped round the room, saying they had never enjoyed a

The farmers come with chests of tea slung over their shoulders.

cup of tea so much as now that they knew something about it.

And the very next afternoon Charley and Richard found their way to a room they had never much cared about before. This room was called the library, and had rows and rows of shelves, with many books upon them.

But besides the books upon the shelves, there were others on the table. And Charley, who was thinking very much about foreign countries, was glad to find a book lying open on Aunt Martha's desk, telling all about India and China. It was full of pictures; among them were some potters making cups and other vessels, and of people picking off the leaves of the tea-plant.

How quickly the time passed in looking at them! Instead of being tired of doing nothing, as Charley very often was when it rained and he could not play out of doors, the time seemed to fly; and Aunt Martha had finished her nap and taken her knitting, and was ready to tell her story, almost before they were ready to hear it.

Not that they were a moment too late; oh no!—they wanted very much to know more about the contents of Aunt Martha's corner cupboard, and were very glad when, without any delay, she began —"The Story of the Sugar."

The Story of the Sugar

EVERYBODY likes sugar. The Christmas pudding would be nothing without it; and the plum-cake, and the tarts, and the custards, and all the nice things that boys are so fond of, would have no sweet taste in them if it were not for the sugar.

But its range is much wider than this. It is found in the ripe peach on the wall, and in the juicy nectarine. The bee knows the taste of it well, and finds it hidden deep in the bell of the flower. It lurks in the grape, and the orange, and fruits too many for me to name.

And it finds its way into the stems of plants, and makes their juice sweet and delicious. There is a tall, reed-like plant, with a yellow stem. It is called the sugar-cane, because there is so much sugar in it.

In some places, people are always chewing it. They cut it with their knives to make the juice come out, and go on cutting and chewing all day long.

The sugar-cane grows in very hot countries, where black people live and monkeys run about on the trees. The burning sun pours its rays full upon it; but this is what it likes, and what makes its juice so sweet. There is an island in the West Indies, called Cuba and the sugar-cane grows there, and we get a great deal of sugar from it.

A great giant called Steam helps to make the sugar now, and does more than all the black people put together. People did not find out all at once how helpful he was, and that he could turn mills, and push carriages, and do all kinds of things. But they were very glad when they did know it; and when he began to help them to make the sugar. For weights, and rollers, and heavy wheels are nothing to him.

A sugar-plantation is a very pretty sight. The tall yellow canes rustle in the wind; and at the top is a tuft of flowers, that looks like a silvery plume. And here and there black people are busy at work, hoeing and weeding. The women have blue and scarlet handkerchiefs tied round their heads, for they dearly love a bit of finery.

Sometimes, in the middle of the night, when all

The sugar grows where monkeys run about on the trees.

is still and cool, and the moon is shining, a troop of monkeys come racing down from some mountains near. Then woe betide the sugar-canes!

The monkeys love the taste of sugar; and they clutch at the canes with their long fingers, and pull them up, and bite them, and do a great deal of mischief.

Happily, the black man has a fancy for roasted monkey,—a dish we never see in America; and he thinks it no trouble to sit watching hour after hour, with his gun in his hand, waiting for the monkeys.

Down they come on the full run, and do not see him at once. But pop goes the gun, and one or another is sure to be shot.

It is time that I told you of a fact connected with the history of the sugar-cane. The stem is not hollow like the grass or the reed, but it is solid, and filled with the sweet juice we have been talking about, which makes the sugar.

But the juice, before anything is done to it is very wholesome, and people who suck it are sure to be strong and healthy. Even the horses that work in the sugar-mill get as fat as can be, for they are always chewing the canes. And nothing fattens poultry half so well,—and there are plenty of fowls pecking about in the negro's little garden.

But the juice is too good to be wasted. It forms the material of that vast supply of sugar met with

everywhere in every town, and village, and household. And it has to go through a great many stages, and pass through a great many hands, like the tea-cup.

In the first place, the beautiful yellow canes are cut down close to the ground, and tied up in bundles. Then they are carried to a mill, and the big giant Steam, in places where he has been set to work, sends great iron rollers over them, and squeezes out every drop of juice.

The juice runs into a cistern, and is made hot, lest it should turn sour; and a little lime is put in with it, to make it clear, and then the liquor is boiled very fast indeed.

When it has stopped boiling, and is set to cool, there will be a great many sparkling crystals in it, which are the real sugar. But the crystals are mixed up with a thick stuff, called molasses, which must be removed.

Now the giant Steam is set to work. The liquor is poured into a large square box made of iron, and divided into two chambers, an upper and a lower. The liquor is poured into the upper chamber, on a floor made of wire like a sieve. Then the good-natured giant begins to pump the air out of the lower chamber. Now nature abhors a vacuum, and always finds something to fill it. So the liquid molasses comes pouring down, through the sieve, into the lower part of the box. The sugar that has become crystallized cannot run through the sieve for the holes are too fine for it to get through; so it is left behind, and that is just what the sugar-maker wants.

The food with which the giant fills his capacious maw is the raw sugar-cane, after all the juice has been squeezed out. It burns well, there is plenty to be had, and it does not cost a penny.

When the sugar is made, it is packed in great casks, and sent to America.

After it gets here, some of it goes through another process, and is made white, and into tall cone-shaped loaves. This is called "lump-sugar;" and the other goes by the name of "raw."

Aunt Martha had hardly finished speaking when Charley, who was seated before the fire with his elbows on his knees and his chin between his hands, observed that monkeys had a better time of it than boys had. If he had been a monkey, he should not have minded. Just think how pleasant it would be to pop down among those sugar-canes!

Richard said he did not think so. Charley might like the chances of being shot, and roasted for a black man's dinner but he preferred less sugar and a safe life. Not that he pitied the monkeys for being shot; it served them right for being so greedy as to pull down the canes.

Charley could not agree with this. "Sugar," he said, "Was so tempting—nobody knew how tempting," added he, rising and looking wistfully at the old-fashioned sugar-basin heaped up with lumps of sugar which old Sally was taking out of the corner cupboard. That basin was very full—too full; he feared that top lump would topple over. A remark which made Aunt Martha smile, and say that if he could find a safer place for it, he might.

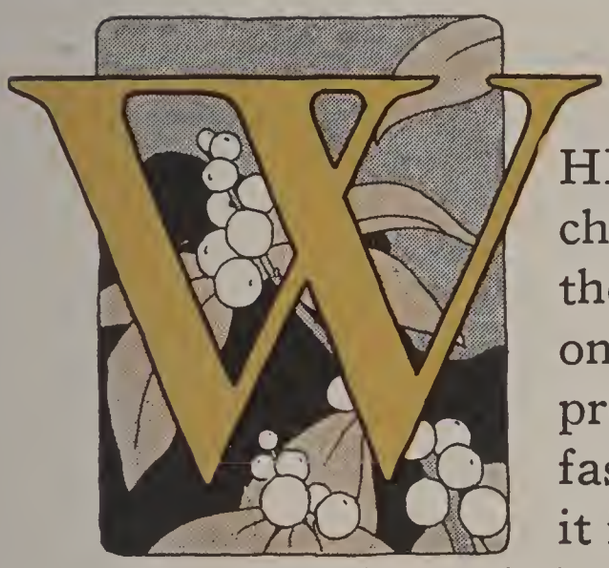
Charley said he knew of one much safer; and, opening his mouth, waited for old Sally to pop it in.

Then he thanked his aunt and they sat down to tea.

The next morning the two boys were early, and went into the kitchen just as old Sally was putting the coffee-berries into the mill to grind for breakfast. Charley asked where they came from, and what they were. Old Sally said she was not book-learned; if they wanted to know, they had better ask their aunt.

The boys said they must; so when Aunt Martha came down, it was agreed that her next tale should be—"The Story of the Coffee."

The Story of the Coffee



HEN the morning sun shines cheerily on the window, and the snow-white cloth is spread on the table, coffee is always present. There are few breakfast-tables in the world where it is not to be found.

You may know it is there by the pleasant odor it spreads around. It is as nice to drink as tea, and a great deal more strengthening. Many a poor man can work hard from morning till night and not drink anything stronger than coffee.

It was a long time before coffee was brought to England; but in the reign of Oliver Cromwell a merchant who use to go Turkey, to trade there, brought home with him a Greek servant. This man had tasted coffee—for the Turks drink a great deal of it, just as the Chinese drink a great deal of tea—and he knew how nice it was.

He brought some berries home with him, and used to make coffee, and let people in London have some of it. Indeed, at last he got so famous for his coffee, and so much talked about, that he set up a coffee house; that is, a house where coffee is sold instead of beer.

Perhaps you would like to know where this first coffee-house was, for there are plenty of them now in every town in England. It was in George's Yard, Lombard Street. This Lombard Street is in the very heart of the business world; and it gets its name because some Jews from Lombardy once came to live there. They used to lend money, for which they made people pay a great deal.

Bankers now live in Lombard Street, and their name comes from the Jews. The Jews had benches with their bags of gold upon them, and there they used to stand and carry on their trade. Now, banco in Italian means bench; and this became corrupted into banker, a man who lends money as the Jews did. But all this has nothing to do with coffee.

From the little coffee-house in Lombard Street, in London the habit of drinking coffee spread all over the world.

At first, like tea, it cost a great deal of money; and it was brought from only one small province in Arabia, called Yemen.

He set up a coffee house.

I should tell you that Arabia is divided into three parts. One is all stones and rocks; and another all sand and desert. But there is a third region, called "Happy Arabia," which is full of gardens, and vineyards, and olive-trees. And here is the province of Yemen.

Mocha is the chief town, and the place where the coffee comes from. It stands close to the sea-shore, on a very sandy plain, and at the entrance to the Red Sea.

The entrance to the Red Sea is through some dangerous straits called "Bab-el-mandeb," or "the Gate of Tears," because so many ships are wrecked there. Indeed, the Arab, who is very fanciful, says that the spirit of the storm is always perched on a rock that overlooks the straits.

A lady in Mocha, when she goes out for an evening visit, carries on her arm a little bag of coffee, and has it boiled when she gets there. And all over the town people are to be seen lying on the ground, under awnings spread to screen them from the sun. These are their coffee-houses; and there they do nothing all day but sip coffee and smoke their pipes.

The people of Mocha pretend that they like coffee best when it is made of the husk of the coffee-berry, and not of the berry itself.

But all the coffee that Mocha and the province round could supply was very little, compared to

what is used now; and, of course, the price of coffee was extremely high. So, when it began to be so much liked, the kings and queens in the different countries of Europe set about having coffee planted in all places where it would grow.

The French sent some coffee-plants to one of their islands in the West Indies, in order to have a plantation there. An officer had the care of the plant, and he sailed in a ship from Amsterdam. He had a long and very stormy passage, and the wind prevented the ship from making headway.

It might have been said of the people on board as it is in the poem.—

"Water, water everywhere,
And not a drop to drink!"

In fact, the water on board was nearly all used up, and no more was to be had until they came to their journey's end. Each man was allowed only a very small quantity a day, and they often suffered from thirst.

The French officer had no more given to him than the rest, and he would gladly have quenched his thirst. But, alas! the tender plants he was cherishing with such care began to droop. They too wanted water; and rather than let them die, he went without himself, and poured the scanty supply given him on their roots.

The crew laughed at him, and he had to bear a

great many rude speeches. But, thanks to this act of self-denial, the plants were able to live until the vessel came at last to land. Then the brave officer received his reward. The plants grew and multiplied, and became great plantations, that supplied other countries and islands.

Many places now furnish coffee in the greatest abundance. Brazil sends out almost enough to supply the world. The plant had grown wild in the island of Ceylon from the earliest times, and the natives used to pluck the leaves and mix them with their food to give it a flavor; they also made garlands of its flowers to decorate their temples; but it was a very long time before they made any use of the berries.

When the coffee-plant is left to nature it grows rather tall. But, as a rule, its top is cut off to make it throw out more branches. The leaves are evergreen; and the flowers are white, and a little like those of the jessamine.

When the berry is ripe it is red, and like a great cherry. There are two hard seeds in it, like beans, that are known to every one, for they are ground into coffee. In many plantations they fall to the ground, and lie under the tree until they are picked up. But in Arabia this is not the custom.

The planter, as he is called, spreads a cloth on the ground, and then shakes the tree, so that the

When the coffee plant is left to nature it grows rather tall.

ripe berries drop off. He then puts them on mats, and lets them lie in the sun till they are dry. And then the husk is broken by a roller, and the berries taken out. All his trouble is amply repaid, for this Arabian coffee is the best in the world.

The coffee-berries must still be roasted, and then ground to powder. They are brought to England, however, before they are ground. Many people have little coffee-mills in their houses, into which the berries are put, to be ground for breakfast. By this means they can obtain the coffee in a state of purity. For it is the custom in these days to mix the ground coffee with the roots of a plant called chicory, to make it go further. This is done to such an extent, that a law has been made compelling the person who

sells coffee to declare whether it is pure or not. And if it is mixed, he is obliged to print on the packet the words, "Coffee and Chicory."

The coffee-plant has a great many enemies. Wild cats climb up the stem and run along the branches to get at the berries; and the squirrel nibbles them as he does nuts; to say nothing of the monkeys, who are always ready for a taste.

In Ceylon, there is a kind of rat that lives in the forest, and makes its nest in the roots of the trees. It comes into the plantation in swarms to feed on the berries. Its teeth are as sharp as a pair of scissors; and it gnaws through the branch that has the fruit upon it, and lets it fall to the ground, where it can feast at its leisure. It is very provoking to the planter to find all the delicate twigs and branches cut off, and he wages war against the rats.

The natives of the opposite coast of India think the flesh of the rat, fed as it is on such delicate fare, very nice, and they come and work in the plantations on purpose to get as many of them as they can. They fry them in oil, and make a dish of them with hot spices and call it "currie."

The boys were sorry when Aunt Martha came to the end of her "story of the coffee," and wanted to know a great many things about the brave man who went without drinking, in order to water the plants, and carry them safely to their journey's end.

In Ceylon there is a kind of rat that feeds on the berries.

Aunt Martha could not answer all their questions, for she was tired of talking, and wanted her tea. But she made a promise that the next time she went to the city, if Charley and Richard were there, she would take them into a coffee house and give them each a cup.

Charley said it was a long time to wait for that treat; but if their aunt would let them, they should like to get up a little sooner each morning, and grind the coffee for breakfast. And then they remembered old Sally's ignorance, and how they must tell her where the coffee came from, and all about it.

When old Sally brought in the tea, she set a dish of new-laid eggs upon the table, and Aunt Martha

gave one to each of her guests. Charley was talking away, and not thinking of what he was doing, so he upset the salt-cellar, and spilt all the salt on the tablecloth. Aunt Martha asked him if he knew where salt came from. He answered very quickly, "From the shop." But then Richard wanted to know where the shopman got it from.

Instead of telling them, Aunt Martha said it was well for Charley that he did not live in olden times, when salt was very scarce, or he would have gotten into disgrace for wasting it. For in those days it was dear, and people took much more care of it than they do now. One large salt-cellar used to be set in the middle of the dinner-table, and everybody helped themselves to a little. It was the custom for the master and mistress to sit above the salt-cellar, and all the servants to take their places below it.

Yes, indeed, he would have gotten into trouble then, if he had spilt the salt. And Aunt Martha promised that tomorrow night she should tell them —"The Story of the Salt."

The Story of the Salt

THERE IS something on the lower shelf of the corner cupboard, that is of more importance than many of its neighbors.

You might contrive to live without either tea or coffee, as people were obliged to do in years gone by, when they drank stout ale for breakfast, and had dinner at twelve o'clock. But what would you do without salt? What would become of your nice relishing dishes, if salt did not season them? They would taste no better than white of egg.

Nay, you would not have those rosy cheeks, nor be able to scamper about from morning till night as you do now. You would be pale and sickly; and I hardly think you could live, without the little harmless doses of salt you are always taking in some form or other.

In some parts of the world, cattle and deer come a long way to get a taste of salt. The salt is in some well or spring that bubbles up among the grass; and the water leaves it behind like a crust on the stones that may chance to be lying about; and the grass all round tastes very much of salt.

The place is called a "salt-lick," because the cattle keep licking at the stones. They are sure to find their way to the salt-lick, even though they live miles away. And they keep cropping the grass, and licking the salt, till they have had enough, and then they go home again. They make a path on the grass with their hoofs, and tread it down. The hunter knows what the path means the moment he sees it, and he lies in wait with his gun. The poor deer is sure to come before long, or the buffalo with his great horns, and then the hunter shoots at them.

The man who owns the salt-lick very often begins to bore down into the ground. He thinks he may find a salt-mine, or, at least, a way underground that leads to one, and then he can get quite rich and become a person of importance.

A man once came to a salt-lick and tasted the water. He found it was all right, and that when he boiled some in a kettle and let it get cold there was a crust of salt at the bottom. He was highly delighted, and bought the land, and set people on to bore. But, alas! there was no salt to be found any-

The place is called a "salt-lick."

where. A cunning hunter had put salt into the spring, and sprinkled it on the grass, to entice the deer, and make them believe the place was a salt-lick. And so the poor man had spent his money for nothing!

In some places the salt-licks are very far apart, and the cattle can hardly ever get to them. The cattle have plenty of food, and large rich pastures to browse in: but they long for a bit of salt, and there is none for them. Once a fortnight their master lets them come home to the farm, and gives each of them a bit of salt. The cows and horses know the right day as well as can be, and they set off at full gallop to the farm. The farmer is quite ready for them; and when they have had their salt they trot back again to the fields, as contented as possible.

In Norway, when the farmer's wife goes out with her maidens to collect her cows and have them milked, she takes a bowl of salt in her hand. The moment the cows see it, they come running up from all parts of the field, as if asking for some. Their mistress gives each of them a large spoonful, and expects them to be satisfied. But sometimes a cow is greedy, and wants more, and pushes his nose into the bowl until it becomes quite troublesome; and then the mistress gives it a box on the

ears with the wooden spoon, to teach it better manners.

There is a desert in Africa where the ground under foot is not sand but salt. It is called the "Salt Desert;" and the salt sparkles in the sun with such a crystal whiteness that people who travel upon it are almost blinded. Because salt is so useful and so necessary it is found in great abundance. The great wide sea could not keep sweet and fresh without salt. People put the sea-water in large shallow pans, and let the sun dry it up. The salt found at the bottom is called "bay salt," and is very bitter. And sometimes it is mixed with other things, —such as a relation called Epsom salts, that has a disagreeable taste, and is used as a medicine.

But the salt makes its way from the sea by all kinds of secret paths under the ground, and then it

is found in places called mines, and is named "rock salt." The mine is like a great deep cavern, and has tall pillars of salt to hold up the roof; and the roof, and the walls, and the pillars glitter as though they were covered with precious stones.

When any person of consequence comes to visit the mine, the men who are at work make a great illumination. They stick torches here and there as thickly as they can, and then light them up, so that the place looks like a fairy palace.

The mine I am speaking of is near the town of Cracow in Poland, and it is not very pleasant to be let down. The person is let down in a hammock by means of a rope; and he goes down, down, a very long way. When he stops, he is not at his journey's end; for he has to get out of his hammock, and go along a pathway that descends lower and lower, till it reaches the mine.

The pathway is sometimes cut into steps, like a great wide staircase and glitters with the light of the torches that the miners carry in their hands. And the road leads through a great chamber or room where a thousand people might dine.

When the traveller reaches the mine he finds himself in a country under ground, such as perhaps he had no idea of before.

There is neither sun nor sky. But there are cross-roads, with horses and carriages going along

them. And there are crowds of men, women, and children, who live always in the mine. Some of the children have lived there all their lives, and have never seen the daylight.

Most of the horses, when once taken down, do not come up again. There are numbers of caverns, little and big, and some of them are made into stables, and the horses are kept there. The roofs of the caverns are supported on pillars of salt, and roads branch from them in all directions. They reach so far, and wind about so much, that a man may easily get lost. If his torch happens to go out, he wanders about until his strength is quite gone; and if nobody finds him, he dies.

I have read of a salt-mine—also in Poland—in which there is a pretty chapel cut out of the salt, and called the "Chapel of St. Anthony."

There are some grand salt-mines in England and in the United States. There are some at a place called Nantwich, in Cheshire; and people are let down in a great tub. When they reach the bottom of the mine, there is the same glittering light from the torches. The torches are what the miners have to see by.

Aunt Martha concluded by remarking how much pleasanter it is to live above ground, and see the cheerful light of the sun, and to walk in the green

fields, and to breathe the fresh air. Did not the boys think so?

Charley said he did; but if ever he went down into a mine he should take a box of matches with him. He thought then if his torch went out, he should stand quite still and light it again.

Aunt Martha agreed with him that would be the best plan.

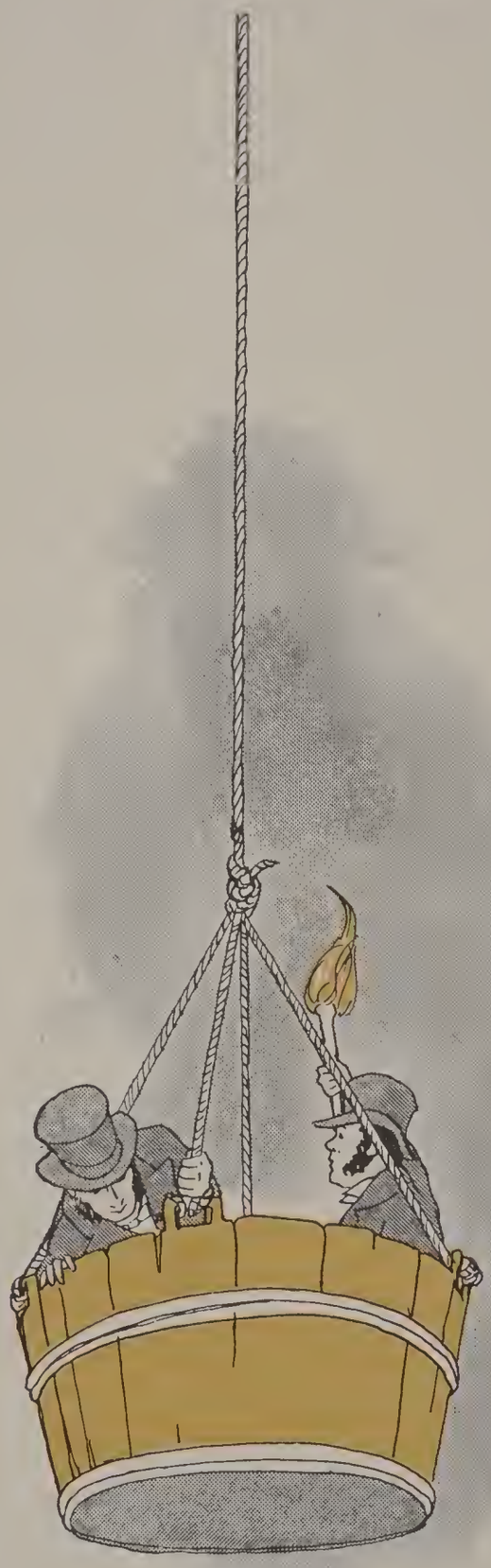
Charley wondered at the cattle liking salt so much. He could understand them liking sugar, but salt was not nice at all—and he put a little into the palm of the hand to taste. It was very well with egg or potatoes, but he should not like to lick it as the cattle did.

Richard said the coachman had told him that salt was very good for horses, and made their coats finer; and that when they could not get it they were neither so well nor so handsome.

Aunt Martha said that was quite true.

But at this moment their attention was diverted by Sally's placing on the table a large plum-cake. Now the boys had seen this cake being made, and had asked old Sally ever so many questions about the currants she was putting into it. Did they grow on trees? Did they come from the same country as the coffee?

So the arrival of the cake brought the currants to mind, and both the boys began to question their



People are let down in a great tub.

aunt about them. But Aunt Martha said it was tea-time now, and she could not answer any questions. She hoped they would find the cake all the nicer for the currants that were in it, as she believed old Sally had put them in on purpose for them. At which Charley begged Aunt Martha, if she was rested by tomorrow night, to tell them—"The Story of the Currants."

The Story of the Currants

EOPLE use quite a wrong word when they talk about currants, meaning the currants we buy at the grocer's shop, and which are not in the least degree related to the red and white bunches that hang in summer from the bushes in the garden.

The mistake arose from the name of one of the places where the currants grow, which is called "Corinth." People chose to speak of them as "Corinths," and in time the word became changed into currants. Currants, indeed! Why, they belong to the elegant family of grapes, that hang in white and purple clusters in the vineyards abroad. They too grow upon a vine, and are nothing in the world but grapes!

The little bush-like vine, on which the currant grows, requires a great deal of care. It has to be supported on sticks, and to have the earth loosened

every now and then about the roots. It is very subject to blight; and if the weather is too wet, is apt to be spoiled and even killed. At all times it is very slow in bringing forth its fruit, and the little grapes do not appear until the tree is six years old.

It grows in some sunny islands near Greece, in a sea called the Ionian Sea. If ever you read the history of Greece, you will find a great deal about the Ionian Islands.

There are seven of them, and one of them is called Zante. It has high cliffs, and a pier where the people land from ships. All kinds of persons land from the boats, and it is a pretty sight to watch their different costumes and faces.

The island is only sixty miles round, and there is a great plain stretching over nearly all of it, and some hills in the distance. There are pretty villages, and houses and gardens, and groves of oranges and lemons; and to stand on the hills and look over the plain, you would think it was one great vineyard.

About the end of August, the grapes of the little bushy vines are ready to gather and a great many men, women, and children are sent into the vineyards to gather them.

They pick off the little grapes, and lay them upon the stone floor of a room or shed, that has no roof, and is open to the sky. The sun pours down his beams upon them, and very soon dries them.

It grows in some sunny islands near Greece

If the weather keeps fine all is well. But now and then there comes a great thunderstorm, and the rain pours in torrents. Then the currants begin to ferment, and are quite spoiled. So the owner throws them to the horses, and cows, and sheep, who eat them up very soon.

If the weather is fine, the currants get quite dry, and then they are taken away to a kind of warehouse, and poured through a hole in the roof until the warehouse is quite full. This makes them cake together, as you see when you open a packet of them.

In the warehouse they cake so much, that men have to dig them out with sharp instruments, when the time is come for putting them into barrels. Then

a man used to get into the barrels, without shoes or stockings, and trample them down as they were poured in. And there were barrels enough to fill five or six ships.

I should tell you that when the currants are brought to the warehouse, the keeper of the place has a paper given to him, saying how many of them there are. And in olden days a great fuss was made about the currants. The islands belonged to the city of Venice, which was then in its glory. And five grave senators, dressed in their robes, used to meet to decide what the price of the currants was to be. And no one might buy them without asking leave of the Government.

When the English came into power, they did rather a foolish thing. They laid a heavy tax on the currants, so that to eat them in puddings was like eating money. But very few people would buy them, and the little vines were neglected and left to die. The owners of them lost all their money, and had to borrow of the Jews. Indeed, there was so much grumbling, and so many complaints made that the tax had to be altered, and then the price of currants came down.

So many ship-loads of currants came to England, that the people of Zante used to wonder what we did with them all. They were quite certain that we used them in dyeing cloth.

When Charley heard that currants were really grapes, he jumped up to pick one off the dish and put it into water. There it lay and swelled itself out till he could see quite plainly that it was a small round grape.

He said the word Corinth was not much like the word currant. And he did not like the idea of the currants being trodden down in the barrels by men with naked feet. Richard said currants were dirty things, and he liked raisins better. Were they grapes too? Aunt Martha told them they were a larger kind of grape, which came from Spain.

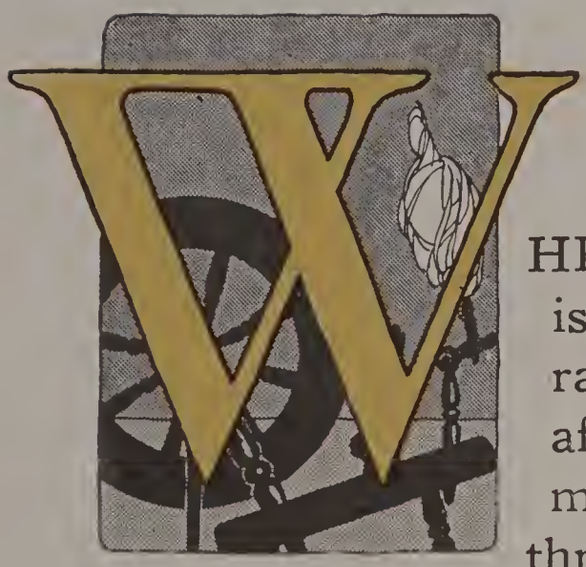
As the atlas was on the table, they might as well show her where Spain was.

She had a few raisins in her corner cupboard, and if Charley liked to put one in water, he would see what a large grape it was.

Aunt Martha was about to rise and reach for the raisins, when she dropped her needle. For after tea she had taken it up to mend a hole in Richard's glove. Charley soon found the needle, but when he had picked it up he began to look at it. Where did needles come from? Who made them? And how did they manage to make that hole for the eye?

Aunt Martha had found the raisins, and would only talk about them now. One thing, she said, was enough at once. To-morrow night she would answer his questions.

The Story of the Flax



HEN Aunt Martha had finished her story about currants, she told the boys that after b r e a k f a s t the next morning she w o u l d look through the cupboard and see what else there was there that might be of interest to them. The boys were very tired after a long stroll through the woods that afternoon, and they went to bed very early.

The next morning they were up bright and early, and before Aunt Martha had time to finish her work in the garden or old Sally to clear the breakfast-table, Charley and Richard had gone to the cupboard to see what they could find. Just then they were startled by hearing Aunt Martha calling for them to come into the garden. Out they ran,

never stopping to cover up the boxes and jars they had opened to see what was in them. They found Aunt Martha with a small armful of tall grass or weeds, as the boys called it, sitting on an old rustic bench she had put in the garden last year.

The boys took their accustomed places beside Aunt Martha wondering what kind of a story they would hear about weeds. Aunt Martha began by telling them that it was not a weed, but flax; that it grew wherever wheat, corn, oats, and rye grew. For thousands of years that little plant has been grown in Egypt and in other parts of the Eastern world. It was carried to Europe by the Romans, and as early as the time of Caesar it was known in England. It may have been brought to England by Caesar, but it was not until 1629 that it was introduced into England.

The stalks are about two feet tall. That is about as tall as they ever grow. Even in very rich soil, as this garden is, flax seldom, if ever, attains a height exceeding three feet.

The leaves are small and pointed, and the flowers are blue with scalloped edges. The stems are hollow and seem to be covered with fibrous material. The flowers grow in clusters at the top of the stems, and when they fall off are succeeded in turn by round seed-vessels the size of a pea, and very much like the morning-glory.

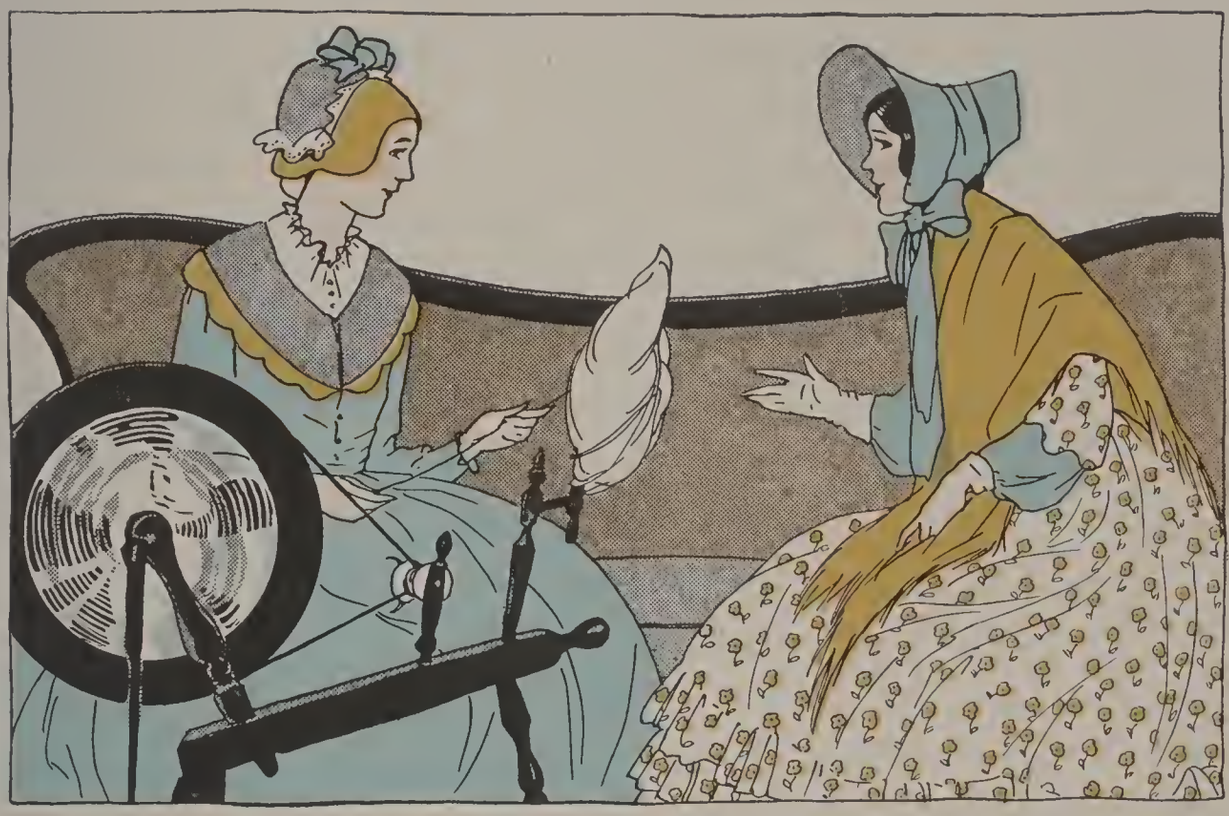
I am sorry, said Aunt Martha, that I have not a stalk just ripening, so that I could show you how the plant and seed look when ready to be harvested.

Flax grows best on a rich, moist soil, and when the season is very dry the small farmers in Egypt and other hot countries are compelled to water the plants by a system of irrigation. That is, they store up all the water they can when it rains, and let it out to flow over the field in very dry weather.

The seed is sown early in the spring; that is, about the same time that we usually sow oats. The crop is gathered in July and August, for it takes longer to mature and ripen than either oats or wheat. Sometimes two crops are gathered from the same field; this can be done only by a very early planting. When the plant is thoroughly ripe, the leaves drop off and the stalks turn yellow, and the field has almost the appearance of a wheat-field at harvest time.

If the crop is grown for the fiber, that is for the stalk and not the seed, the plant is pulled up by the roots when the seeds begin to ripen. If flax is raised for the seed, then it is pulled up when the stem is growing and the leaves begin to fall.

Just here Aunt Martha told the boys that they would go into the house and get some flax seed, and she would show them just how and where they grow on the stalk.



Spinning was done by hand.

After explaining the many uses to which flax seed is put, such as poultices, making of linseed oil, cake, etc., Aunt Martha said that Linum, from which we get the word linen, is only another word for flax. The stalks are steeped in water until fermentation sets in, so that the fibers of the outside covering, or bark, can be separated. After being dried in the sun, any woody portion of the plant which may adhere to the fibers is removed by an instrument called a brake.

To prepare the fiber for the spinning-wheel, the fibers must be laid out straight. This is done with a hatchel or a swingle, a contrivance resembling a

brush with sharp-pointed needles. The process is called heckling, and the flax is drawn over these points, and the long fibers become straight. The short, uneven ones are left and make a substance called tow, used in calking vessels to prevent their leaking.

The processes required to convert these fibers into cloth are the same as are necessary in the manufacture of wool and cotton. The spinning and weaving is now done entirely by machinery, where formerly it was done by hand. Flax fibers are of a brownish color and have to be bleached before the beautiful white color of linen can be obtained. The quickest way to accomplish this is to use chloride of lime.

Various qualities of linen are manufactured, which are used for making sheets, pillow-cases, handkerchiefs, and different articles of wearing apparel. With linen thread, which is made by spinning the fiber, we make lace and fancy edgings, tidies, etc. A rich variety of linen cloth, woven with figures, is called damask. Irish linen is so called because this fine quality is manufactured very extensively in Belfast and other Irish cities. It is used for table cloths, napkins, towels, etc. Laun is a very fine material; it was first made in France, but now it is made in every part of the civilized world where there are any manufacturies.

The industry is one of the oldest in the world.

Linen was used by the Egyptians for embalming.

Four thousand years ago the finest quality of linen was used by the Egyptians for embalming. The earliest records in Egypt and India show its extensive use, and under Greek and Roman civilization its manufacture reached as high a state of perfection as we have it to-day.

We see, then, how little progress after all we have made in some things. In the matter of steam and electricity we are far in advance of the ancients, but in the manufacture of glass, steel, bronze, iron,

gold and silver ornaments and linens we have made very little advancement in two thousand years.

Charley and Richard were delighted with the story of the flax, for they never dreamed that this little plant was so valuable. Richard said he knew the mummies were wrapped in cloth bandages so as to preserve them for ages, but he did not know of what this cloth was made. He asked Aunt Martha to let some of the little plants grow in the garden till they were yellow and the seeds were ripe, and they would see if they could not make some cloth too; but Aunt Martha told them that it was a long and quite difficult process to convert the stalks into woven linen, but that when they got older she would take them to one of the big mills near Boston where some very excellent linens are made.

Just then old Sally entered the room with a large sponge in her hand, which she used to wipe off the windows. The boys were continually on the outlook for material for stories, and as Aunt Martha was very careful to select only such articles as she was perfectly familiar with she was very glad when Charley asked her to tell them about the sponge, what it was, and where it came from. So Aunt Martha told Sally to hand her the sponge so that she could explain it more fully.

The Story of the Sponge

UNT MARTHA began by having Charley get her a pan of water which she placed on the table by the large sponge old Sally had given her. She first explained that the sponge was for many years supposed to be a vegetable or plant, and that it grew in salt water and only on large rocks. Instead of a plant we now know it to be an animal, and of the very lowest of all forms. Said Aunt Martha:

You see how soft and elastic it is, and by dipping it in the water it absorbs, or takes up about all there is in the pan. Now by pressing it between the hands all of the water is returned to the pan, and the sponge is almost as yellow as it was when perfectly dry. By holding it up to the light, you see that it consists of a horny framework made up of an innumerable number of small tubes, branching out

from larger ones which grow still larger near the center of the sponge.

These tubes all have openings at the surface and are filled throughout with a jelly-like, fleshy substance. They are called pores, and at the end of the smaller openings the sponge takes in water, which passes through the tubes and finally out again through the openings of the larger tubes. It is in this way that the animal, (for such it is) takes in food. It does not require much to maintain life, for it never leaves the rock it once forms on, but remains there until it dies and falls off, or is eaten by the fish, or washed off by the action of the deep waves.

The sponge does not live very far under the surface, for the water would be too heavy at a greater depth than thirty or forty feet. While we get most of our sponges from the Mediterranean Seas and along the rocky coasts of Greece and the Ionian Islands, still they are formed in all parts of the world—in the hottest countries and in the coldest; but the largest and roughest ones come from the Bahamas and other islands in the West Indies.

Sponges are of all shapes, sizes, and colors; some are spherical (that is, round), others are long and slender. They vary in size from a piece no larger than a pin head to masses clustered together that could not be gotten into this room. In the water the

The sponge never leaves the rock it once forms on.

sponge is almost black, because it contains that jelly-like substance which is really the animal, and the water it contains makes it look black. The sponge I have in my hand is only the skeleton; the animal died and was washed out of its house or skeleton by the men who dive down under the sea for it.

The people who gather these sponges live in little villages near the sea. Boys no older than you, begin by diving near shore and as they get older they go out in boats. The water is not cold where we get most of our sponges, and the men and boys dive down to great depths and get them. Sometimes they put on waterproof rubber suits with an air-pipe that leads to the air above and through which they can breathe; but in olden times the men were so accustomed to this work that they could remain under water from two to four minutes without any air whatever.

Charley and Richard thought they would like to try staying under the water four minutes, but Aunt Martha told them to hold their nose tight, take a long breath and then shut their mouth tight, and she would see how long they could hold their breath. It was not difficult to guess the result. Charley held his breath about half a minute, and Richard a little longer than Charley. They said they were going to keep on practicing until they went swimming when

Men and boys dive down to great depths and get them.

they knew they would be able to stay under water a minute or more.

"I don't believe you will ever be able to stay under water as long as the boys who live by the sea and gather sponges almost all the year," said Aunt Martha, "for they go down under the water hundreds of times a day from the time they are old enough to work until they are old men, but it will not hurt you to try it, for it will strengthen your lungs."

Aunt Martha would have ended her story here and gone out into the garden, but Charley remembered that there were several things in the cupboard

that Aunt Martha had not told them about, and they were very anxious to know more about the things that are on the table and how and where we get them. Charley ran out into the kitchen where the cupboard stood and got the little round box that Aunt Martha knew contained the ground pepper. She told Sally to bring her the large box containing the unground spice, and after selecting the package containing the whole pepper, she began her story of the pepper which she said would be the last until after supper as she had some work to do in the garden.

The Story of the Pepper

OW, said Aunt Martha, you must first understand the difference between the several kinds of peppers. Out in the garden I have a bed of large green peppers called the Bell pepper, and over by the apple tree are some other pepper plants, which when the fruit is ripe will be bright red. These are red peppers. Now the pepper I have here is not like either of these; it is black, you see, and these that are unground are about the size of a pea and all shriveled up. This kind of pepper is called a spice and comes from very hot countries.

The plant, or bush from which this little seed is gathered grows wild in China and India, and while it is a native of the East Indies, it is cultivated in all tropical countries, principally in South America, Java, Sumatra, Ceylon and other islands of the Indian Ocean. Of all the spices, pepper is by far

the most universally grown; it is used by the people of all nations in cooking, in seasoning, and in pickling. It is also a grand medicine, being very effective in the cure of ringworm, and it makes an excellent ointment.

As far back as we have any records of mankind pepper has been used as a medicine; but only within the past two or three hundred years could any but the very wealthiest afford to buy or use it. A gift of a few pounds of pepper was considered a very generous offering a century or two ago.

Pepper grows on a creeping shrub or vine and has ivy-shaped leaves and thick, spongy stems. The size of the fruit is increased by frequent cutting, or trimming, very much as we do our grape-vines. The vine grows to the height of twelve feet, usually being trained on poles or up date or palm trees, because of the absence of lower limbs.

The plant begins to bear fruit the third year, though it takes five years before it is in full bearing. The flowers are small and white and the fruit round and red when ripe, and as you see, about the size of a pea. Just before it is fully ripe it is gathered and dried in the sun, which gives it a dried and wrinkled appearance. If allowed to fully ripen on the plant it loses much of its strength. The berries are produced in clusters very much like our grapes, currants or gooseberries. At first they are green, then red when

ripe, but black when ready for the market.

Black and white pepper, continued Aunt Martha, are taken from the same vine or shrub. The white pepper is stripped of its covering while the black pepper is the entire fruit. In this ground pepper you see particles of gray mixed with the black. That is the seed, which, if separated before grinding, makes the white pepper, a much more valuable, stronger, and better spice than the black, or the outside covering ground separately.

In addition to the black and white pepper there is also the long and cayenne pepper. The long is very much like the clove in appearance. But little of it reaches America, for the round berry is preferred. I forgot to say, said Aunt Martha, that the way the white is separated from the black is to steep the berry in salt water for several days, then the two parts easily become separated.

Cayenne pepper comes mostly from South America, where it grows wild. It is grown very extensively in India, Hungary, Italy, Spain, Turkey, and in some parts of both the temperate zones. The ripe

fruit is dried, ground, and then mixed with wheat or buckwheat flour. It is occasionally adulterated with red-lead, vermillion, ochre, ground rice and tumeric. Cayenne pepper is used principally in sauces, though the fruit is eaten by the natives of the warmer climates. The inhabitants of all warm climates eat largely of all kinds of spices, and this may account for the temper, quick to anger, of the people of all southern countries—most notably the Spanish speaking races.

When Aunt Martha finished her story of the pepper, old Sally came in to wipe off the windows. Now Richard had often thought he would ask Aunt Martha to tell them about glass. He knew that it was made of sand and water, but did not see how window panes could be made so clear and smooth by simply mixing sand and water together and putting it in the fire to boil. Aunt Martha told the boys that she would tell them about glass before dinner.

The Story of the Glass

JUST ONE more story before dinner, said Aunt Martha, and now if Charley and Richard will go out and get all the old glass they can find—bottles, lamp chimneys, tumblers, and broken window panes—I will tell you how each is made and how the making of glass was discovered.

The boys were not long in getting a panful of glass out in the ash barrel and in the garden where Aunt Martha kept old window panes to protect her young plants from the frost early in the spring.

The discovery of the process of making glass will ever remain a mystery, said Aunt Martha. It has been so long in use that we are tempted to believe that it was one of the first discoveries ever made by man. One story of its discovery, which is very generally believed, is that some pirates who had landed somewhere on the southern shore

of the Mediterranean, probably in Egypt, more than five thousand years ago, built a large fire of sea-weed and drift-wood, intending to cook their food. after the fire had gone out they found that the sand where the fire had been had become very hard and brittle. Breaking off large pieces they found them transparent, but full of bubbles and little pebbles. The alkali in the sea-weed and the intense heat which had been kept up for several days had converted the shore-sand into glass, though of a very poor quality. Some merchants happening that way not long afterward were told of this discovery, and when they returned to their homes in Egypt, Phoenicia, Arabia, Syria, or probably at Thebes or Babylon or Damascus, for we cannot tell which of these countries was the earliest home of man, they experimented until they were quite proficient in the art of making glass.

From this accidental discovery fifty or sixty centuries ago, have come the beautiful things we now have in glassware. The ancients made a flexible, transparent glass which we cannot make to-day, and even the use of which we would be at a loss to know should we chance to discover the process of making it. Here you see are some ornamental flowers and a necktie bought at the World's Fair in Chicago that are made of glass, but they are not transparent and contain materials that permit bending, without in-

Some pirates built a large fire of seaweed and drift-wood.

jury to the outside coating of glass.

Now, as you see by this lot of broken glass, there are many varieties, both in color and design. All glass is made of sand and water with a chemical composition composed of potassium or sodium, with silicates of lime, lead, aluminum and others. The mixture, said Aunt Martha, must be so proportioned that there is not sufficient alkaline silicate present to render the product attackable by water or acids. It is put into a furnace for several days, or until it is reduced to a soft, sticky mass, by an intense heat. To make bottles, window panes, plate glass, crown glass, flint glass, or any desired kind or quality, no other ingredients are used, but in some, like crown or optical glass one or more silicate is left out, for one acid gives a greenish tint, another a yellow, and so on, and optical glass must be absolutely free of color.

Bottles are usually blown, though many are moulded, as are also tumblers, pitchers, bowls, etc. It would take a whole day to tell how each object of glassware is made and the purpose of each. We have several large plate glass factories in the United States, one of the largest being at Crystal City, Missouri, about thirty miles south of St. Louis on the Mississippi river. Here they make only plate glass used in windows of large office buildings and stores. At Alton, Ill., East St. Louis, and many

Bottles are usually blown.

other places in the west, are large bottle factories where skilled workmen make those handsome bottles used by druggists, and also the common beer and soda bottles. Most of the largest breweries and manufacturers of inks and other liquid products make their own bottles in the same town in which their goods are manufactured.

Plate glass is first blown into large cylinders, which, after the ends are removed, are split down their length by a diamond, and afterwards flattened out in a kiln. The men have to be very careful in handling the large sheets of glass, for many have been killed by the breaking of glass in carrying it from the tables to the polishing room. The smooth surface is secured by a long process of rubbing with

pumice, rotten stone and putty powder, very much the same way in which men polish granite and marble for monuments and buildings.

In coloring glass red, gold and copper is used; cobalt for blue; silver or iron for yellow; chromium for green, etc. These substances are put in at the time that the sand, water and chemicals are, so that they get thoroughly mixed during the boiling process. The plate glass intended for mirrors undergoes a process called annealing, similar to the process required to make cast-iron. The glass, after being rolled smooth, is placed over an intense heat, but is not permitted to become soft; it is then removed and allowed to cool gradually. In order to render the glass brittle and free from bubbles the process of annealing is repeated many times. When quite cool, quicksilver is poured over one side of the glass, and after thoroughly drying we have the finished mirror you see over on the wall.

Dinner had just been announced by old Sally, and so Aunt Martha brought her story about glass to an end, promising to give them one or two more stories after dinner.

The Story of the Cork

UNT MARTHA did not intend to spend the entire afternoon with the boys, for she had work to do in the garden, but just as they were finishing dinner it began to rain and then Aunt Martha knew that she might just as well prepare for a whole afternoon to be spent in story telling. Without waiting for the boys to ask her for a story, she went to the cupboard to see what had not already been talked about. She was surprised to find how many things there yet remained. She had told Charley and Richard all she knew about Tea, Sugar, Coffee, Salt, Currants, Flax, Sponge, Pepper, and Glass, but there were so many more things in this wonderful cupboard that she could talk and talk and talk for a week and then not exhaust the subjects yet to be found hidden away in this useful article of furniture.

There was Cork and Chocolate, Cloves, Feathers, Honey, Rice, Cheese, Cinnamon, Ivory, and a dozen

other things that she would like to talk about if these boys could remain another week. So taking two or three corks she called the boys into her large sitting room and told them she would tell them about Cork, what it is and how it is obtained.

Cork, like pepper, tea, and the sponge, said Aunt Martha, grows only in warm climates. It is the outer bark of the cork-tree that we use, and is extensively raised in South America, Italy, Asia, Africa and most of the islands of the Southern Pacific. The tree often lives to be from one hundred and fifty to two hundred years old, and has very much the appearance of our large white oak or black gum trees.

The bark is stripped from the tree just as we gather slippery elm—by cutting around the tree and peeling off the outer bark, taking care not to injure the second bark or wood. The next year new bark forms and the tree appears as it did before the bark was taken off. The tree is not injured in the least, in fact it sheds its bark every few years very much like some species of the sycamore, only the bark is from two to three inches thick, while that of the sycamore is scaly. The process is repeated only about every eight years and with each operation the bark improves in quality. The best time to gather the bark is in July and August, for it is necessary for the wound to heal before the sap comes

down, and then, too, it must be thoroughly dry before it is ready for the market.

After the outer surface has been scraped and cleaned, so as to remove every particle of rough matter, the pieces are flattened by heating them, and at the same time submitting them to great pressure on the flat surface of an oven. In the heating operation the surface is charred, thereby closing the pores, and what is termed "nerve" is given to the material. In this state the cork is ready for manufacture or for exportation. It is shipped in crates and in bundles, and late in the fall many vessels leave the South American ports bound for the United States or Europe with no other cargo than cork. The decks are piled with great bundles of this light material and it is necessary to ballast the ship with rock, though sometimes many barrels of sugar and sorghum are used in place of rock. The ballast then more than pays the cost of transportation of this cork.

Cork is very light, and, as you see, said Aunt Martha, floats, but it possesses a combination of properties which peculiarly fits it for many and diverse uses, and for some of which, it alone is found applicable. The chief purpose for which it is used is for forming buoys and stoppers for bottles, casks and other vessels intended to hold liquids.

Its compress ability, elasticity and practical im-

perviousness to both the air without and the liquid within, fit it so admirably for its purpose that the term cork is more often applied to the function than to the substance. We say, put a cork in that bottle, or, do you know where there is a cork; but how often do we see or hear a person ask for some cork?

Large pieces of cork are used to put around bottles to prevent their breaking in shipment. Its lightness, combined with strength and durability, recommends it above all other substances for forming life buoys, belts and jackets, and in the construction of apparatus for saving life at sea, or on the large rivers and lakes. It is used on handle bars of bicycles, artificial limbs, instruments and for hundreds of other purposes requiring light yet impervious material.

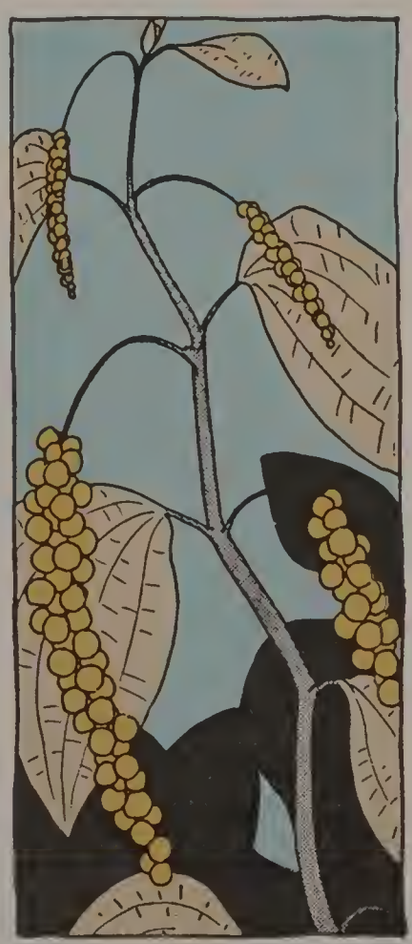
Like glass and flax and practically all the other articles of commerce that are in daily use, the discovery and practical application of cork dates back to the earliest Greek and Roman civilizations. In the writings of Horace and many others, we read of its use in making stoppers for wine and other vessels intended for liquids. It was not until about the year 1680 that cork came generally into use, and to-day there is no successful substitute for cork, as we commonly use the word, save rubber and glass, and both of these are used to a very limited extent and

It is used for forming life buoys, belts and jackets.

only in bottles containing most notably perfumes, acids and ammonia.

Richard wanted to know why it was that the Greeks and Romans understood the use of cork, glass, flax, sponge and so many other useful articles, and yet all of these things had to be rediscovered within the last four or five hundred years. Aunt Martha would like to have explained to them the many causes that produced the "Dark Ages" when there was no learning, no invention, no discoveries, and the people even forgot the use of iron and brass,

save in the most ordinary articles of necessity; but that was more than a story in itself; some time, she said, she would give them a brief history of the world, commencing with the Bible account of the Creation. They would then see why it was that the whole world slumbered in darkness until Columbus awoke the sluggards from their thousand year trance



The Story of the Chocolate (cocoa)

HOCOLATE, said Aunt Martha, is only cocoa in its manufactured form. So in speaking of cocoa or chocolate you must understand that it is from a shrub or small tree that grows wild in all warm countries. It is very extensively cultivated for its fruit in Mexico, South America, Africa, the East and West Indies. The tree seldom exceeds eighteen or twenty feet in height, and has large oblong taper-pointed leaves, and clusters of flowers. Its fruit varies from six to ten inches in length and three to five inches in breadth, and like the leaves is also oblong, but blunt, and marked usually with ten elevated ribs running lengthwise. Each fruit or pod contains from fifty to a hundred seeds, and it is from these that the cocoa or chocolate is prepared.

After the fruit is ripe, it is picked and the seeds

taken out, cleaned and spread in the sun to dry. When thoroughly dry they are roasted in large revolving metal cylinders, then bruised to loosen their skins. The skin resembles that of the peanut, and is removed by fanning, after which the bean is crushed and ground between heated rollers, which softens the oily matter, and reduces the bean to a paste. This is then mixed with variable amounts of sugar and starch to form the different kinds of cocoa, or sweetened and flavored with spices, vanilla or other extracts, after which it is made into little cakes such as we have here in this box.

In its pure state a very little of it satisfies the appetite, but it is very nourishing. The Mexicans, for hundreds of years, have been accustomed to prepare a beverage from roasted and pounded cocoa dissolved in water and mixed with maize-meal and spices. This they call chocolate. Chocolate was introduced into Europe in 1530 by the Spaniards who first learned of its value as an article of commerce during the conquest under Cortes. From Europe it found its way to the United States, or rather the colonies, about 1570.

As an article of food cocoa is exceedingly valuable, because of its large amount of nutritive matter; but as a refreshing beverage it is much inferior to either tea or coffee, owing to the large amount of fat (fifty per cent.) which it contains, and also to

After the fruit is ripe, it is picked.

the fact that the whole of the substance is taken into the stomach, while with tea and coffee only an infusion is drank.

I forgot to say, said Aunt Martha, that the tree begins to bear fruit the third year and is fully grown at its sixth year. It is short lived, as are most of the trees and shrubs in hot countries; the cocoa tree seldom lives more than forty or fifty years. The tree is extremely tender, and great care is taken of those in cultivation. In their wild state they thrive best in deep, dense forests where they are protected by the large date, palm, rubber and other trees common to hot countries. When they are set out and cultivated in fields, it is necessary to alternate the plants with a row of the trees I have mentioned, or some foliage plant that grows to a greater height than the cocoa tree, say twenty to thirty feet.

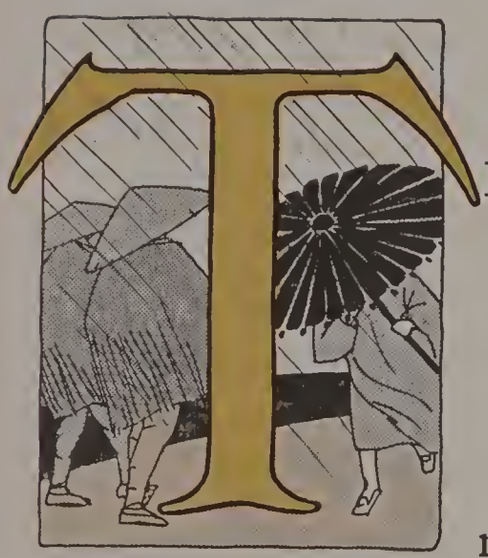
It is a very pretty sight to see a forest of cocoa trees in bloom, the flowers are a bright red and grow from all parts of the tree or shrub. One does not have to go thousands of miles to see almost every tropical plant growing. Every large city in America has one or more gardens where most of them are cultivated for the benefit of science or the public generally.

The most notable garden in the United States is in St. Louis. At an expense of upwards of $2,500,000 Henry Shaw established Shaw's Botanical

Garden in that city, which is open to the public two or three days a week. In this garden will be found all known vegetation, whether flowers, shrubs, or trees, brought from all parts of the world. Plants are blooming all the year round, and orange, lemon, banana, pineapple, citron, date, fig, olives, pepper, cocoa and a hundred other fruits can be seen forming or ripening every day in the year.

Other cities than St. Louis have botanical gardens, or observatories. In some of the parks of Boston, New York, Chicago, Cincinnati, San Francisco, and New Orleans are to be found most of the plants that are to be found in St. Louis. When you have finished your studies under Dr. Birch I will ask your father to let you go on a visit to St. Louis, where you can spend as much time as you wish in studying the tropical fruits and plants in that beautiful garden.

The Story of the Rice



THE yellow corn that waves in the field is one of the most useful plants that grows. It feeds hundreds and thousands of persons, and has been called the "staff of life." But rice feeds millions—nay, hundreds of millions!

Just open the map of Asia and look at it. Do you see the great peninsula of Hindustan? and do you see China, and Japan, and the islands round about? And turn to another map, where the New World is spread out before you. There is a state called Carolina, where the rice grows and flourishes. Nay, in Europe itself, on the banks of the river Danube, it is not lacking. So far does its domain extend.

And all the swarming hosts of China and of India feed on rice, and it is to them what bread is to us—the staff of life.

People in those hot countries do not care for beef or mutton. A little boiled rice, seasoned with pepper, makes them a good dinner. In America such is not the case. Rice is eaten, it is true, but rather smiled at for its simplicity. An American would look very blank if he had nothing set before him but a dish of rice.

The plant that bears the rice wants a great deal of moisture. When it does rain in the tropics, it pours in torrents, and comes from the clouds like a sheet of water. The water cannot run away all at once, and in some places forms a great lake. This is just the place for the rice to grow; for it must be kept, till nearly ripe, with its head just above water.

It is not very pleasant to work in the mud. But the farmer and the buffalo that draws the plough, have to do it. They wade about as best they can; and here and there a bird with long legs, called a heron, stands patiently waiting for a fish in the middle of a rice-field, as if he thought fishes must be there.

And here and there is a little shed built on poles, with a man sitting inside it. A great many ropes are fastened to it, and spread over the field. A number of scarecrows are tied to the ropes, and the man in the shed makes them jump up and down.

This is done to frighten away a flock of birds called "rice-birds," that love to pick out the grain

while it is soft and milky. When the odd-looking figures, or scarecrows, begin to jump about, the birds that have been picking and eating, and doing all the mischief they can, rise in the air and fly away. But as soon as the scarecrows are at rest again, they come back, and go on feasting on the rice.

In a month or two the flood is gone, and the field looks as if it were covered with a waving crop of barley. Then comes the busy time of harvest; and the villagers all turn out to reap, sometimes up to their knees in mud. This muddy part of the business is not very healthy, and the people who work in the rice field often die of fever.

When there is no flood likely to come upon the ground, the water is made to stand upon it from the same river. This process is called by the long name of "artificial irrigation."

We never need it in America, where the clouds keep us amply supplied; and we never meet with such a machine as a water-wheel, set up for the purpose of pumping water on the land. Nor are we obliged to coax our rivers and streams up-hill and then let them run down into the valleys. But all this is done in countries where it does not rain for months at a time.

The Chinese farmer is very fond of making terraces on the banks of a river, for his rice to grow. upon. He ploughs the land with the help of the buf-

A number of scarecrows are tied to the ropes.

falo, for horses are not used as in America. Both man and buffalo wade in the mud, and seem quite contented.

Then, when the land has been ploughed, the rice-plants are brought from a hot bed, and set in holes made on purpose. The holes are full of water, that has been pumped up from the river by the water-wheel. It is pumped up to the top terrace, and then runs down all over the rest.

This pumping goes on until the rice-stalks begin to turn yellow. Then the Chinaman stops, for he knows the plants have had enough.

When the crops are ripe, the terraces have a green and beautiful appearance, and look like gardens.

Sometimes the little trickling rill is led many miles along the country to a rice-field that wants water; and no trouble is thought too great to ensure a plentiful crop.

There is a kind of rice that does not require all this watering. It is called mountain-rice, and grows in the island of Sumatra, where it rains every few days. When the crop has been gathered in, the land is allowed to lie fallow for a time, and then it becomes covered with a great jungle-grass as much as twelve feet high. In this tall grass the tiger hides himself, or the rhinoceros comes to graze.

But when the ground is wanted for another crop,

In this tall grass the tiger hides himself.

the tall grass has to be burned off. As soon as the fire is lighted, a loud, rustling noise is heard, and the great column of flame rises and sweeps along, till the whole ground is covered with a sheet of fire.

If the traveler sees the column in the distance, he takes care to escape it if he can. But sometimes it is too quick in its march for him to get away, and then woe betide him!

When Aunt Martha had finished her story, she got up, and opening her corner cupboard, reached

down a jar of rice for the boys to look at. After that, she showed them a picture of the plant itself, as it looks when growing. It had three ears on the top of each stalk, and each ear had awns to it.

Charley said it was almost like barley.

Richard said he should like to see a Chinaman ploughing, with his buffaloes, in the mud. He had once seen a Chinese giant; he wore his hair in a long pigtail down his back.

Charley asked what the ladies did to make their feet so small.

Aunt Martha said, that when they were babies, their feet were fastened up in tight bandages, so that they could not grow. When Charley got home, he must ask his father to take him to the museum, and show him all the curious things that were there.

The boys then began to talk about the rice-puddings they had at school. Charley said he should like them better, now he knew that so many people lived on rice, without any meat at all.

Aunt Martha observed that everything in her corner cupboard had told them its story. The tea-cup, and the tea, and the sugar, and the coffee, and the rice, and the salt, and the currants. It was well they were going home so soon, for there would be no more tales to tell. Yes, she believed everything had told them its story.

Charley said, might he see? And, before his aunt had time to reply, he had jumped on a chair, and was peering into her cupboard. What was that yellow jar hidden up so snug? What had that inside it?

Aunt Martha said that indeed she had forgotten that; it was her honey-jar. If they liked, she would tell them a tale about Honey to finish with; it would be short and sweet.

The Story of the Honey

MOST of the things in my corner cupboard have been made, or as it is called, manufactured, by man. And if he has not made them, he has at least prepared them for use. Even the tea and the coffee and the sugar have to pass through his hands before they come to the table.

But I am now to tell you about something with which he has very little to do. He has neither made nor prepared it, and yet it is something we all like very much, and should be sorry to do without.

The garden in summer-time is full of bright-colored flowers. The rose, and the honey-suckle, and the jessamine that climbs over the porch; and the white lily, and the pink, and the carnation. Now in the deep recess of the flower a sweet juice lies hidden. It is not honey, but it is the stuff out of which honey is made.

The garden in summer is full of flowers.

A hundred little workmen are busy carrying away the juice—or, as it is called, the nectar—for the very purpose of making honey. You will guess that I mean the bees. But the bees are very knowing, and they do not take the nectar out of all the flowers; they skip over some, as if they did not like them.

The bee is very intent on its work. It lives in the hive by the garden wall: though it has plenty of relatives who do not live in a hive, but make their nests out in the fields and woods; but they all carry on the same trade,—that of honey-making.

No one can take any liberties with the bee, because it is armed with a sharp little sword called a sting; but it is worth while to stand a minute and see what it is about.

It has a tongue which is a great deal too long for its mouth, so it lies folded down on its breast. When the bee settles on a flower, it thrusts its long tongue deep into the very bottom of it. The tongue is like a sponge, and sucks up all the nectar. The nectar passes along the body of the bee to a curious little bag called the honey-bag, which seems made on purpose to hold it.

By-and-by the bee flies off home to the hive with its honey-bag quite full. The hive, as you know, has a great many cells in it made of wax, and they form what is called the honey-comb.

By-and-by the bee flies off home to the hive.

The bee pushes its head into a cell, and empties the honey by drops out of its honey-bag; and then comes another bee, and does the same till the cell is quite full; and then it is closed up with a waxen lid to keep out the air.

I do not pretend to find out a secret known only to the bee, but it is quite certain that the nectar by some means or other has become changed into honey. It is full of little bright crystals like sugar, and has a pleasant smell, and a taste I need hardly describe.

All over the country, in every garden, are the little honey-makers at work from morning till night. They

are doing it to lay up a store of food for themselves. But honey is very nice, and the wax of which they make their comb is very useful; so the bee is robbed every year.

It would not be easy to rob the hive in an open and straightforward way, because of the sharp little swords I have told you about. But the owner of the hive gets some round white balls that are found in the fields, and are called furze balls, and sets them on fire under the hive. The smoke gets in among the bees, and makes them drop down as if they were dead.

But, I am happy to say, they come to life again, though not before their beautiful comb with all its nice honey has been carried away.

There is a bird called the honey-guide, that lives in Africa, in the country of the Hottentots. It is rather larger than a sparrow, and is so fond of honey that it is always looking for some. There are no bee-hives in that country, but the bees make their nests in the hollow of a tree, or in some other sheltered place.

The bird is sure to find its way to the bee's-nest, but it does not like to attack it, for fear of being stung. So it begins to call out in its own way for some one else to come; it makes a loud piercing cry, that is well known by all who are within hearing.

Sometimes the bear is lurking about among the trees, and he hears it; and by-and-by he sees the bird

The bear follows for he loves the taste of honey.

perched on some branch close by. The bird flies towards the nest of the poor unsuspecting bees, and the bear follows; for he loves the taste of honey, and this is not the first time, by any means, that he has gone after the honey-guide. He does not much care about the stings, though they sometimes put him into a great passion. At any rate, he pulls out the nest with his feet and paws, and feasts on the honey; and while the bear is eating, the bird is sure to get as much as it wants.

The Hottentot knows the voice of the honey-

guide, and follows it with great delight. When he reaches the nest, he does not forget his kind friend; he takes care to leave behind that part of the comb which contains the eggs and the little grubs, for the bird likes these better even than the honey.

And he would not catch or kill the honey-guide for any reward that could be offered. A traveller once told a Hottentot that he would give him any number of glass beads and a great deal of tobacco, if he would set a trap for the honey-guide. But the Hottentot would do nothing of the kind.

"The bird is our friend," he said, "and we will not betray it!"

Richard and Charley were very sorry when Aunt Martha came to the end of her story, and they might have said more about their regret that it was to be the last, had not Charley espied old Sally getting the jar of honey out of the cupboard.

What was she going to do with it? Charley was not wrong in guessing; although, on sitting down to tea, he made believe to look surprised at a nice slice of bread and honey on the plate before him. How good it was!

He asked Aunt Martha why she did not keep bees, she had so many flowers in the garden.

Aunt Martha said she had thought about it, and that perhaps next time they came to see her, they might find she had set up a bee-house.

The next day, the boys returned to school. Aunt Martha was very sorry to part with them but old Sally predicted they were going back to learn, and she was not a bit afraid of their turning out dunces.

Old Sally was right; for the two boys had no sooner got back to school than they set to work in earnest: indeed, the very first thing they did was to pull out of their desk their dog's-eared geography. They wanted to see if it said anything about the places their aunt had told them of in her stories. When they found that it did, they hastened from one to another of the great maps which hung on the school room wall, talking all the time about Brazil and China, Zante and Corinth. One would have thought they had just come back from a voyage round the world!