

THE LIFTING OF THE FOG.
("The Brooklyn Bridge."—Page 689.)

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HOW JOHNNIE'S MEN STRUCK WORK.

BY SOPHIE SWETT.

It did seem strange that, just as soon as Mr. Sparrow went to Colorado for his health, everything about the creamery began to go wrong. Johnnie had been *determined* that everything should go right. He had told his father, over and over again, that he need not feel the least uneasiness about the business, because *he* should look after it. Johnnie was not quite fifteen, but he was the tallest boy in Potowka for his age, and when he talked about managing the business while his father was away, he always seemed to grow several inches taller.

Smart? Johnnie had his own opinion about that, and almost all Potowka was inclined to agree with him.

He had won all the prizes there were to be won at the grammar-school, and without seeming to try, either, for he was never known to be studying when he was wanted to join in any game, and everybody said they had never had a Fourth-of-July orator at Potowka who could equal him at declamation. At a game of ball he was sure to be on the winning side, and when there was a rowing match on the river, everybody regarded it as a foregone conclusion that Johnnie Sparrow would bring his boat in ahead.

That was the kind of boy that Johnnie Sparrow was.

His father kept one of the largest stores in Potowka, and a creamery besides. Johnnie did not think much of the store, but the creamery suited him. He had almost decided that the firm

should be John J. Sparrow & Son when he grew up. When he was younger, he had thought that he should run for Congress, or keep a livery stable, but he found that with advancing years his ambitions changed.

He felt very proud when the long trains of refrigerator cars went off laden with butter and cheese, to fill orders that had come to Potowka, the little village in the heart of Illinois, not only from Chicago and St. Louis, but from far-away New York and Boston. For no butter was sweeter and yellower, no cheese had a richer flavor, than that made in John J. Sparrow's creamery.

When a very large load was sent (fifteen tons sometimes went at once) Johnnie felt as if everybody would have a surfeit of butter, and it would never be possible to sell any more. But still orders kept coming—sometimes from the very city to which the fifteen tons had just gone. It seemed as if everybody must live on butter. Johnnie had almost come to the conclusion that it was butter that made the world go round. And he certainly talked as if it were. He sternly rebuked his little sister Minty, who held buttercups under people's chins to see whether they loved butter.

"Everybody loves butter," he said. "Anyway, you must n't put it into people's heads that they don't, because it might hurt the business!" By which you will see that Johnnie was of a practical turn of mind.

But he was not so practical but that he sometimes enjoyed revolving in his mind a scheme by

which the whole world was to be supplied with butter from his father's creamery. He had dreams of establishing an agency for the creamery in Japan, and even in the Cannibal Islands. From the north pole to the south there should not be a spot where Sparrow & Son's butter was unknown.

Just how many cows they should have to keep, and just how many men would be required to collect cream enough in the country around; just how large a steam-engine they would need, and just how many pigs it would take to eat up the buttermilk, when that day came, he tried in vain to calculate. But, then, arithmetic was not Johnnie's strong point.

He had, however, very little doubt of his own ability to manage such a business as that when he grew up.

With such confidence in his power to do great things, it was certainly very humiliating to Johnnie that, just as soon as his father left for Colorado, things began to go wrong in the creamery.

It was more aggravating from the fact that Johnnie's uncle Daniel seemed to think that *he* had been left in charge of the creamery, and when he was unexpectedly called away to New York on business, he patted Johnnie on the shoulder, and said:

"You're getting to be a big boy, Johnnie; you can keep an eye upon the business. I am sorry that I'm obliged to go away, but I know your father trusts you a great deal, considering you're only a boy, and there's Jotham Jenkinson, a good, faithful man, to take the responsibility."

Very condescending, as you see, was Uncle Daniel, who kept a hardware store, and scarcely knew cream from skimmed milk. Johnnie had resolved to show him whether he knew how to manage the business or not—he whom Uncle Dan called only a boy.

But, alas! things had gone wrong.

In the first place, Jotham Jenkinson, the engineer, fell ill of rheumatic fever, and there was nobody to take his place. Johnnie made inquiries, and sent letters far and wide, but it was in a busy season, and every man who understood running an engine was occupied. Young Jotham Jenkinson thought he could run the engine about as well as his father, but young Jotham was barely sixteen, and everybody said a boy ought not to be trusted with so responsible a position. The other men did not like the idea of working under a boy, and gave Johnnie to understand that they should leave if he employed young Jotham.

In the meantime, work in the creamery was at a stand-still. It did not pay to buy cream only to grow sour, and the people who were in the habit of supplying the creamery threatened to make an

engagement to sell their cream to a rival firm in an adjoining town; and the men who collected the cans of cream, although they received their pay regularly, thought they had better offer their services to the rival firm, since it certainly seemed probable that the Potowka creamery would come to an untimely end and throw them out of employment. The cream from their own cows was fed to the pigs, but they knew the difference, or Johnnie fancied so, and grunted dolefully for their accustomed buttermilk.

Orders came in thick and fast, with threatenings from the different firms to give their trade to those who could supply them promptly. Johnnie was at his wits' end. He had thought of telegraphing to his father to ask what he should do, but the doctor had said his father must have absolute freedom from care, and such news might be seriously injurious to him.

He might telegraph to Uncle Daniel, but what did Uncle Daniel know about it? Aunt Daniel had come to the creamery, and had wrung her hands because the pigs were eating all the cream, and had said she should write to Uncle Daniel. She could if she wanted to, but *he* should n't, Johnnie said to himself.

But something must be done. Johnnie felt as if he should really become crazy, as he walked about the creamery and looked at the engine that did n't go, at the horses and wagons standing unused in the stable, at the empty churns, the empty butterworkers, and the pigs squealing for their buttermilk.

One day, he heard a man say that "the creamery never ought to have been left with nobody but a boy to look after it." And that day Johnnie made up his mind.

The first thing he did after that important event happened was to go to see young Jotham Jenkinson. The two boys had a long conference behind the wood-pile in young Jotham's back yard, Johnnie insisting upon privacy.

That the interview was satisfactory to Johnnie might be inferred from the fact that he turned a double somersault in the seclusion afforded by the wood-pile after young Jotham had left him. Young Jotham looked unusually serious as he returned to the house, but he was an old boy for his years, and had a great sense of responsibility about whatever he undertook.

Johnnie was so grave and dignified when he re-appeared on the main street that nobody would have believed that wood-pile if it could have told what it had seen.

He next made a call upon Absalom Decker. Absalom was a boy of about Johnnie's own age, who had worked more or less upon his father's

farm since he left off wearing dresses. He was not a very brilliant scholar; he could do addition, if you gave him time, and he professed a firm belief that the earth was round, after being kept after school every day for a month to find it out, and, furthermore, having his faith aided by the school-master's rattan. But he had a cloudy idea that Patagonia was a suburb of Paris, and a strong conviction that the Sultan of Turkey was a North American Indian.

But Absalom was a marvel of strength and toughness. He could do more work than any three boys in Potowka; and as for lifting, there *were* boys who believed he could lift the church and carry it off on his back if he wanted to.

He was very slow of comprehension; it was a long time before he seemed to get any idea of Johnnie's plan, and then it required a great deal of logic and persuasion to make him agree to do what Johnnie wanted him to. He made so many objections, in his slow, stammering way, that Johnnie almost lost heart, and quite lost his temper. Absalom was so aggravating, sitting on the top rail of the fence, with his hands in his pockets, and his long legs dangling, saying:

"You're the ser-mar-mar-martest boy I ever saw, Johnnie, but you ker-ker-can't do it! Men always work in a cre-cre-creamery, not b-b-boys. And Jotham might be reading a b-b-book—he always is reading a b-b-book—and let the b-b-boiler burst, and b-b-blow up ev-everything. Or the cars might go to ker-smash, and you'd lose all your b-b-butter, or the ker-ker-cows get poisoned, or your father get well, or your Uncle D-D-Daniel come home, or s-s-something. S-s-something always does happen to a b-b-boy!"

But in the end Johnnie secured Absalom's services, Absalom's father giving his consent, although with a good deal of amusement, as if he regarded it as a joke.

Three or four other boys Johnnie hired without any difficulty, except in the matter of wages, they considering that they ought to receive as much as men if they did the same work, while Johnnie thought that when it came to the question of wages boys were boys!

Johnnie went home, and with his grandest air discharged the few remaining workmen from the creamery. In less than an hour the rumor had spread all over Potowka that Sparrow's creamery had closed for good.

But, lo and behold! the very next morning work was resumed.

Collectors went over the old route and brought the big cream-cans back full. Into the churns went the cream, and the engine, starting up with as much spirit as if it had never known an idle

moment, churned it into butter; it seemed to Johnnie that he had never heard such a delightful roar, and rush, and clatter. Strong hands moved the butter from the churns to the butter-workers, and with a whisk and a splash and a spatter the engine worked it; and before night there were rows and rows of tubs ready to be sent to the railroad early in the morning, and the pigs' voices were drowned in buttermilk!

And, as Patsy O'Brien, who took care of the pigs, remarked: "The workmin was ivery man o' them b'ys!"

It must be acknowledged that Johnnie strutted and tossed his head considerably about the streets of Potowka the next day. The general topic of conversation was the doings at the creamery; and while there were some who ridiculed and prophe-sied that the prosperity would be short, and wondered where in the world Mr. Daniel Sparrow was, that that boy was allowed to go on as he did, there were others who had always known that Johnnie was an uncommonly smart boy, and since there was no work at the creamery that boys could not do, they saw no reason why it could not be kept running—provided, of course, that the boys did not get tired of it.

The orders that came in were filled "with promptness and dispatch," to quote from telegrams which Johnnie sent to both his father and Uncle Daniel, and Aunt Daniel actually wept tears of joy at seeing the pigs restored to their buttermilk diet, and decided not to write to Uncle Daniel. A letter came from Johnnie's mother, who was with his father in Colorado, saying that it was gratifying to hear that matters were going on so well at the creamery, but his father's condition was such that perhaps he had better say nothing about business in his letters for awhile. His father was perfectly confident that Jotham Jenkinson, the engineer, would manage the business as well as it could be done in his absence, and was able to keep it out of his mind if he heard nothing to recall it to him.

Johnnie was sure that he should have no difficulty in obeying that injunction, and he trusted that nobody in Potowka would be so officious as to write to his father that the engineer was disabled, and boys were running the creamery. For although his father was a very sensible man, he might not be above the common prejudice about boys, and think they were not fit to manage a business and do the work alone.

Uncle Daniel wrote that he was especially glad to hear that there was no trouble at the creamery, because he found that he should be detained for several weeks in New York. Johnnie felt that he could be resigned to Uncle Daniel's absence for as long a time as he found it convenient to stay.

Uncle Daniel never seemed to have the least respect for boys, perhaps because he had none of his own, and knew very little about them. He would be sure to regard the doings at the creamery as mere child's play, and feel it to be his duty to make a revolution. For he thought the creamery had been left in his charge. And Jotham Jenkinson, the engineer, thought it had been left in his. But Johnnie thought that, as it belonged to his father, it was clearly his right and duty to manage it, *and he meant to do it.*

And now that his bold stroke had turned out so well, he felt himself to be master of the situation.

A week passed, and work still went on prosperously at the creamery. Absalom Decker had thrashed Alonzo Herrick for spilling a can of buttermilk all over him; and one of the collectors had stopped his team so long to watch a base-ball match that the cream had all soured; and half a dozen cheeses had been gnawed by rats. But Johnnie was not discouraged by these little misadventures. He gravely admonished the guilty boys, and got a dozen traps and half as many cats to dispatch the rats; and he wisely argued that he might have had the very same trials if he had hired workmen instead of work-boys.

The boys became very proud of their position. They fully believed Johnnie when he told them that the work had never been so well done before, and, strange as it may seem, that was the root from which trouble sprang!

The boys decided that they ought to have higher wages, but when they expressed that opinion to Johnnie, he told them, with the firmness and decision which he thought becoming to a man of business, that he should not pay them a penny more. He was paying them more than they could earn in any other way, and, besides, they felt a pride in the business; there was no fear that any one of them would leave, Johnnie said to himself. And he adopted an independent and lordly bearing toward them which was intended to show them that there was not the slightest chance of his yielding to their demands.

That night the boys held a council in Jotham Jenkinson's back yard, behind that identical wood-pile that had concealed Johnnie's somersault from the public gaze.

Alonzo Herrick, who was the chief spokesman, had a newspaper containing an account of a strike of iron-workers in a Pennsylvania city, which he read aloud to the boys, who listened with breathless eagerness.

Potowka was in the midst of a farming region, and strikes were almost unheard of; but they all agreed with Alonzo Herrick that there was no reason why Potowka boys should allow their rights

to be trampled upon — all except Absalom Decker; he had some misgivings.

He "did n't know but they had b-b-better keep right on, seeing Johnnie was n't one to give in easy." But Absalom was soon brought to terms by the other boys, and the momentous agreement to strike for higher wages the next day was made, and solemnly ratified.

So it happened that the next forenoon, just as some extra orders came in, which it was very important to have filled at once, Johnnie went into the creamery and found work stopped, with the churns full of cream that was just beginning to show little floating specks of butter, and the cream-cans empty that should have gone out on their daily routes to be filled with cream at the neighboring farms; with the butter-workers full of half-worked butter, and the tubs and firkins that ought to be filled and on their way to market still empty. Johnnie might have been at a loss to understand what it all meant if it had not been for placards pasted upon the walls, with these astonishing sentiments, in very black letters, upon them: "Down with The Opresur!" "Potowka Boys Never will Be Slaves!" "Good Work deserves Good Wages!" "Liber is King!" "Down with the Tirant!" "Long Live the People!" "We Must and Will have Bread!"

Johnnie was considerably impressed. They certainly were very fine sentiments, even with their glory somewhat marred by faulty spelling. He felt guilty, as if he really were an "opresur" and a "tirant."

But after he had reflected a little, and become somewhat accustomed to these placards, with their big black letters staring at him, and calling him names, his feelings changed. Johnnie possessed a liberal share of that lively commodity known as temper. And it flared up.

If those boys thought they could get the better of him, and make him pay them more wages by any such trick as that, they were mistaken! He would get others to take their places at once.

But how? Johnnie's heart sank as that question confronted him. He knew there was not a boy in Potowka, except young Jotham Jenkinson, who understood how to run the engine, and there was scarcely one to be hired for the other work.

Suddenly, in the midst of his despair, a bright idea struck Johnnie. There was a cheese manufactory at Yankton, a town twenty miles away, from which he had heard that a good many boys had been lately discharged. He had a vague recollection of hearing that it was for misconduct that they had been discharged, but they would be sure to know something about the business, and one could not be stopped by trifles in such an emer-

gency! If they were bad boys, Johnnie felt sure that he could manage them. And in a very short space of time he was on his way to Yankton, prepared to offer almost any wages to the discharged cheese-makers.

They *were* a rough-looking set,—Johnnie was forced to acknowledge that to himself, but they were big and strong, and two of them professed to understand how to run an engine; so, although they called him "young feller," and various other slang names that tried his dignity, and persisted in regarding his offers as a joke, Johnnie used all the arguments he could think of to persuade them, and they finally promised to go to Potowka the next day, and "see how they liked the looks of things."

On that next day, the boys who had disappeared, not only from the creamery but from the streets of the town, as suddenly as if the earth had opened and swallowed them up, came slinking around the creamery. In some way, they seemed to have got an inkling of what was going to happen. (Johnnie *had* confided it to a few intimate friends.) Young Jotham Jenkinson and one or two others made several shy hitches, and cast conciliatory glances in Johnnie's direction, but Johnnie ignored them, save for a scornful look. If only his new hands came, as they had agreed, he should be master of the situation, and could bid defiance to the strikers.

In any case, he would not take them back, though they should get down on their knees to him.

And there the new hands were! A group of rough-looking boys, probably just alighted from the train, was coming up the road toward the creamery. Very rough-looking they were. The guardians of public morals in Potowka were very strict, and Johnnie had some fear that his new workmen would be arrested as suspicious and desperate-looking characters before they reached the creamery.

But no such misfortune befell them; they came shuffling and swaggering up to the creamery, while the old hands, who had gathered themselves into a group, looked at them and then at each other in wonder and dismay.

Suddenly—if any of his movements could be described as sudden—Absalom Decker planted himself in the door-way.

"Maybe you'd b-b-better not let them in here! We might be apt to p-p-pitch them out," he said to Johnnie.

"Remember what the strikers did that I read about, boys!" cried Alonzo Herrick, putting himself into a fighting attitude.

"Well, now, if there's going be fun, 't was n't such a bad plan for us to come," said the biggest of the new hands, proceeding, with great deliberation, to take off his jacket.

Matters were assuming a serious aspect. Johnnie, who had a great horror of a disturbance, began to have an uneasy consciousness that he was *not* going to be master of the situation; that position was being rapidly taken out of his hands. The queerest thing about it was that, now that these Yankton roughs seemed about to engage in a fight with the Potowka boys, Johnnie felt an impulse to pitch in on the Potowka side. The origin of the difficulty, and the fact that the Potowka boys were the aggressors, seemed to escape his mind. Some of the Potowka boys wavered and hung back a little—the Yankton boys were so much larger, and were evidently so much more used to warfare; but Absalom Decker was evidently all ready to "grace battle's brunt."

There was a kind of savage war-whoop, and a wild rush, when suddenly into the midst of the *mêlée* stepped Uncle Daniel! He had his portmanteau in his hand, and his spectacles and tall hat on awry. His clothes were very dusty, his face was very red, and he was almost breathless with haste and anger.

"A pretty state of things, upon my word!" he cried, while the combatants fell back, but remained in fighting attitude, as if all ready to resume hostilities the moment the interruption should be over. "A pretty state of things! Half the men in Potowka writing to me to come home and save the creamery from going to ruin! And I should think it was time! Hiring a lot of *boys* to run the creamery! Why was n't I informed that the engineer was sick? I never heard of a boy taking so much upon himself since I was born! But it's a good deal the fault of your bringing up, and I shall tell your father so! When I was young, boys were kept in their places! It's a wonder you have n't been chosen Selectman before this time! Maybe that's too small business for you, though! I expect you'll be running for President in a year or two!"

All these unpleasant remarks Johnnie bore with meekness. Uncle Daniel had come at an opportune moment, and the relief that Johnnie felt in his presence made the sting of his words less hard to bear.

"Now I would have *you* to understand," pursued Uncle Daniel, turning from Johnnie to the crowd of boys, "that I am the manager of this creamery, and I don't want to hire any boys! The sooner you're off the premises the better!"

The Yankton boys demurred, and made some threats of thrashing Johnnie for getting them there under false pretenses, but they finally decided that discretion was the better part of valor, and moved off.

The Potowka boys gathered around Johnnie,

their late "opresur" and "tirant," with an air of sympathy and good-fellowship.

"I telegraphed to your father how things were going," said Uncle Daniel, "and asked him what I should do, and here's his answer!" And he drew a telegram from his pocket, and unfolded it before Johnnie's eyes, and, what was worse, before the eyes of all the boys. It contained these four crushing words:

"Send Johnnie to school."

"D-d-don't you mind, Johnnie," said Absalom Decker, "I t-t-told you so! Folks are always d-d-down on a b-b-boy."

"If you had n't struck, it would have been all right!" said Johnnie, returning to his grievances against his friends, now that the common enemy had departed. "We were going on splendidly! Boys are fools, anyway!"

"It would have been all right if you had paid us

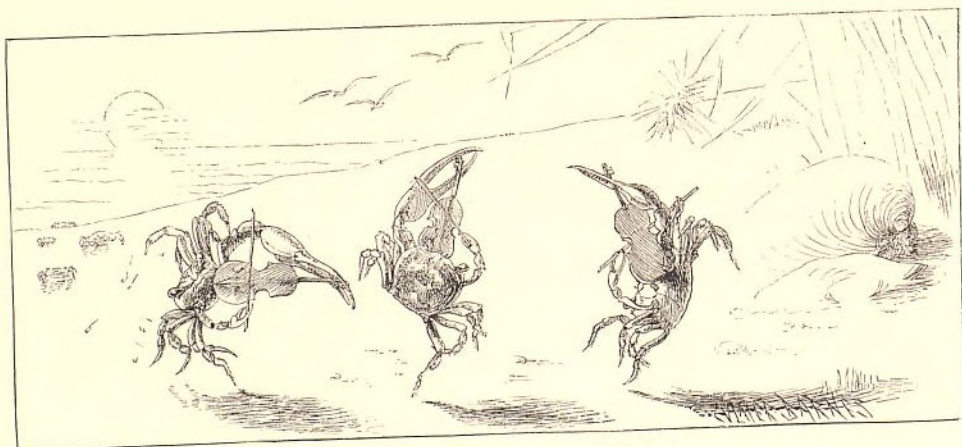
the wages that we ought to have had!" put in Alonzo Herrick. "Boys *don't* know how to manage business!"

"You would have struck before long if I had," grumbled Johnnie. "You wanted to do it for the fun of it!"

And there *was* a guilty look on the faces of the boys!

At the Drumfield Academy, where Johnnie is a pupil, the boys are often entertained by wonderful stories of the success of the Potowka creamery when Johnnie managed it; but just how Johnnie's management came to an end they have never had explained to them.

Johnnie has decided that, after all, he shall not have a creamery when he grows up. There are so many vexations attendant upon a business life that he has returned to his old plan of a future career, and means to run for Congress.



"OLD KING COLE was a jolly old soul,
And a jolly old soul was he;
He called for his pipe, and he called for his bowl,
And he called for his fiddlers three."

Now who were the fiddlers? And what did they fiddle,
And where were the fiddlers three?
A fiddle for fiddles! King Cole is a riddle—
The fiddlers are down by the sea.



"IN THE COOL OF THE MORNING."

RECOLLECTIONS OF A DRUMMER-BOY.

NEW SERIES.

BY HARRY M. KIEFFER.

II.

A MUD-MARCH AND A SHAM BATTLE.

We had been lying in winter quarters at Belle Plain some two months, early in the spring of 1863, without having yet had much to vary the dull monotony of a soldier's ordinary life. There was, of course, plenty of work in the way of picket-duty and endless drilling, and an abundance of fun in the camp, of one kind or other; but of the fatigues

of the march and the excitement of battle we could so far form not the slightest conception. It is my purpose, in the present paper, to give the readers of ST. NICHOLAS some little account of our first mud-march, and the sham battle to which it led.

It was Monday, April 20th, 1863, when we suddenly received orders for the march. As good luck would have it, Andy and I had just finished a hearty meal on apple-fritters; for by this time we had repaired our chimney, which had been destroyed by the fire, and had already several

times prepared our fritters without burning our house down over our heads in the operation. Having finished our meal, we were lying lazily back against our knapsacks, disputing whose turn it was to wash the dishes, when Andy, half-catching the sound of an unusual order, with the nimbleness of a frog suddenly leaped out of the little door in the side of our cabin into the Company street, exclaiming:

"What's that, Sergeant? What's up?"

"Orders to move, that's all," said the sergeant.

"Orders to move—that's what! Pack up immediately."

"Where are we going?" queried a dozen voices in chorus, as the boys tumbled out of their tents and gathered about the sergeant in a group.

"You tell me and I'll tell you," answered the sergeant, with a shrug of his shoulders, as he shouted: "Pack up immediately, men! We go in light marching order. No knapsacks; only a shelter or gum-blanket, and three days' rations in your haversacks, and be lively now."

It was not long before we were all ready, our haversacks duly supplied with hard-tack, pork, coffee, and sugar, and our gum-blankets or shelters, rolled and twisted into a shape somewhat resembling an immense horse-collar, slung over the shoulder diagonally across the body, as was universally the custom with the troops when knapsacks were to be dispensed with in winter, or had been thrown away in summer. We drummer-boys, tightening our drums and tuning them up with a tap-tap-tap! of the drum-stick, took station on the parade-ground upon the hill, awaiting the adjutant's signal to beat the assembly. At the first tap of our drums, the whole regiment, in full view below us, poured out from its quarters, like ants tumbling out of their hill when disturbed by the thrust of a stick. As the men fell into line and marched by companies up the hill to the parade-ground, where the regiment was ordinarily formed, cheer upon cheer went up; for the monotony of camp life was plainly at an end, and we were at last to be up and doing, though where, or how, or what, no one could tell.

When a drum-head is wet, it at once loses all its charm and power, for it sounds as hoarse as a frog. On the present occasion our drum-heads were soon soaked, for it was raining hard. So, unloosing the ropes, we slung our useless sheepskins over our shoulders, as the order was given: "Forward, route-step, march!" The order of "route-step" was always a merciful and welcome command; for the readers of ST. NICHOLAS must remember that troops on a march always go by the "route-step." They march usually four abreast, but make no effort to keep step; for marching in reg-

ular step, though good enough for a mile or two on parade, would soon become intolerable if kept up for any great distance. In "route-step," each man picks his way, selecting his steps at his pleasure, and carrying or shifting his arms at his convenience. Even then marching is no easy matter, especially when it is raining, and you are marching over a clay soil. The soil about Belle Plain was the toughest and most slippery clay in the world, it seemed to us—at least, in the roads that wound serpent-like around the hills, among which we were marching, and where many a poor mule, during the winter, stuck fast and had to be pulled out, or, if that was impracticable, left to die in his tracks after the harness had been ripped off his back.

At first, however, we had tolerable marching, for we took across the fields and kept well up on the high ground as long as we could. We passed some good farms and comfortable-looking houses, where we should have liked to go in and buy some bread and butter, or get some pie and milk; but there was no time for that, for we made no halt longer than was necessary to allow the rear to "close up," and then were up and away again at a swift pace.

The afternoon wore on. Night set in, and we began to wonder, in all the simplicity of new troops, whether Uncle Sam expected us to march all night as well as all day. To make matters worse, as night fell dark and drizzling, we left the high ground and came out on the main road of those regions: and if we never before knew what Virginia mud was like, we knew it now. It was knee-deep, and so sticky that, when you set one foot down, you could scarcely pull out the other. As for myself, I found my side-arms (if they deserve to be dignified by that title) quite an incumbrance. Drummer-boys carried no arms, except a straight, thin sword fastened to a broad leathern belt about the waist. Of this we were at the outstart quite proud, and kept it polished with great care. However, this "toad-sticker," as we called it, caused us a world of trouble on this mud-march, and well illustrated the saying that "pride goes before a fall." For as we groped about in the darkness, and slid and plunged about in the mud, this sword was forever getting tangled up with the wearer's legs, and, whenever it came between his knees, down he went sprawling on his face in the mud. My own toad-sticker I handed to the quartermaster after this march was done, agreeing to pay the price of it thrice over rather than to carry it any more. The rest of the drummer-boys, I believe, carried theirs as far as Chancellorsville, and then solemnly hung them up on an oak tree—where they are to this day, unless some one has

found them and carried them off as trophies of war.

We had a little darkey along on this mud-march, who had an experience that night which was as provoking to him as it was amusing to us. The darkey's name was Bill. Other name he had none, except "Shorty," which had been given him by the boys because of his remarkably short stature. For, although he was as strong and as old-fashioned as a man, he was so dwarfed in size that the name Shorty seemed to become him better than his original name of Bill. Well, Shorty had been employed by one of the captains as cook—which office, on this occasion, seemed also to include the duties of a sumpter mule. For the captain, having an eye to comfort, had loaded the poor darkey with a pack of blankets, tents, pans, and

we forded a creek, and kept still on and on, till at last we were allowed to halt and fall out on either side of the road into a last year's corn-field, to "make fires and cook coffee."

To make a fire was an easy matter, notwithstanding the rain. For some one or other always had matches, and there were plenty of rails at hand, and these were dry enough when split open by a hatchet or ax. In a few moments the fence around the corn-field was carried off, rail by rail, and everywhere was heard the sound of axes or hatchets, the premonitory symptoms of roaring camp-fires, which were soon everywhere blazing along the road.

"Harry," said my lieutenant, "I have n't any tin cup, and when you get your cup of coffee cooked, I believe I'll share it with you. May I?"



THE QUARTERMASTER'S TRIUMPH.

general camp equipage, so large and bulky, that it is no exaggeration to say that Shorty's pack was quite as large as himself. All along it had been a wonder to us how he had managed to pull through so far with all that immense bundle on his back; but, with strength far beyond his size, he had trudged on at the captain's heels over hill and through field quite well, till we came at night-fall to the main road. There, like many another sumpter mule, he stuck fast in the mud, so that he could not pull out either foot, and had to be dragged out by force.

At length, in the thick darkness, no one being able to see an inch before his face, we lost the road. Torches were then lighted to find it. Then

"Certainly, Lieutenant. But where will I get water to make the coffee? It's so dark nobody can see how the land lies so as to find a spring."

The lieutenant not being able to aid me with any suggestions, I silently, and without telling him what I was about, scooped up a tin cupful of water (whether clean or muddy I could not tell—it was too dark to see) out of a corn-furrow. I had the less hesitation in doing so, because I found all the rest were doing the same, and if they could stand it, I could too. Tired as I was, I could not help but be sensible of the strange, weird appearance the troops presented, as coming out of the surrounding darkness I faced the brilliant light, with groups of busy men every-

where. There they sat, squatting about the fires, each man with his quart tin cup suspended on his iron ramrod, or on some convenient stick, and each eager and impatient to be the first to bring his cup to the boil. Thrusting my cup in among the dozen others already smoking amid the crackling flames, I soon had the pleasure of seeing the foam rise to the surface—a sure indication that my coffee was nearly done. When the lieutenant and I had finished drinking it, I called his attention to the half-inch of mud in the bottom of the cup, and asked him how he liked coffee made out of water taken from a last year's corn-furrow. "First-rate," he replied, as he took out his tobacco-pouch and pipe for a smoke—"first-rate. Gives it a good flavor, you see."

"Fall in!" It was now half-past eleven o'clock, and away we went again, slap-dash, in the thick darkness and bottomless mud. At three o'clock in the morning, during a brief halt, I fell asleep sitting on my drum, and tumbled over into the road from sheer exhaustion. Partly aroused by my fall, I spread out my shelter on the road where the mud seemed the shallowest, and lay down to sleep, shivering like an aspen.

At six o'clock we were aroused. And a pretty appearance we presented, for every man was covered with mud from neck to heels. However, daylight having now come to our assistance, we marched on in merrier mood toward Port Royal, a place or village on the Rappahannock, some thirty miles below Fredericksburg, and reached our destination about ten o'clock that forenoon.

As we emerged from the woods and came out into the open fields, with the river in full view about a quarter of a mile in front, we were persuaded that now at last we were to go into battle. And so indeed it seemed, as the long column halted in a corn-field a short distance from the river, and the pontoon trains came up, and the pioneers were sent forward to help lay the bridge, and signal flags began flying, and officers and orderlies began to gallop gaily over the field—of course we were now about to go into our first battle.

"I guess we 'll have to cross the river, Harry," said Andy, as we stood beside a corn-shock and watched the operations of the men engaged in putting down the pontoons, "and we 'll have to go in on 'em and gobble 'em up."

"Yes," answered I, "gobbling up 'is all right; but suppose that over in the woods, on the other side of the river yonder, there might happen to be a lot of Johnnies watching us, and ready to sweep down and gobble *us* up while we are crossing the river—eh? That would n't be nearly so nice, would it?"

"Hah!" exclaimed Andy, "I 'd like to see 'em do it! Look there! There come the boys that 'll drive the Johnnies through the brush!"

Looking in the direction Andy was pointing,—that is, away to the skirt of the woods in our rear,—I beheld a battery of artillery coming up at full gallop toward us, and making straight for the river.

"Just you wait, now," said Andy, with a triumphant snap of his fingers, "till you hear those old bull-dogs begin to bark once, and you 'll see the Johnnies get up and dust."

As the battery came near the spot where we were standing, and could be plainly seen, I exclaimed:

"Why, Andy, I don't believe those dogs can bark at all! Don't you see? They are wooden logs covered over with black gum-blankets and mounted on the front wheels of wagons, and—as sure as you 're alive, it's our Quartermaster on his gray horse in command of the battery!"

"Well, I declare!" said Andy, with a look of mingled surprise and disappointment.

There was no disputing the fact. Dummies they were, those cannon which Andy had so exultingly declared were to drive the Johnnies through the brush. And we began at once to suspect that this whole mud-march was only a miserable ruse or feint of war, got up expressly for the purpose of deceiving the enemy, so that there was n't going to be any battle after all! Such indeed, as we learned later, was the true state of the case. But, nevertheless, the pioneers went on putting down the pontoon boats for a bridge, and our gallant Quartermaster, on his bob-tail gray, with drawn sword, and shouting out his commands like a major-general, swept by us with his battery of wooden guns, and away out into the field like a whirlwind, apparently bent on the most bloody work imaginable. Now the battery would dash up and unlimber and get into position here; then, after an imaginary discomfiture of the enemy at this point, away it would dash on a gallop across the field and go into position there, while the Quartermaster would swing his sword and shout himself hoarse as if in the very crisis of the battle.

It was, then, alas! all a ruse, and there would be no battle after all. About nine o'clock that night we were all withdrawn from the river-side under cover of darkness, and bivouacked in the woods to our rear, where we were ordered to make as many and as large fires as we could, so as to attract the enemy's attention, and make him believe that the whole arm^y on the Potomac was concentrating at that point, whereas, the truth was that, instead of making any movement thirty miles below Fredericksburg, the Union army, ten days

later, crossed the river thirty miles *above* Fredericksburg, and met the enemy at Chancellorsville.

But I have never forgotten our gallant Quartermaster, and what a fine appearance he made as the commanding officer of a battery of artillery. It was an amusing sight, for my readers must remember that a quartermaster, having to do only with army supplies, was a non-combatant — that is, did no fighting, and, in most cases, “staid by the stuff” among his army wagons, which were usually far enough to the rear in time of battle.

Thinking of this little episode on our first mud-march, the writer recalls a conversation he had recently with a gentleman, his neighbor, who had also been a quartermaster in the Union army:

“I was down in Virginia on business last spring,” said the ex-quartermaster, “and I found the people there very kind and friendly indeed. One man came up to me, and says he:

“Major, you were in the war, of course, were you not?”

“Yes,” said I, “I was. But I was on the other side of the fence. I was in the Union army.”

“You were? Well, Major, did you ever kill anybody?”

“Lots of ‘em!” said I. “Lots of ‘em!”

“You don’t say so!” said the Virginian; “and how did you generally kill them?”

“Well,” said I, “I never like to tell, because bragging is not in my line; but I’ll tell you. You

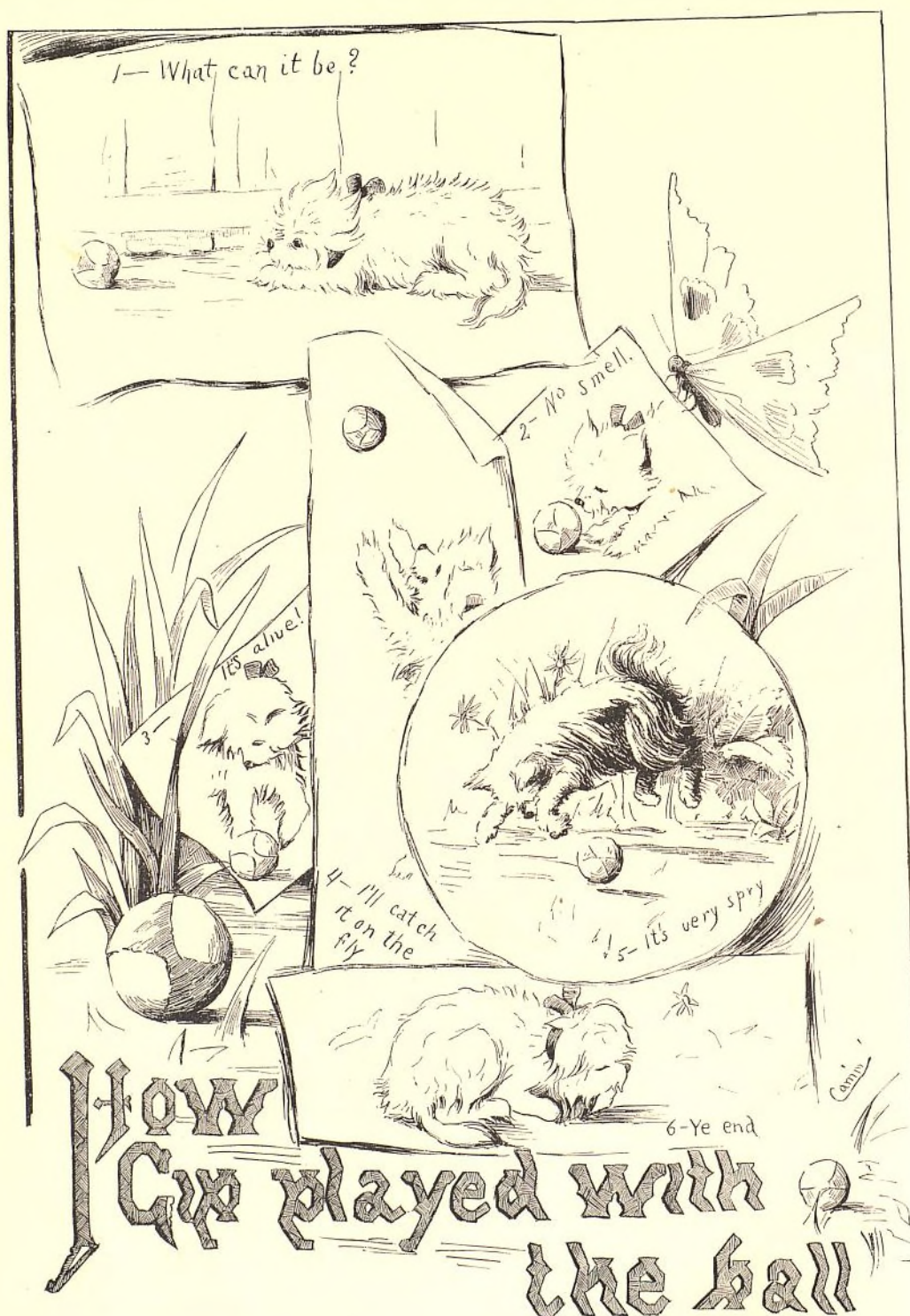
see, I never liked this thing of shooting people, because I was a kind of Quaker, and had conscientious scruples about bearing arms. And so, when the war broke out, I entered the army as a quartermaster, thinking that in that position I would n’t have to kill anybody with a gun, anyhow. But war is a dreadful thing — a dreadful thing, sir. I found that even a quartermaster had to take a hand at killing people, and the way I took for it was this: I always managed to have a good, swift horse, and as soon as things would begin to look a little like fighting, and the big guns would begin to go off, why I’d clap spurs to my horse and make for the rear as fast as ever I could; and then when your people would come after me, they never could catch me — they’d always get out of breath trying to come up to me; and in that way I’ve killed dozens of your people, sir — dozens of ‘em, and all without powder or ball. They could n’t catch me, and always died for want of breath trying to get hold of me!”

We slept in the woods that night under the dark pine trees and beside our great camp-fires; and early the next morning took up the line of march for home. We marched all day over the hills, and, as the sun was setting, came at last to a certain hill-top whence we could look down upon the odd-looking group of cabins and wigwams which we recognized as our camp, and which we hailed with cheers as our home.

(To be continued.)



OUR FIRST SUMMER BOARDER.



THE STORY OF ROBIN HOOD.*

BY MAURICE THOMPSON.

CHAPTER VII.

ROBIN HOOD AND THE KING.

FOLLOWING the advice of a shrewd forester, King Edward took five of his noblest and bravest knights and went to an abbey, where they procured monkish clothing and disguised themselves as ecclesiastics, the King donning the Abbot's apparel. Thus completely transformed in appearance, they set out to search for Robin Hood, guided on their way by the forester, and followed by servants with pack-horses.

As they rode through the forest, they heard the woodwile singing in the cool, shadowy tops of the trees. The King was in a very gay mood. He felt sure that Robin and his men could not penetrate his disguise or in any way discover his identity. The guide, who, as I am inclined to think, was really one of Robin's company, led the way directly toward the *trystel tree*; but before they reached it they were seized by some of Robin Hood's watchful foresters, who took them to dine with the chief, as was their custom when they captured a rich company.

Robin took hold of the King's horse, and said: "Sir Abbot, we are yeomen and freemen of this forest. We are the protectors and guardians of the poor against the oppression of the rich. You grind the bread from our poor people to make you fat. Now, in turn, I shall take from you your money, and divide it among the poor."

King Edward, adopting the tone and manner of an abbot, said in reply:

"I have but fifty pounds left. I have been with the King and his nobles at Nottingham, and have spent a great deal there. What I have left I give you freely."

Robin took one-half of the money and gave it to his yeomen; the rest he returned to the supposed abbot, saying as he did so:

"Keep this—I do not wish to cause any one to suffer. We shall meet again some day."

This strange generosity touched the King. He drew forth his broad seal, and handing it to Robin, said:

"The King sends you his seal with greeting, and cordially invites you to come to him at Nottingham and partake of his royal hospitality."

Robin knew the seal was genuine. He felt a thrill of delight run through him. He had long

desired to become friendly with Edward, and get his royal sanction to live unmolested in the forest he loved so well. He bowed before the seal, and said:

"I love my King above all men. In token of my delight at this good word from the comely and generous Edward, I bid you welcome to this forest, and you shall dine with me under my *trystel tree*."

He took the King by the hand, and courteously led him to the space where the yeomen usually dined. Here he caused a sumptuous meal to be spread. There was fat venison and roasted pheasants and broiled trout, with wine and ale.

Robin lifted his bugle horn, so famous in song and story, and blew a cheery blast upon it. In response there came from all parts of the forest seven score yeomen, all dressed in green mantles and armed with beautiful yew bows. Each of them in turn knelt on the ground before Robin Hood, as a sign of their respect for him and of their readiness to do his bidding.

"This is a rare and beautiful sight," thought King Edward. "This outlaw's men are more obedient and deferential to him than are my men to me!"

When the dinner was ready, Robin Hood and Little John waited upon the King, doing everything in their power to please and entertain him.

"Eat and be merry, Sir Abbot," said Robin, graciously, "and a blessing on you for the good tidings you have brought from the King. Before you leave, I will show you how we live and how we sport in the greenwood, so that you may tell the King when you go back to Nottingham."

The meal being now over, Robin Hood suddenly gave a sharp signal, whereupon his men sprang up and seized their bows in an instant. The King was terribly frightened. He thought that he and his followers were to be slain outright. He was mistaken, however, as he soon discovered. The yeomen were merely preparing to give an exhibition of archery. Willow rods, two yards long, and peeled so as to be bright and white, were set up to be shot at. The King was surprised when he saw the great distance to the marks. His bowmen could not shoot so far with any accuracy by at least forty yards.

A garland of wild roses was hung on each rod or wand.

"Now," said Robin to his men, "whosoever shall miss the garland at which he aims shall for-

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feit his arrow and shall receive a buffet with the hand on the side of his head. No one shall be spared."

So they began to shoot, Robin joining in the game. One yeoman missed his aim, and Robin struck him a powerful slap, making the fellow's head ring and ache. Gilbert with the white hand, Little John, and Scathelock shot surpassingly well, as did many others of the merry foresters. When it came Robin's turn to shoot he excelled them all, cleaving the garland with every shaft save the last, which by some mischance flew more than three finger's-widths wide of the mark. Thereupon Gilbert with the white hand said:

"Master, you must take your buffet. You have missed. Stand out, and take what we all have to accept when we fail."

"Very well," said Robin. "Sir Abbot, I deliver my forfeited arrow to you. Here, deal me a buffet on the side of the head."

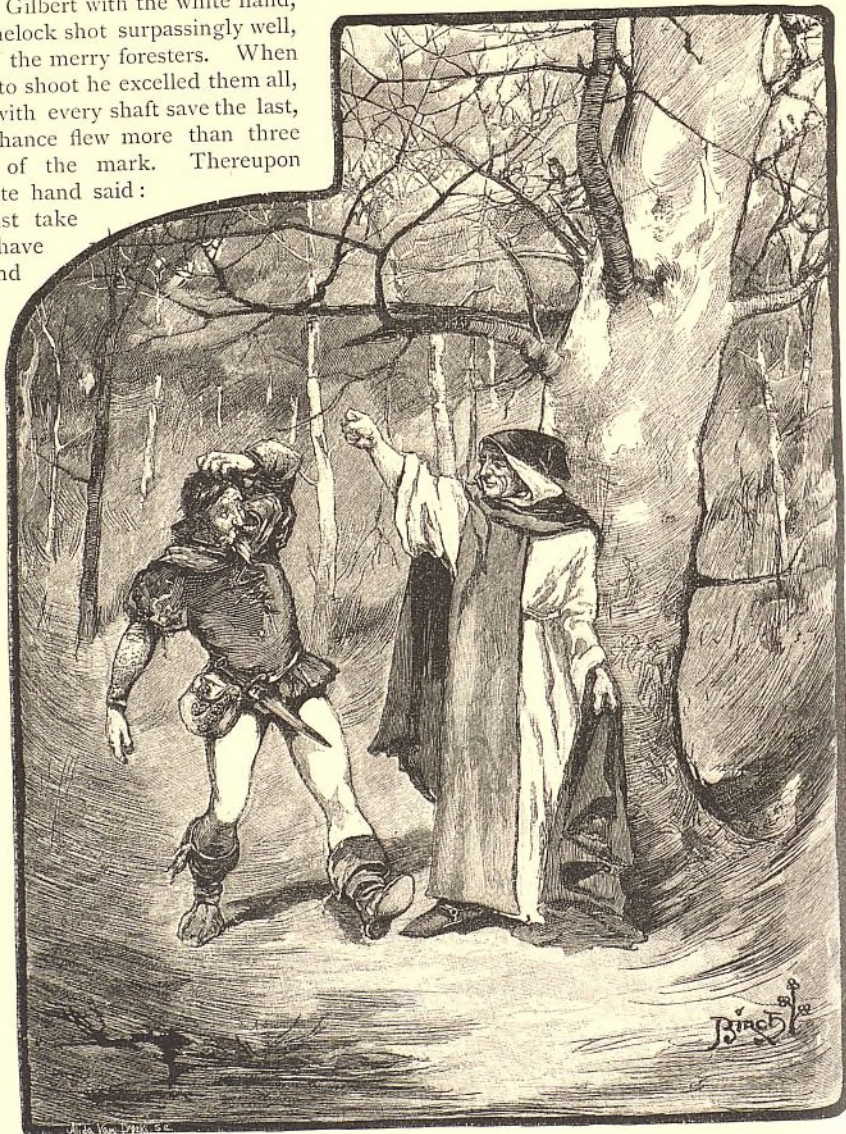
Robin was cunning. He knew that the churchmen did not work or take any manual exercise; wherefore their hands were soft and their muscles weak. A blow from the Abbot's hand, he thought, would not be much to bear.

"It does not become one of my order to strike a man," said the King, speaking as an abbot might. "I fear I may hurt you."

"Strike away!" exclaimed Robin, turning the side of his head to the King. "I give you full liberty. It is our rule."

Then the King rolled up his sleeve and struck Robin Hood a tremendous slap, which knocked him almost flat upon the ground. The yeomen were astonished. How could an ecclesiastic show such strength? Surely there must be some mistake.

Robin was surprised as well as pained. He stared at the King, and cried out: "I vow you are a stalwart abbot! There is strength in your arm. You would make a good bowman and shoot well." He looked searchingly into the King's face. He



KING EDWARD, DISGUISED AS A MONK, DEALS ROBIN HOOD A SOUNDING BLOW.

had penetrated the disguise, and all of a sudden he knew that Edward stood before him. At the same instant the knight, Sir Richard at the Lea, also recognized the King. They both knelt upon the ground, and Robin said:

"I know you now, my King, and I beg your mercy for myself and all my merry men."

"Upon one condition I can grant your request," said the King: "you and all your company shall go with me to my court and enter into my service."

"I promise," said Robin. "I will take seven score and three of the best archers in the world into your service."

And now a happy thought came into Edward's mind. He procured from Robin's store green mantels for himself and his followers, which they put on, and they took bows in their hands.

"Now," merrily cried the King, "let us go back to Nottingham all together, as a band of good fellows."

So off they went, shooting at marks on the way. Robin and the King rode side by side through the green groves and along the shady lanes, their men following in a jolly mood, singing and talking together. Robin and Edward gave each other heavy buffets whenever the mark was missed by either,—the winner buffeting the loser,—and they did not spare each other a whit, but laid on with full power.

The people of Nottingham were greatly frightened when this rollicking band of bowmen came into the town. They knew the uniform of the outlaws, and supposed that their King had been killed, and that Robin Hood had come with his men to murder them all. They all, old and young, male and female, rich and poor, fled, and left the town deserted.

Edward enjoyed their consternation; but he called them back and ordered a great feast. He pardoned the outlaws, and restored the estates of Sir Richard at the Lea. All the people of the country rejoiced, and feasted, and danced under the trees.

When the King went back to London, Robin and his men accompanied him, and they were made a part of the Royal Band of Archers.

For a time this life at the King's court was pleasant; but the men began at length to long for their old happy days under the greenwood tree. So, one by one, they slipped away and went back to the forest, to chase the deer and shoot the pheasant in freedom.

Finally, one day Robin went and knelt before the King, saying:

"My Lord, the King of England, I beg to go back and visit Barnesdale. These seven nights I have not slept a wink, and for seven days I have not been able to eat even a morsel of food. I pray you, let me go."

"You may be gone seven days and no longer," said the King.

Robin thanked him, and seizing his good bow he made haste to reach the greenwood.

It was a beautiful spring morning when he arrived in the forest near his trystel tree. The birds he loved so well were singing everywhere. The perfume of wild flowers loaded the air. He was delighted.

A fat hart came bounding along. Robin bent his bow and brought down the game. Then he blew his bugle horn, as he had done of old. The merry blast went echoing through the groves, and the lurking yeomen, hearing it, knew that their beloved chief had returned. They flocked around him and fell upon their knees. Once more they all were happy and free.

For twenty-two years longer Robin Hood lived in the greenwood. The King could not get him to again give up his merry life for all the gayeties and splendors of the court.

CHAPTER VIII.

THE DEFEAT OF SIR WILLIAM.

The years went merrily by. Robin Hood and his bold men refused to submit to the King's authority, because he upheld the right of the rich nobles to oppress the poor by exacting exorbitant taxes from them. Many expeditions were fitted out and dispatched against the outlaws. All were disastrously unsuccessful, though at times Robin was forced to fly from town to town for fear of treachery.

At last the outlaw chief was beginning to grow old and his strength was failing somewhat, when the King ordered Sir William, a bold and powerful knight, to take a hundred of the very best of the English bowmen, and go make an end of the rebellion of the foresters.

"Go to bold Robin Hood," said the King, "and tell him to surrender to my authority, or else he and his men shall all be killed. Take a hundred of my strongest and truest archers, armed in the best manner, and lead them into the forest till you find the outlaws."

Sir William answered that he would do the King's bidding, and that he would fetch Robin Hood, dead or alive, to the court.

It was midsummer when this carefully chosen company set out for the greenwood to search for the merry bowmen of Sherwood and Barnesdale. Their spears and swords, their bows and arrows, and their gay uniforms, shone bravely as they marched along.

When they had reached the forest, Sir William bade his men halt and stay there with their bows ready, while he went to summon the outlaws to surrender. In the midst of a grove, under a tent or canopy, he found Robin, who, when told to surrender, stood up and defied the King and all his

CHAPTER IX.

THE DEATH OF ROBIN HOOD.

armies. "So long," he cried, "as I have seven score brave archers to do my bidding, I never will be controlled by any king or his officers. Tell them this for me."

Sir William then attempted to take Robin by surprise, but one of the foresters, Locksley by name, frustrated his plan.

Robin Hood blew his horn. The knight, Sir

ALL accounts affirm that Robin Hood lived to a very old age, and at last died by treachery. He had a cousin, who was the prioress of a nunnery called Kirklees, and when he was aged and infirm,



ROBIN HOOD MARKS THE SPOT FOR HIS GRAVE.

William, blew his. In a moment the followers of each rushed to the spot and formed about the leaders.

A terrible and bloody fight ensued, in which Sir William was killed and his men driven from the forests.

This was the last effort made to subdue the merry greenwood rovers. Thenceforth they were left free to dwell in the forests unmolested.

They shot the deer and caught the trout, they helped the poor tillers of the soil against the usury and tithe-taking of the rich, until at last wiser laws were enacted, and the blessing of freedom was secured to all.

and suffering from an attack of disease, he went to her to be bled. In those days, blood-letting was considered a remedy against many kinds of illness.

Robin was very sick when he reached the gate of the nunnery, where he was met by his cousin. Little thinking of treachery, he suffered her to conduct him to a room and open a vein in his arm. There he was left bleeding. The door of the room was locked, and the window was too high above ground to admit of jumping out. He remained in this state till the next day at noon, when he thought to blow a blast on his horn. It was but a quavering and feeble sound. One faithful soul caught it, however. Little John was lingering

about, waiting to see his beloved master. When he heard the mournful blast, he sprang up and hurried to the nunnery. He broke locks and dashed open doors until he reached the room where Robin lay dying. He fell on his knees, and begged to be allowed to burn Kirklees Hall and all the nunnery; but Robin said: "No, I never hurt a woman in my life, nor a man in company with a woman, and I will not allow such a thing to be done now. But string my bow for me, and give me it and a broad arrow, which I will shoot from the window, and where that arrow falls there let my grave be dug. Lay a green sod under my head and another at my feet; and lay my bent bow by my side, for it has always made sweet music for me."

This request was complied with by Little John.

The arrow that Robin shot fell under a tree, and there the bold chief was buried. His death was probably near the year 1300.

Some worthy historians have doubted whether such a man as Robin Hood ever lived, and have classed the stories of his exploits among the myths of the past. It is hardly probable, however, that this is the correct theory. The safer and more reasonable conclusion would seem to be that Robin Hood really reigned in the forests as represented, but that many of the stories about him have been exaggerated by the ballad singers and early writers of England. I have taken what I thought to be the simplest and most authentic incidents of the outlaw's life, and have put them together for the benefit of my young friends.

THE END.

A BACK-YARD PARTY.

BY PALMER COX.

ONE evening bright there was a sight
That should recorded be.
All gazed in wonder—well they might—
Such funny things to see.

A neighbor's yard is smooth and hard,
And through the block extends,
And there came lively rats and mice,
With town and country friends.

It may have been a wedding scene
They celebrated there,
A birthday party, or *soirée*,
Enjoyed in open air.

But this is plain, whatever train
Had brought the rogues that way,
From loft and lane and bins of grain,
A jovial troop were they.

The household cat, so sleek and fat,
Is by the servants fed,
And only leaves the rug or mat
To find her cream and bread.

So nought was there to harm or scare
The lively groups below
That danced and played in light and shade,
Or rambled to and fro.

No slaves were they to fashion's sway,
With all its outs and ins:

For some wore gauze or summer straws,
While others dressed in skins.

Beside the gate, upon a crate
That once held earthen ware,
An old musician, throned in state,
Gave many a pleasing air.

He scraped and paw'd and chopped and saw'd,
But never seemed to tire,
Though oft his bow would run as though
To set the strings on fire;

While at his side, in pomp and pride,
A knowing mouse was stalled,
And while the sets he sharply eyed,
The mazy dance he called:

"To partners bow the first, and now
To those on either side,
Across and back, the lady swing,
Now balance all!" he cried.

'T was charming fun to see them run,
And curtsy, bow, and wheel,
Or slip and slide and trip and glide
Through some plantation reel.

The smallest mouse about the house,
And most destructive rat,
Danced half an hour with grace and power—
An Irish jig at that;



Upon a pan the dance began,
And round the yard they passed,
But dancing still for life, until
The rat gave out at last.

The Highland fling and pigeon-wing,
The polka and quadrille;
The waltz and schottish—everything—
Was found upon the bill.

The latest dance that came from France,
From Germany or Spain,
The most delightful hop or prance,
Their programme did contain.

And people who could gain a view
Of either jig or reel
Would hardly grudge the lively crew
A little corn or meal.

The moon was high and morning nigh
Before they quit their play,
To shake their paws and say "Good-bye,"
And pass in pairs away.

And when again they're in the vein
To pass a night in fun,
May we be nigh the window pane
Until the sport is done!



HOW TO BUILD A CATAMARAN.

BY W. L. ALDEN.

EVERY boy knows how hard it is to get permission to go sailing. His mother is sure he will be drowned, and his father tells him to "be careful" in a way that clearly shows his wish that sail-boats had never been invented. And though the boy himself says, "There is no danger," he knows, if he is familiar with sailing, that there is nothing easier than to capsize a cat-boat by a moment's carelessness or a little recklessness.

Now, if a boy had a boat which could neither capsize nor sink, no reasonable mother would feel

any uneasiness as to his being drowned. If at the same time this boat could outsail any ordinary sail-boat; could carry twice as many people as a cat-boat of the same length; could be taken out of the water and carried over a reef or a dam by two boys; and could be built by any intelligent boy who is handy with his tools, at a very slight expense, would it not be just the thing that every boy ought to have?

The boat in question is what is called a catamaran—that is, a boat with two hulls. It is not

so fast as the wonderful Herreschoff catamaran, but it is a great deal cheaper, drier, and more roomy, and is in every way better suited for cruising. Moreover, a boy can have the pleasure of building it himself, and there is no better fun than building a boat which, when it is launched, answers all your expectations.

The first thing you need to do is to send to a lumber-yard or saw-mill for four good pine planks, fifteen feet long, eighteen inches wide, one inch thick, and planed on both sides. It may be necessary to have them sawed to order at the mill, as they are unusually large. The rest of the lumber that you will want can be had at any carpenter's shop, and a good deal of it you may be able to find at home in the shape of old boxes and strips of wood.

Put two of the four planks aside, and busy yourself at first only with the other two. Planks of this size, if put in the water, would be sure to warp. To prevent this, screw across one side of each plank four strips of wood, about three inches wide by three-quarters of an inch thick. These should be placed regularly, so as to divide each plank into four divisions of exactly the same size. Be sure that on one of the two planks these strips are seventeen inches long instead of eighteen, thus leaving a clear space an inch wide along one edge of the plank.

The next thing is to shape the ends of the planks. Begin three feet from the end, and cut away the wood, first with a saw and then with a drawing-knife, until you have a nice curve extending from the point where you began to cut to the end of the plank. When you are satisfied with this curve—which is to be the bow of your boat—lay the plank down on the other uncut plank and mark out on it precisely the same curve. After this is cut, then take the other ends of the two planks, shape them in the same way, taking great care that each one of the four curves shall be precisely like every other one. The way they will look after this part of the work is done is shown in Fig. No. 1.

Now lay one plank flat on the floor, with the side on which the strips are fastened uppermost. Take the other plank—the one with the seventeen-inch strips—and stand it up on its edge close against the one on the floor, having first white-leaded both the edges that are to touch. (See Fig. 2.)

You will now see why the strips on one plank were shorter than the other strips, for this has enabled you to bring the edges of the planks close

together. Nail these edges together with galvanized iron nails, using a good many of them, and taking great care not to split the wood.

The next thing is to cut four pieces of three-quarter-inch plank into the shape diagrammed in Fig. 3.

The side A B is seventeen inches long, and the side A C eighteen inches. These sides must form a true right angle, and be made very smooth and straight. When the four pieces are finished, white-lead the edges and place them between the two planks, so that they will lie close to the strips which you secured to the planks to prevent them from warping. Fasten them with long galvanized screws, carefully countersinking the heads. Then run a strip of quarter-inch white cedar, two inches wide, from A to B, cutting mortises in the curved edge of the four triangular pieces of wood to secure it. (See Fig. No. 4.)

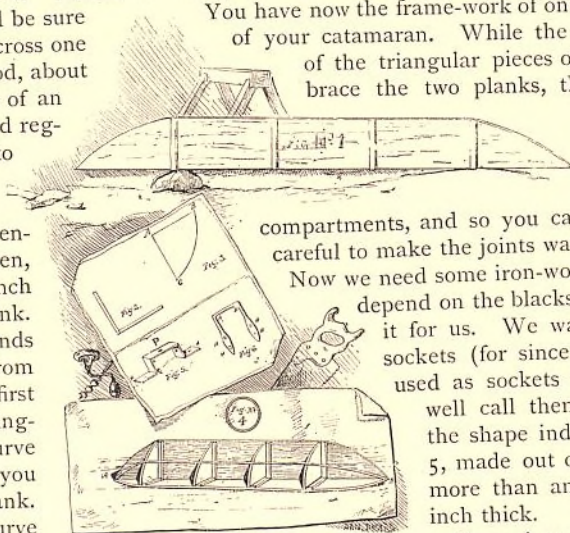
You have now the frame-work of one of the hulls of your catamaran. While the chief object of the triangular pieces of wood is to brace the two planks, they are also meant to divide the hull into water-tight compartments, and so you can not be too careful to make the joints water-tight.

Now we need some iron-work, and must depend on the blacksmith to make it for us. We want three iron sockets (for since they will be used as sockets we might as well call them sockets) of the shape indicated in Fig. 5, made out of iron, rather more than an eighth of an inch thick.

From A to B is four inches, and from A to C the same. The iron should be an inch and a half wide, and the two holes, H and H', should be large enough for a quarter-inch bolt.

When the blacksmith has made these, then have him make three other sockets out of half-inch rod-iron, hammering the ends flat and piercing them with holes countersunk for screws. (See Fig. 6.)

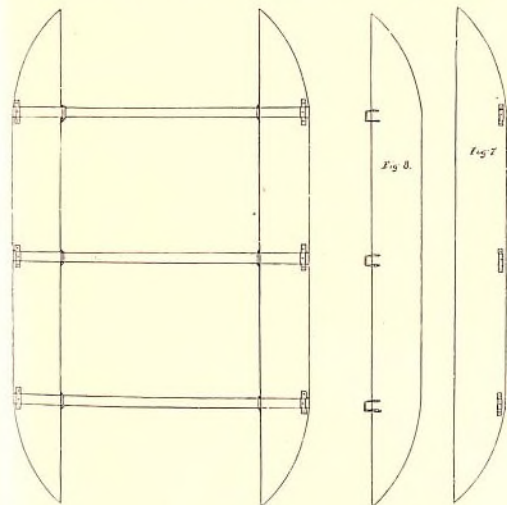
This round-iron socket is four inches wide, and each arm ten inches long. The holes (H) are for quarter-inch bolts. Order a double set of each of these sockets, as you will need three of each kind for each hull. The flat sockets are to be placed on the upper side of your hull—the side which is eighteen inches wide, the other side being an inch narrower. One is to be placed exactly halfway between the two ends of the plank, and the



others exactly three feet each from either end, and they should all be placed about three inches from the outer edge of the planks. These positions are indicated in diagrams 7 and 8, given below.

The other sockets are to be placed in the other plank precisely on a line with the first three. Use screw-bolts, with nuts for fastening all the sockets, and put a thin leather washer under the part of the iron which the bolt passes through, and an oak washer under the nut on the other side. Screw them on as tightly as possible, and put plenty of white-lead on the under side. The iron and the bolts ought to be galvanized, but if you live in the country, you may not be able to have this done.

Your hull is now nearly ready to be covered with canvas, but first you should give the inside a thick coat of paint, and bore an inch hole through the middle of the upper plank into each water-tight compartment. Plug the holes with corks, and



should your hull spring a leak at any time it will always be possible for you to pump or empty out the water. The canvas should be well oiled and dried before it is used, and should be forty inches wide. Place the keel—or the part of the hull where the keel ought to be—in the middle of the canvas, and tack it with copper tacks to the lower edge of the plank, except on the two ends where the plank is curved. Then bring the edges of the canvas around both sides of the hull to the upper plank, and tack them firmly. To fit the canvas to the curves at the bow and stern is a more difficult task, but it can be done with the exercise of care and judgment. Perhaps your mother could help you in this matter with her womanly ingenuity in handling cloth. Remember when you are putting on the canvas to strain it as tightly as possible.

Along the lower edge of the side-plank you must fasten an oak or ash keel a quarter of an inch thick, putting it on with screws, and painting the canvas under it just before you put it on. By soaking it in hot water—or, what is better, steaming it—you can bend it to fit the bow and stern. Strips an eighth of an inch thick should be screwed to the outer edges of each of the triangular pieces of wood that form the water-tight compartments, thus making the canvas fit more closely to them than it would were it fastened only with tacks. After all is done, give the entire hull two heavy coats of paint, and you can feel reasonably confident that it will not leak.

One hull is now finished, and the second, which is to be precisely like it in every respect, can be built in much less time than the first one, thanks to the experience you have gained. When they are all ready, place them with their flat sides toward one another and seven feet apart. Then take three pine joists, four inches square and nine feet long, and push them through the iron sockets, fastening them with iron pins, dropped (not driven) through the holes in the middle of the flat sockets. In the drawing of the socket (Fig. 5), the hole for the pin is marked P. These pins will prevent the joists from slipping in either direction.

The catamaran is now ready for her deck. This is simply a platform, nine feet square, made of planks a quarter of an inch thick and six inches wide. It is to be made double, the upper layer of planks running fore and aft, the under layer running at right angles to the upper. Fasten them firmly together with clinched copper nails, and finally nail a quarter-inch strip of oak all around the platform, so as to keep the water from the edges of the planks. Every seam on both sides must be carefully filled with white-lead.

The deck is to be fastened to the joists or deck-beams with screw-bolts, and grooves must be cut in it to receive the upper part of the iron sockets, so that it will lie flat on the deck-beams. Four good-sized bolts will hold it firmly. An iron ring of the same thickness as the iron used for the flat sockets, and supported by three iron legs in the shape of a tripod, about eighteen or twenty inches long, two of which should be bolted (with screw-bolts) to the forward deck-beam, and the third to the deck itself, will support the mast, the foot of which will rest in a wooden step. A somewhat similar piece of iron work, with a row-lock in place of the ring, must be bolted to the aftermost deck-beam, to hold the oar with which the boat is to be steered, and also to enable you to scull her in case you are becalmed.

Before rigging the boat, take an ordinary eight-foot "A" tent and pitch it on the deck, fastening

the corners and the sides to little brass rings screwed into the deck—the kind that will lie down flat when not in use. Inside of the tent, and just where the four ends are fastened, nail narrow strips of wood, a quarter of an inch thick, to the deck. These will keep the water out when it rains.

Now, take away your tent and rig your boat. The sail should be fifteen feet in the boom, nine feet in the gaff, fifteen feet in the luff,—or the edge nearest the mast,—and nineteen feet in the leech. You had better get a sail-maker to make the sail, which is the only part of the work which you can not do well yourself. Put a big ring-bolt in the forward deck-beam to make your cable fast to when you anchor, and also to hold your painter when you want to make the boat fast to the dock. Put a long oar on board to steer with, and you are now ready to set sail.

It would be a good plan to put a little railing, if it were only an inch high, around the deck, so as to keep things from sliding overboard. All iron work that is not galvanized should be thoroughly

painted, and whenever a screw is used it should be dipped in white-lead, and its head covered with the same material after it is driven home.

You will find that it is impossible to capsize your catamaran. The mast and sail would be torn out by the wind long before it would blow hard enough to bury one hull and lift the other out of water. The boat will sail fast either before or on the wind, and, with the help of the steering oar, will tack easily. Of course, if you run on the rocks, you will knock a hole in the canvas, but such an injury can be easily repaired, and the deck will float even were both hulls full of water.

There is no better boat to cruise in than such a catamaran. At night you anchor her, unship your mast, pitch your tent, and sleep safely and comfortably. If you come to a dam, you can take the craft apart, and carry her around it piece-meal. If you once try to build a catamaran, and succeed,—as you certainly will, if you have patience,—you will have the safest and most comfortable sail-boat in the world.



A SAFE CRAFT.

THE STORY OF A BRAVE GIRL.

BY GEORGE ENOS THROOP.

IF any of the readers of ST. NICHOLAS, happening to be in Albany, have gone down South Pearl street as far as Schuyler, they have doubtless noticed at the head of the latter what appears to be a hill with the sloping sides cut off and a fence built around it.

Now, this is not a hill, as its looks would indicate, but merely the old level of the country, which, as the city grew and people commenced to dig away the land so that the streets might be even, was left untouched, as we see it now.

If you open the gate in the fence and go up two flights of stairs, you will find yourself facing a white brick house with gabled roof, pretty front porch, and large, pleasant windows, all telling of peaceful times and happy days they had witnessed before the Revolutionary War. Upon closer inspection, however, it will be seen that the window-blinds are covered with iron and the extra thick door has as many bars and bolts as a prison—signs that there have also been stirring scenes enacted around these walls. This was brave General Schuyler's house, and it is about one of these very scenes that I am going to tell you.

In the year 1781, while Clinton and Washington were closely watching each other's movements in the neighborhood of New York, there was comparative peace in the North, during which both sides took a breathing spell and gathered strength to plunge once more into the bloody strife.

At that time, the war was chiefly carried on in the South, but the northern frontier was constantly troubled by parties of Tories and Indians, who would swoop down on some small settlement, plunder the houses, and make off with whatever they could lay their hands on.

During this time, Schuyler, having resigned the command of the northern division, on account of some unjust charges against him in connection with the surrender of Fort Edward, was staying at this house, which then stood alone outside the stockade or wall of Albany. The British commander, therefore, seeing his opportunity, sent out John Walter Meyer, with a party of Tories and Indians, to capture General Schuyler.

When they arrived at the outskirts of the city, they learned from a Dutch laborer, whom they had taken, that the General's house was guarded by six soldiers, three watching in the day-time and three at night. They then let the Dutchman go,

after having made him swear an oath of secrecy. But this oath he did not keep very strictly, for the minute the band was out of sight he took to his short legs, and warned the General of their approach.

On one of those scorching August days, when you feel as if you hardly had energy enough to move, and when the very trees droop their dusty leaves, too lazy to hold up their heads, Schuyler and his family were sitting in the large hall, when a servant entered, and told the General that there was a strange man at the back door who wished to see him.

Schuyler, understanding the trap, gathered his family in one of the upper rooms, and giving orders that the doors and windows be barred, fired a pistol from one of the top-story windows to alarm the neighborhood.

The guards, who had been lounging in the shade of a tree, started to their feet at the sound of the pistol; but alas, too late! for they found themselves surrounded by a crowd of dusky figures, who bound them hand and foot before they had time to resist.

And now you can imagine the little group collected in that dark room up-stairs; the sturdy General, standing resolutely by the door, with his gun in his hand, and his black slaves gathered around him, each with some weapon; and at the other end of the room, the women huddled together, some weeping, some praying. Suddenly, a crash is heard which chills the very blood, and brings vividly to each one's mind the tales of Indian massacres so common at that day. The band had broken in at one of the windows.

At that moment, Mrs. Schuyler, springing to her feet, rushed toward the door; for she remembered that the baby, only a few months old, having been forgotten in the hurry of flight, was asleep in its cradle on the first floor. But the General, catching her in his arms, told her that her life was of more value than the child's, and that, if any one must go, he would. While, however, this generous struggle was going on, their third daughter, gliding past them, was soon at the side of the cradle.

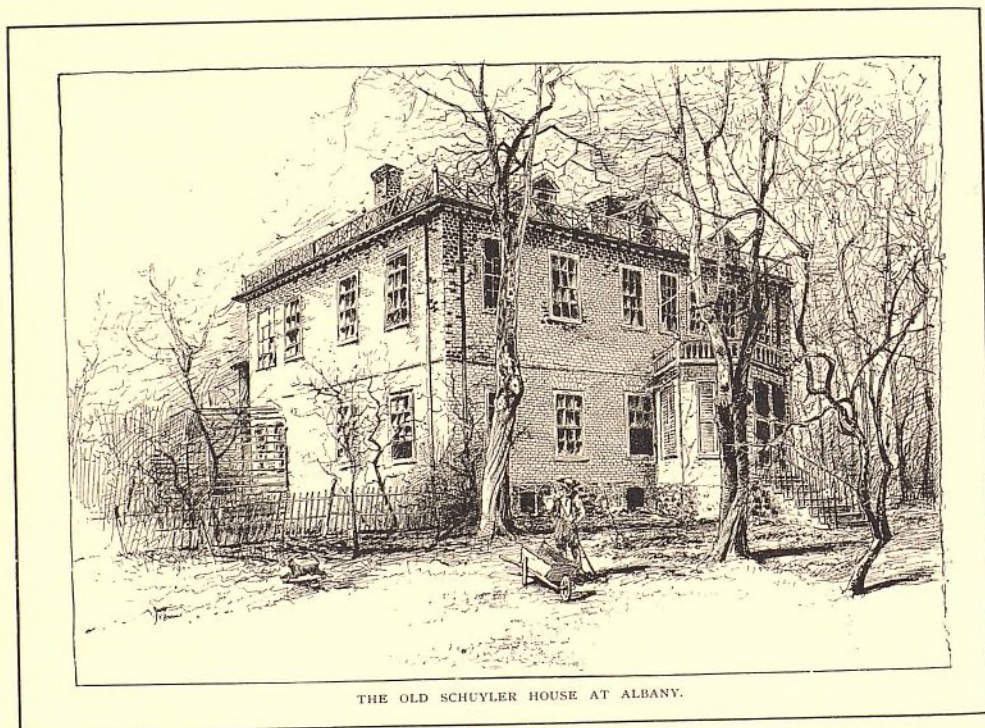
All was as black as night in the hall, except for a small patch of light just at the foot of the stairs. This came from the dining-room, where the Indians could be seen pillaging the shelves, pulling down the china, and quarreling with one another over their ill-gotten booty.

How to get past this spot was the question, but the girl did not hesitate. She reached the cradle unobserved, and was just darting back with her precious burden when, by ill luck, one of the savages happened to see her. Whiz! went his sharp tomahawk within a few inches of the baby's head, and, cleaving an edge of the brave girl's dress, stuck deep into the stair-rail.

Just then one of the Tories, seeing her flit by, and supposing her to be a servant, called after

men: "Come on, my brave fellows! Surround the house! Secure the villains who are plundering!" The cowards knew that voice, and they each and every one of them took to the woods as fast as their legs would carry them, leaving the General in possession of the field.

There is very little more I can tell you of the brave girl, his daughter, except that later in life she was married to Stephen Van Rensselaer (Patroon), of Albany, and lived very happily in another inter-



THE OLD SCHUYLER HOUSE AT ALBANY.

her: "Wench, wench, where is your master?" She, stopping for a moment, called back, "Gone to alarm the town!" and, hurrying on, was soon safe again with her father up-stairs.

And now, very nearly all the plunder having been secured, the band was about to proceed to the real object of the expedition, when the General, raising one of the upper windows, called out in lusty tones, as if commanding a large body of

esting old house on the extreme northern end of the city.

The old Schuyler house looks now as it looked then, except that the back wing for the slaves has been torn down, and some few alterations have been made around the place; but when you are shown the house, you can still see the dent in the stair-rail made by that Indian's hatchet more than a hundred years ago.

THE TINKHAM BROTHERS' TIDE-MILL.*

BY J. T. TROWBRIDGE.

CHAPTER XXVII.

RUSH HAS AN IDEA.

A BUSY night began. A lantern was lighted, and lamps were carried to the mill. The two younger boys were sent to the village for a pickax and a spade and some galvanized nails, while the two older ones began at once to saw joists and sharpen stakes.

Rush left them sawing and trimming, and arguing again the question of a temporary dam; and taking the lantern, with a hammer and a hatchet, went out to the pile of fragments below the mill.

He set the lantern on the ground, and was occupied in clearing the mud-sill of old nails and bits of broken spilings, when a sound of oars working in their row-locks told him that a boat was coming up the river.

He heard voices, too; and these words, though spoken in a low tone, were borne to him distinctly over the water:

"It will take 'em at least three days to rebuild it, even if they have a chance. But they wont have a chance."

"No, sir! There's no dam to bother us to-night, and there never will be again!"

"Keep quiet! There's a light in the mill, and there's one of 'em with a lantern!"

The voices ceased suddenly, and Rush, who all the while kept quietly at work, heard no more until the boat drew near the mill. Then some one on board called out derisively:

"Where's your dam?"

"It will make good fire-wood," said another, "what there is left of it."

"Stop your nonsense, boys!" said a third.

"Don't hit fellows when they're down."

Thereupon Rush straightened himself up from his work, and stood beside his lantern, hatchet in hand, and gave the passing boat a haughty look, with these words:

"If you think the Tinkham brothers are down, you'll wake up some fine morning and find yourselves mistaken. Don't keep any of your insolence corked up on our account. We can stand it."

He got no reply; but heard low voices again, after the boat had passed a few rods up the river.

"That's the bloodthirsty one that was going to knock Milt on the head with a bean-pole, and hove the big rock at his boat this afternoon."

"Yes! and he looked just now as if he'd a little rather fling his hatchet at us than not!"

Rush went on prying off the broken ends of the spilings. He fancied the boat passing the bridge, and wished for a moment that he was there with another "big rock," to drop down gently and softly on the Argonautic heads.

Then suddenly a startling thought flashed upon him. He rose, gazed excitedly up the river, then, stooping again, drew out and hammered down the last of the nails.

This done, he stepped into Mr. Rumney's boat, which had been hauled up beside the mill, placed the lantern low in the stern with some broken boards to hide it, pulled into the current, and followed the other boat at a cautious distance.

His absence was soon noticed by Mart and Lute; and as he did not return for nearly half an hour, they grew more and more surprised at his going off in that mysterious way, when time was precious.

At length he returned and walked into the mill, where he found them still preparing material for rebuilding and discussing plans. When they asked where he had been, he replied with a counter question:

"Have you decided about the temporary dam yet?"

"I rather think Mart agrees to it," answered Lute, "though he has n't said as much yet. know he hates the n-n-notion."

"If we're going to lay the mud-sill in the night, I suppose we must manage somehow to keep the water back," Mart admitted. "But I'm afraid Lute's plan wont work well, and I hate to strip the siding off the sheds."

"Well!" cried Rush, with a joyous countenance, "you need n't! We'll get along without Lute's temporary dam. And we'll plant the mud-sill without having much water to work in, either! The Argonauts are going to help us!"

"This is a poor time for a j-j-joke," said Lute, reproachfully.

"It's no joke at all," Rush replied, with eager confidence. "I've looked the thing all over, and I know what I'm talking about."

Mart laid down a piece of joist he was shaping into a stake, and regarded his brother with solemn scrutiny, saying, after a pause:

"The boy is certainly crazy!"

"Hear my plan first," cried Rush; "then, if you don't say we can get the mud-sill in without trouble

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or danger from the water, and have the dam all built before high-tide to-morrow morning, I'll give you leave to put me into a straight-jacket."

"Some folks say the age of m-m-miracles is n't over," was Lute's cool comment; "and now Rocket is going to p-p-prove it."

"Go ahead," said Mart, "before I make any more stakes. We've got enough for the permanent dam already."

"You won't need any more, I promise you."

The brothers listened, at first incredulously, then with a respect which quickly grew to admiration, as Rush proceeded to convince them that he was not crazy, and that the plan he proposed was in no sense a miracle.

"Well, I declare, Rocket!" exclaimed Lute, "you're a chip of the T-T-Tinkham block! How did you ever happen to think of it?"

"Why, just as either of you would, if you had been in my place," Rush replied, not at all anxious to gain extraordinary credit for a scheme which his older and more ingenious brothers had failed to hit upon. "I was trying to think of some trick I could play off on the Argonauts, when it popped into my head."

"It never would have p-p-popped into a foolish head!" exclaimed Lute.

"Nor into a very crazy one, for that matter," Mart added. "I owe you a humble apology, Rocket."

"Pshaw!" laughed Rush. "It's all right, since you see it as I do."

The three were earnestly talking over details of the plan, when the younger brothers returned, bringing the pickax and spade and the rust-proof nails.

"They knew at the store what we wanted of 'em," said Rupert. "One of the men asked if we were going to build up the dam again to-morrow, and I told him I did n't know."

"That's right, for you don't know," said Mart. "Nobody can tell what may happen then, or between now and then. Now, you youngsters go to bed."

"Oh, no!" Rupe exclaimed, in astonishment.

"We are going to stay up and help," said Rodman. "Why can't we?"

"There'll be nothing you can help about for three or four hours," Mart explained. "All we can do before ebb-tide is to get ready. If you stay up, you'll be all tired out by that time, and good for nothing. But go to bed now, and I'll have you called at twelve or one o'clock. It will be moonlight then; you'll be fresh after your nap, and I promise you some fun."

"Will you surely call us?" asked Rupert.

"Surely, unless the bottom drops out of our

scheme, which does n't look likely now. Have your old rubber boots ready to put on,—for you may have to stand in mud and water,—and your worst old clothes. We are going to put ours on."

"Well, don't forget to call us. Come, Rod!"

The two youngest returned reluctantly to the house, and went to bed. Excitement kept them awake for a time, and they seemed hardly to have fallen asleep when they felt somebody shaking them, and heard a voice exclaim:

"Wake up! wake up, boys! You're wanted at the dam!"

Opening their sleepy eyes, they saw in the moonlit room a dim figure bending over them. It was Letty, who had sat up with her mother, waiting for a signal from the mill to call the sleepers.

"We've only just come to bed," yawned the confused Rodman.

"You've been in bed four hours," cried Letty. "Now make haste, or the dam will be built before you get there."

They were well aroused by this time; and quickly putting on their old clothes and rubber boots, they ran out to the bank of the river, where they looked down on what appeared a scene of enchantment.

It was a night of wonderful stillness and beauty. The moon was high in the cloudless eastern heavens, flooding the valley with its mild radiance, by which they could see, beyond the black shadow of the mill and in strange contrast with it, a sheet of water, flashing with curves and streaks of silver fire, not much more than ankle deep to three figures that now appeared in the moonlight, crossing the plashy and glimmering river-bed.

Rupe and Rod ran down the bank, marveling more and more. There was no temporary dam to be seen; and yet that pool, or rather a series of such, connected by little runnels, shining here and there amidst the black and oozy bottom, was all that was left of the Tammose River. The appearance of fiery snakes was caused by the sparkling wakes and ripples of hundreds of alewives, with perhaps a few eels and other fish, darting and writhing about, in the endeavor to escape into deeper channels.

"Where's all the water?" cried Rupert, splashing in where the older boys were at work.

"Be quiet!" said Rush, in a low voice. "The Argonauts are keeping it back for us."

CHAPTER XXVIII.

HOW THE ARGONAUTS HELPED.

THE older boys had evidently been busy while the younger ones were asleep. They had, in fact,

not only got everything in readiness for rebuilding the dam at low water, but, after putting out the lights in the mill, they had embarked on what Rush called an Argonautic expedition.

There was no regular meeting of the club that night; but it was to have been expected that a good many members would get together, to enjoy the triumph they had that day achieved in the destruction of the dam. The upper windows of the boat-house were lighted and open, and loud talk and laughter resounded within, when the Tinkham brothers rowed noiselessly by in the Rumney boat, making careful observations, and waiting for the Argonauts to disperse.

The tide had turned before they left the mill. It would soon be going out rapidly. The time had come for them to begin their secret night's work. Yet nothing could be done until the last of the Argonauts' boats had gone down the river.

The boys grew exceedingly anxious and impatient, as they floated about under the shadow of the high shore, and counted the wasting moments.

"They never staid so late before," said Rush.

"They must crow and crow again over the old dam," replied Mart. "Don't begrudge 'em that short-lived satisfaction."

"There goes a b-b-boat," said Lute.

In fact, one, two, three boats put out from the shadow of the club-house, crossed the moonlit arm of the lake, and disappeared at the outlet.

"There were only three moored at the float," said Rush. "The way will soon be clear now."

At the same time the Argonauts could be heard leaving the house on the shoreward side, and talking and laughing as they went up the lane to the road. Still, lights were seen and voices heard within.

"See here, boys," said Mart, "we're losing too much time. It wont do!"

"We must r-r-risk something or miss our chance," said Lute. "Don't the fools know it's time all honest folks were abed?"

A bold stroke was finally resolved upon, and the boys paddled silently up to the side of the club-house, where the platform lumber of which Mr. Rumney had told Rush lay half in moonlight on the bank.

While the lamps still shone and voices were heard from the open windows overhead, one by one, eight boards, each twelve feet long and a foot in width, were slid down into the water, placed one upon another, and lashed together. Then three stout poles were selected from a pile designed for posts to be driven down into the mud for the platform to rest on, and launched in like manner without noise. This done, the boat was pushed silently off, boards and poles following darkly in tow.

A shout of laughter from the windows rang out over the water as the Tinkham brothers, now in their turn, emerged from the shadow of the boat-house and rowed across the moonlit arm of the lake.

Reaching the outlet, they pulled with strong strokes, in the full, slow current, down to the bridge. Under that they paused, and drew the boards and poles alongside.

"So far, so g-g-good!" chuckled Lute.

The abutments had been already examined, and the bed of the channel explored and cleared of loose stones. A pole was now drawn forward and set in an upright position, slightly leaning, against the upper side of the bridge. Rush and Lute held the boat against the stream, while Mart thrust the pointed end down into the gravelly bottom.

A second pole was then placed still more slantingly, a few feet nearer one of the solid granite abutments. To these two uprights the boat was made fast, broadside to the stream, and all hands were free to work.

A board was now forced down edgewise, extending from the first post to the abutment, to be supported by them against the pressure of the current. The second post was just outside of the board; it served as a guide in placing it, and held it fast when it was down. A heavy sledge-hammer was used in the water, with a sort of churning stroke, in driving the lower edge of the board into the bed of the river.

A second board was placed in like manner as the first, a third on that, and finally a fourth put into position; the upper edge of the last rising four or five inches above the surface of the water.

The entire span of the bridge measured not more than twenty feet, so that now the boys had only to extend a similar set of boards from the first post to the other abutment, in order to have a complete gate across the channel.

They had worked cautiously at first, listening often for footsteps approaching the bridge. As none came, and it was getting late, they grew bold in their movements, and worked rapidly, until, as Mart was setting his third post in place, somebody looked over the edge of the bridge, and called out, "Halloo!"

All was still in a moment, except the gurgle of the water against the side of the boat; the boys, hidden by the shadow beneath the bridge, keeping quiet until another head peeped over, and another voice said:

"What are you doing down there?"

Then Mart answered back, in as gruff and careless a tone as he could assume:

"Did n't you ever see anybody spear eels?"

"It's a queer place to be spearing eels, and a

queer way to do it," said one of the voices above. "Look at that big pole!"

"There's two more!" said the other voice. "They're setting some sort of trap to catch alewives. Come along! it's awful late!"

The voices went off with the sound of hurrying footsteps, and died away in the distance. The brothers breathed again.

"They are Dempford Argonauts footing it home," said Rush.

"Good fellows!" said Mart, resuming his work. "They help us best by lending their lumber and getting out of our way. Now, give us a board."

The current was growing stronger and stronger all the while, and by the time the third board of

I wont warrant either of those posts to stand long, after the water begins to tear its way under."

CHAPTER XXIX.

REBUILDING THE DAM.

THEY hastened to the mill, and floated the mud-sill in place while there was yet water enough in the fast-draining channel. It was a foot deep when they began; it was not much more than ankle-deep by the time they had got ready to make the trench for it.

On the arrival of the younger boys, Mart and Lute and Rupert began at once, with pick and



"SOMEBODY LOOKED OVER THE EDGE OF THE BRIDGE, AND CALLED, 'HALLOO!'"

the second set was in place, the water poured over it in a cascade. A fourth shut it off; and then the sledge-hammer was used again to drive each set of boards firmly together and settle them still deeper into the level river bed. The water under the bridge fell away rapidly, the boat dropping with it, and the brothers had the satisfaction of seeing their extemporized gate emerge before them like a dark wall.

As the pressure of water held the boards in place, the two outside posts were now set inside, in a row with the first, as assistant supports; and Mart, getting upon the bridge, drove one after another with all his might into the bed of the channel.

"Now, boys!" he said, jumping down from the abutment, "we must make the most of our time!

spade and hoe, to dig out the gravel beside the old spillings; while Rush, with Rodman's assistance, carried out a plan suggested by Lute for getting rid of more of the water.

It was a modification of Lute's first idea of a temporary dam. The mill-sluice was opened, and the water that came down from above drained into it by means of a diagonal line of boards set up edgewise and supported by short stakes. A hatchet and a hoe, in lively hands, made a quick job of it; and some of the same boards served which were afterward to be used in the dam.

"We sha'n't care much for the water, you know, after the mud-sill is laid," said Rush; "then those boards can come up."

Meanwhile, the simple device was found exceed-

ingly useful. For though the water came down for a time in a constantly dwindling stream, it began at length to increase in volume, showing a considerable escape at the bridge. The drain turned it easily into the sluice, however; so that in throwing out the loosened gravel the spade and hoes kept the trench also tolerably free from water.

The moon shone brightly. It was not very hard digging, and in an unexpectedly short time the new bed was made ready for the mud-sill. This was then pried into it, one side being set close against the spilings, and secured in its position by stakes driven close against the other side. Each stake was then firmly nailed to the sill.

"This is j-j-jolly," said Lute. "Now if we can only get the spilings nailed before there's a d-d-deluge!"

To do that the boys had first to dig out some of the gravel on the upper side of the spilings. These they found in quite as good condition as they had expected, and the sill being laid below the line of broken tops, only two or three had to be patched.

Never did young fellows work with greater energy and speed. As they were now engaged on the shady side of the row of spilings, Rod held the lantern; and the digging done, Rupe handed nails for the older ones to drive.

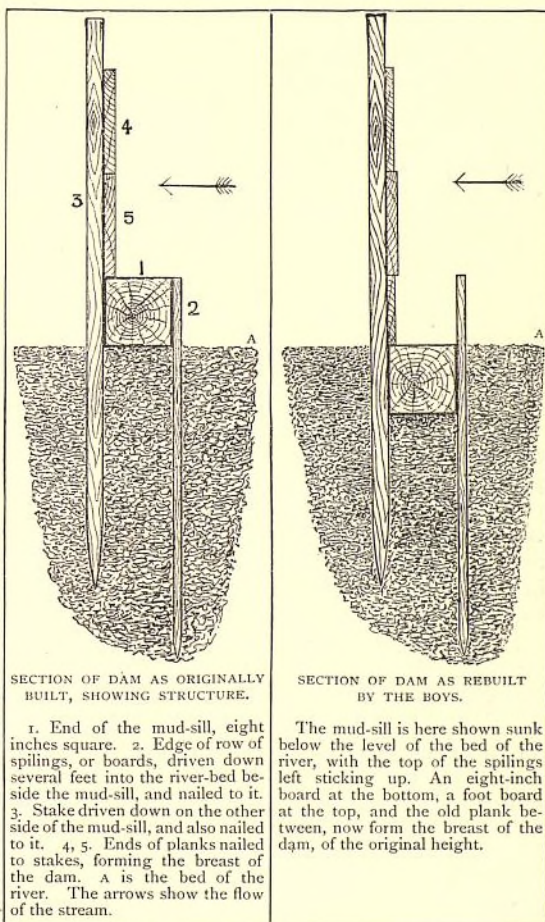
A strange sight they must have been in their rubber boots, splashed clothes, and brigandish hats, there in the glimmering river-bed, by moonlight and lantern light, if only Dempford and Tammoset had been awake to see! But all around them the two towns lay fast asleep, while the secret night work went on.

The rapid hammering made merry music to the boys' ears; for they now felt that the most difficult part of their task would soon be over. Rush kept the water scooped out of the new trench in advance of the nailers, and filled in the gravel after them. The sill, which had originally rested on the river bottom, was now sunk to a level with its surface, only the notched ends of the line of spilings being left sticking out, "like the back fin of a b-b-buried sea-serpent," Lute said.

More than once in the meantime Rush had to spring to his line of boards, which an ever-increasing flow of water threatened to wash away. He, however, managed to keep them in place until the sill and spilings were safe, and the mud and gravel packed against them.

Then the boards were to be nailed to the stakes. And though that part of the work might have been done in the water, it could be done much faster out of it; and no time was lost in running on the first tier.

There had been originally two tiers of foot-wide planks above the sill. But now the sill had been sunk, and in order to make the dam as high as before, three tiers would be necessary. For the first, the boys used some narrower stuff they had, running it clear across the flash-board opening. The best of the old planks served for the second. Finally, for the upper tier, the boards were taken



from the diagonal drain. And it was time. A rush of water was sweeping them away.

"There must be a big wash-out under the Argonauts' gate!" Rush said. "Do you suppose there's any chance of the abutments being undermined, or that the bridge will be in danger?"

"Let 'em be undermined!" exclaimed Lute, "and let the b-b-bridge be in danger! What's that to us?"

"Good enough for Tammoset and Dempford, for tearing our dam away!" said Rupe.

"Besides," said Mart, with a nail in one corner of his mouth, "after the bridge is gone, the little

Commodore's yacht can pass with the mast up. That's to be considered."

No serious fears for the bridge were entertained, however; and it was hoped that the gate would hold until the flood-tide came to carry the borrowed lumber back up into the lake.

As soon as the spilings were nailed, the two younger boys had got a basket and a garden rake, and gone to catching fish. The rake served to snatch them out of the shallows in which they were still flopping, and the basket was before long filled with fine alewives, measuring nearly a foot in length. As they were taken on their way up into the lake to spawn, they were in excellent condition. Eels, too, might have been secured, if the boys had known how to hold the slippery creatures or to keep them in the basket after they were caught.

One thing of interest they fished out of a puddle; it was neither an eel nor an alewife, but a small sledge-hammer which had been missing from the back shop ever since the night when the blades of the mill-wheel were broken. This discovery confirmed their belief that it had been stolen for the occasion, and afterward flung into the river.

Birds were now singing, and the brothers had the growing daylight to finish their work by. The platform and fish-way were repaired. The dam had no "apron," as Lute declared it ought to have, and should have some day, to prevent the water that poured over from washing out the river-bed below, Dushee's way having been to fill with stones and gravel any holes thus formed.

It was sunrise by the time the last plank was sawed, and the end of the dam against the Dempford shore stanchied with stakes and earth. Then the tide came up, meeting the water that came down, and forcing it back. The boys put away their tools and stood on the platform, splashed and muddled, but picturesque and triumphant, regarding their completed work.

"Now let 'em come on with their writs to prohibit us from doing what is already done!" exclaimed Rush.

"Writ or no writ," replied Mart, wiping his bespattered face, "it's something to say the dam was back again by daylight the morning after the two towns had their big jubilee tearing it away."

"Besides," said Lute, "it will let 'em know the T-T-Tinkham brothers are no t-t-triflers. Now hurry in, boys, with your fish, and tell Mother we and the dam are right-side up with c-c-care."

The widow had been up nearly all night, keeping her chair or her lounge, and sleeping little, while anxiously awaiting the result of her sons' extraordinary undertaking. Great, therefore, was her joy when the younger ones came in, announcing its success, and lugging their basket of fish.

Letty had gone to bed, but she, too, was now awake, and had to get up and rejoice with her mother over the good news. Then the three older boys appeared, begrimed and streaked from head to foot, from old slouched hats to rubber boots; haggard but hilarious, hardly knowing they were tired, but knowing very well they were hungry, and eager for congratulations and gingerbread.

The pride and happiness of the little household did not, it is to be presumed, prove extensively epidemic in the two towns when it was discovered, and told swiftly from mouth to mouth, that the dam, after being destroyed with such pomp and circumstance, had been replaced as if by magic in a single night.

What the Argonauts thought of it after their late jubilation does not appear. Some glimmer of light is perhaps thrown upon the subject by an article from the local newspaper, which I find pasted in Mart's interesting scrap-book.

Much the larger part of it was evidently written and set up in the silent hours of that same moonlit night when the Tinkham brothers were busy with their magic. A glowing description is given of the magnificent uprising of the sister-towns, and the inspiring spectacle of their united people gathering in majesty and might, and putting an end to a grievance which had been too long endured.

Only brief allusion is made to the appearance of the crippled mother on the bank—"a somewhat painful incident, which marred the otherwise perfect satisfaction which must have filled every patriotic heart on this glorious occasion."

Then follows this postscript:

"Since the above was put in type, we have learned with very great surprise that the dam has been rebuilt! Unable to credit so astonishing a rumor, we dispatched our reporter to the spot early the next forenoon, not doubting that those who started it were deceived by some illusion. He found it only too true! The dam had been entirely reconstructed within twelve hours of the time when at least two hundred people looked on and saw it, as was supposed, finally and forever destroyed!

"How the feat was accomplished is a complete mystery. There is evidence that the water was stopped at the bridge. Persons were heard at work under it late that night—"spearing eels," they said. Some lumber belonging to the Argonauts was found adrift in the lake the next morning, bearing such marks of rough usage that there is no doubt it had played an important part in this strange drama. It is believed that it was placed across the channel, between the abutments, by means of posts, one of which still remained in position against the upper railing of the bridge at ten o'clock the next morning. The rest of the temporary gate, if there was one, had been carried up into the lake at flood-tide. The posts—the ends of which were found battered, like the edges of some of the boards—had also been borrowed of the Argonauts. To make the members of our honored boat-club contribute in this way to the rebuilding of the dam was a piece of impudence which may be termed simply colossal.

"Our reporter states that many Tammoset and Dempford people visited the locality in the morning, to assure themselves, by the testimony of their own eyes, that the dam was indeed there. Comments were various. If the young mill-owners worked all night in replacing it, it would seem as if they must have required rest the day after; but at ebb-tide the mill was going, and they were busy at work as if nothing unusual had happened. The general impression seems to be that, whatever else may be said of them, they are smart."

(To be continued.)

ARCHIBALD STONE'S MISTAKE.

BY EMMA C. DOWD.

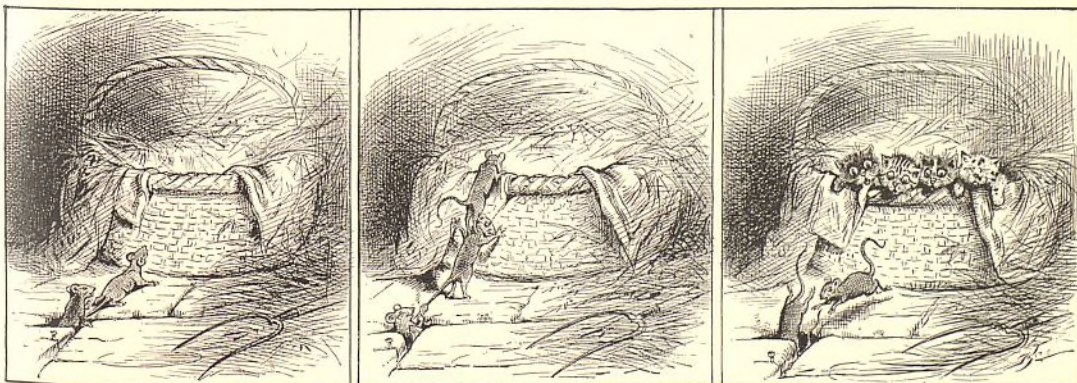
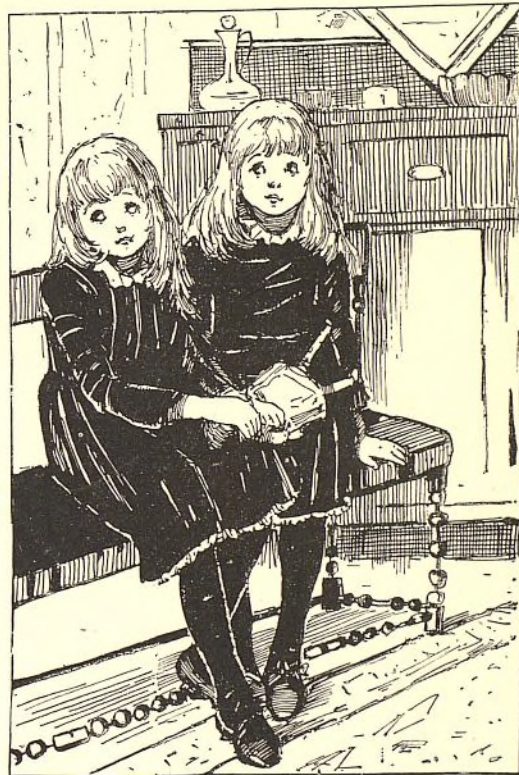
ARCHIBALD STONE is Archie's name,
And Daisy Stone, that's Daisy;
Mamma's and Papa's are just the same,
And mine—why, I am Maisy.

Daisy and I are twins, you know,
Exactly eight years old;
We are just alike from top to toe,
And our hair is just like gold.

And Archie he is almost ten,
And figures on a slate,
But does not add up rightly when
He says we are not eight.

For I have learned a little song—
Its name is "Two Times Two";
That's why I know that Archie's wrong,
For 'course the song is true.

Papa says not to worry more,
Nor vex my little pate;
But Daisy's four and I am four,
And that makes us just eight.



"LET'S SEE IF IT'S ANYTHING GOOD TO EAT"

—!!!

VOL. X.—43.

MAGGIE DARNLEY'S EXPERIMENTS.

BY JANE EGGLESTON ZIMMERMAN.

"THERE!" said little Margaret Darnley in despair, as she stood, broom in hand, at the north door. The dust, and bits of paper, and string, and clippings of cloth which she had been collecting from all over the room with her broom, kept drifting back persistently when she tried to sweep them out at the door. And worse than all were the feathers from the pillow of Myra's doll, which were scattered in every direction. Myra did sew dreadfully, and a pillow was the last thing she ever ought to have made. And everybody knows what hard things to sweep up feathers are. Margaret leaned against the wall, tired out.

"Why don't you try the other door, Maggie?" asked her brother Jack, who sat by the window.

"That is just the queer part of it," said Margaret. "I tried the other door first, and it is just as bad there. The wind *can't* blow in exactly opposite directions at once, can it?"

"May be it shifted while you were sweeping the dirt across the room," said Jack.

"Well, that *would* be funny," said Margaret; "but I'll try it again. It will be a sort of nixperiment, I guess."

"A sort of what?" asked Jack.

"A nixperiment," said Margaret. "I listened to your philosophy-teacher the other day, and Mr. Baird said that everything in science had to be—something by nixperiments."

"Verified by experiments," said Jack, laughing. "Yes, that's so, and now we'll see if there's any philosophy about this dirt."

So Margaret swept the dirt carefully across the room again, while Jack looked on.

"There!" exclaimed Margaret, "look at that!"

Jack did look, and had to confess that it was too much for his philosophy. "Stop," said he, "I'll see which way the wind is really blowing." Margaret shut the door and sat down to wait. The poor little arms were quite tired by this time, for Margaret was only ten years old, and was but just learning to sweep.

"It's the stillest day we've had this season," cried Jack, bursting in. "The weather-cock turns tail to the south, so whatever wind there is comes from the north. Let's try the south door again."

To the surprise of both Jack and Margaret, the dirt, which had been so perverse and contrary, went out this time without making much trouble.

"That's it—the wind shifted, don't you see,

Maggie?" said Jack, with a wise look. "That's the way with science. Science believes nothing till it has thoroughly proved it. That's what experiments are for, and that's the beauty of science."

"Open the draft, Jack, and put in some more wood. What makes this room so cold?" called their father from a small adjoining room, which he used as a study. "What's that you were saying about science?" he added, with a quizzical look on his face.

Jack, with a very grave and scientific look, explained their experiment in natural philosophy.

"Ah!" said his father, "the wind shifted, did it? How many times?"

"Why, four times, Father," said Margaret. "Just as quick as lightning—almost," she added, seeing her father raise his eyebrows. "I swept the dust from one door to the other just as quick as I could, but by the time I got there, the wind got there too, and blew the dirt back every time."

"Suppose we try the experiment again," said Mr. Darnley.

"Oh, I've swept all the dirt out now," said Margaret, "for after we had tried and tried, it finally went out quietly."

"Well, here are a few feathers which gave you the slip, little Pearl," said her father. "We can try the experiment with them. Put in some more wood and make the room pretty hot."

"What for, Father?" asked Jack, who was not very fond of carrying wood.

"It is necessary to our experiment," said his father.

Jack put in the wood. This was mysterious and interesting.

"Now, Maggie," said her father, when the room was uncomfortably warm, "get your broom and sweep out these feathers."

"Which door, Father?" asked Margaret.

"It makes no difference," said her father; "either door will do."

"Better let me look at the weather-vane again," said Jack.

"It is not necessary," said his father, smiling.

Margaret tried again, but the feathers all blew back, some entirely across the room.

"There they are, Maggie, close to the south door," said Mr. Darnley. "I'll shut this door, and you may sweep them out at that one."

But Margaret had no better success than before.

"Is n't it curious!" said Jack. "There must be witches standing in the door, blowing the feathers back."

"That is what ignorant and superstitious people would have said years ago, Jack," said his father, "but science shall teach us better than that."

"Now," continued Mr. Darnley, "let us make two piles of the feathers—one near the south and the other near the north door. Jack, get another broom for this pile. Now, both sweep in opposite directions at the same time. That will show us whether it is caused by the shifting of the wind."

Jack and Maggie tried faithfully, but the feathers went every way but out of the doors, some of them even rising toward the ceiling.

"It's the cold day," said Jack; "they don't like to go out."

"Father, what is the reason, please?" asked Margaret, earnestly.

"Hot air always rises," replied Mr. Darnley.

"Why?" asked Margaret.

"Because," answered her father, "hot air is lighter than cold. When it rises, of course cold air rushes in to fill its place. When you open the door, currents of cold air rush in at the bottom, while the hot air is escaping at the top. Open the

door, Jack, and try to drive out a feather above your head, while Maggie tries one at the floor."

The children did so, and found that, while the feather at the bottom blew in, the one at the top floated out.

"But, Father," said Maggie, "we did sweep the dirt out at last. Why was that?"

"Because you had let the room grow cold while you were trying your experiments," said her father, "and as the temperature became more like that outside, the currents were less strong. That is the way your 'wind shifted.'"

Jack looked foolish.

"Science is a fine thing, my son," continued his father, "and great beauty and interest, as well as importance, attach to its discoveries. But the life and soul of science lie in its exactness and thoroughness. A scientific experiment, to be worth anything, must be thorough. You tried an experiment half-way, and then jumped to a conclusion."

"Mother," said Margaret, "how do you sweep the dirt out?"

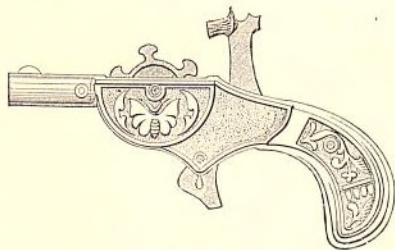
"I take it up on the dust-pan, Maggie dear," said her mother, smiling.

Jack and Maggie had both learned something that morning.

THE TOY PISTOL.

BY CHARLES BARNARD.

HERE is a picture of a toy pistol. You see it has a lock, a trigger, and a barrel, just like a real pistol. There is even a "sight"—a bead at the end of the barrel to help you take aim. This is very funny, because if you were to aim at anything with this pistol, you would be sure not to hit it. When it is



fired it will make a noise, but it will not shoot anything. For all this, it is truly a wonderful pistol. It might kill a horse—if he could fire it. It is sure to hit the boy who pulls the trigger. It is a sort

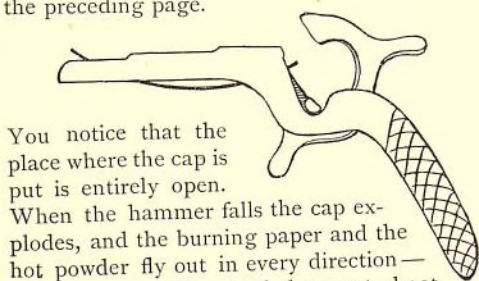
of boomerang, and fires backward. The fact is, this pistol is a sham and a cheat. It is made of cast-iron, and can fire neither powder nor shot.

If you wish to use this toy pistol, you must get some caps. These are little dots or wafers of paper, white on one side and red on the other. In the picture you see that there is a wheel, having large teeth on its edge, in front of the lock. Place one of the paper caps on the wheel, between the teeth. On drawing the trigger back, the wheel turns over and the hammer moves back. Pull the trigger, and the hammer falls on the cap, and it explodes with a flash of fire and a little report. To fire it again you must put in a new cap.

Girls who have brothers who like to playfully aim pistols at them will be charmed with this pistol. The persons at whom it is aimed never get hit. Many a boy who has fired it wishes he had never touched it. As I have said, it is a sort of boomerang, and like that remarkable weapon, is sure to fire backward.

As I tried it once, I can tell you about it. First, I twisted one of the caps around a match, and set the match on fire. When the flame reached the paper cap there was a little explosion. Suddenly I felt a stinging sensation in my hand, and, on looking at it, I found several tiny black splinters sticking in the skin. I pulled them out, but I felt the pain for some time afterward. Then I placed a cap on the hearth and struck it with a hammer. This time I was well scared, and kept my hands as far away as I could. When it went off I felt the same stinging sensation in my left hand, which was more than two feet away. I had been struck again by a flying splinter. This thing was getting decidedly dangerous, and when I took up the pistol to try it, I carefully wrapped my right hand in my handkerchief. It went off beautifully, but—ah! There was the mischief! The handkerchief was dotted here and there with the black splinters from the exploded cap. I did n't fire that pistol any more. Neither did I sell it nor give it away. I sent it to an artist, that a picture might be made for you all to see.

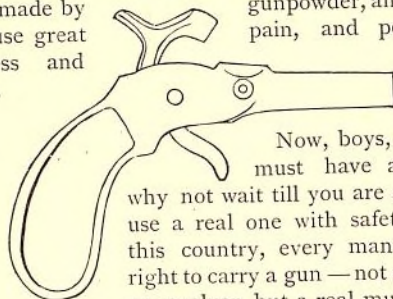
Now let us examine carefully the weapon on the preceding page.



You notice that the place where the cap is put is entirely open. When the hammer falls the cap explodes, and the burning paper and the hot powder fly out in every direction—except one. This pistol does not shoot ahead or through the barrel. The thing you aim at can laugh in your face, for the little projection on the wheel keeps the shower of sparks back and throws them upon your hand. The pistol “kicks” its whole charge right into the hand of the person who fires. Certainly this is a capital pistol for boys who wish to get hurt. It makes a pretty loud noise and a good flash of fire, but it may prove a terrible shot for the poor boy who fires it. The little burns and cuts made in the hand by the flying sparks sometimes bring on a strange illness, called the lock-jaw, which is apt to prove fatal.

There are several other pistols that can be used in this way. Some of them are pictured here, and each one is warranted to hurt the boy who fires it. Every one else will be perfectly safe, and that, I am sure, is a great blessing. I gave some of the caps used with these pistols to a chemist, and he tells me they are composed of a mixture of chlorate of potassium and sulphate of antimony.

These things may not of themselves be very harmful, but the wounds they make are the same as those made by gunpowder, and sure to cause great sickness and death.

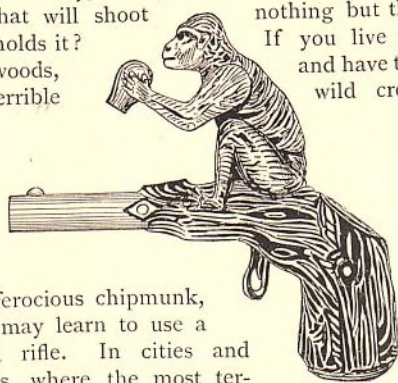


Now, boys, if you must have a gun, why not wait till you are able to use a real one with safety? In this country, every man has a right to carry a gun—not a pistol or revolver, but a real musket or rifle, to be used in defending the country. These pistols are only toys, but they are very dangerous toys.

The Fourth of July is close at hand, when the very air will crackle with reports of the toy pistol. It is so safe, many ignorant persons think, because it carries neither shot nor bullet. But look into the newspapers on the day after the Fourth,—for days after the Fourth, in fact,—and you will see accounts of some of the innocent doings of the pretty toy in every city in the country.

The insane desire of the small boy to carry a pistol is one of the wonders of the age; and the worse than folly of those who allow him to do so is almost incredible. Of what use is it? If the pistol will not go off, it is, as its owner would scornfully express it, “no good.” If it does go off, it is a dangerous weapon that has power to maim and kill.

Did you ever think what it means to kill—to take away life? Who shall do so dire and terrible a thing as that? Are you fit to have a pistol? Are you wise enough to carry a revolver? No, sir. It is against the law in some States to carry pistols. Why, then, should you wish a toy-pistol, that will shoot nothing but the boy who holds it? If you live in the backwoods, and have to fight the terrible wild crow or



the ferocious chipmunk, you may learn to use a good rifle. In cities and towns, where the most terrific wild beasts to be seen are the cats, a boy who carries a pistol is a boy without sense—a boy whom girls despise and brave boys call a coward.

Said a sorrowing maiden named Fan;
 That they stuff all the dollies with bran
 There is scarcely a doubt;
 I have just found it out.
 What a horrid deceiver is man!



SWEPT AWAY.*

BY EDWARD S. ELLIS.

CHAPTER X.

A MISFORTUNE.

"I WONDER," sighed Crab, when the stoppage of the raft had lasted long enough for them to recover their self-possession,—“I wonder if dat am de end ob dis v'yage?”

"I hardly think so," said Jack, "for I don't believe the tree, or whatever it is that detains us, can hold the raft a great while."

"Why can't we shake it loose?" And Crab began to set the structure rocking, by way of experiment. But Jack stopped him, expressing a fear that he would loosen the logs and possibly dismember the entire raft.

Jack then walked around the margin of the roof,

as close to the water as was prudent, peering into the muddy depths, and trying to see what it was that held them. He saw nothing, however.

What was to be the end of this?

Well might they ask the question, for, if they were to remain anchored in this novel fashion, escape would be impossible, unless some one came to their rescue—which, in the present condition of things, was scarcely to be expected.

Looking about, over the great, turbid sea that was sweeping around them, they could discover nothing that gave them any encouragement—nothing but a confused mass of cabins, logs, trees, planks, and everything that a vast river gathers up when overspreading its banks for an extent of thousands of square miles.

True, there were many people in sight as well, but

* Copyright, 1883, by Edward S. Ellis.

none who were so situated as to be able to give them any assistance. All were sufficiently occupied in endeavoring to secure their own safety, without risking anything to help those who were strangers.

Far away to the south-west, a black streak stained the sky, as though some giant had drawn his soiled finger along the horizon; and, just beneath, a dark object could be discerned creeping slowly along, like the hour-hand across the face of a clock.

It was doubtless a steamer, but so far off that it was idle to hope it would be attracted by the plight of the children.

"Fire off de gun!" suggested Crab.

"What for?" asked Jack.

"Fur a salute," replied the negro; "maybe dey'll hear it and come ober to us."

Jack shook his head, with a half-smile.

"It would be only throwing away so much ammunition," said he. "There is no more chance of attracting their notice than that of the crowds on the wharf at Vicksburg."

"Den I would n't fire it," said Crab, who saw that his companion spoke the truth.

"There's something coming this way!" called out Dollie, suddenly.

The boys could not imagine what she meant, until she pointed directly up-stream, where they presently espied what seemed to be a large log floating on the current.

"That's going to strike the raft," said Jack, "and more than likely it will knock us loose."

"Wont it knock us to pieces as well?" inquired Crab, anxiously.

"I don't think the roof is put together so weakly as that —" began Jack.

"That is n't a log!" interrupted Dollie, whose eyesight for once seemed to be more acute than that of the boys.

"What is it, then?" asked Jack.

"It's a boat!" she replied eagerly, clapping her hands.

Such proved to be the fact. The discovery naturally threw the children into a state of great excitement, for, as it was coming straight toward them, it offered the very means of escape they needed.

When within less than a hundred yards, it was seen to be a large flat-boat or scow, which stood so high out of the water as to indicate that little weight was in it.

"We must have that boat," said Jack, placing himself on the upper part of the roof, where the waters foamed and rolled over the shingles, "though it will not be very easy to get it."

Curiously enough, the scow was drifting as directly toward the roof as if a skillful boatman was

steering it. But it was reasonable to expect that it would swerve to one side just before reaching them, inasmuch as the current itself was forced to divide as it swept around their raft. Great care and no little skill, therefore, would be required to capture the prize.

"Stand here by me," said Jack to Crab, "and the minute it comes close enough, reach out and catch hold, but look out that you are not drawn into the water."

Crab promised to do his best, and prepared himself for action. The situation was exciting, but it became much more so in a very few minutes.

The swiftness of the current was fully appreciated for the first time when the scow, as it neared them, plunged toward the raft as if about to split it asunder.

Jack was afraid that he and Crab were about to attempt an impossible thing; but as he fully realized the value of such a craft to them in the present desperate state of affairs, he resolved to make the strongest possible effort to secure it.

As he anticipated, the scow, when quite close to them, swung partly around, so that it came quartering, and was certain to approach near enough for Jack to catch hold of the gunwale.

The instant it was within reach, and just as it began swerving with the powerful eddy, Jack stooped and, extending his right hand, grasped the gunwale with all his might.

Almost at the same instant Crab did the same, and both exerted their utmost strength to stop the boat. But they miscalculated its momentum.

They were both jerked off the roof and into the water like a flash, without in the least checking the motion of the scow itself. Dollie uttered a scream when she saw the two struggling in the river, and sprang up and down in frantic alarm.

But, fortunately for Jack and Crab, they held fast to the gunwale, and without difficulty drew themselves over the side into the boat, where they were safe.

But, brief as was the time occupied in doing this, it had carried them a couple of rods below the stationary roof, where Dollie stood looking at them, the tears still running down her cheeks.

In the scow lay a long pole and a broad paddle. "Quick!" shouted Jack to Crab. "We must work the boat back, or Dollie is lost!"

Jack caught up the paddle, and began plying it desperately. Crab thrust the long pole into the water, but, although he pushed it under until his hand touched the surface, he did not reach bottom. The lower end bounded up like a cork, and the pole flew from his grasp. But he caught it again before it got beyond reach.

Meanwhile, Jack plowed the water with the

broad paddle, with, however, only the effect of turning the boat slowly around. He then plunged it into the river on the other side, and put all his strength into each stroke, while Crab, no less in earnest, made a vigorous but futile attempt to use the pole as a paddle.

They strained every nerve to the utmost, but, to their consternation, the boat still continued to drift down-stream, and further away from the cabin on which poor Dollie stood, helplessly looking at them.

They toiled against hope, not pausing until they were fully two hundred yards away. Then they stopped, and looked despairingly at the distance which separated them from the raft.

"It's no use," said Jack, in a hopeless tone. "A dozen men could n't force this miserable scow against such a current."

"And hab we got to leab Miss Dollie all alone?" said the panting Crab.

"There is no help for it," replied Jack, despondently, hardly able to keep back his tears.

"What will become ob us?" said Crab, with a heavy sigh.

"What will become of us!" repeated Jack, indignantly. "What is to become of poor Dollie?"

"She's got all de pervisions," replied Crab, in the most doleful of tones, "and we hab n't so much as a bite—and I'm hungry enough to eat a meeting-house dis bery minute."

Jack Lawrence made no answer to the characteristic outburst of Crab, who was evidently of the opinion that the situation of the forsaken little girl was, after all, better than their own: for she was provided with enough food to last her a long time, while they had not a mouthful.

But what was to be the fate of Dollie, who, a mere child as she was, could do nothing for herself?

Perhaps some passing steamer or boat might see and take her off before she succumbed to terror and exposure. But if no such help should reach her, what then?

Ay, indeed, what then?

CHAPTER XI.

DRIFTING APART.

"GOOD-BYE, Jack!" called Dollie, standing with her apron to her eyes, and calling to her brother, through her blinding tears.

"Good-bye, Dollie!" came back, in a tremulous voice. "Don't give up yet! Somebody will come to take you off."

"I will pray to the Lord to take care of you and me," said Dollie, simply, "and I know He'll do it. Good-bye, Crab!"

The negro essayed to reply, but his voice failed him, and he could only sob:

"Good—bye—Dollie—we'll neber see you ag'in! I feel—so bad—I want to die!"

"Good-bye, dear Dollie!" Jack called out.

They exchanged endearing terms, and called to each other as long as they could make their voices heard. Dollie remained standing on the roof, waving her handkerchief, as long as their brimming eyes could make out her figure. Presently they could see nothing but a fluttering speck in the distance, and finally even that faded out altogether.

Crab seated himself on the gunwale, the picture of woe, while Jack, with despair in every feature, sat opposite. They bent their eyes on the bottom of the boat for awhile without speaking.

Jack never felt more saddened and wretched in all his life. The consciousness that the cruel flood was carrying him further away every minute from his loved sister was enough to have crushed a stronger one than he.

He presently sprang to his feet and scanned the waters in every direction, in quest of some one whom he might send to the rescue of poor Dollie. But there was nothing in view that could give the least hope.

Not the faintest tint of smoke showed in the leaden sky, which proved that there was no steamboat within many miles of them. There was ever in sight innumerable wrecks and drifting *débris*; but everything was sweeping in the same direction—all rushing helplessly toward the far-away Gulf, unable to stem the tremendous current.

Then Jack turned and peered up the river. Was he mistaken, or did he really see a dark object resting stationary on the waters, supporting the slight figure of a little girl, who stood erect, shading her eyes with one hand while she waved a tiny handkerchief with the other?

Possibly he did see such a sight, but, if so, it was only for an instant. Then everything became blurred, misty, and indistinct. Once more he realized that he and Crab were alone and hurrying



"GOOD-BYE, JACK."



on the gunwale, waiting for Crab to recover from his strong emotion.

Withdrawing his thoughts from the sad subject of his sister's fate, he now began to examine carefully the boat in which they were sitting.

It was fully twenty feet long by six in width, with a depth of two feet. The planks were thick, sound, and strong, and the seams were so well caulked that the interior was scarcely moist. The scow—



"JACK AND CRAB DREW THEMSELVES OVER THE GUNWALE."

downward, and that every minute was taking them further from poor Dollie, who could only pray and hope and wait.

"I thought at first that the boat was a great prize," said Jack, rousing himself, "but it has proven anything but that."

"Dat's so," added Crab, whose regret and grief seemed fully as great as that of his young master. "If I had an ax here, I bel'ebe I'd chop de ole flat-boat all to pieces."

"That would n't do any good," said Jack. "What would become of us then?"

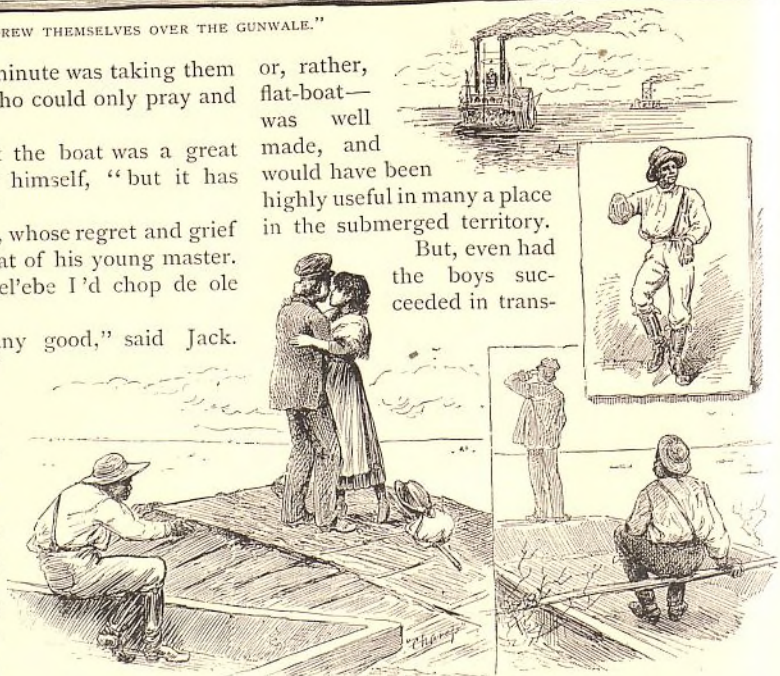
"Who cares what becomes ob us?" blubbered Crab. "Does you? I don't, I want you to understan', wid poor little Dollie back dere cryin' her eyes out, and we two can't do nuffin —"

And once more Crab gave way to his sorrow, and sobbed as if unable to stop.

Grief, like mirth, is contagious; and, though Jack had got the mastery of himself, his tears now flowed again in sympathy with Crab's. But he soon rallied, and sat silently

or, rather, flat-boat— was well made, and would have been highly useful in many a place in the submerged territory.

But, even had the boys succeeded in trans-



ferring Dollie and their luggage from the cabin to the boat, it was by no means certain that the situation would have been thereby improved.

The scow was empty, save for its human freight and the pole and the paddle which had been plied so vainly against the resistless current. There was nothing that could give a hint of the owner, or tell where the craft had come from.

Gradually the grief of Crab subsided into occasional sobs, and he finally ceased wiping his eyes. With moist and shining cheeks, he looked across at his young master.

"Jack," said he, in a softened voice, "dis am what I call rough, don't you?"

"Yes, it is dreadful," responded Jack. "I could hardly feel worse if poor Dollie had been drowned before our eyes."

"Is n't it purty near noon?" continued Crab, skillfully leading the conversation toward his favorite topic.

"I guess not, but there is no way of telling," said Jack, looking up at the sky, which was so heavy and overcast that the position of the sun could not be seen.

"It seems to me dat it's been a week since de night passed," pursued the negro, reflectively. "I was neber hungrier in all my life."

"Crab," said Jack, impatiently, "do stop thinking, if only for a few minutes, of something to eat."

"So I would," replied Crab, in a mournful tone, "if I could only stop feeling hungry for dem few minutes."

"You may as well make up your mind that you wont get anything to eat for two or three days," rejoined Jack, unrelentingly.

Poor Crab looked so horrified over the bare suggestion of such a terrible fate that Jack hastened to add: "That is, there is such a possibility, though we will hope for something better."

"Yes, let's keep on hopin'," said Crab. "I neber missed but one meal in all my life, and I did n't get ober dat for a good many weeks, so I don't want to try it ag'in."

Something at that moment scraped the bottom of the boat. The sound was a rough, brushing one, such as is made by the limb of a tree grazing a swiftly moving board.

"We're going over a piece of woods," said Jack, his face lighting up with a sudden idea. "See whether you can't catch hold of one of the tree-tops."

Here and there the tree-tops of which he spoke could be seen, nodding and dipping after the manner of "sawyers"; and there were so many of them visible that there could be no doubt they were passing over a stretch of forest. But they were of such a character that it was hard to find anything that would hold. Although they seized several branches, the treacherous twigs broke off

or slipped through their fingers without in the least checking the progress of the boat.

Jack now took a careful look about him. Here and there, over a space of a quarter of a mile, the tree-tops reared their heads. Many of them were scarcely visible, but a few projected considerably above the water.

"Yonder is a big tree that is n't much out of our course," said he, presently, "and we must reach it."

"What for?" asked Crab, who did not seem to have caught his companion's idea.

"So as to hang on to it till the roof floats free and comes down-stream," explained Jack.

"Dat's a good idee," replied Crab. "Let me hab de paddle, and I'll make tings hum."

And so, in a figurative sense, he did. The task was not a difficult one, and Jack soon saw that the flat-boat would be driven straight among the branches of the tree that had caught his eye.

"You've got it headed right, Crab," said he, presently. "You needn't paddle any more, but hold the boat to its course."

"I'm so mad at de ole scow," said Crab, as he ceased paddling, "dat I'd jes' like to twist it apart."

Jack made no answer to this childish remark, but gave all his attention to the work before him. The boat, if it should strike broadside, was likely to overturn, and it was necessary to guard against such a catastrophe, which would be fatal.

The best of fortune attended the effort: the scow glided swiftly among the branches, and it so happened that Jack and Crab each seized a limb at the same moment.

They held fast, and the boat came to a standstill, pointing directly up and down the Mississippi.

The force required to maintain it in this position was much less than they had anticipated, the sloping bow of the boat allowing the swift current to sweep under it with comparatively little resistance when contrasted with the way in which it had surged and boiled against their raft under similar circumstances.

CHAPTER XII.

A CHANCE FOR DINNER.

SO SLIGHT an exertion was required to hold the scow stationary in the rapid current that the boys saw it would be easy to maintain their position for a long time.

"This is all well enough," said Jack, after the lapse of a quarter of an hour, "but the trouble is we don't know how soon the roof will move, or whether it will move at all."

"If de riber am risin', wont dat help tings?" inquired Crab.

"I did n't think of that," replied Jack, his face brightening. "It can't help freeing the roof. If the water keeps on rising, it must lift the cabin clear of whatever it has caught against."

"But den," suggested Crab, "s'posin' dat de Massissipp am fallin' or only standin' still—how den?"

"Then I don't see that there is much hope, for there is nothing to loosen the cabin," replied Jack. "However, we can soon tell whether the flood is going down or not by the tree here."

It was tiresome work to sit motionless, and the boys presently set themselves to find some means of lightening the task.

Jack soon hit upon a plan. The tree to which they had "anchored" was a sycamore, and the more slender branches were easily twisted and tied together, so as to make a firm knot. Through this the end of the pole was forced, and laid across the boat. Then, when one of the boys sat on the pole, the scow was held as firmly in position as before, while the strain on their hands was removed.

This was an improvement, but the tedious monotony of waiting was not diminished. The air was chilly, and Crab, whose coat was on the roof, regretted more than once that he did not have it with him.

While one of the boys held the pole in place and kept the boat still, the other remained on his feet, scanning the horizon, especially to the northward, in quest of the precious raft on which little Dollie Lawrence had been left.

"Shuah as I lib, if dar aint a steam-boat!" finally exclaimed the overjoyed Crab, indicating a point to the west and a little below them.

There was a large boat indeed, the smoke pouring from her two tall funnels, while her wheels churned the current into yellow, muddy foam. The pilot was at the wheel, and there appeared to be plenty of passengers moving hither and thither, principally occupied in surveying the waste of waters around them. Two could be seen with glasses leveled, apparently at something a long way off. But all failed to notice the scow, standing motionless, half-buried in a bushy tree-top.

Crab and Jack shouted, and in turn waved their arms and hats violently, and it was hardly possible that they were not seen. But, if they were observed, the boat did not change its course, and was soon so far up the river that the boys gave up their effort to attract the notice of those on board.

"Dat's what I call a mean piece ob business," said Crab, taking his seat on the pole and banging his hat on the bottom of the scow. "They

need n't pretend dat dey did n't obsarve us, when I was jumpin' up and down all de time in front ob 'em."

"Of course they saw us," said Jack. "But they must have concluded that we were well enough off without taking us aboard."

"And dar's whar dey're mistook," said Crab, in a tone of dejection.

Crabapple Jackson was so indignant over the action of the captain and pilot of the steamer that he was anxious they should be punished in some way.

"If dey did n't want to take us aboard," he continued, sulkily, "why did n't dey run alongside and fling some perwisions to us, so dat we wont starve to death—Heigho!"

"What's the matter?" asked Jack, a little startled.

"Dis pole am sort ob twistin' loose," explained Crab, partly rising, and looking down as if to demand what it meant. "What makes it cut up in dat sort ob style?"

"I understand," said Jack. "The river is rising, and it makes more strain on the pole as the other end is lifted against the knot in the limbs. That pleases me."

"So it does me," said Crab, earnestly, "if it makes any better show for poor Dollie on de roof up de riber."

"It *must* help her," said Jack, with the emphasis of one who was determined to make himself believe the best.

Jack balanced himself on the side of the boat and strained his eyes in every direction, in the hope of catching sight of the old cabin on the roof of which this strange voyage had been begun.

He could not, however, discover anything that looked like it, and so he again took his seat on the pole, which stretched across from one side to the other. Crab then went to the bow, and balanced himself on the gunwale for a search in his turn.

While he was doing so, Jack intently watched the black, honest face, certain that he could read success or failure there. Only a few minutes had passed, when it seemed as though a ray of sunshine flashed from the sky and illuminated the swarthy countenance.

"What is it?" asked Jack, quickly.

"Clare to goodness!" replied Crab, breathlessly, "if I don't see sumfin' dat looks bery like dat same ole roof!"

At the risk of precipitating himself into the water, he rose on tiptoe so as to gain an additional inch or two in height; then he remained silent a minute gazing up the river, while Jack studied his face no less intently.

"Yes, I see sumfin' dat looks like de ole roof,"

repeated Crab to himself, "and it *am de roof, too!* — And I don't know, but I tinks I see sumfin' on top dat looks like a little gal wavin' her handkerchief—yes, it *am* a little gal which her name *am* Dollie, and here goes tank de Lord!"

And springing into the middle of the scow, Crab flung his hat into the air and danced a most vigorous breakdown, ending it by striking his heel against the planking with a force that threatened to start the seams. Then, with a face beaming with delighted expectancy, he added:

"Now, dar's a chance to get some dinner!"

CHAPTER XIII.

A HAPPY MEETING.

JACK was so afraid that Crab had been mistaken that he requested him to exchange places with him. Then he carefully balanced himself on the prow and gunwale, and looked up-stream.

There certainly was a dark object approaching, which might well be the cabin they left anchored among the trees, but for a minute or two he could see nothing resembling the figure of a person upon it.

Just as he was about to make a remark to that effect, Crab inquired:

"Don't you see her? — standin' in de middle ob de roof?"

"I can not see anything at all," said Jack — "but yet — hold on!" he added, excitedly.

"I thought so," said Crab, with a grin.

Yes, he now discerned a figure which a minute or two later was recognized as that of a little girl, who, of course, must be Dollie.

All doubt on that important point was removed when Jack plainly observed the fluttering handkerchief in her hand. She was signaling to her friends that she was coming, though it was hardly to be supposed that as yet she saw the scow among the tree-tops.

A thrill of joy and gratitude too deep for words went to the heart of Jack Lawrence when he realized that his lost sister had been mercifully restored to him (for there was no reason to fear any difficulty in taking her from the cabin).

Crab was so overjoyed that, although obliged to keep his weight on the cross-pole, he continued to shuffle vigorously with his large feet, ending the performance by banging one of his heels against the planking on the bottom with sufficient force, as it would seem, judging from the sound, to drive a nail to its head.

"Dat *am de best ting* dat could have happened," he said to himself; "for if dat steam-boat had taken us off, mebbe dey would n't hab had enough

to eat, while Dollie is sure to hab plenty, and it can't be far from dinner time."

Only a few minutes passed before Dollie caught sight of her brother, who was waving his cap and shouting her name. The distance decreased so fast that soon they were able to call to each other without difficulty.

"Halloo, Jack!" came in the clear voice he knew so well. "Are you and Crab all right?"

"Nothing is the matter with us —" Jack was beginning, when Crab, speaking eagerly and in an under-tone, interrupted him.

"Jes' frow in an observation dat I'm ready for dinner and can't wait much longer; dat will lead her to keep her eye on de bag ob perwisions."

Jack, however, chose to disregard the request of Crab, who straightened his body as much as he could while still sitting, so as to catch sight of the cabin and its single passenger. Finally, unable to restrain himself, he stood up, keeping one of his feet on the pole to prevent its slipping away.

This gave him the desired view, and he became so interested that he forgot himself until the pole was suddenly wrenched from its place, and the scow began moving down the current again.

"What's the matter?" demanded Jack, hastily catching at one of the branches. "Why don't you attend to your business, Crab?"

The accident was of small importance, however, for it was an easy matter now to propel the scow to the floating cabin, since their relative positions were the same as if the water was perfectly calm.

As the boys had paddled considerably out of a direct course to reach the tree, the cabin would have gone some distance to their left had they remained stationary until it had passed by.

But it was yet above them when Jack let go his hold and seized the paddle, while Crab essayed to assist his efforts with the pole; but, as before, it proved of no use, as it did not reach the bottom.

As Jack began working the heavy boat toward the cabin, he noticed that, since he had last seen it, the cabin had settled so that the roof was now almost flat on the surface. It looked as though the structure was being gradually dismembered by the action of the current. It was not unlikely that even the shingles of the roof might soon separate.

A vigorous use of the large oar sent the scow steadily toward the raft on which Dollie was standing, with the gun, the bundle of clothing, and the bag of provisions near her. Crab was quick to observe this latter article, and did all he could to hasten the transfer.

"Was n't it nice, after all?" asked Dollie, as they came closer together. "I did n't have to wait long before the water just lifted me clear."

"Did you see the steam-boat?" inquired Jack.

"Yes," said she, with a smile, "and I lay down as low as I could on the roof, so they would n't see me."

"What under the sun did you do that for?" asked her astonished brother.

"I was afraid they would come and take me off," said she, naively.

"But was n't that the best thing that could have happened to you, Dollie?" asked Jack, in a tone of grave reproach.

"Perhaps so. But," she added, with a sweet smile, "what would have become of *you* without *me*, and how would you have got anything to eat?"

"I declar'!" exclaimed the grinning Crab, "she am de most sensiblest little ting along de Massissipp. If dey had picked her up dey would n't hab come back for us, and like as not we would n't hab had any supper to-night arter going widout dinner, too."

With little trouble the scow was swung around so that the bow rested against the upper side of the cabin, where it could be easily held. Crab kept his place at the stern, while Jack stepped to the roof and met his sister.

"Oh, Jack, I am *so* glad to see you!" cried she, as they met. And, with one bound, Dollie sprang into the arms opened to receive her. The tears ran down the cheeks of both as they embraced each other, for their delight was beyond words.

Then, as he gently released his sister, Jack led her to the bow, where she was helped into the boat.

Happy Crab shook the hand of the little girl warmly, for he was scarcely less overjoyed than her brother.

"Look out, Jack, that we don't float away and leave you on the roof, just as you did me," said the anxious Dollie.

Jack laughed, and replied that no such danger could threaten while the raft and scow were floating down-stream together.

The bag of food and the clothing were quickly passed to the ready hands of Crab, and then, with the gun in his grasp, Jack sprang into the boat. Crab pushed the pole against the cabin, and separated the two by a distance of several yards.

"Good-bye!" called Dollie, waving her hand. "I don't suppose we shall ever see our house again."

"If we do, it wont amount to much as a house," laughed her brother, ready to make light of anything in his happiness over the recovery of his precious sister.

"Dollie," suggested Crab at this point, "don't you think it's 'bout dinner time?"

"For mercy's sake, do give him something to eat!" said Jack. "He is n't able to wait another minute."

The girl gladly waited on Crab, who devoured the bacon and cold corn-bread as though he were really famishing.

He was given twice as much as any one else, and would have been glad of as much more. Jack, however, prudently limited each to what he considered necessary.

The little party were now in a large scow, with pole and paddle, provisions, and a double-barrel gun. The last was loaded, but they had no more ammunition, so that the two charges were all that were at their command.

They had no means of telling where they were in the flood, the extent of which was such that the shore was invisible on the right and left. They judged, however, that they had not yet reached the mouth of the Arkansas, because in that case an agitation of the current would have been noticeable.

The hope of our voyagers was that they might be seen by some steamer passing up or down, and be taken aboard. Though their situation was scarcely an enviable one, it was still far better than that of thousands of others who were involved in the unprecedented flood which devastated the vast tract of country adjoining the lower Mississippi and its tributaries during the month of March, 1882.

"Keep a bright lookout," said Jack, "and, if we catch sight of a steamer, we'll make for it. We have seen three already, so it can't be so very long before we run across another."

All scanned the waters in every direction, but nothing was seen which could awaken hope of a speedy rescue.

(To be continued.)

THE ADVENTURES OF RANA PIP.

BY EVELYN MULLER.



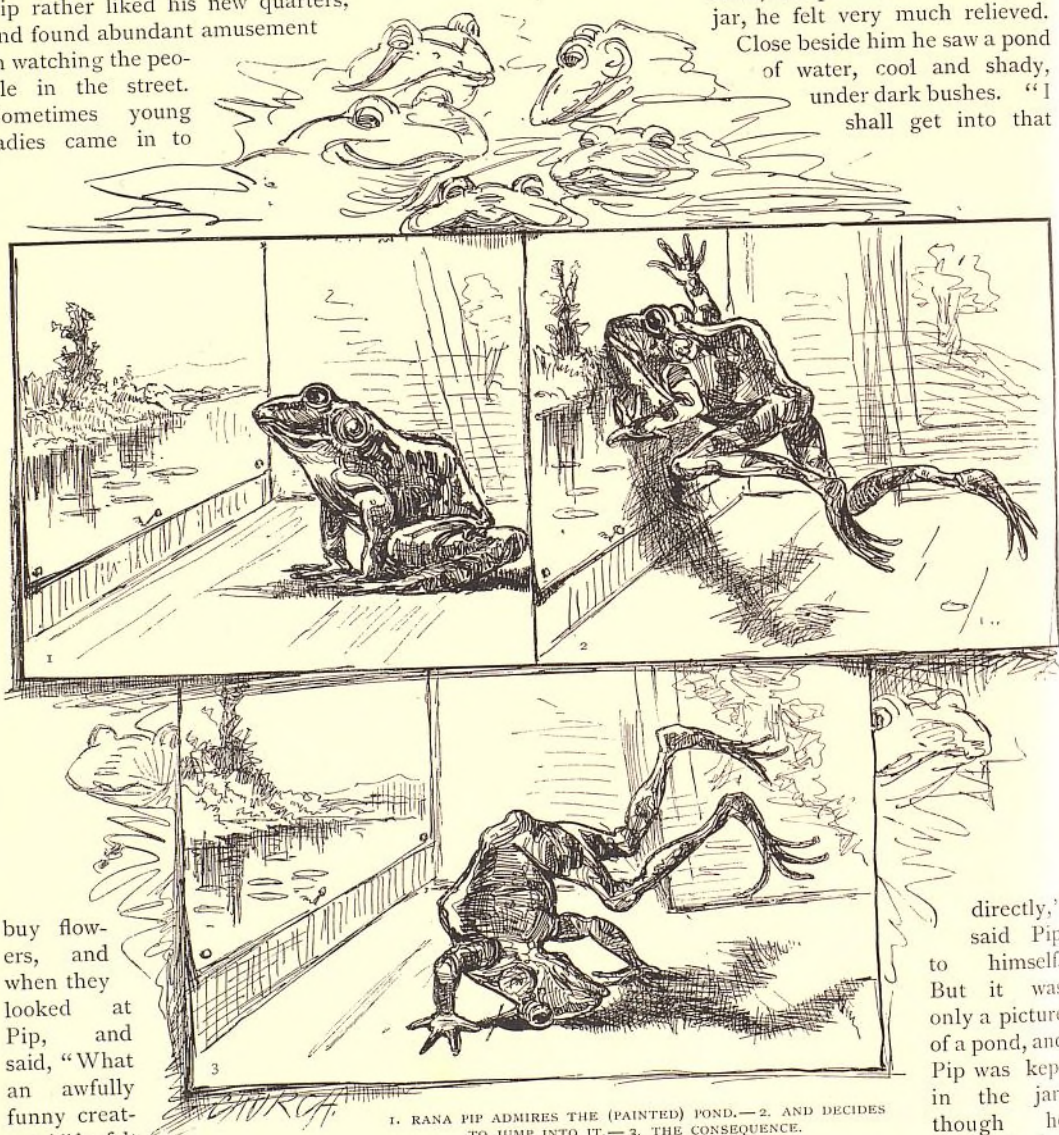
It was such a beautiful evening that you would have thought even the frogs would get out on the bank and watch the sunset; but they were too busy quarreling. Such shouts and groans came out of that pond! "You're wrong, wrong, ong! Get down, ge'down, down!" "Cheat, a cheat, cheat!" These were only a few of the dreadful

things the frogs were saying to each other, because some thought it would rain, and some did n't.

Suddenly, while they were fighting, a boy pounced on Rana Pipiens, and carried him off.

Rana Pipiens belonged to the family of Ranas, but he put his last name first because he was a frog (they don't put names the same way as we do), and he was called "Pip," for short. The boy carried him to town, and sold him to a man who kept a flower store, and the man put him into a large glass jar full of water, and set him in the window. Pip rather liked his new quarters, and found abundant amusement in watching the people in the street. Sometimes young ladies came in to

top of a house. Pip wished he was back in his glass jar, for he thought surely that a heron had got him, and was taking him up to a tree-top to eat him. Pip had an aunt's sister's cousin who had been eaten by a heron that way, and he remembered it now, and was very badly frightened. But when he found himself taken into a large sunshiny room, and placed in another glass jar, he felt very much relieved. Close beside him he saw a pond of water, cool and shady, under dark bushes. "I shall get into that



buy flowers, and when they looked at Pip, and said, "What an awfully funny creature!" he felt flattered.

But he wished for another frog to talk to, and by and by he wanted a larger place to swim in. Then he grew very unhappy indeed, and was just thinking of starving himself to death, when some one took him out of the jar, and carried him into the street, and up ever so many flights of stairs to the

Presently fresh troubles began. A man sat down in front of him, with pencil and paper, and watched him. Pip did n't like to be stared at, so he turned around in the jar. Then the man (who was an artist) turned the jar around, till Pip faced him again. This was provoking. Pip squatted flat, and

directly," said Pip to himself. But it was only a picture of a pond, and Pip was kept in the jar, though he wondered why.

1. RANA PIP ADMIRES THE (PAINTED) POND.—2. AND DECIDES TO JUMP INTO IT.—3. THE CONSEQUENCE.

put down his head, and tried to look like a piece of mud, the way he used to at home, when danger threatened. But that was of no use either. The artist shook the jar, and turned it nearly upside down, till Pip got over his bashfulness, and behaved as a model frog should—or as a frog should who has been bought for a model.

This sort of thing was repeated on several days, till Pip nearly wondered himself sick, trying to imagine what was the matter with that man who stared at him so much.

But one day Pip found himself alone, and no cover on the jar. He was not long in getting out, and, hopping over the table, he began to explore this strange country. After he had knocked over an inkstand, and upset a glass of water into a drawer full of papers, he fell off on to the floor, and tried to get into the picture of the pond. It was surprising, but one good jump, which ought to have taken him clear into the middle of the pond, only knocked him flat on his back, and gave him a headache. He gave up that pond as a mystery. Presently he saw several happy-looking frogs sitting together among some grass. They looked just like his cousins of the Rana family; but when he said "Good-day" to them, and remarked that the pond of water here seemed to be frozen hard, they never answered him a word, nor even winked a wink at him. Pip concluded they were huffed because he had not called on them before, and he turned his mind to more discoveries. Three pretty little ducks, yellow and fuzzy, were standing on the wall, high above Pip's head. It was very strange. Pip could almost hear them quack, and he looked carefully around, for fear the old mother duck might be after him. But none came; the little ducks had no mother it seemed, and what was more strange, they never moved, though Pip

looked steadily at them. It was a wonderful place, this artist's studio; at least, it was to a frog from the country. "There's a turtle, as sure as my name is Rana Pipiens!" exclaimed Pip, and he looked around for a safe place. But the turtle sat still on its log; so did the little turtles with it. They never seemed to see that there was a fat young frog close beside them. But Pip was too frightened to investigate any further. He sat perfectly still, under the table, in the shadow of the waste-paper basket, while a few drops of ink slowly dripped on him from the table-top. He was very miserable, and when the artist came and put him back in the jar, Pip could have thanked him, he was so glad to feel safe again. These strange adventures put Pip out of spirits, and he no longer made a lively model, so the artist put him in a tumbler of water, one day, tied a cloth over the top to keep him safe, and carried him out to the country. Pip could hardly believe his eyes when he saw grass and trees again. Presently the cloth was taken off, and Pip was gently rolled out on the edge of a beautiful pond. Pip remembered the strange, hard pond in the studio, and stopped for half a minute. Then he caught sight of a familiar frog face in the water. "It is *my* pond!" cried Rana Pipiens; and with one leap he reached the deep water, and was at home again.

Such stories Pip had to tell! Every evening, that whole summer long, he sat on the shore, and related his adventures, always beginning with: "Ahem! When I was in the country where ponds are frozen green, and little ducks hang up in the sky——" But few of his family believed him. These things were too wonderful. When he began in this manner, they generally looked at each other, put their right forefinger to their heads, and said, "He's wrong, ong, ong!"

SWEET PEAS.

BY LILIAN PAYSON.

"PLEASE wear my rose-bud, for love, Papa,"
Said Phebe with eyes so blue.

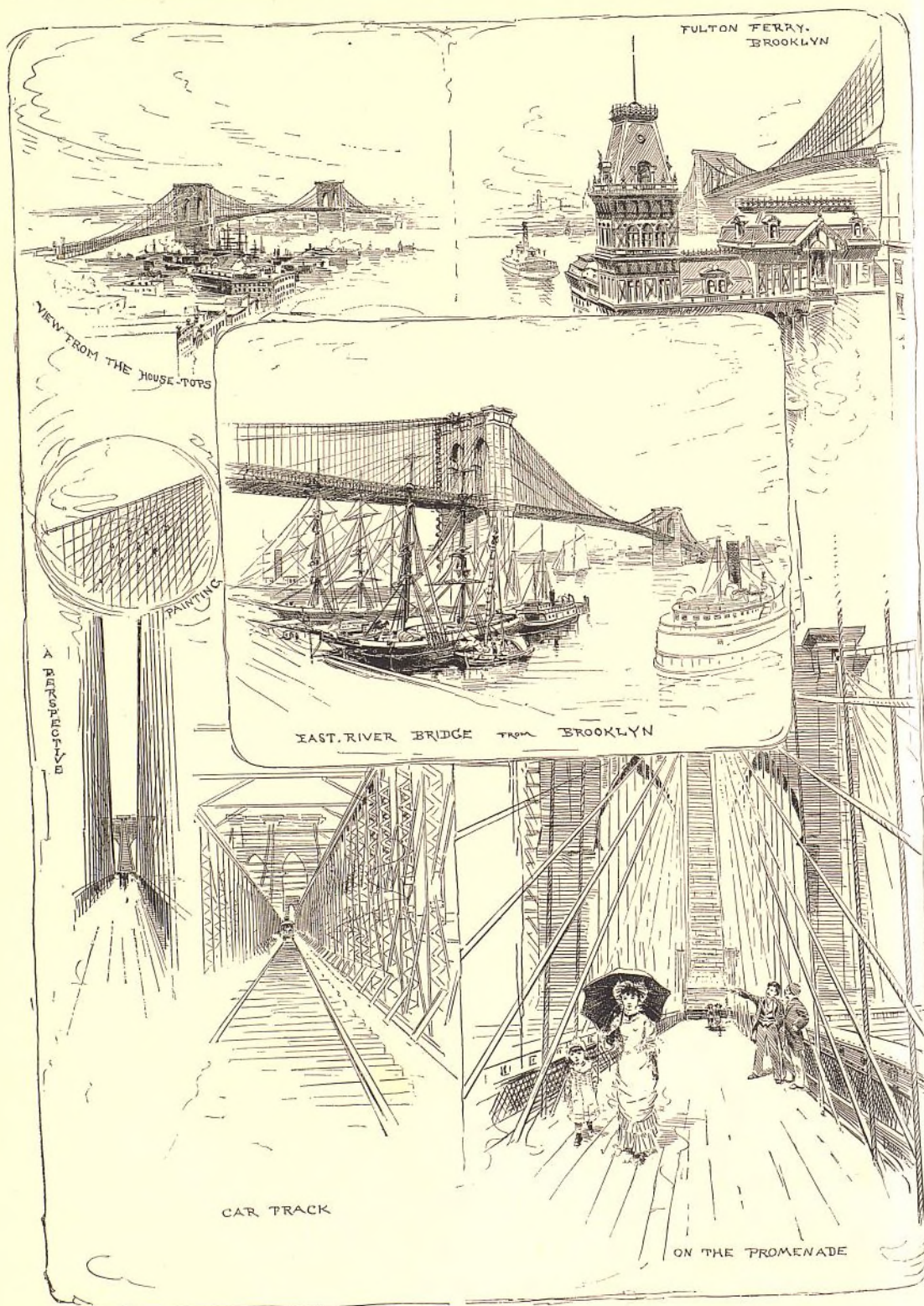
"This sprig of myrtle put with it, Papa,
To tell of *my* love," said Prue.

Said Patience, "This heart's-ease shall whisper,
Papa,
Forget not *my* love is true."

Papa looked into the laughing eyes,
And answered, to each little girl's surprise:

"My darlings, I thank you, but dearer than these—
Forgive me—far dearer, are bonnie sweet peas."

Then he clasped them close to his heart so true,
And whispered, "*Sweet P's—Phebe, Patience,
and Prue!*"



THE BROOKLYN BRIDGE.

BY CHARLES BARNARD.

THERE is between the city of New York and the city of Brooklyn an arm of the sea called the East River. It extends along the east side of Manhattan Island, and it certainly looks like a river. It was probably named the East River to distinguish it from the North or Hudson River on the west side of the island. For all that, it is not a river. A real river, as you know, rises among the hills—begins as a little rill in the grass, and glides down through farms and forests to the sea. To the south of New York City is the great New York Bay, just at the angle where the coast of New Jersey, which faces the east, meets the coast of Long Island, which faces south. Long Island was well named, for it extends all along the shore of New York and Connecticut. Long Island Sound begins near New York City, and spreads out wider and wider toward the east till it meets the sea near Rhode Island. This East River connects the Sound with New York harbor, which opens through the Narrows into New York Bay. Thus it happens that the East River is a part of the sea. All the sloops and steam-boats and ships and steamers coming down the Hudson or from the ports scattered along our Southern coast, and wishing to go to ports on the Sound, pass through this narrow and winding river. Steamers bound to Providence, to Boston, past Cape Cod to Maine and the Eastern Provinces, take this river to reach the great Sound and the ocean beyond.

Day and night, summer and winter, an endless procession of ships, steam-boats, canal-boats, schooners, sloops, and barges sails or steams along this arm of the sea. It is like a Broadway upon the water, crowded with traffic. There comes a fussy little tug, toiling along with four great schooners deep laden with coal. They have come from the coal depots at Jersey City, and are bound East. There is a big, lazy sloop, with a cargo of red bricks. She has just dropped down the Hudson from Haverstraw, and is steering for some Connecticut port. Behind her, coming the other way, just arrived from New London or Fall River, plows along a monstrous steamer crowded with people. What a queer tow that is! The tug-boat is dragging a long string of canal-boats and old hulks laden with lumber, oats, and corn. Perhaps they came through the Erie Canal from the West, and are going to Narragansett Bay. There are ships from France and Norway, English steamers and Italian barks, bound in or out, and never for a

moment is the water quiet. Perhaps a stately warship, with tall, slender masts, regular "sky-scrapers," comes down from the Navy Yard and salutes the forts with her roaring guns. The tide runs swift and strong, and the waves leap in white clouds of spray from the sharp bows of flying steam-boats, or roll in surging billows from the black stems of huge merchantmen. It is like a bit of the great sea, with a city on either side.

There are more people living by the banks of this arm of the sea than in any other place on this continent. Nearly half a million people cross this rough, swift-flowing water every day; and though the ferry-boats are among the largest and best in the world, the little voyage is at times long and dangerous. Fogs sometimes delay the boats for hours, and floating ice in winter often blocks the way so that navigation is almost suspended.

"It seems to me they need a bridge at this point," do I hear some bright boy say? That is what other people thought, years ago, with the result that to-day, as you are reading this, there is a bridge, and you may walk from New York to Brooklyn in any weather. Perhaps you think that this is nothing worth talking about—all it was necessary to do was to build a bridge. Let us see about this.

The East River is an arm of the sea. You can not bridge such water, because it belongs to the nation, and every one has a right to sail there. Beside, we must in honor permit the people of other nations to sail their ships in our waters.

Such a place as this is called navigable water, and the United States Government could not permit navigable water to be obstructed by a bridge, however convenient it might be for the people of New York and Brooklyn. The New Jersey schooner carrying coal to Connecticut, the Haverstraw lighter laden with bricks, the boats from Boston, the lumber sloops from Maine, and the vessels of foreign nations as well, have a right to sail here, and no man can stop them by building a bridge.

Why not have a draw-bridge? That is a sensible question; but when the ships and steamers are as thick as the teams on Broadway, the draw would have to be kept open all the time, and then what would the people on the bridge do?

See that full-rigged ship coming down with the tide, under the escort of that little tug. Look at her tall masts. That pennant flying at her main-top is more than one hundred feet above her decks.

Her masts are taller than many a church steeple. If there is to be a bridge, it must take one grand flying leap from shore to shore over the masts of the ships. There can be no piers or draw-bridge. There must be only one great arch all the way across. Surely this must be a wonderful bridge.

When they first began to talk about bridging the East River, there was much discussion as to what kind of a bridge it should be. It might be made of iron or wooden piles, driven into the bed of the river, with the roadway on top.

Figure No. 1 represents in outline the plan on which such a bridge would be built. The sloping

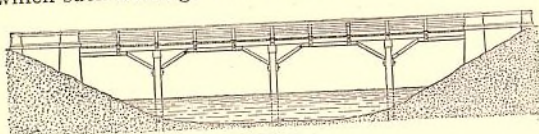


FIGURE 1.

lines at each side stand for the banks, and the broken lines for the water of the river. The upright lines are the piles, and the roadway is shown by the horizontal lines resting on the piles.

A bridge might also be built of stone, supported by a number of arches resting on the bottom of the river. Such a bridge is shown in Figure 2.

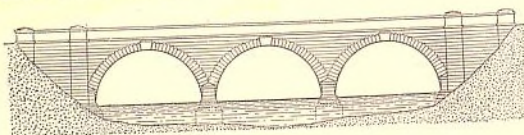


FIGURE 2.

But neither of these two kinds would answer, for there is no room for ships to pass.

Pile-bridges and bridges with arches have been built for centuries. Figure 3 is an outline of a very different kind of bridge, invented in modern times. On either bank is a stone pier, and on these rests a great iron box. Where such a bridge is

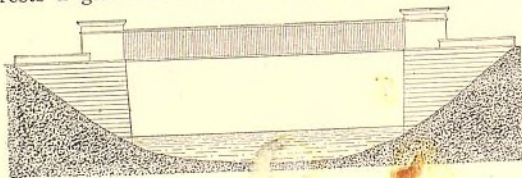


FIGURE 3.

used, the people cross the river by walking inside this box, going in at one end and coming out at the other. In this kind of bridge there are no piles or arches to obstruct the river, and if the piers are high enough, the ships can freely sail under the big iron box. But a bridge built in this way over the East River would not only be very difficult to make, but it would have to be so high up in the air that it would be liable to be blown down.

Suppose two posts be set up on one bank of a river, and two more on the other bank, directly opposite. Then suppose a rope was stretched from

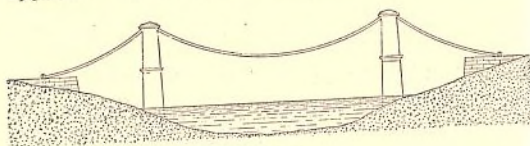


FIGURE 4.

one post on one side of the river to the opposite post, and a second rope was stretched between the other posts. Then if short boards were laid on the two ropes they would make a hanging bridge. (See Fig. 4.) This style of bridge was used by the Chinese so long ago that no one can tell who first thought of it or tried to make one. Perhaps the old builder got the idea from seeing a grapevine hanging from tree to tree over a brook.

On other pages are pictures of the finished bridge. Which is it, a pile bridge, an arched bridge, a box bridge, or is it a hanging bridge? Clearly it is a hanging bridge. You can easily pick out the ropes stretching over the river. This form of bridge is called a suspension bridge because it is hung, or suspended, over the river. If you study the pictures, you will see that the ropes or cables hang down in the center and are lowest over the middle of the river. But even a suspension bridge must be high enough to enable ships to pass under. So it is the custom in building such bridges to raise the cables on towers, and thus make room under the bridge.

In Figure 4 you see the rope is made fast to the post on one shore, carried over the top of the tower that stands at the edge of the bank, and stretched across the river to the top of the opposite tower. On this side it is likewise fastened to a post or stone pier. Of course, the people who cross such a bridge would not find it convenient to go over the top of the towers. What shall they do? Look once more at the pictures of the bridge. See the slender lines hanging down from the cables. These are called the suspenders. Each one is fastened to the cable and supports the end of an iron beam. So it appears there are beams hung in the air under the cables, and on these beams is laid the roadway. The towers have arches, and the men and horses pass under the arches and over the hanging bridge. Study the pictures on page 688, and you will see just how all this has been done.

Now, while the idea on which this bridge is built is so simple, the real work was a great labor, costing millions of dollars and occupying years of time. The towers must be high enough to raise the lowest part of the cables, where they hang down



in the middle, sufficiently to let ships pass under. The river is wide and the cables proportionately long, and they must be securely fastened at the ends so that they will never pull out and let the bridge fall down. The shore on each bank is low, and behind the bank on both sides the land rises slightly. The entire bridge, therefore, extends from the top of a hill down to the water-side, over the river, and over the streets and houses to the top of the second hill. Horses can not climb up to the lofty bridge over the water, and there must be a long inclined plane up which they can walk. The more we look at this bridge, the more interesting it becomes.

The towers must stand at the edge of the water, but this is always a bad place to build, because the ground is sandy or covered with soft mud. There must be a firm foundation, and the only way to find it is to dig deep under the sand or muddy water. How could they do that? Every hole made by a spade fills up with water, and even if they managed to make a shallow cellar the water would soon be over their heads. They must call on the atmosphere, and use the invisible air as a shield to keep away the water.

How can such a strange thing be done? Get the wooden chopping-bowl from the kitchen and a clear glass tumbler. Fill the bowl half full of water, and then, holding the tumbler upside down, press it slowly into the water till it touches the bottom. When it rests there you will see

feet high and the bottom fifteen feet thick. The box has no top, and the edges of the four sides are sharp and bound with iron. Such a box, turned over and placed upside down in the water, would act just as the tumbler in our experiment. Such a box is called a caisson, and there is one under each of the towers of the great bridge.

A caisson is, of course, built upside down, for it is too big to turn over, and it is the custom to build them on shore and then to launch them, just as a ship is launched. Figure 5 shows the caisson under the Brooklyn tower just as it began to sink in the soft sand. On one side is the shore, and on the other the deep water. Piles are driven on each side of the caisson to make an inclosed dock, so that it may rest in smooth water. You see the heavy top of the box, made of layers of timbers, and the sharp edges of the sides cutting down into the sand. As the box rests on the edges its weight causes it to sink. In the middle of the roof of the caisson is a well that reaches down to a pool of water inside. On top is a derrick for hoisting the dirt and stones out of the well, and a little railroad for carrying the rubbish to the barge that floats in the river. On top of the caisson can also be

seen some of the stones of the tower. Inside are men at work digging up the sand and boulders.

The picture does not tell all the story. There are on the shore great pumps called compressors, driven by a steam-

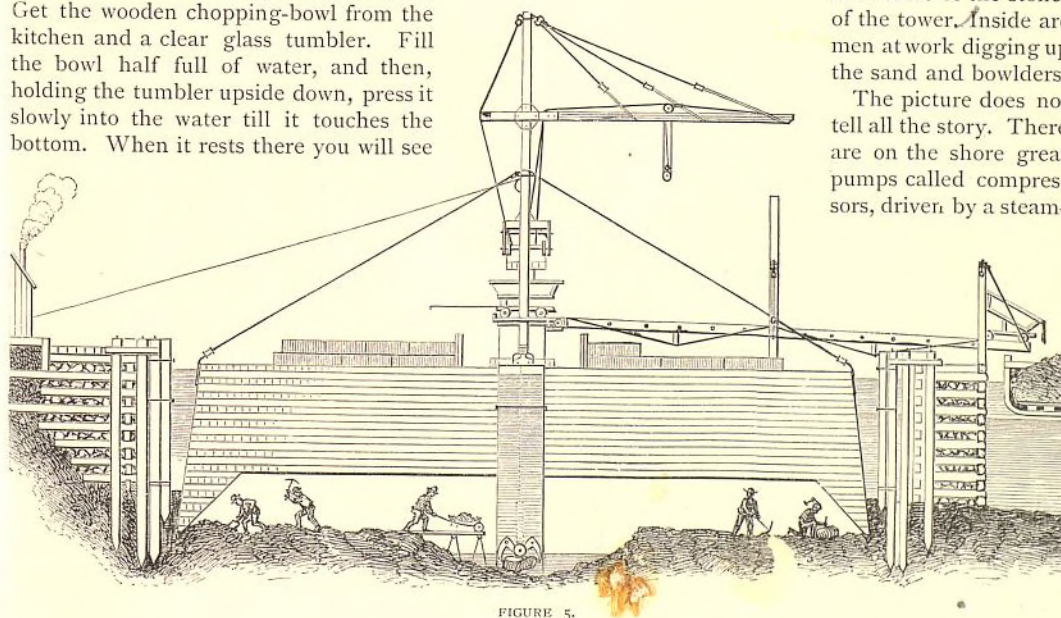


FIGURE 5.

there is no water inside the tumbler, and that the bottom of the bowl is nearly dry. The air caught under the tumbler has pushed the water away. If the tumbler were large enough, a man could stand inside and dig out the bottom of the bowl quite comfortably.

Now imagine a huge wooden box, 168 feet long and 102 feet wide. The sides of the box are nine

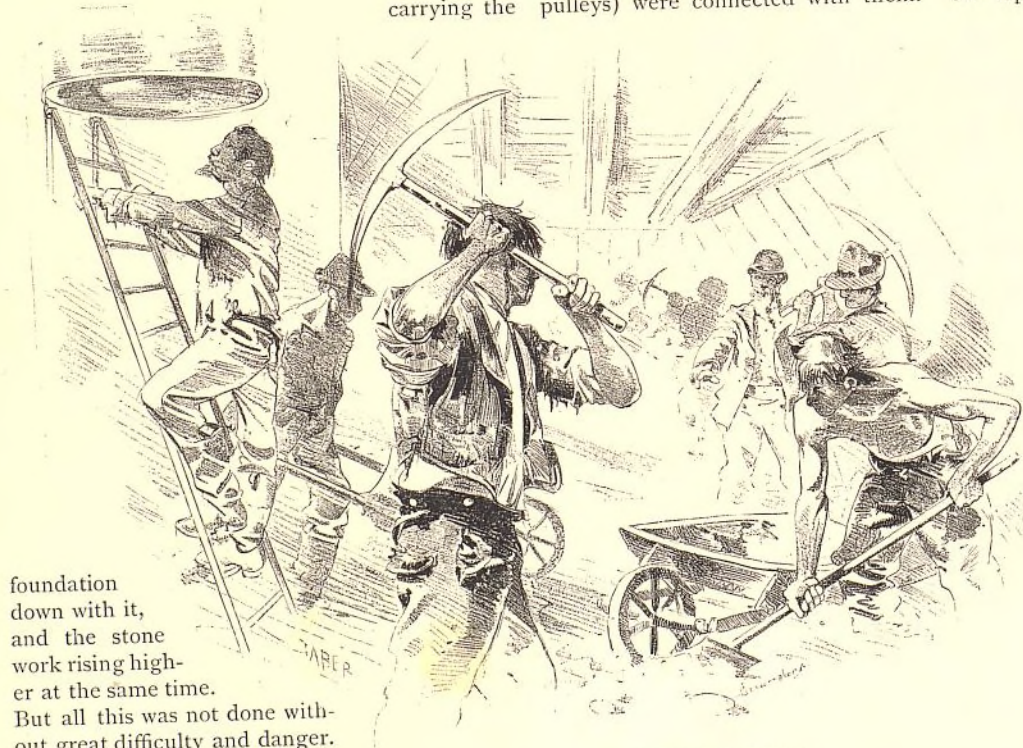
feet high and the bottom fifteen feet thick. The box has no top, and the edges of the four sides are sharp and bound with iron. Such a box, turned over and placed upside down in the water, would act just as the tumbler in our experiment. Such a box is called a caisson, and there is one under each of the towers of the great bridge.

men to go in. This is the most curious thing of all. If there was but one door, the moment it was opened the compressed air inside would rush out, the water would break in through the sand under the side of the caisson, the workmen below would be drowned, and the work come to a stop. So two air-tight doors are arranged, one below the other. The workman opens one door, enters the place between the two doors, closes it behind him and then opens the second door. Such a set of double doors is called an "air-lock," and it is certainly a very clever invention. The air might also rush up the well, but you see the well touches the pool of water inside, and this makes a seal to keep it air-tight. The picture below shows the inside of the caisson. One man is going up a ladder to the air-lock, and the others are busy digging in the wet sand. As the men inside the caisson dig away the sand and let it settle deeper and deeper in the water, others on top lay the foundation-stones of the tower. The weight increases with every stone laid; and thus the work proceeds, the caisson sinking and carrying the

great box, impelled by the terrible weight of the rising tower, could crush its way downward.

At last, when the caisson had sunk forty feet under water, solid ground was reached, and it would sink no further. Then the whole interior, where the men had been at work, was filled in solid with small stones and sand mixed with cement. There the box rests securely under the sea, where the heart of the old oak will remain green and sound for centuries. The lofty tower stands secure on its wooden foundation, and nothing save an earthquake can ever shake it down. The caisson under the tower built on the New York side of the river had to be carried down much deeper than on the Brooklyn side. It, too, stands on top of the great box, and the two towers thus have their feet in wooden shoes to keep them firm and dry.

By the time the sinking caissons had found a resting-place, the towers had been built high enough to begin the work of laying stone on stone up toward the clouds. Powerful steam engines were set up behind each tower, and great iron drums (or pulleys) were connected with them. On top of



INSIDE THE CAISSON.

foundation down with it, and the stone work rising higher at the same time.

But all this was not done without great difficulty and danger. Once the caisson took fire. Several times the air escaped, and rushed out of the caisson in a terrible fountain of mud and water. Stones were caught under the edge of the caisson, and much toil and time were spent in blasting them before the edge of the

the rising towers were placed iron wheels, and from the drums up to the wheel, downward to a second wheel at the foot of the tower, and then underground to the drum, was laid a strong wire rope.

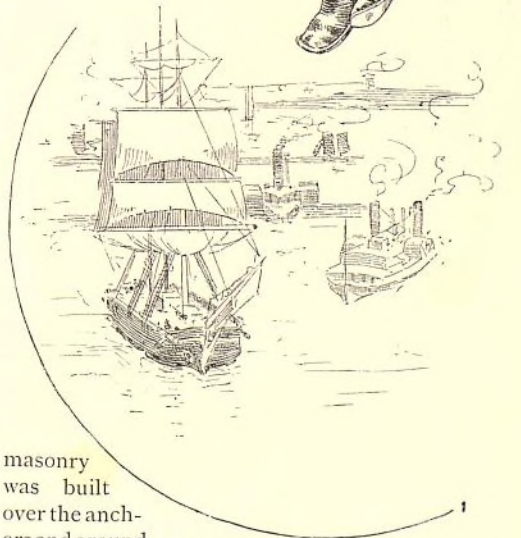
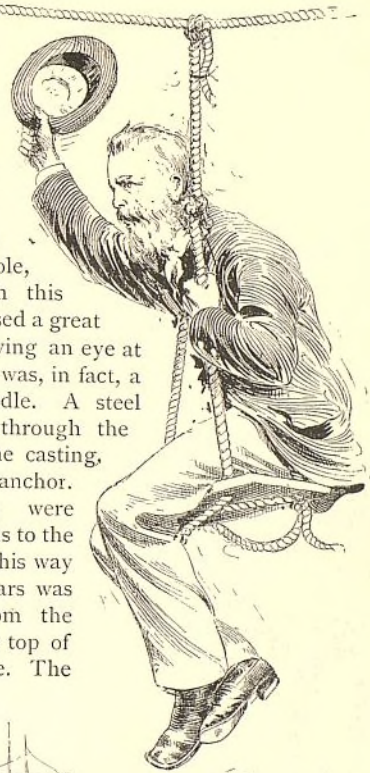
Thus, when the engine turned the drum, the rope ran up or down over the top of the tower. To raise the stones the blocks were secured by chains to this rope, and the engine whirled them away into the air. The masons worked on day by day, summer and winter, laying each stone in place, and lifting the splendid towers above the houses, above the steeples, higher and higher into the air. From time to time, the wire rope had to be made longer as the towers rose. Schooners and sloops brought the massive stones to the dock; the derricks unloaded them, block by block, and put them in reach of the men, and the engines lifted them into place. The lower part of the tower is solid; then it is hollow up to the base of the great arches, 119 feet above the water. These splendid arches rise 117 feet higher, and the cap-stones rest 271 feet above the tide.

In building a suspension bridge, it is very important to find a place where the ends of the ropes or cables can be properly fastened. Any weight put upon the bridge must be held up by the cables. These pass over the top of the towers, but they are not fastened there. The cables merely rest on the towers, and unless they were securely fastened beyond, they would give way, slip over the towers, and let the bridge fall. To fasten the cables to the towers would never do, for the weight of the bridge would pull them over into the water. The place where the ends of the cables rest is called an anchorage. It is really a stone anchor for fastening the cables into the ground so that they can not be pulled out. The anchorages for this bridge are each 930 feet behind the towers, and each consists of a great stone structure 127 feet long and 119 feet wide on the ground, and 80 feet high. As large as a church and as tall as a house, these curious stone structures make the jumping-off place where the people going over the bridge seem to leave solid ground and walk out into the air over the houses. These anchorages, with the cables fastened to them, are plainly shown in two of the pictures. One is a view from the side, and one is from the street below.

The manner of building these anchorages was very curious. An elevated railroad was built just over the place where the walls were to stand. On this lofty railroad ran a very accommodating engine, that not only picked up the big stones from the trains in the streets, but lifted each block in the air and carried it to just the place where the masons wished it laid. The strangest thing of all was the funny way the engine passed around the sharp curves of the railroad. One track was curved or bent in a half-circle. The other track turned sharply around at right angles. When the engine came to the corner, one pair of wheels ran around

the curve and the other pair stood still, just like a boy standing on one leg and turning around on his heel.

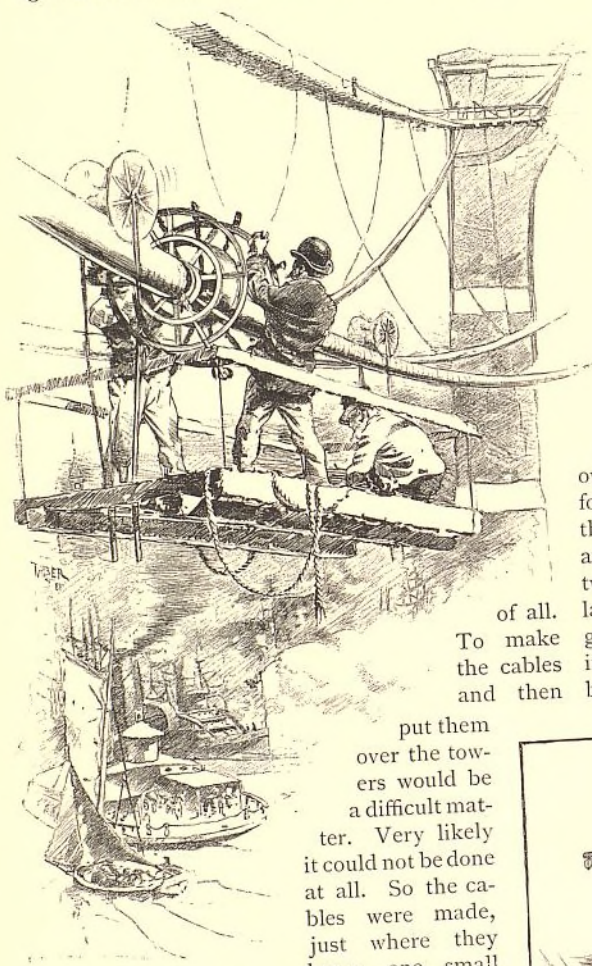
Deep in the ground, under these anchorages, were laid enormous pieces of cast-iron. In each was a hole, and through this hole was passed a great iron bar, having an eye at the end. It was, in fact, a monster needle. A steel pin, passed through the eye under the casting, made a great anchor. Other bars were joined by pins to the first, and in this way a chain of bars was laid up from the anchor to the top of the anchorage. The



HOW THE FIRST MAN CROSSED THE BRIDGE.

masonry was built over the anchorages and around the bars, and thus they were fastened down by the whole weight of the anchorage. It was to the ends of these chains of bars that the cables of the bridge were fastened. The weight of the men and horses on the bridge is thus really sustained by the stones and anchors on the hill-side, far back from the towers.

After the towers had been built and the anchorages made ready, then came the strangest work



WINDING THE CABLES.

cables are not chains with links, nor are they twisted like ropes. They are bundles of straight wires laid side by side, and bound together by wires wound tightly around the outside. They called the work "weaving the cable."

At the Brooklyn anchorage was placed a powerful steam-engine, and on the top of the anchorage were placed two large wheels, and with the aid of proper machinery the engine caused these wheels to turn forward or backward. From each wheel was stretched a steel rope to the top of the Brooklyn tower, over the river, over the other tower, and down to the New York anchorage. Here it passed over another wheel, and then stretched all the way back again. The ends were fastened together,

making an endless rope, and when the engine moved, the ropes traveled to and fro over the river. For this reason they were called the "travelers."

There were, besides these travelers, two more ropes placed side by side. On these were laid short pieces of oak, thus making a foot-bridge on which the workmen could cross the river.

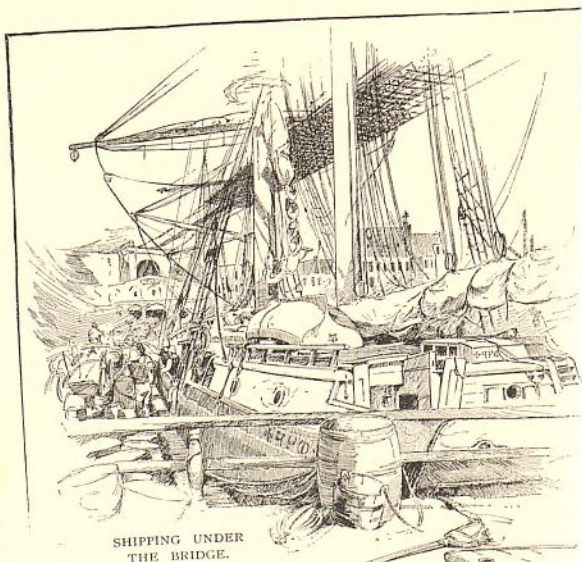
One of the pictures shows this slender bridge, that extended over the tops of the towers. It was taken from the New York anchorage at the time the bridge was building. Another picture shows one of the engineers of the bridge crossing on the traveling-rope—the first man to cross the river by way of the bridge.

There were also other ropes for supporting platforms, on which the men stood as the weaving went on. On each traveler was hung an iron wheel, and as the traveler moved the wheel went with it.

It took only ten minutes to send two wires over the river in this way. The men on the foot-bridge and on the platforms suspended from the other ropes guided the two wires into place, and thus the cables were woven, little by little, two slender steel wires each time, and carefully laid in place till the 5434 wires were bound together in a huge cable, fifteen and three-quarter inches in diameter. The work was fairly started by the 11th of June, 1877, and the last wire was

of all. To make the cables and then

put them over the towers would be a difficult matter. Very likely it could not be done at all. So the cables were made, just where they hang, one small wire at a time. The



SHIPPING UNDER THE BRIDGE.

laid October 5, 1878.

There are four cables, each 3578½ feet long, and if all the wires in the four cables were placed in line, they would reach over fourteen thousand miles.

The work was long and dangerous. Sometimes

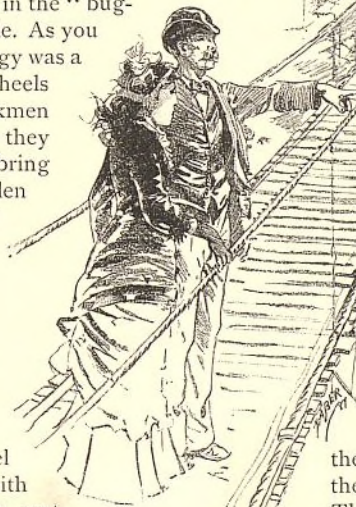
the wire would break and fall into the water, and an hour or more would be spent in hauling it up and starting once more. The men on the foot-bridge or on the cradles high in the air watched every wire as it was laid in place. To start and stop the engine, men stood on the top of the towers and waved signal flags to the engineer. Such a mass of wires would not very easily keep in place, and as the work went on, a number of wires were bound together into little bundles or ropes, and at the end all were bound together into one smooth round bundle or cable.

The next great work was to wrap the wires by winding a wire around the outside, to hold them all together and to keep out the rain and snow. The great bundles of steel wire were loose and irregular, and the first step was to put on wooden clamps to bind the bundles into something like the right shape. Then came the men riding in the "buggy"—a car suspended from the cable. As you see by the picture (p. 694), the buggy was a sort of platform, suspended from wheels that run on the cables. The workmen in it had with them a steel clamp they put around the bundle of wires to bring it into shape, and then with wooden mallets they beat on the outside of the bundle till it was hammered into the right shape. It would be very difficult to wrap the cable with wire by hand, and have it fit smooth and tight like thread on a spool. You see the wheel in the picture, riding on the cable. The men turned it round and round, and it guided the wire from the reel upon the cable. As they went on with the work they gave the wrapping a coat of white paint, so that the cables look to-day like great white cords. At the same time, the men put around the finished cable iron clasps or bracelets, to bind the entire structure together as firmly as possible.

These seem like simple things to do. But just think of it a little while! Think of working in a little wooden cage swinging and swaying two hundred and fifty feet in the air! The days were bleak and cold and the wind blew—oh! how it does blow up there sometimes! Below was the black water, perhaps dotted with ragged ice. A misstep, and—good-bye. No man would ever come back alive. There was nothing between them and death but the wire ropes suspended high over the masts of the ships. Steamers passed under, and sent up clouds of hot gas in the faces of the men. The two cities were spread out far below, and the roar of the streets came up

faint and far away. If the wind blows hard, there is no sound save the wind sighing in the ropes and the faint blast of the steam-whistles. At such times, the cities below seemed to be dumb.

The boats sail and men in the streets below move about, like



ON THE FOOT-BRIDGE.

black dots, in solemn silence. The world seems very big.

There is the sea all along the southern horizon beyond Brooklyn. To the north and east the hills of Long Island make a dim and wavy line

on the horizon, and to the west is the Hudson River and the blue Orange mountains beyond. The view is magnificent, but it is a bad place to work—cold, bleak, and dangerous, and it was a good thing

when the very last ring had been put on the great white cables, and the men came down from the dizzy height.

The next thing to be done was to hang from each ring on the cables a heavy steel rope. These were called suspenders, and they are to hold up the floor on which the men and horses pass over the bridge. It took a great deal of time and hard work to hang these suspenders,—for of course there were a vast number of them,—and then came the next great task.

The endless wire rope to the top of the towers was still in use, and by its aid the wrought-iron beams were hoisted to the foot of the arches; then one by one they were fastened to the suspenders and hung in the air. As soon as a few beams were suspended, a railroad was laid on the beams

from the arches out over the river, and on this ran a car, to carry the beams to the places where they were to be hung, the railroad growing as fast as the beams were laid.

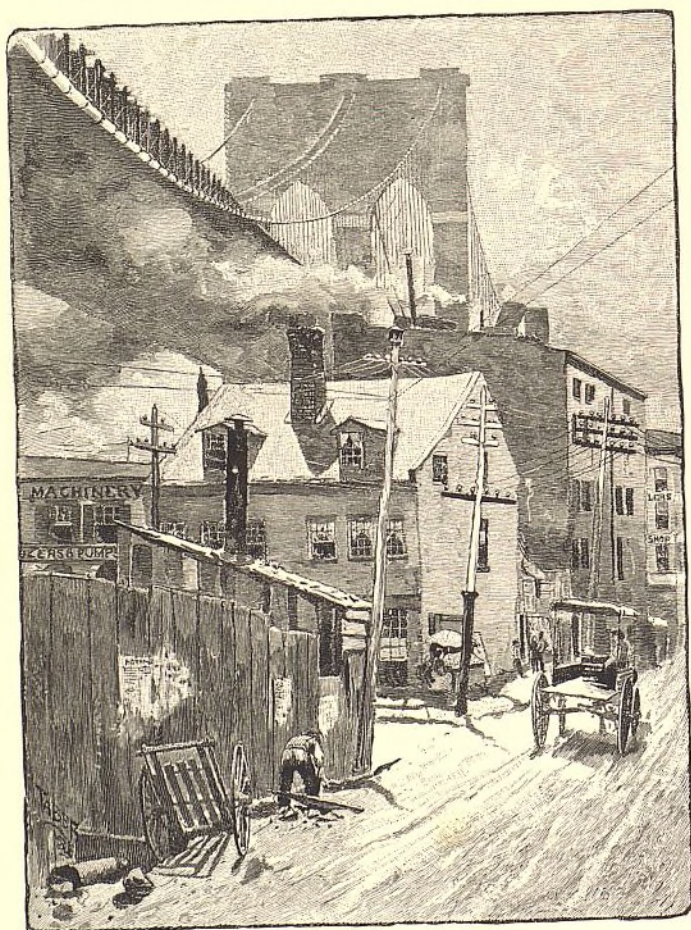
It was a strange place where the great beams hung in the air, above the ships and houses. It was easy to walk along the planks, but it was dizzy work, for you seemed to be standing in the air or on a floating cloud.

When the last beam was put in place, the structure began to look like a bridge. The high foot-bridge from the top of the towers was taken down, and there it stood—tall gray towers, slender white cables, and spider-web wires, holding up the black floor that at a distance looked like a snake caught in a web, and reaching from shore to shore.

from walking overboard, and foot-paths for the people. To accommodate every one, the bridge was divided into five parts. On each side, next the edge, are the carriage roads for teams and carriages. Inside of these roads are the railroads, and in the middle, between the tracks and raised above the cars, is the broad foot-path. This will give the people a high, wide sidewalk, raised above the dust of the road and safe from the cars, where the view will be open over the river. At the same time, there will be no danger that venturesome boys will fall off by climbing over the railing. If they should get over the rail, there is the railroad track and the carriage road to be crossed before you reach the edge of the bridge. And a glorious walk it will be, from shore to shore, up the long

incline, over the house-tops, under the arches that are like cathedral windows, out over the blue waters, and through the pure fresh air. Pedestrians will be sure to stop halfway over, if it is for nothing more than to catch the breath of the sea or the fragrant breeze from the Long Island farms. What a relief it will be from the ill-smelling streets and stuffy shops! What a happy escape from those dreadful cabins on the ferry-boats! What a grand place to stretch your legs of a bright winter's day after toiling through the streets! To go from shore to shore in one straight and jolly tramp, with the sky for a roof and the breeze for good company.

In San Francisco, Chicago, and Philadelphia are curious railroads called "cable roads." Under the street, between the tracks, is a hollow tube, and in this tube runs an endless wire rope, always traveling swiftly. Just above the rope is a narrow slit in the pavement, and down through this slit passes a curious bit of machinery like a pair of tongs, which is fastened to the car on the rails. It clutches the rope, and so the car is dragged swiftly along by the moving cable. Here on the bridge is the same kind of railroad. An endless cable stretches over the entire bridge and round a big drum under the arches on the

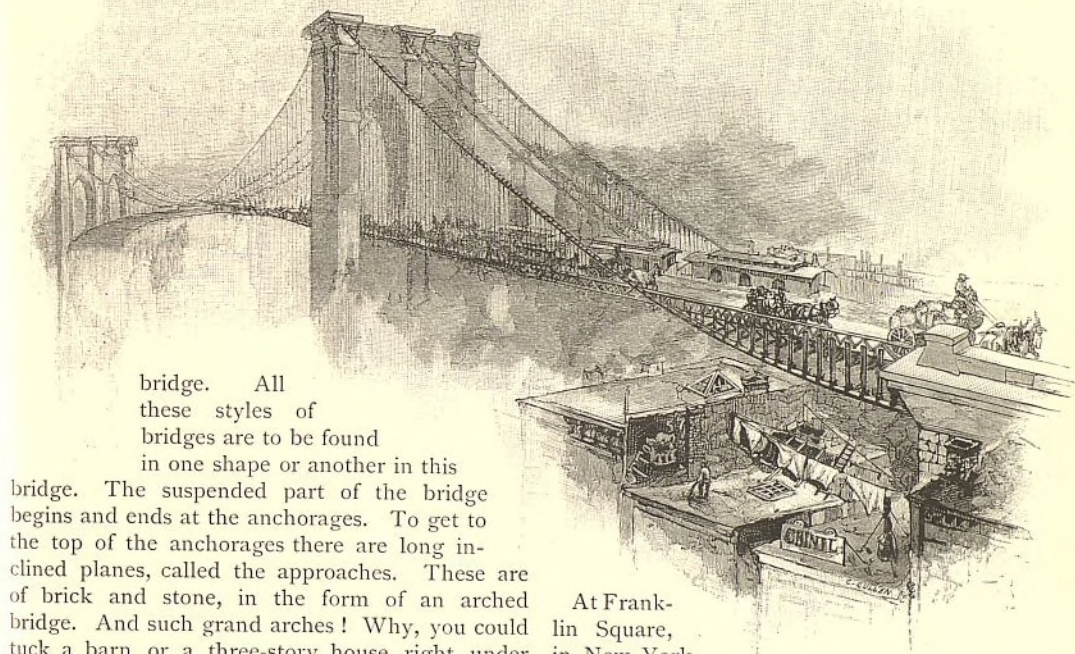


"OVER THE HOUSE-TOPS."

Still the bridge was far from finished. The beams must be firmly fastened together, and there must be braces to keep it from swaying in the wind. There must be railings to keep horses

Brooklyn side. An engine turns the drum, and this makes the rope run swiftly. The cars, as in the street roads, hitch on to this rope when they wish to go over, and are quickly drawn across the bridge.

Look once more at the diagrams showing the pile bridge, the arched bridge, and the iron-box cars to cross over the top or deck. For this reason they call this style of bridge a deck bridge.



bridge. All these styles of bridges are to be found in one shape or another in this bridge. The suspended part of the bridge begins and ends at the anchorages. To get to the top of the anchorages there are long inclined planes, called the approaches. These are of brick and stone, in the form of an arched bridge. And such grand arches! Why, you could tuck a barn or a three-story house right under one of these arches, and the people inside would think they lived under a brick sky. The picture admirably shows the incline plane, the arches, and the place where the bridge flies over the elevated railroad.

The picture on the next page gives an idea of the masonry of the great bridge. The roadway is on top, and some of these arches stretch over the streets. Some of them will also be closed up, and used for warehouses by putting up a partition, with doors and windows in front. Thus, in this part of the work, we have the arched bridge. At one point in the Brooklyn approach, there is a place where you can see the style of bridge where the roadway is supported on posts. At another place in Brooklyn you can also see the box style, or something very like it. There is really no box, but still the work is founded on that idea. Plates of iron are riveted together so as to form, as it were, great flat boards. These are set up on edge and fastened together, and, if you stand in the street below and look up at them, you will see that the bridge is a kind of box, open below, and with a place for the men, horses, and

At Franklin Square, in New York, is still another kind of bridge, that flies in one grand leap

right over the side street and the elevated railroad, tracks, station, and all. This is a most curious piece of work. At the top is a massive iron beam, formed of iron plates riveted together like a long, narrow box. On the under side is a series of iron rods, placed side by side, and the two parts are joined together by a net-work of iron beams. This is a modern style of bridge, invented since the time railroads were first used. It is quite as interesting as any part of the work, for, while it looks so light and "spidery" for the great weight it has to carry, it is nearly as strong as if made of solid iron.

The method adopted for building these iron bridges over the streets was strange enough. A wooden bridge was built first, and the different parts of the iron work were carried up and put together on top. When the last piece was put in, the wooden bridge was knocked away, and there the iron work stood, light and frail in appearance,

THE END OF THE ANCHORAGE — "THE JUMPING-OFF PLACE, WHERE THE PEOPLE GOING OVER THE BRIDGE SEEM TO LEAVE SOLID GROUND AND WALK OUT INTO THE AIR."

yet so strong that it will endure for long years after we shall have gone to another country.

One of the most curious things about the bridge is the fact that it never stands still. On a warm day in summer it is three feet lower than on a cold night in winter. But the odd thing about it is that the bridge is not touched or apparently changed. The hot sun in July heats the cables, and they expand and stretch, letting the bridge sink down in the center. When the thermometer falls on bitter January nights, the cables shrink and shrink, and the center rises until it is three feet higher above the water than in summer. A lesser change of this kind -

Note the perspective between the cables, and the complicated net-work of crossing lines seen from the promenade. Even the railroad track shows the strangest vistas between the iron-work, the cables, and the suspenders. The latter hang down straight from the cables, but there are also diagonal lines or stays that cross the suspenders, as you will see in the circular picture at the left on page 688.

The insects in the cobweb are men at work painting the wires.

This whole work, bridge, approaches, anchorages, railroads, depots, and all, cost sixteen million dollars in money and thirteen years of time. What is the grand result? Is it worth all this? How many people can use it in a day?

Let us see. On the approaches the bridge is one hundred feet wide. On the suspended part it is eighty-five feet wide. This gives room

enough for two lines of teams on each way, or four in all. All the teams going

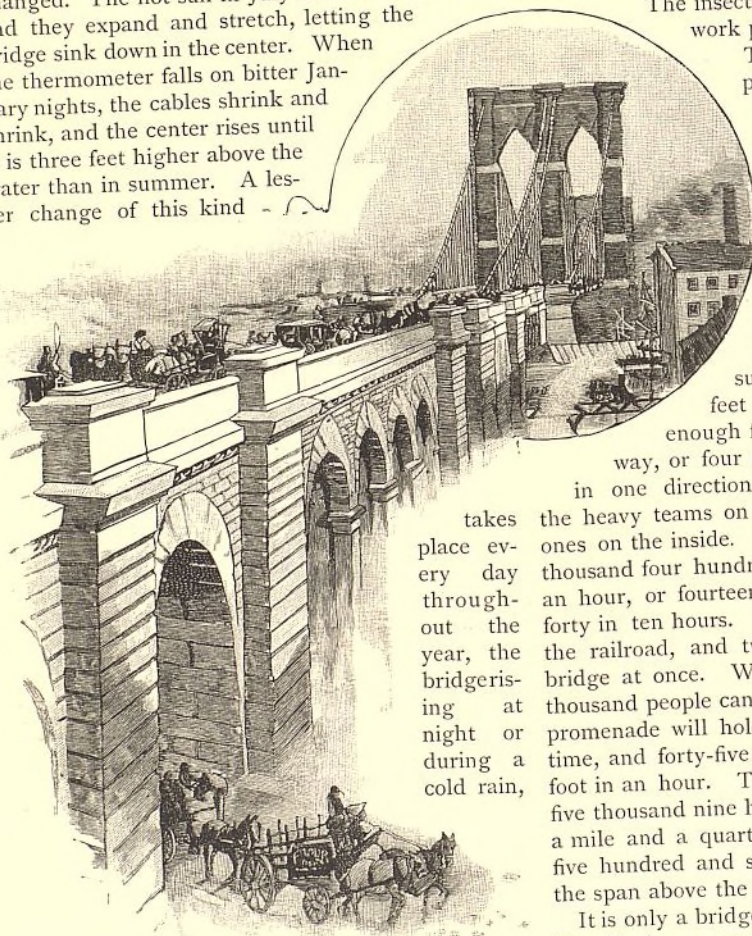
in one direction take the right-hand road,

takes the heavy teams on the outside, and the lighter ones on the inside. The two roads will allow one thousand four hundred and forty teams to pass in an hour, or fourteen thousand four hundred and forty in ten hours. There will be eighty cars on the bridge at once. When all are running, eighty thousand people can cross in an hour. The grand promenade will hold ten thousand people at one time, and forty-five thousand people can cross on foot in an hour. The total length of the walk is five thousand nine hundred and eighty feet (nearly a mile and a quarter), and of this one thousand five hundred and seventy-five feet are included in the span above the river.

It is only a bridge, but should you ever come to New York, you must take pains to see it. Walk over it and all about it. Cross in the ferries, and look up at it from below. Take your ST. NICHOLAS with you, and study it out with the help of the pictures. It will show you that every great work has a meaning. It will help you to see that everywhere in the world men spend their labor on buildings and structures that are for the benefit of all the people. It will show you that there is nothing more honorable than work, nothing more admirable than skill, patience, courage, and knowledge.

and stretching and sinking in the warm sunshine.

The pictures on page 688 give a good idea of the size of the great bridge. The view over the rooftops shows the grand flying leap the bridge seems to take over the cities and the river. The view from the Fulton ferry-house is one of the best, as it shows the beautiful curve of the roadway between the arches. As you walk over the bridge, the cables and the suspenders make fantastic cobwebs against the sky that change at every step.



NEW YORK ANCHORAGE AND APPROACH.

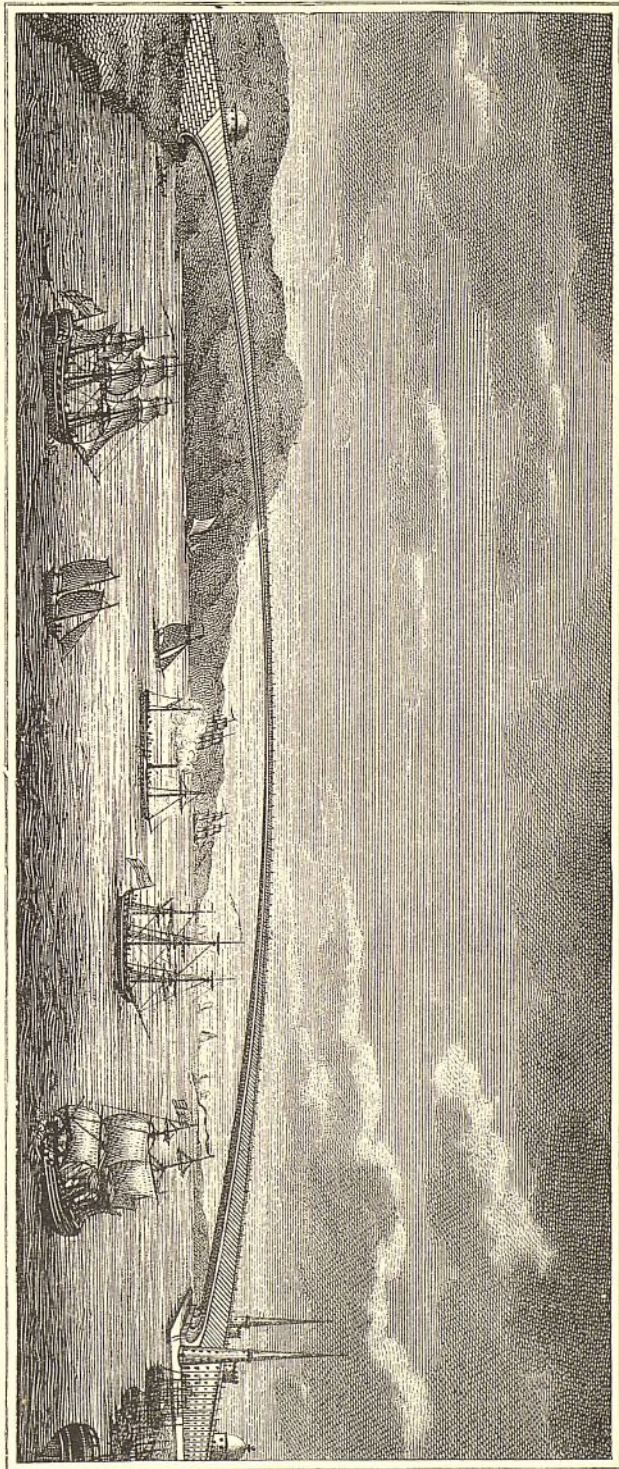
ONE of New York's oldest citizens has favored ST. NICHOLAS with the following account of a single-span bridge which was proposed for the East River many years ago :

Perhaps few, if any, of my young readers are aware that any attempt was ever made to bridge the East River from New York to Brooklyn before the present great structure was begun. Yet a plan for bridging the river was made and published as early as 1811 by a Mr. Thomas Pope, an architect, then residing in Canal street, New York, a short distance east of Broadway. (Broadway was not then paved above Canal street, and a stone bridge then crossed the stream that ran through that street to the North River. In front of Mr. Pope's house were green fields, bordering the canal.)

Thomas Pope's specialty was bridge building. He proposed to put one across the river on the line of the present Fulton Ferry boats—namely, from Fulton street, New York, to Fulton street, Brooklyn—a bridge of a single span, sufficiently high for the largest sailing vessels to pass under. Mr. Pope made a model of his bridge, published a book with an engraving of it, and solicited aid to enable him, to fulfill his project. Had he succeeded, New York long ago would have had a bridge-way to Brooklyn. But the enthusiastic engineer was doomed to disappointment. Not only was aid denied, but he was assailed with ridicule. No man in his senses, they said, would seriously propose to bridge that river, though, doubtless, if such a thing *could* be done, it would tend to make Brooklyn building-lots quite valuable.

I was a playmate with Mr. Pope's children, saw him often, and have heard many pretty anecdotes of him and his bridge. It is said that he, in company with Robert Fulton, the inventor of the steam-boat, and a number of other distinguished New-Yorkers, on a certain day made a trip around the city in one of the new steam-boats. The afternoon was

VIEW OF THOMAS POPE'S FLYING-LEVER BRIDGE.



showery, and just as the boat rounded Castle Garden the rain ceased, and there was seen a rainbow spanning the East River. "See there!" says Fulton, tapping Pope on the shoulder, "there's your bridge, Pope. Heaven favors you with a good omen."

The bridge was not built, and the model was probably destroyed — just how, I do not remember, though I was intimate with the family. One account, however, says that a company of gentlemen, including Governor De Witt Clinton, had assembled at Pope's house to view the model of his bridge and see its supporting power tested, for which purpose the model had been set up in the wild, half-cultivated meadows in front of Pope's house, though at some distance from it. While they were

examining the structure, a heavy shower came up. They ran for shelter to Pope's house, where from the windows they could still see the model. Suddenly there was a terrific flash, followed by a heavy crash of thunder which startled all. A moment later, the bridge-model was discovered to be in ruins — hardly two pieces together. The bolt had entirely destroyed it. And Pope's hopes died out with it.

One of his daughters is yet living in Brooklyn, and, through her courtesy, I own a copy of the book already alluded to, which her father wrote and published concerning his proposed bridge.

The engraving which ST. NICHOLAS here shows you is a fac-simile of the frontispiece of that book, a volume which is now very rare.

THE BLUE JAY.

BY SUSAN HARTLEY SWETT.

O BLUE JAY up in the maple tree,
Shaking your throat with such bursts of glee,
How did you happen to be so blue?
Did you steal a bit of the lake for your crest,
And fasten blue violets into your vest?
Tell me, I pray you, — tell me true!

Did you dip your wings in azure dye,
When April began to paint the sky,
That was pale with the winter's stay?
Or were you hatched from a bluebell bright,
'Neath the warm, gold breast of a sunbeam light,
By the river one blue spring day?

O Blue Jay up in the maple tree,
A-tossing your saucy head at me,
With ne'er a word for my questioning,
Pray, cease for a moment your "ting-a-link,"
And hear when I tell you what I think, —
You bonniest bit of the spring.

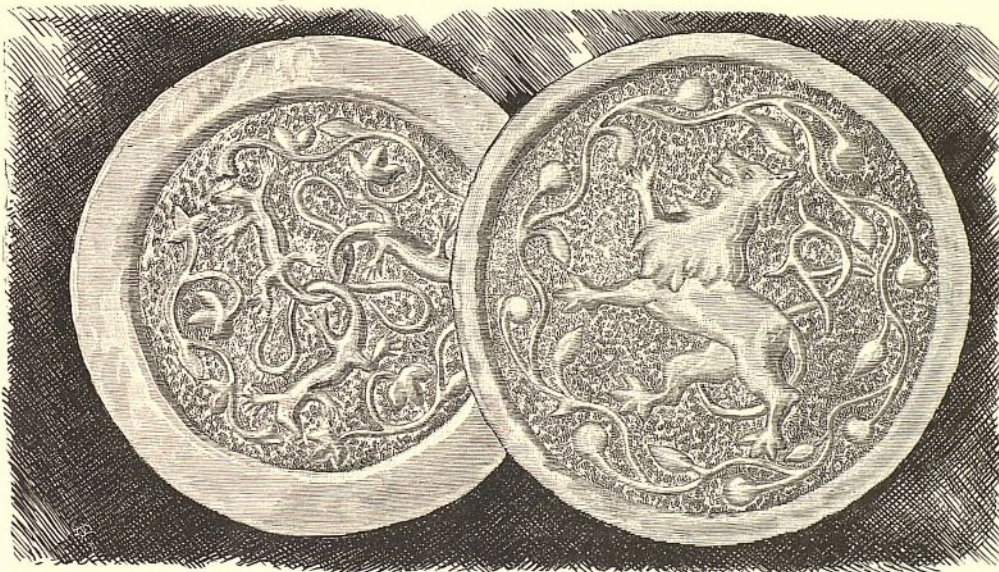
I think when the fairies made the flowers,
To grow in these merry fields of ours,
Periwinkles and violets rare,
There was left of the spring's own color, blue,
Plenty to fashion a flower whose hue
Would be richer than all and as fair.

So putting their wits together, they
Made one great blossom so bright and gay,
The lily beside it seemed blurred,
And then they said: "We will toss it in air;
So many blue blossoms grow everywhere,
Let this pretty one be a bird!"

WORK AND PLAY FOR YOUNG FOLK. VII.

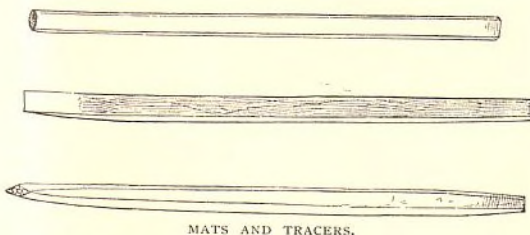
BRASS WORK FOR BOYS AND GIRLS.

BY CHARLES G. LELAND.



Boys and girls can be taught to do many kinds of work which are generally supposed to be quite beyond their power. It is very common to hear the remark: "I have no gift for drawing; none of my children have any talent in that way; it would be time lost for us to try to learn." But the truth is that there is no person who can not in a few weeks or months learn to design decorative art patterns very well, and when this is learned it is easy to

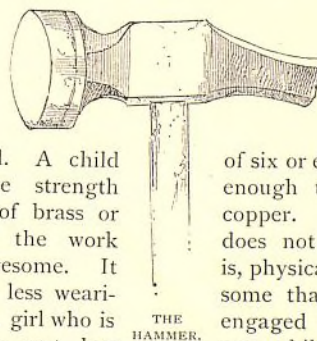
write. To *repousser*, or emboss, or chase (for the process is called by all these names) sheet brass is supposed by many to be very difficult. I am often asked of it, as of wood-carving, if it does not require a great deal of strength and much exertion. The fact is, that in learning both the one and the other, those who make no great effort are the most



MATS AND TRACERS.

master any kind of drawing. There are very few who have any "natural gift" for art. Among five hundred pupils of all ages, I have found only one who had, or seemed to have, a genius for it. But, then, of the five hundred there was not one who could not or did not learn to design, model, carve, embroider, or work in sheet brass.

It is of this latter minor art that I propose to



THE HAMMER.

successful. A child has quite strength a sheet of brass or culty of the work being tiresome. It ing, even less wearibecause a girl who is work can rest her

I will explain the process, and render this clear. Sheet brass is made in about forty different degrees of thickness, which are numbered. Thus, eighth brass is less than the eighth of an inch in thickness. The thinnest is not thicker than writing paper. If you take a piece of any of the

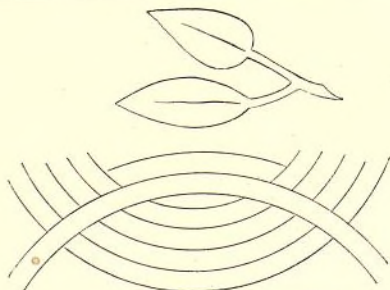
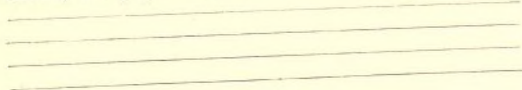
of six or eight years enough to emboss copper. The diffidoes not lie in its is, physically speaking, engaged in brass-arms while hammering.

thinner kinds, you can indent it deeply with a common pointed stick or even with your thumb-nail. Of course, if you draw a pattern on this with a hard point, and then beat down the ground or the space between the edges of the pattern, your picture will stand up in low relief. To do this well, it is more important not to hit too hard than to make great exertion.

There are two ways of working sheet brass, both of which I will describe. One is to hammer the face alone; the other consists in turning the sheet around and beating the pattern out from behind. This is the true *repousser*, or embossing.

As the first is the easier and the one by which my pupils all begin, I will explain it distinctly before setting forth the other. You have, let us say, a piece of sheet brass. Let it be of No. 25. That is the best thickness for a beginner. Then take a board an inch thick, and screw the brass on it with small screws, set as near the edge as possible. Now you must have two tools, the one a tracer, and the other a mat. They are made of steel, and look like large nails without heads. The tracer has an edge like that of a very dull knife; in fact, it very much resembles a screw-driver. The end of the mat is flat, and is either simply roughened, or else crossed with very fine lines like a seal. The object of the tracer is to mark out the lines of the edge of a pattern; that of the mat is to beat in, and at the same time to roughen, the background. Thus, if the pattern is smooth and in relief while the ground is sunk and irregular, there will be a contrast of light and shade. An ingenious person will always contrive to obtain tools or make them. I have known a lady who, with only a spike nail, filed across the end, and a screw-driver, chased a plaque admirably.

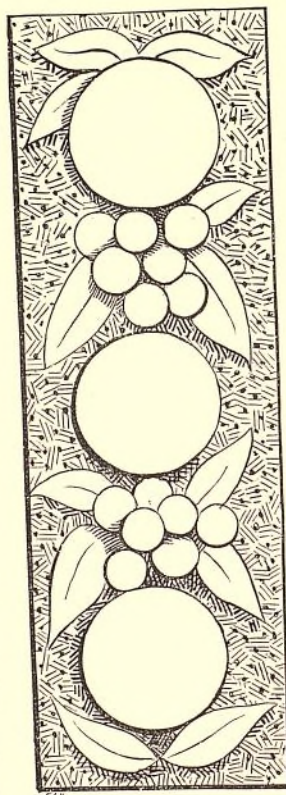
Having screwed a piece of brass down on the board, the pupil may take a lead-pencil and ruler



SIMPLE LINES FOR EARLY PRACTICE.

and draw on it as many parallel lines as he can, about an eighth of an inch apart.

Then let him take the tracer in his left hand, and in his right a small hammer with a broad head, like a shoe-maker's hammer, only much smaller. This is a chasing hammer, made for the purpose.



AN EASY PATTERN.

Now, resting the edge of the tracer on a line, move it along, and, as you move, keep tapping the upper end with the hammer. Continue to do this until you can make a perfect unbroken line. Do not strike too hard. A mere *tap-tap* will answer the purpose. After you can make such a marked straight line, then draw curves, as indicated by the curved lines in the preceding column, and work them out in the same manner.

When you can trace lines perfectly, and not till then, you should begin work. I will suppose that you want a finger-plate for a door, or a piece three inches by nine or twelve, which may serve for a hang-

ing candlestick, or perhaps as one side of a frame.

Here is such a pattern. There is an object in making in this pattern so many round objects, such as apples and grapes. Every one of these, in brass, will be a shining ball. In all ordinary work, it is advisable to avoid patterns which have inside lines, such as scales on fishes, hair, etc. Do not attempt any fine work, or picture-making. Decorative art should be looked at from a distance. Most pupils want to begin with designs full of minute details. They do not realize that broad and simple designs are the most elegant. No one, indeed, should attempt to work in brass who can not design patterns. Those who beg or buy them always bungle.

To aid my scholars, I have found it necessary to write a manual of decorative design, and one on sheet-brass work, which have been published. From these the intelligent student may readily learn to draw the simple designs suited to such art.

When the pattern is traced or outlined so that not a break or dot can be seen in it, the pupil takes the mat and indents the background. No great care is necessary for this in certain grounds. It may be done roughly or more evenly. There are different kinds of both mats and tracers, as well as punches for making circles and rounded holes, etc. I have known a professional chaser to have nearly two thousand. The tools of best quality cost thirty cents apiece. It is well to buy from two (which is the least number sold) to six, eight, or ten.*



A SIMPLE DESIGN.

After matting the ground, you next go over the edges with the tracer again, or with a border tool, which is a tracer with the edges made like a very fine saw. Do not be in a hurry, as too many people are, to make a fine piece of work to show as your first effort. It is generally the ignorant who lay great stress on the first attempts in art. I have known scores of people to lose months of work by trying to make show pieces, instead of learning *how* to make them.

In the Philadelphia school there are boys and girls, from twelve to fifteen or sixteen years of age, who can design patterns, carve wood panels, model large and beautiful vases covered with flowers or grotesque figures, and execute sheet-brass work. I have not found their work in any respect inferior to that of adults who had studied art for the same time. And the different arts are so easy that within a few months many pupils can master several of them.

The kind of *repousser* which I have described is called cold hammering on wood. A more advanced process is hammering on pitch, during which the metal is heated from time to time to make it soft. By this means a higher relief can be given to the figures.

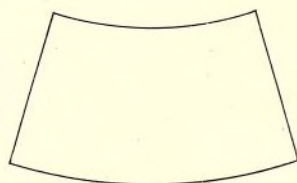
The way in which this is effected is as follows: A composition is made of Burgundy pitch, which is melted in a tin skillet, and when fluid is mingled with brick-dust and powdered plaster of Paris, in proportions varying with the hardness required and the time of year. When all is well stirred and mingled, the composition is poured into a bucket

of cold water, and worked by hand into cakes. When needed for use, these cakes are melted and spread in a coat half an inch thick on the board. This process is technically known as "foxing." When the brass is screwed down on this, of course it yields more than wood, and allows a deeper relief to be made.

Hammering the brass hardens it, and the higher the relief the thinner and harder it gets, and the more liable to crack or split it becomes. Therefore, it is placed from time to time on a fire or gas-jet, to soften it. This process is called annealing. It requires some little practice and judgment to anneal well. If after cold hammering on wood any cracks are found in the work, they may be soldered. This is readily done by the tinsmith who makes up the work. That is, after making, let us say, a plate sixteen inches in diameter in a square piece, you send it to a tinman, who will cut it round for you, turn the edge over a wire, and solder a ring on the back by which to hang it up. This he should do for from eighteen to twenty-five cents. Any other *repousser* can be made up in like manner. All small brass articles that are to be handled require it, just as do those made from tin.

Beginners should not think of using the pitched, or annealing brass until they can work it cold on wood. Brass costs at retail from thirty-five to forty cents a pound; the tools, with a hammer and board and screws, less than two dollars. Of course, as the young artist advances, he will need more mats and tracers.

Now, it will be worth while to consider what objects may be made of sheet brass.



SHAPE OF A CASE FOR FLOWER-POT.

A plaque or a round plate is easily made, and may be used as a platter on which to serve fruit. Or you can make a square plate, which, according to its size, may be set either in a cabinet, in a box, in the back of a chair, a clock, a sofa, or anywhere that a flat and ornamented surface is needed. Again, a square piece of ornamented sheet brass can be made by any smith into a cylindrical cup, which would look well anywhere. Boxes of sheet brass are well adapted to hold wooden boxes of flowers, and outer cases for flower-pots are quite effective. The sheet for a flower-pot cover is of the shape shown above. It will also, if made narrower, serve for a tankard or cannon-shaped goblet or can. A square piece, with the sides sloped or cut away, will "make up" into a coal-scuttle. Narrow strips can be set in picture-

* The name of the publisher of Mr. Leland's manuals, and the address of an experienced dealer in tools for brass-work, will be furnished by Sr. NICHOLAS, upon application.

frames. Quivers are useful to hold canes and parasols. A very common and very pretty object is a brass-covered pair of bellows. Cups can be bought ready made of brass. These can be filled with the pitch-cement, and worked on the outside.

that time there are no other classes in the building to be disturbed.

It is a very natural question for every one to ask: "How can I sell my work when it is done? Who will buy it?" For many months, I have been



AT WORK.

The din which is made by a dozen boys and girls hammering sheet brass all at once together is appalling. Therefore, in our school, Saturday afternoon is set apart specially for this work. At

in the daily receipt of letters from every corner of our country, asking me where the writers can sell their manufactures. People who have never seen a piece of brass work, but who have heard about

it, "think they would like to learn if it would pay," and write to know if I will find them purchasers. This is very much as if one should ask an artist who buys his pictures, or a grocer how to sell sugar. If anybody living could tell exactly where anything could be sold, half the world would at once rush to sell. I have had many pupils who have sold their brass work, and some who have made a great deal of money by it, but I do not believe that even they could help any one else to sell. As I see their plaques and panels about town in shops, I know that they find dealers to dispose of them.

But, after all, the main object of learning to work in metal, or wood, or clay should not be to at once make money but to learn to use the hands and brains. The boy or girl who learns to design patterns, and work them out, is not only prepared by so doing for some more serious occu-

pation, but also becomes cleverer intellectually. If we take two boys or girls of the same age and of the same brain power, and give them the same book-studies, but allow one to occupy part of his leisure in learning to draw and work brass, while the other spends an equal amount of time in aimless amusement, it will be found, at the end of a year or two, that the former is by far the cleverer of the two. There is no doubt that such pursuits, while they are as interesting as any play, also improve the mind.

I suppose that, among the thousands who will read this article, there will be many who will like to learn to design patterns for brass work and then to execute them in the metal. Those who intend to do so will find that it will save much expense, and that they will advance far more rapidly, should they form a club, association, or school for the purpose.

SILK CULTURE FOR GIRLS.*

By C. M. ST. DENYS.

CAN not girls raise silk as well as boys?

"Yes, *better*," says a girl who ought to know, for she has been raising silk herself for two years. "Of course, boys can feed the worms as well as girls; but when it comes to handling the delicate fibers, for reeling or other purposes, the girls have the advantage, because their fingers are more delicate. But most girls would rather embroider or paint on silk than raise it. I tell you, they don't know how interesting silk-raising is. I've been at it two years, and it grows more and more interesting to me every day."

This particular girl has a brisk step, and such bright eyes, clear complexion, and rosy cheeks as would set you wondering if she had not washed her face in May dew.

It seems she began raising silk when she was thirteen years old. At that time she was very fond of reading, and spent so much time poring over her books that her eyes were in danger of being injured. Her father, to prevent this, sought to occupy her with silk-worms; and now she has become so interested in silk that she devotes all her time to the subject.

As her family lived in the heart of the city, where there were no mulberry trees, she and her father used to start out at four o'clock every morning in the feeding-season and walk to the park, to gather fresh leaves for her worms.

This little girl's father helped her very kindly.

He made frames for her to cover with nets for her feeding-trays; and, after awhile, actually moved to a house nearer the park, so that she would not have so far to go for the mulberry leaves. So now they have only a mile to go, and need not start on their morning walk till about five o'clock. "To be sure, one runs the risk of malaria by such habits," she owned; "but then we always eat something before we start, which greatly lessens the danger."

The young silk-raiser has her room full of curiosities connected with the silk industry. It is interesting to note the difference between the boys' silk-room and this one. The boys' place looks like a real work-room, without much attempt at ornament. The girl's, on the contrary, looks like a little parlor with her collection of silk products tastefully arranged on the mantel, on tables, and in glass cases. The walls are hung with painted silk screens, with photographs of patrons of the silk cause, and letters of distinguished people who have been interested in her work. There is no reason why a boy's room should not look as neat and pretty as a girl's, and it is very seldom that girls devote too much attention to the ornamental, and not enough to the useful.

"All these things were sent as presents," said the young silk-raiser. "You see, I have orders for silk-worms' eggs constantly coming in from all parts of the country, so I have a great deal of cor-

respondence, and I make a great many friends that I never could have made in any other way. They send me these things either as gifts or in exchange."

There was a box of cocoons of wild silk, spun by the oak-feeding worms of the north of China, of which pongee is made, the light brown color characteristic of this goods being observable in the cocoon. Beside it lay an oak-leaf from the park, to which clung a cocoon spun by one of our native silk-moths. There were jars of cocoons raised by a boy of eight years, and by girls of thirteen and fourteen. There was a silk fishing-line of a pretty ultramarine tint, twisted so tight and smooth that it seemed almost as stiff and elastic as fine steel wire.

"That was made by a Georgia lady from silk produced by eggs I sent her," explained our informant. "She makes silk fishing-lines, for sale, and supplies all the men and boys in her neighborhood."

"This satin book-marker," she continued, "with the bunch of violets painted on it, was sent to me by a girl in the neighborhood; and this little screen was painted for me by an Ohio girl who is nearly blind. I value it all the more for that; but a person with good eyesight need not have been ashamed of it. But just look at these Chinese gauze screens, covered with hand-painted flowers. If that work had been done in this country it would have cost an immense sum, but we can import them at a very low price. That little model of a reel worked by Chinese figures was sent to me from a fair, and these cotton pods, closed and open, with the snowy cotton bursting out, were sent from Louisiana."

"Here is something I value highly—two bits of ribbon, labeled, 'Economy, Pa., 1832.' So, you see, as long ago as that, German emigrants made silk in this country. It is very hard to get a piece of this rare silk."

So she went on showing one interesting thing after another. There were specimens of silk in almost every form—loose, reeled, spun, twisted, woven, embroidered, cases of gay sewing-silk, wreaths of flowers of silk thread stretched on wires, and hanks of silk that looked like lovely silver-gray hair. Over the cases hung a placard with the words, "See what a worm can do." And I thought to myself that it might have said just as truthfully, "See what a girl can do."

One of the most striking objects in the room was a tall stand on which were displayed long, flowing bunches of silk of all the natural tints, from cream color to a bright yellow, which looked like the treasured tresses, flaxen or sunny gold, of so many fair maidens.

But the most valued treasures of this silk-enthusiast are displayed on the walls. Conspicuous among them is a note of thanks from Miss Mollie Garfield, saying: "Both my mamma and I are much interested in the cocoons and other specimens you sent us. We think you must be a very enterprising girl."

There, too, hangs her diploma, awarded by the State Agricultural Fair.

"I value that more than any money prize," she said, "for I can keep it always to show. I suppose it was given to me because I was so young more than for any other reason, for I had just begun silk-raising then and had n't much to show—just some eggs and cocoons in a little frame. Here is the very jar of silk I sent, labeled, 'Silk raised and reeled on her fingers by a little girl thirteen and a half years old.' I think I would go through fire and water to save that diploma. I have a fine reel now that was made in Philadelphia and given to me. There it stands in the corner. I had the water-pan made by a tinman and fitted on this old sewing-machine stand. When I use it, I set a lamp under the pan to heat the water. But I don't reel very much, only in the winter, because I keep most of my cocoons for eggs."

"Where do you feed your worms in the rearing season?" we asked.

"Right here in this room," she replied. "But as they grow we have to spread them out over three rooms, though our frames are five stories high—that is, there are five tiers of trays. I raise so many worms now that my father and two brothers have to help me carry home leaves for them every morning, and sometimes the boys have to go again in the evening. But it is only for a few days that the worms eat so much."

"It seems strange that there are not a great many other girls interested in silk as you are," we remarked.

"Yes, it does," said she. "I suppose there are some in different parts of the country. But in the city it is not easy to get mulberry leaves; and city girls who have to earn their living seem to prefer working in factories or stores to taking the trouble to help themselves by silk-raising. Now, I like it so much I would n't change it for any other employment. There is so much variety in it—so much that is interesting to learn about it; though it does n't take very much knowledge to raise silk. I've put all the necessary information in my instruction book. Have n't you seen it? It is in the third edition now."

Last year, a lame girl I know, who lives with her mother in a country village where there are a few mulberry-trees growing near the house, thought she would try raising silk. So she bought a dol-

lar's worth of eggs and a little instruction book, and began with her trays spread on the sitting-room table. At first, it was nothing but fun to watch the queer little brown things feeding. But they soon grew so large and ate so much that she was obliged to spread them out more and more, till they occupied two or three rooms instead of one table, and it kept the little lame girl and her mother both busy gathering leaves to satisfy their appetites.

But, by the end of six weeks, they had all done feeding and spun their little silken covers and gone to sleep. The lame girl had a fine lot of cocoons,

which she sold for twenty-seven dollars, and felt that she was well paid for her trouble. Besides, she got honorable mention at the grand silk fair at St. George's Hall, which was something to be proud of. So she bought four dollars' worth of eggs for the next season, hoping to make four times as much money.

I wish more girls would try silk-raising. I think you would enjoy it, girls. If it is not practicable for you to belong to a silk association, you can raise silk just as well by yourselves. But I should like to hear of a Girls' Silk-Culture Club ready to begin work next season.

MADE BY A SILK-WORM.

By JOHN R. CORVELL.

MOST of the many boys and girls who already own or who intend to own silk-worms will be glad to know of a way by which the silk-spinning powers of the little creature may be turned to account so as to produce immediate results.

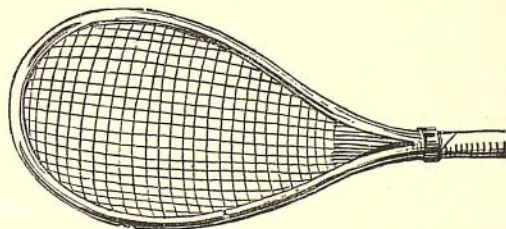
The formation of the cocoon, the reeling of the raw silk, and the final weaving into the finished sheet of silk are not only processes requiring considerable time and skill, but are, all of them, usually carried on without the assistance of the young silk-raiser. Or even if he reel off the silk from the cocoon himself, he will be little likely to attempt weaving it into cloth.

There is a way of contriving, however, so that the silk-worm will itself save you the time of its own house-building and spare you the trouble of reeling and weaving. It can, in fact, be made to produce for you, under your own supervision, a piece of beautiful, golden silk. Nor is this all: it will even shape the silk and fasten it to a fan, a tambourine, or to any other similar frame; provided, of course, that the silk-yielding capacity of the worm be not overtaxed.

The method of accomplishing this result is a very simple one, though, like many other simple things, it is not commonly known. Very many Chinese ladies, however, know it, and make use of it to divert the weary hours they usually spend in idleness.

When the worm is full-grown, and has filled its reservoir with the silk-making material, it is ready to build its house or cocoon. This you must not

permit it to do. It must instead be placed on a common Japanese fan, of the battledore or lawn-tennis bat shape.



Nature tells the worm that it must spin—spin a cocoon if possible, but spin anyhow. If permitted to have its own way, it will build on the flat surface of the fan; but if prevented, it will wander from side to side of the little platform, spinning all the while its wonderful silken thread, fastening it at the edges, and in the end covering the whole surface with a closely woven golden web almost as tough as parchment.

In relating this fact, however, we must, at the same time, impress upon the young silk-culturist that, if he tries this experiment, it had better be with only two or three worms, and that it would be wrong and cruel to divert many of the little creatures from their proper work of cocoon-making, for the sake of the ornamental fan-covers they might be made to supply. Though the result is, of course, interesting, it is decidedly not for this purpose that you are supposed to keep silk-worms.

A CONVENTION OF AMATEUR JOURNALISTS.

BY H. H. BALLARD.

THE next annual convention of the National Amateur Press Association is to be held in New York City, in July. These gatherings of enthusiastic journalists attract more and more attention, and serve to make known in widening circles the character and purposes of the N. A. P. A. Some notion of what the coming meeting will be may be gained perhaps by a glance at the members composing last year's convention as they were assembled in the New Era Hall, of Detroit, Michigan, on July 14th, 1882. Our cut is engraved from a photograph taken at that time. Although the photograph is unfortunately indistinct, it is evident that it represents a group of thoughtful boys and young men, who believe in their "cause," and who are ready to work for it.

The convention gave promise of much good for the Association, and, looking back over the history of the year, we can see that the promise has been fulfilled. The ranks of the society have been extended; many new papers have been started; the wings of the older ones have grown stronger for flight, and the general character of the papers has been raised. We note with pleasure a more manly ring in editorials, a fairer tone in critical reviews, a growing freedom from personalities, as well as higher order of literary work and better mechanical execution.

Reports of the Detroit meeting from several widely separated sources show that it was, on the whole, one of the most harmonious and satisfactory ever held. We have read, with considerable interest, detailed accounts of the political campaigns which preceded the convention, and have traced through bulky files of amateur journals the inception and development of the several parties there represented—all of which study has strengthened the belief expressed in a former article, that amateur elections are conducted with fairness and good nature, and that candidates are nominated mainly from confidence in their ability, and elected by honorable and manly methods of voting. The history of a campaign is something like this: Soon after an annual election (if not long before!) some bright, and distant-future-scanning editor, with a taste for wielding pen-power, runs carefully over his exchanges, and makes a mental estimate of his contemporaries.

(And very much can be learned of an amateur editor from a single number of his paper. Is its general appearance attractive? Is its face clean? Are its hands washed? Are its eyes wide open?

Can it hit heavy and honest blows? Is it truthful, modest, pure, sensible, bright?)

Having decided from such mental view of many papers that Pungent Pepperpot, the editor of the *Capsicum*, is likely to prove a popular and capable president, he proceeds to throw among his next week's editorials some such tentative remark as "Did any gentleman mention Pepperpot for our next president?" or to suggest that "Among those who were most active in the late campaign, none displayed more unselfish enthusiasm, or showed more marked ability, than the editor of the sprightly and well-written *Capsicum*."

Without waiting to see whether this little seed will sprout or not, our young politician next sits down and writes to a score of brother editors in different sections, and asks in varied phrase of each whether he has yet made up his mind regarding the proper man to fill the presidential chair at the expiration of the current year. He gently intimates that, if no other name has been proposed, it would be an excellent plan to unfurl the flag of Pepperpot. These letters dispatched, another must be written to no less distinguished a personage than Pungent Pepperpot himself, offering to "work" for him from date. As soon as three or four favorable responses are returned, a committee is organized, consisting of members judiciously sprinkled over the several points of the mariner's compass.

The work of the committee is then fully mapped out, and a "net-work of correspondence" is carried on in all directions.

A good plan is to have all members of the committee concentrate a fusilade of political epistles upon a doubtful amateur, so that upon the same day he may receive, by a strange coincidence, letters from Ohio, Pennsylvania, and Massachusetts, all pointing out the critical point in its history upon which Amateurdom is now quivering, and demonstrating that the only person who can possibly place it in a position of permanent perpendicularity is Pungent Pepperpot.

Few can withstand this. Letters begin to flow toward the committee, to the following effect:

"Regarding Pepperpot, I *will* work for him, and give him all my influence."
SAMUEL SCRIBBLER."

"I am solid for P. P."

WM. WHITEWELL."

"I shall be exceedingly happy to render you any aid that lies in my power to bring about the election of Pepperpot."

EDWARD EDITSON."

But by this time some other politician has become aware of the danger which threatens the Associa-

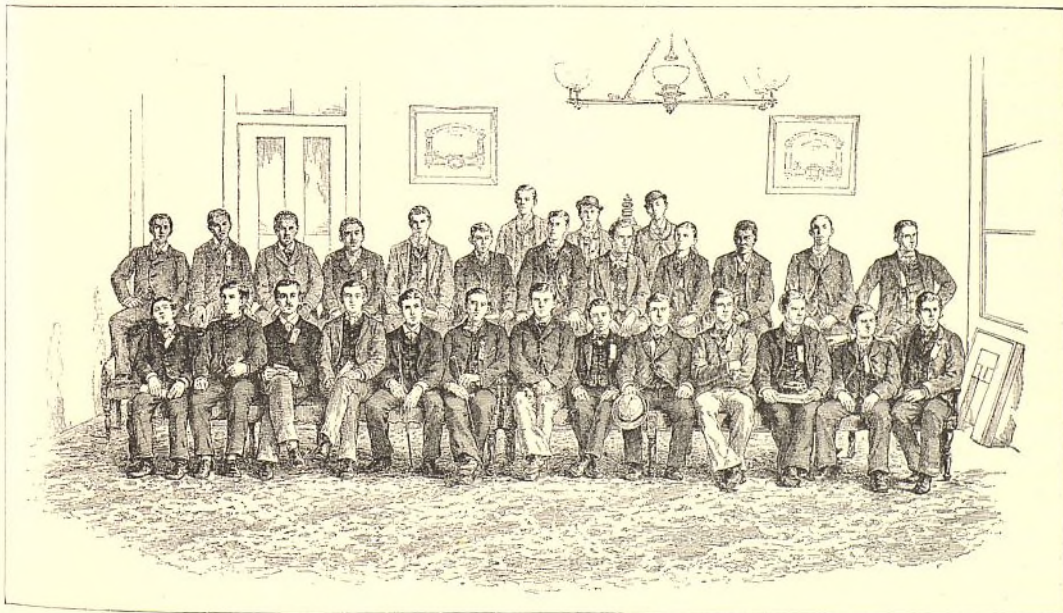
tion if it allows the fiery and impetuous Pepperpot to gain the highest office in the gift of the N. A. P. A., and by substantially similar methods he rapidly organizes a boom for Zachary Zero, who edits the monthly *Iceicle*. Now the fun begins. As kernels of corn over a hot fire, so paper after paper pops out in favor of one or the other of the rival nominees. Histories of each appear, introduced with eye-compelling head-lines, and illustrated with portraits or caricatures of the candidates. The Pepperpotists ridicule the chill indifference of the Zeroites, who in turn criticise the dangerous heat and fierce passions of their opponents. "Shall Amateurdome bare its back tamely to receive an application of capsicum?" "Better that, a thousand-fold, than to face the fearful fate of freezing in an untimely grave," is the undaunted reply.

As the time for the convention approaches, the interest deepens. Other candidates appear, letters of acceptance and of declination see the light, noses are counted, and estimates of attendance are made. The records of the rivals are searched for evidences of literary skill, editorial power, political penetration, honorable "stands," and general popularity on the one side; and, on the other, for proofs of incapacity or plagiarism, of weakness or narrowness of mind, indirect methods, and general impracticability. Finally, on the eve of the election, caucuses are held, speeches made, members button-holed, pledges circulated, promises given, and after the crisis is over and the photographs paid for, the next month is devoted to explaining how, if Pepper-

pot had not resigned on the very edge of victory, and if Zero had only rallied his men with more of his rival's ardent but flagging zeal, it never could have happened that the hitherto unknown editor of the *Wayback Waif* should have been quietly accepted as a compromise candidate, and triumphantly elected almost by acclamation.

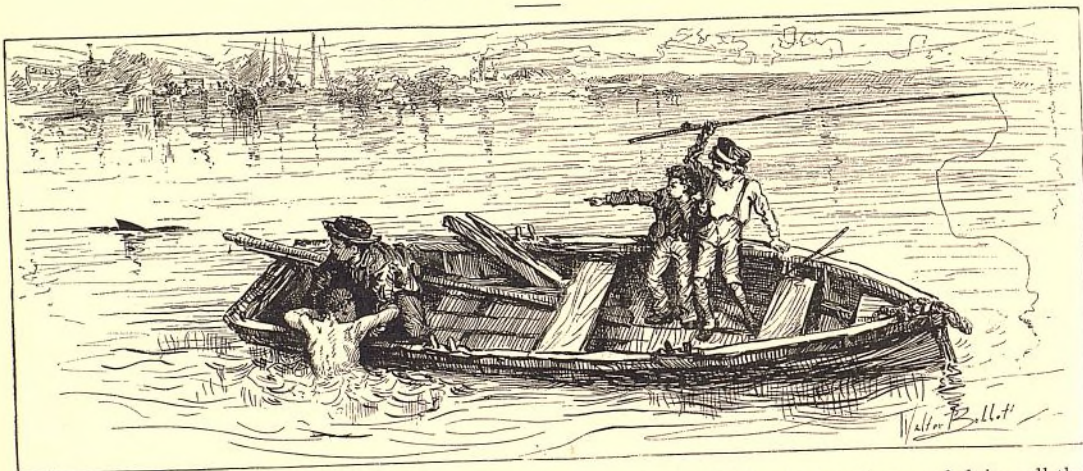
In concluding this sketch, we wish distinctly to state that it is not designed to represent under the fiery and frosty appellations of Pepperpot and Zero any of the gentlemen who were actually in the field during the campaign of 1882, which reached its climax at Detroit; nor to indicate by the name of *Wayback Waif* the paper of him who was really chosen president. In fact, last year it was not a "dark horse" that won, but a gentleman who, during most of the campaign, was generally felt to be the proper one for the place.

It was our plan to enter somewhat in detail into an account of last year's convention; but as the minor incidents of friendly greetings, eager caucuses, and ballot-counting are of interest mainly to the actors in chief, and as such a course, moreover, would cause us to thread our way through an intricate maze of dangerous personalities, we must content ourselves with congratulating the Association on its manly and dignified representation at Detroit. Those of my readers who are desirous of a closer acquaintance with the workings of the N. A. P. A., or who wish to enroll themselves among its members and attend the July convention in New York City, should address Mr. F. A. Grant, South Gardner, Mass.



"A SHARK IN SIGHT."—A PRIZE COMPOSITION.*

BY JOHN PECK, JR. (AGED 15).



ALTHOUGH we Sandersville boys had lived all our lives within sight of the ocean, yet we did not grow tired of the sea, and never were so happy as when fishing in its depths, or rowing about over its throbbing bosom.

Almost every pleasant Saturday a party of us would charter old sailor Bob's ancient and weather-beaten boat, and spend the whole or a part of the day in fishing, or in the oft-repeated but ever pleasant task of exploring the shores of the bay in the vicinity of the village.

One bright July afternoon, four of us—Dan Blockly, George Davis, Benny Temple, and myself—secured the "Dandy" (never was there a boat that bore a name more unsuited to its appearance), and set out for a few hours' enjoyment.

Rowing over to Rock Island, as a large cluster of huge boulders was called, that showed their black heads above their white collars of snowy sea-foam, about two miles distant from the village, we landed upon them, and rigged our lines.

Rock Island and its vicinity was noted as a good angling ground, and we enjoyed fine sport; and not until the sun began to hide itself behind the hills back of the village did we enter our boat.

As we rowed slowly homeward, we could not help admiring the beauty and clearness of the waters of the bay, which were as smooth and transparent as glass.

"I declare, boys, I must take a swim," said Dan, at length. And hastily slipping off his clothes, he leaped overboard. "I tell you, fellows, the water is just right—neither too warm nor too cold."

Dan swam round and round the boat, diving,

swimming on his back, treading, and doing all the feats which boys delight in performing, and at last darted away at a lively rate, laughingly telling us that he would reach the beach before we would.

We were about to seize the oars and prove to his satisfaction that three boys in a boat can travel much more rapidly than one boy in the water, when Benny Temple called our attention to something that was speeding through the water toward the swimmer. "What is it?" asked Ben.

I had not the remotest idea what it was, until I heard George utter an exclamation of astonishment and fear, and then shout: "Dan! Dan! come back here, quick! There's a shark in sight!"

The boy addressed was some distance from the boat, but his friend's words came to his ears with terrible distinctness. For an instant he remained motionless, then turned and struck out for the boat.

Never have I seen a person swim with more speed than Dan exhibited that day. He was an excellent swimmer, and, fully comprehending his peril, he plowed desperately through the water, leaving a trail of foam and bubbles in his wake as he strained every muscle to reach the boat.

As for ourselves, we never thought of the oars, but remained motionless in the "Dandy," terror-stricken, watching the race.

Suddenly the shark disappeared beneath the surface of the water. Our excitement and anxiety were now more intense than before, for we did not know how near the voracious monster might be to our friend, or at what moment he might be crushed in the jaws of the huge and blood-thirsty fish.

Nearer and nearer came Dan, and at last he

*See the Committee's Report, page 713.

grasped the side of the boat, and in a moment more was pulled on board.

Scarcely had he been drawn from the water, when the shark appeared at the side of our craft; but his prey had escaped him. For a moment he regarded us intently with his cunning, wicked-looking eyes, then swam slowly around the boat and disappeared.

It was one of the species of white sharks, or man-eaters, which are found in all seas. They swim

very rapidly, and usually near the surface of the water. This one, though scarcely twenty feet long, appeared a very monster to us. Its body was white below, gradually fading to a light brown above. Its mouth, as is usual in fish of this species, was on the under-side of its head, and was set with two rows of sharp, ugly-looking teeth.

It was a fearful and repulsive thing to look at, and I dare say it will be a long time before any of us forget the shark or the fright it gave us.

ROBERT BURNS.—A PRIZE COMPOSITION.

BY MARION SATTERLEE (AGED 15).

THE violet blooms both at the door of the lowly cottage and at the gate of the palace; so genius is found in the plowman as well as in the peer.

A striking instance of this is Robert Burns.

In the hamlet of Alloway, in Ayrshire, Scotland, a farmer, one William Burns, built with his own hands a cottage, a picture of which is now before us, doubtless himself making the little window through which the sun, veiled by the mists of a

land and from far across the sea, who had come to visit his early home and carry away with them a pressed flower from the threshold of him whose spirited battle-cry or whose tender love-songs had stirred their hearts.

But it was with Burns as with many others before him: all this came too late. The statues and monuments raised in his memory, the biographies and essays written about him, the choice editions of his works, could not lift the great load of care and sordid poverty which made him prematurely old, and crushed out the life and buoyancy of his warm, passionate, proud heart.

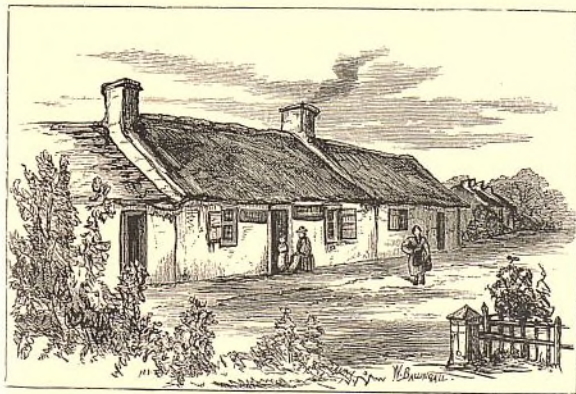
Burns was born a plowman, but also a poet; as a farmer, he could not succeed; his poet soul took wings and soared far beyond the lowly calling to which he had been born. He was continually falling in love, and constantly broke out into song to some Jean, or Mary, or Nannie, who had been captivated by his dark eyes and eloquent tongue; and then his tender heart sang even about the little trifling things that he daily saw around him, such as a daisy or field-mouse's nest.

With such a nature, strive as he might, both

ends would not meet, and in a fit of despondency Burns resolved to set out for the West Indies and to say farewell, perhaps forever, to his loved Scotland.

It must have been a moment of overwhelming joy to the poet, because so entirely unsuspected, when he first learned that he was famous, and that distinguished men and cultivated women were eagerly reading his recently published poems and inquiring for the gifted author.

A time of brightness now seems to have come to him; but his nature was an exceptional one: impetuous and ardent, moderation was impossible to him. He found himself at home in society such as he had never enjoyed before; but the enjoyment could not last long. During his stay in Edinburgh he acquired only a thirst for drink and a desire for



January morning in the year 1759, first shone into the birthplace of Robert Burns.

Here, at Alloway, in his boyhood, the stalwart figure of the future poet became a familiar sight to the simple farmers of the neighborhood, as he followed his plow and hummed over as he went some quaint old Scottish air, or sat at his father's table, devouring, at one and the same time his midday meal and some favorite book. Few of his associates, however, could have dreamed that, in after years, the little clay-built cottage would bear an inscription, proudly stating that there had been the birthplace of Robert Burns, the poet; and that the walls, the wood-work, and even the tables in the principal room of the house, would be covered with the names of travelers from all parts of Scot-

fame, neither of which tastes were likely to render his quiet after-life at Ellisland, where he retired in 1788, either a peaceful or a happy one. As combined farmer, exciseman, and poet, he did not prosper any better than in his earlier days. But in spite of his want of success, he might have been happy on his secluded farm, with his wife (Jean Armour) and his children; but his now uneventful life soon became irksome to him. It was not, however, of long duration: he died at the early age of thirty-

seven, after a short, sad life, full of disappointments and cares.

That the character of Burns was faulty, and that his too impulsive nature led him into frequent excesses, can not be denied; but that his heart was a great one, and that many of his aspirations were noble, can not be denied also. And it is with a feeling of affectionate interest that we turn to the humble cottage which, as the birthplace of Robert Burns, has become forever a hallowed spot.

ROBERT BURNS.

BY JAMES C. HOLENSHADE (AGED 13).

ROBERT BURNS was born in Scotland:
He was a farmer lad—
His lot in life to guide the plow,
In simple homespun clad.

He dined on cheese and oaten cake,
Or buttermilk and porridge,
And breakfasted on plain pease broth,
But longed for fame and knowledge.

He must have had a tender heart,
For in the field one day
A mouse's nest was overturned—
The creature ran away.

Then Robert wrote a little rhyme,
Quite pitiful and kind,
Bewailing the poor beastie's fate.
That showed the Poet mind;

Because, you see, a common boy
Would sure have chased the beast,
With savage yells and whirling stones,
Till out of sight at least.

And once, while seated in the church,
A lady proud and gay,
Close to him sat with scornful look,
Too frivolous to pray.

Perchance upon his homespun clothes,
Or sturdy brogans coarse,
Her scornful glances fell askance
With irritating force.

He must have thought her conduct coarse,
Unladylike, and strange,
For, moralizing o'er the fact,
Right quaintly did arrange

That well-known phrase with sense so true:
"Could we as others see us
But see ourselves, the gift, indeed,
From much that's ill would free us!"

The merry pranks of "Halloween,"
So many years ago,
He pictures to our minds until
We long to do just so.

And surely Tam O'Shanter's mare
The lesson must convey,
That round one's house at night is far
The safest place to stay.

"The twa dogs" long and friendly chat
Impresses on the mind
That e'en in selfish idleness
No happiness we 'll find.

His cheery heart must sore have been
The day he penned, forlorn,
"Man's inhumanity to man
Makes countless thousands mourn."

How many men and women, too,
In life's hard struggle drear,
"A man's a man for a' that" has
Unto them given cheer!

His words for o'er a century
Have given hope and pleasure
To hopeless men, to hapless men;
Made better men of leisure.

He may have often dropped the plow,
At rhyming to take turns;
Mind, every boy that drops the plow
Can't be a Robert Burns!

THE COMMITTEE'S REPORT.*

AS STATED in our Letter-Box last month, many hundreds of compositions have been received in response to our invitation on page 474 of the April number of ST. NICHOLAS. Of these, the two which seem to our Committee the best on their respective subjects, taking all points of the contest into consideration, are: "A Shark in Sight," by John Peck, Jr., and "Robert Burns," by Marion Satterlee.

Another paper on Robert Burns, written in verse by James C. Holensshade, aged twelve years, is so good, in spite of some faulty lines, that we yield to the temptation

to print it with the two already named. Payment, at the rate promised, has been sent, with our thanks, to the three young authors.

It must, however, be said that, as in the case of the "Tiger" competition (see page 235 of ST. NICHOLAS for January, 1883), the difficulty of selecting the best has been very great; and, as before, our sense of justice demands a long Roll of Honor, giving the names of those whose efforts in composition are too praiseworthy to be passed by without acknowledgment.

ROLL OF HONOR.

"A SHARK IN SIGHT."

Lottie A. Best—Carrie Lash—Will von Moody—Addie W. Bunnell—Alice P. Pendleton—R. K. Saxe—Claribel Moulton—Alice Dillingham—William Dana Orcutt—Amy Mothershead—Louise M. Knight—Peter Wade Chance—Eddie Sabin—Hortense E. Martin—Lizzie B. Robertson—L. T. Van Santvoord—Marion Clara Smith—Edna Morse—Emma Hall—C. Louise Higgins—Gertrude Halladay—Nellie Tunnicliff—Pet Ennis—Edgar T. Keyser—Horace Wylie—Hugo Diemer—Bessie Holmes—Nellie Glass—Kate M. Bott—Geo. D. Moore—Flora Rawson—Charles T. Slider—Paul R. Towne—Orville H. Leonard—Angelo Hall—Helen B. Pendleton—Richard Payson—Dudley Garst—Harry Houck—Minerva Primm—Alex. Heron Davisson—Virginia M. Reid—William Lamping—Caroline D. Elmendorf—Hilda E. Ingalls—Hallie Metcalf—Charles C. Brown—Minnie M. Wait—Harry V. Army—Wallie Wilson—May Manny—Mamie Leverich—John F. Fairchild—Mamie E. Page—Edith D. Cooper—Louise Hobby—Gertrude Bemis—Julius K. Schaefer—Arthur C. Hobart—Annie E. Lewis—Charles F. Shaw—Mary A. Fletcher—Lightfoot Meredith—Gracie Q. Bird—Mattie W. Baxter—Rosemary Baum—Genevieve Harvey—Phillips Carmer—Sue D. Huntington—Milan E. Goodrich—Henry Channing Church—Carrie C. Howard—Dimple Robertson—Julia T. Pember—Lulie R. Shippey—Flossie Paul—Fred. Russell—May Gearhart—Bessie Howe—Bertha M. Sears—Henrietta Hulskamp—Martha Kennar—May Winston—D. O. Sullivan—Louise H. Lawrence—Stark R. Sweeney—Susie M. Higgins—Birdie Byrne—Katie H. Elliott—Bessie P. Sutphen—Lyle M. Foote—Reginald I. Brasher—"Woodpecker"—Truman J. Purdy—R. N.—Harry W. George—Millie G. King—Charles Lee Faries—Carrie Malen—Paul W. Brown—Lilian Scott—Josephine Kernochan—George C. Baker—Ethelind Richards—Elizabeth Pendleton—Helen G. Dawley—Clara B. Pitts—Percy F. Jamieson—Glenn J. Bowker—Andrew H. Pattison—Mary Sherman—Julie E. Avulhe—Mary Redline—E. W. Mumford—Bessie Dolfield—Aileen O'Donnell—Mary L. Barnett—Corina A. Shattuck—Harold Stebbins—Edith King Vezin—K. M. M.—Ernest Peabody—George Robinson—Stuart M. Beard—John S. Aukeny—Eva G. Hunt—Jennie C. Kissam—Thomas L. Thurber—Helen H. Baldwin—Caro Hodges—Helen M. Slade—Willie B. Trites—Evelyn P. Willing—Bessie A. Jackson—Mabel Florence Noyes—Edna Wheeler—F. Louis Grammer—A. L. Walter—Mable G. Guion—M. C. D.—Samuel Herbert Fisher—Harriet Langdon Pruyn—R. H. Caley—M. B.—L. Mabel Newman—Paul Clagstone—Vincent Zohrowski—Willie E. Galloway—Walter M. Arnold—S. F. Riches—John MacCracken—Kittie R. Kipp—Harrison Hall Schaff—Florence A. Pool—Violet A. Todd—Mary Helen Ritchie—W. Martin—A. E. Cotrel—Pauline Lattimore—E. W.—Maude Pike—Charles Richardson—"Honor Bright"—M. Louise Grozier—J. C. Loos—Lillie MacVolland—Emma L. Flagg—May B. Gray—Mary B. Boyd—Herbert P. Morton—Mary Yeager—Belle I. Miller—Magella Pool—E. M. Perry—George Shepard—Bessie Carroll—Effie Lovell—Lulie Stockton—Abbie Scott—Nellie A. Freeman—Maude Graves—Margaret G. Spring—Pearl McCall—E. C. Armstrong—Alice J. Allen—Martie Le R. Stoddard—Orie Stevens—George James Bayles—Annie Blanton—James R. Allen—Samuel Parry—Ralph W. Newcomb—Nora Brewer—William H. Allen—Lizzie Beecher—George S. Mason—Georgia A. Capen—Ed. Munger—Blackford Mills Condit—Gertrude E. Bromfield—Ned Pierson—Eugenia Winston—Clarence H. Newton—Harry C. Nesbit—Sarah M. Roberts—Eleanor McFetridge—Blanche M. Henszey—Alexander Whiteside, Jr.—Geo. Candee Gale—R. M. Hotaling—Margaret Brent—E. Heydon Baker—Grace Barstow—Louis M. Bishop—Warren P. Sheldon—Elliott Forsyth—Lulu T.—Arthur N. Dennis—Augustus L. Craig—Archie B. Jennings—L. E. Smalley—Alice B. Wilbur—Eddie Chenevent—Perry M. Riley—Etta L. Hodgdon—Henry A. Bull—Edward Thomas—Minnie A. Olds—Frank Lee—Bessie Hall—Philip Ferris—Zoe E. Hubby—Mary M. Mears—Robert D. Jenks—Leland S. Boruck—Sada Tomlinson—Frederic Wm. Bailey—Helen M. Perkins—Shelton Fleetwood—Margarita Grace—Elena Maria Grace—Emily Geiger—George Whipple—Harry Patterson—Libbie Williams—C. R. Hervey—Theo. A. Straub—Nimmo F. Pettis—Henry F. Peake—Edmund A. Burnham—Lizzie Warren La Mont—Willie C. Cook—Mamie Tomlinson—Lizzie S. Peebles—Mary E. Nichols—Gertie Hurd—Mary Leiraux—Mabel A. J. Cornish—Theron A. Harmon—Sarah Gruntal—Miriam Gutman—Helen C. McCleary—H. V. De Hart—Andy Colvin—"Sandpiper"—Annie Armstrong—Fred A. Brady—Josie Bigelow—Harry E. Witmer—Henrietta Van Cleve—Walter A. Walmsley—Fanny L. Van Cleve—"Rexie"—John Rogers Gaum—Addie House—Mabelle L. Parker—S. M. Muncaster—Fred. S. Elliott—Fred. Mersil—Wm. McDowell—Jas. F. Berry—Wm. C. Henry—Annie E. Frazer—Willie C. Perry.

"ROBERT BURNS."

Mabel Cilley—Calvin W. Gibbs—Maye Boorman—Rudolph L. Grunert—Lizzie C. Roberts—Frank Shallenberger—Agnes Young—Mary Snellbaker—Clara Gilbert—Margt. Neilson Armstrong—Belle Patterson—Estelle La Paz—Lizzie H. Knieffier—Hollis C. Clark—Pare Winston—Ettie M. Withey—Herbert Sloan—Agnes B. Walker—Howard C. Ives—Helen E. Sands—Josephine E. Chapman—Helen M. Brown—Mary Hitchcock—Eleanor Ennis—Bessie L. Cary—Josie Nicholls—Edith A. Edwards—Charles T. Slider—Orville H. Leonard—Charlie M. McKee—E. P. MacMullen—Helen Thomas—Jessie S. Hoyt—Rosa Scott—Sue D. Huntington—Amy T. Briggs—Anna G. Clark—Sara Bair—Katie B. Sullivan—Edward D. Hinckley—Minnie Moreno—May Jackson—Eliza M. Grace—Annie Jenkins—May A. Morse—May Roberts—Ella Wooster—Kittie Vanderveer—Dannie B. Ruggles—Adele Bacon—Jessie Price Thomas—"Ida"—Florence P. Fay—George Moulton McIntosh—Mabel C. Craft—Evangeline H. Walker—Carrie McNaughton—Helen Loveland—Virginia C. Gardner—Mildred W. Howe—James A. Harris—Laura H. Wild—George Randolph—Maud V. Du Bois—Bennett Hornsby Armstrong—Fanny Gearhart—W. E. Borden—Clara E. Holloway—Mamie M. Bryce—Corra B. Riggs—Richard Clunan—Med E. Dey—Sallie Janney—Rachel L. Pierce—Alice Hyde—Emma M. Curran—Nannie B. Sale—Arthur W. Rice—Lilian Andrews—Laura M. White—Anna E. Wright—Charlie Scarritt—Nellie Whitcomb—Gracie E. Richardson—Mattie P. Baldwin—Jane Peoples—Harriette R. Horsfall—Luita N. Booth—Anna Hotchkiss—Jennie F. King—Georgina C. Wolsley—Grace Goodridge—Luther Davis—J. M. Mitcheson—Mary White Morton—"Teddie"—Maud Adams—Elizabeth Alling—Alice Robinson—Blanche Brown—Laura Virginia Julian—Florence M. Tabor—M. Fanner Murphy—Hattie L. James—Otto R. Barnett—May E. Holland—Josie Nicholls—Ettie Rambar—Josephine de Rougé—Rosaland Webling—"Honor Bright"—Abbie Hough Pierce—May Meinell—Bertody W. Stone—Adele Marsh—Mary G. Millett—Albert Clausen—Mary F. Kent—Mary D. Reeve—Herbert Crane—Gertrude R. White—Frank Smalley—Maude Burton—Walter A. Knight—May Craig—T. S. K.—Lydia B. Wiley—Mabel Burr—Edward Marlor—Joseph Bartlett Acken—Gaylord Miles—D. H. Bates, Jr.—Nellie H. Grandino—Ellen L. Way—Annie Hughes—Florence Hyde—Edith Kursheedt—Jennie S. Thomson—Maude Graves—Etta C. Johnson—Bramwell C. Davis—Frank M. Bosworth—C. A. Horne—Margaret Deane—Mabel C. Falley.

* See ST. NICHOLAS for April, page 475.



JACK-IN-THE-PULPIT.

PEACE and joy be with you, my girls and boys! Summer greets you, and sends you merry rest and play. Open your eyes and hearts wider than ever, and be glad.

And now, just for a little while before school closes, let us consider:

THE DIFFERENCE IN INTEREST.

THE other day, Deacon Green surprised the youngsters of the Red School-house very much. He was telling them what an advantage the scholars who take great interest in their studies have over those who take only little interest,—“for,” said he, bowing to the dear Little School-ma’am as he spoke, “I am sure every boy and girl in this room can not help taking some interest in even the dull-est lesson.”

Then he went on to explain to them how wonderfully interest works. “Not only now, not all at once, but in the course of life. It cumulates,” said he, “like money interest. For instance: Some boys and girls take two per cent. interest in their studies, and some take ten per cent.—and compound at that, as all interest in mental improvement must be. Well, what is the consequence? Is the ten per cent. chap in the course of years just five times better off than the two per cent. chap? No; he is many a five times better off. His mind will have widened, deepened, and filled itself, so to speak, in the most surprising way. Now, I’ll illustrate the point out of your own arithmetic,” and the Deacon turned the pages at the end of a volume that looked very well-worn in its first half, but quite clean in the other portion.

“See here,” he continued, “look at these figures and make your own application: ‘One dollar loaned at compound interest at one per cent.,’ this book says, ‘would amount, in one hundred years, to *two dollars and seventy-five cents* exactly.’

Now, what do you suppose it says one dollar at twelve per cent., compound interest, would amount to in one hundred years? Why, to eighty-four thousand, six hundred and seventy-five dollars. Is n’t that more than twelve times two dollars and seventy-five cents? And, boys, what do you suppose the one dollar loaned for one hundred years at twenty-four per cent., compound interest, would amount to? Twice eighty-four thousand, six hundred and seventy-five dollars? No, sir. It would amount (you see, I’m not guessing; I’m reading the figures right out of your own book)—it would amount to *two billions, five hundred and fifty-one millions, seven hundred and ninety-nine thousand, four hundred and four dollars!* (\$2,551,799,404). There, boys, what do you think of that?” The boys were too much astonished to speak. They looked first at the Little School-ma’am and then at the Deacon, to make sure that no joke was being played on them; and finally a manly little fellow of twelve spoke up for the whole school:

“We think, sir, that we scholars might as well go in for a high rate of interest, after this.”

A WEATHER SUNDAY.

NEW YORK, May 3, 1883.

DEAR JACK-IN-THE-PULPIT: Were you standing out-of-doors in your pretty pulpit all last Sunday, I wonder? It was a strange day here, but maybe it was different in your meadow. I live in the upper part of New York City, near the Central Park, and I must say I never saw such a day. First, when I woke and looked out of the window, I saw that the pavements were quite dry, so I thought I would wear my best bonnet to church. Then by breakfast-time it was raining, and I was afraid I must wear my waterproof. Then by church-time it was really snowing and hailing, and Mamma said I must put on my thick sacque. Off we started, the wind cutting my face like everything. During the service, we heard sounds like distant thunder, but when we walked home the storm was over and we felt only a gentle mist. By afternoon it was so bright and clear that Papa and I walked in the park and admired the willows shaking their tender green tips in the sun; and actually it was so warm before night that, on our way home, Papa had to take off his overcoat and carry it on his arm, and I nearly suffocated in my sacque. In the evening, Grandma actually asked for a fan! and there was n’t a fire nor a speck of steam-heat in the house. We had spring, summer, fall, and winter all in one Sunday, Mamma said.

Your admiring friend, JENNY B. C.

A GOOD NAME.

SAN MATEO, FLA., April 18, 1883.

DEAR JACK-IN-THE-PULPIT: I read in ST. NICHOLAS this year something about the devil’s darning-needle, and so I write to tell you that down here in Florida we call them mosquito-hawks. I thought it would be nice to write and tell you about them. The reason they call them mosquito-hawks is because they eat the mosquitoes.

I am your constant reader,

M. JENNIE P.—

FOLKS’ GLOVE.

ALMOST all of you have seen the pretty summer flower called the fox-glove. But did you ever hear that the original name was folks’ glove? “The folks,” as all good children know, is another name for the fairies; indeed, this flower-to-day is called by the people of Wales the fairy-glove.

Even the Latin name of the plant is *digitalis*, which, the Little School-ma’am says, is derived from *digitus*, meaning finger. All these finger-and-glove titles come from the fact that the purple or white blossoms, as they hang in a row down the stem, resemble so many swinging glove-fingers;

but, according to my way of thinking, such titles are anything but a compliment to the fairy-folk.

A funny fairy hand, indeed, five such fingers would make! Why, a whole fairy might easily slip into one of them! Besides, the digitalis is used as a medicine by the doctors. It's poisonous, too. I don't think it belongs to the fairies at all.

JUST hear this melancholy ballad by O. I. C. :

THE INQUISITIVE FISHERMAN.



ONCE there was a fisherman
Who went to catch some fish;
He took with him a basket
And a little china dish.
"I'll use one for the fishes,
The other when I sup;
For, if they meet my wishes,
I'll cook and eat them up!"

He fished and fished the whole
day long,

From morn till late at night;
He baited hooks and watched
his bob,

But could not get a bite.
He then threw down his rod
and line,

And vowed he'd go below,
To find out what the reason
was

The fish had used him so.



The fish all gathered round
him,
Each wagging his own tail,
From the little polly-woggy
To the great gigantic whale.
Some fish were looking scaly,
And some exceeding thin,
But all were glad to see the
man,
And offered him a fin.

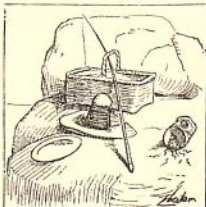
They said: "We have no
china dish,

Nor basket snug and tight;
But we are very prudent fish,

Who think before we bite.
We do not need to cook our
prize

Ere we sit down and sup."
And so, before his very eyes,

They ate that fisher up!



HELP WANTED.

THERE is something that troubles your Jack, greatly. The other day a round rubber ball, that two boys had been tossing back and forth, rolled very near to my pulpit. I examined it closely, and it seemed to be hollow. There was only one tiny hole, the size of a pin-head, in the entire ball.

Now, this is what troubles me: If that ball was made in a mold (and it seems to have been), how did they get the inner part of the mold out of that tiny hole? Or was the ball made of two hollow halves stuck together? Or do you suppose they used a mold at all?

The Little School-ma'am tells me that not only balls are made of rubber, but dolls, and toy horses, cows, sheep—in fact, the variety of shapes which this substance can be made to take is endless.

But about that ball. Do look into the hole, — I mean the subject, — my sharp-eyed chicks, and let me hear from you about it.

LINDLEY MURRAY'S LIST.

THE birds have just brought in a letter from our good friend Joel Stacy. Let us read it together :

DEAR JACK-IN-THE-PULPIT: Once I went to a Mrs. Jarley's Exhibition of Wax-works, modeled after that described in Charles Dickens's "Old Curiosity Shop," and there, in the scene called The Chamber of Horrors (a title borrowed from Madame Tussaud's exhibition of real wax-works in London), I saw a live "wax-figure representing Lindley Murray in the act of composing his celebrated grammar." It was very funny to see the fierce way in which this figure would go through his motions when wound up, dipping his pen into an imaginary inkstand, and then, according to Mrs. Jarley, "writing them dreadful rules down into his book which it was indeed a most suitable figger for the Chamber of Horrors, as all well-edicated young people would testify."

Now, a friend has just sent me a list of books which Lindley Murray, in 1805, prepared for his niece to read.* She, Alice Colden Willett, was then a girl in her teens, and one can imagine her gratitude to her kind uncle when shown the course of reading upon which she was expected to enter with girlish alacrity. Here it is:

The Idler.	Savary's Letters in Egypt and
Guthrie's Geography.	Greece.
Morse's Geography.	Mandrell's Journey from Aleppo
Dr. Emerson's Gazetteer.	to Jerusalem.
Milton's Paradise Lost.	Bryden's Tour through Sicily
Milton's Paradise Regained	and Malta.
Thomson's Seasons.	Boswell's Tour through the
Young's Night Thoughts.	Hebrides.
Pope's Essay on Man.	Gisborn on the Duties of the
Akenside's Pleasures of the Im-	Female Sex.
agination.	Eliza Hamilton's Letter on Ed-
Cowper's Poems.	ucation.
Campbell's Pleasures of Hope.	Blair's Sermons.
Goldsmith's History of Greece,	Gisborn's Sermons.
of Rome, of England.	Fordyce's Sermons to Young
Robertson's History of the Em-	Women.
peror Charles V.	Watts on the Improvement of
History of America.	the Mind.
Elizabeth Hamilton's Life	Beattie's Evidences of the
of Agrippina, three volumes.	Christian Religion.
Middleton's Life of Cicero.	Addison's Evidences.
Doddridge's Life of Gardiner.	Newton on the Prophecies.
Aiken's View of the Character	The Rambler, by Dr. Samuel
of John Howard.	Johnson.
Shaw's Travels Through Bar-	Kalm's Travels in North Amer-
barry.	ica.
Boswell's Life of Dr. Johnson.	Doddridge's Family Expositor.

There is the list, with many a good book in it, but rather appalling to poor Miss Alice, I should say. Did she read all these volumes? your boys and girls will inquire; and did she ever ask for more? I can not answer. I am thinking of my friend Mrs. Jarley and little Nell, and a familiar wax "figger" in the Chamber of Horrors, and Mrs. Jarley is saying: "Wind him up, old man! P'int him out, little Nell!"

Affectionately yours and the children's, JOEL STACY.

SNAKES IN INDIA.

CAN any of my chicks tell me why snakes are specially respected in certain provinces of India? I am told on good authority that the natives of such districts refuse, on account of religious principles, to kill them; and yet the latest statistics say that during last year four thousand seven hundred and twenty-three human beings died in those parts of India from snake bites.

*The original letter containing this list of books is in the Historical Society in New Haven.

THE LETTER-BOX.

CONTRIBUTORS are respectfully informed that, between the 1st of June and the 15th of September, manuscripts can not conveniently be examined at the office of ST. NICHOLAS. Consequently, those who desire to favor the magazine with contributions will please postpone sending their MSS. until after the last-named date.

OWING to the space required for the prize compositions and the report of the Committee, we are compelled this month to omit the Very Little Folk Department.

WE commend to all our readers Mr. Leland's interesting article on "Brass-Work for Boys and Girls," in this month's Work and Play department, and, in connection with it, we are glad to announce that the author probably will contribute to our pages some other papers dealing with similar kinds of Work and Play, such as "Leather-Work," "Wood-Carving," and "Modeling."

That studies in these arts form both useful and enjoyable recreations for young folks has been amply proven by the success of the industrial schools in our large cities. And, indeed, the New York Society of Decorative Art lately solicited aid in extending instruction in these branches, in a circular, from which we quote the following:

"The Managers of the Society of Decorative Art are very desirous to extend their educational work in the direction of free instruction in the minor industrial arts. They wish to form large classes in plain sewing, embroidery, wood-carving, hammered brass, mosaic work, and in the rudiments of modeling and design. The experience of the past five years proves to the Managers that a broad field of usefulness lies in the training of children of both sexes, from nine to fifteen years of age, in industries which may, at the same time, be both useful and pleasant to them.

"The Managers feel that these are years when the fingers may become most expert and the perceptions quickened, as well as the brain developed; and that this teaching need not interfere, but go hand in hand—rather as recreation than otherwise—with regular school duties."

HERE is a letter, proving that The Schuyler mansion at Albany (pictured on page 666 of this number) is not the only old house in New York State which bears the marks of Indian tomahawks upon its stairway:

JOHNSTOWN, N. Y.

DEAR ST. NICHOLAS: I live in the country, two miles from Johnstown.

More than a hundred years ago, Sir William Johnson lived here, and the town was named for him. The house where he lived is standing. The banisters are all hacked up by the Indians' tomahawks.

There is an old bell in the school-house which Queen Anne sent here for a church.

There are a great many glove and mitten shops here.

My brothers and I take ST. NICHOLAS. We like it so much we are going to have the numbers bound to save them. I am eleven years old.

From your admiring friend,

HANNAH E. C.

DEAR ST. NICHOLAS: I send you a conundrum that I hope you will be able to find a place for.

What garden flower does a man name who has paid half his debts?
Answer—Glad-i-o-lus (Glad-i-owe-less).

L. D. H.

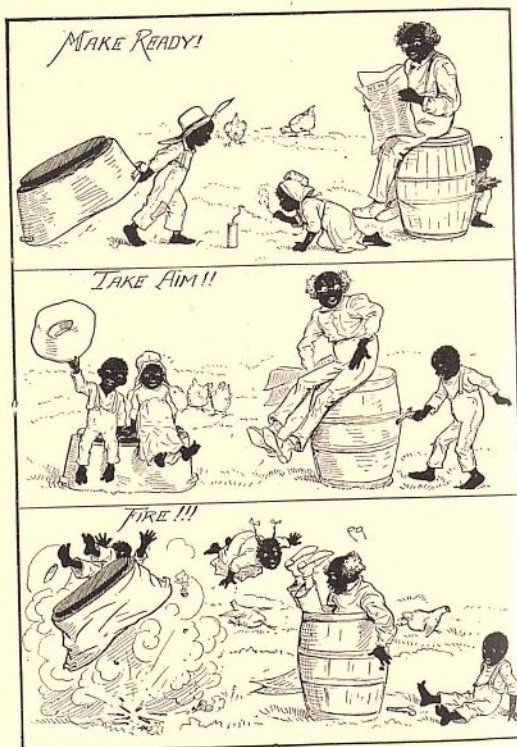
SCRANTON, PA., January 3, 1883.

DEAR ST. NICHOLAS: My Uncle George, who lives in Minneapolis, Minn., sends me the ST. NICHOLAS every year as a Christmas present. I think it is splendid. I can hardly wait for it from one month to another. As you publish letters from the little folks, I want to tell you something my aunt, who is living at our house, told me. She is seventy-five years old. Her name is Mrs. Jane A. Winton. Her maiden name was Jane A. Pabodie. The story she told me is about George Washington. It is true, and has never been published, so far as I know. Here it is: When her father, Ephraim Pabodie, was a small lad, his father took him to see Washington, who was then visiting Providence, R. I., where they lived. When they came into the presence of Washington, the boy said, "Why, father, he is nothing but a man." Washington heard the

remark, and turning to the lad said: "No, my son, I am nothing but a man." He seemed so pleased at the speech that he put a number of pennies into the boy's hand. Aunt's father lived to be eighty-two years old, and used to tell this story about Washington with a great deal of interest.

Yours truly,
GEORGE ROBERT VAN SCHOICK.

HERE is a Fourth of July picture which comes from a young contributor.



SAN FRANCISCO, CAL.

DEAR ST. NICHOLAS: I've had such a time this morning with my black-and-tan pup. He is only three months old. He bites my hands all the time, and I can not do a thing with him. Will not somebody give me a few rules for training him?

Please put this in the Letter-Box. I like you ever so much; please remember that, and my name is

NANNIE D.

Anoint your hands well with a strong tea of bitter aloes. Then after the little darling has bitten them a few times, he will lose his appetite for you.

GARRISON, N. Y.

DEAR ST. NICHOLAS: I am going to tell you about a little kitten that was given to me by the housekeeper at Fort Monroe. It was white all over, with a little black tail and a black crown on its head. It was born on Easter, and when I got it it was a week old. It would lie on its back and drink milk out of a bottle. It would hold the bottle with its hind legs, and put both its fore paws around it.

Yours truly,

K. T. D.

AGASSIZ ASSOCIATION.—TWENTY-EIGHTH REPORT.

THE pleasure is ours once more of extending the thanks of the A. A. to the gentlemen who offer us assistance in our several departments. There is still room for more, especially in mineralogy. The following letters speak for themselves:

COLUMBIA, CALIFORNIA.

I will send, to all of the A. A. members who will send me their addresses and postage to prepay the same, samples of various flowers, ferns, etc., found on or near this snow-belt of the Sierra Nevada mountains. I will also send, to all members of the A. A. who may desire them, specimens of minerals for the simple cost of postage and packing. Any information on minerals that I can render, I will cheerfully give to the extent of my knowledge. With me this study has a great attraction, and here I find endless fields for research.

Some of the most beautiful flowers, highly colored and delicate, new to your botanists, are found in rocky gorges and steep cañons. I can aid you, I think, in very many ways, and also the others in all the States. You are at liberty to use this letter in part or entire.

Yours truly, in the cause of education,

WM. H. BRIGGS.

After this large-hearted offer, Mr. Briggs, perhaps better known by his *nom de plume*, "Willie Fern," may look to see the Sierras prematurely whitened by a snow-fall of responsive letters.

I offer my services to the A. A. in the determination of conchological specimens.

BRUCE RICHARDS,

1726 N. 18th St., Philadelphia, Pa.

I will correspond with any one on shells. THOMAS MORGAN,
Somerville, N. J.

A COURSE OF ORIGINAL STUDY FOR OUR ENTOMOLOGISTS.

We propose for an experiment to offer a short course in the observation of insects, to extend through several months. All who successfully complete this course shall receive certificates, and be qualified to enter upon a higher one next year. In order that as many as possible may enter upon the work, it has been made quite simple, and is as follows:

All members of this class will be expected to write, each month, a paper on the subject assigned, which paper is to be a record of original field observations on any one species of the order announced for the month. To make the matter perfectly clear, the subjects for the next six months follow:

July. Lepidoptera.

August. Hemiptera.

September. Neuroptera.

October. Diptera.

November. Coleoptera.

December. Insects in general.

The subject for this month is *Lepidoptera*, and the papers should be prepared as follows:

1. Give a brief but clear description of the *order*.

2. Give a careful report of your own observations on any one species of the order. In this report should be included:

a. *Description* of the insect, accurate as may be, and, if possible, accompanied by drawings, however rude; difference in coloration of the sexes; varieties observed; probable causes of such variation, such as differences of food, location, and time of year.

b. *Habits*.—Date of appearance and disappearance of the *perfect insect*; number of annual broods; localities most favorable, etc.

c. *Transformations*.—1. The egg: description, sketch, duration of this stage; where and how deposited by the female. 2. Larva: number of molts, and changes noticed in these molts; duration of each molt, and entire time consumed in this stage: food-plants of the larva; drawings. 3. Chrysalis: description; methods of protection and fastening; duration of this stage; special observations. 4. Parasites observed during these stages (ichneumonids, chalcids, etc.).

d. Concluding remarks, with notes drawn from various works on the subject, and a list of such references.

It will be seen that this work can be done by the youngest members, as well as the eldest, and in the award of certificates regard will be had to age as well as merit.

Prof. G. Howard Parker, of the Philadelphia Academy of Sciences, has very kindly consented to receive and examine these papers, and to his address (corner Nineteenth and Race streets) all wishing to enter the class should send their names immediately, as also to the President of the A. A.

On the completion of the course, a list of the successful students will be printed in ST. NICHOLAS.

There are no charges for entrance to any of our classes.

A COURSE IN THE OBSERVATION AND COLLECTION OF BOTANICAL SPECIMENS.

Prof. Marcus E. Jones, of Salt Lake, Utah, will conduct a class of observers in botany. The plan is this: The members of the

class will collect all possible forms and carefully press them, and send drawings of them, arranged according to the schemes to be monthly given in ST. NICHOLAS; or in case of inability to draw, send the specimens themselves, arranged according to the same schemes.

Plants can be said to have five parts: I. ROOTS; II. STEMS; III. LEAVES; IV. FLOWERS (including fruit); V. HAIRS (*Trichomes* in general).

The collection of these several parts may be made simultaneously and as the season requires; but the drawings and specimens must be sent to Prof. Jones in such monthly installments as the printed schemes call for. The subject for this month is *Roots*, and the specimens must be arranged as follows:

I. ROOTS* are divided into

PRIMARY.† The kinds are

Tap; the shapes are (they are found in evergreens, vegetables, etc.),

cone-shaped,

spindle-shaped,

turnip-shaped,

round,

narrow,

etc. (Collect combinations of these forms also.)

Multiple (found in grasses, vines, etc.).

(For shapes, see *Tap roots*.)

SECONDARY. (Those coming from any part of the plant but the lower end of the stem, i.e., rootlets.)

Underground,

from root stocks (ferns, sedges, etc.),

from true roots.

Aerial (above ground),

Used for nourishment:

from strawberry stolons,

pea-nuts,

corn,

many tropical trees,

parasites, etc.

Used not for nourishment:

mosses,

orchids (tropical),

air-plants of all kinds,

parasites,

trumpet creepers, etc.,

ivy, etc., etc.

All those who finish this course shall receive the A. A. certificate also, and have their names printed in ST. NICHOLAS. All who wish to enter the class should forward their names immediately, both to Prof. Jones and to the President of the A. A.

The reports from Chapters are more encouraging than ever this month, but are unavoidably crowded out. The following new Chapters have been organized:

NEW CHAPTERS.

No.	Name.	Members.	Address.
455.	Bedford, Pa. (A).....	5..W. C. Langdon, Jr.	
456.	Chicago, Ill. (N).....	5..Ovington Ross, 584 W. Washington.	
457.	Albany, N. Y. (C).....	6..W. L. Martin, 240 Clinton ave.	
458.	Haverhill, Mass. (A).....	7..H. W. Spaulding, lock box 171.	
459.	Philadelphia, Pa. (N)....	4..Harry Colby, 1520 Wellington.	
460.	Georgetown, D. C. (D)....	4..F. A. Reynolds, 159 Washington.	
461.	E. Orange, N. J. (A)....	13..Miss S. L. Hook, Brick Church P. O., Essex Co.	
462.	N. Haven, Conn. (A)....	15..Fred. Post, 34 Edwards.	
463.	Dayton, Ohio. (B).....	5..Jos. H. Jones, 233 Commercial street.	
464.	Westboro, Mass. (A)....	30..Miss Kitty A. Gage.	
465.	Waterville, Maine. (A)...	6..C. W. Spencer.	
466.	Golconda, Ill. (A).....	6..Clarence E. Kimball.	
467.	Foster's Crossing, O. (A)...	4..Miss Katherine M. Bridge.	
468.	Saco, Maine (C).....	20..Miss L. F. Bradbury, box 606.	
469.	W. De Pere, Wis. (A)....	16..Miss Annie Tracy.	
470.	W. De Pere, Wis. (B)....	25..Samuel Willard.	
471.	Germantown, Pa. (D)....	10..Miss A. E. Brobson, 106 Pastorius.	
472.	Hazleton, Pa. (A).....	8..Miss Anne McNair.	
473.	Washington, D. C. (H)...	4..C. Buchanan, 43 Myrtle street.	
474.	Greeley, Col. (B).....	12..Miss Flora Ecker.	
475.	Dundee, Scotland (A)....	6..Miss A. G. Keiller, Temple House, Longforgan.	
476.	Aurora, N. Y. (A).....	27..E. L. Wilson.	
477.	New York, N. Y. (M)....	5..A. C. P. Opdyke, 200 W. 57th.	
478.	Comstock, N. Y. (A)....	4..Geo. C. Baker.	
479.	Durhamville, N. Y. (A)...	5..Arthur Fox.	
480.	Baltimore, Md. (F).....	8..Miss R. Jones, 222 McCulloch.	
481.	Newton, Mass. (A).....	10..Fred. H. Hitchcock.	

* Names more deeply indented than others are considered as belonging to them: as *Tap* and *Multiple* are kinds of *Primary roots*; cone-shaped, etc., are kinds of *Tap roots*; *Underground* and *Aerial* are kinds of *Secondary roots*, etc.

† The *uses* of every kind of roots should be carefully observed.

No.	Name.	Members.	Address.
482.	Halicong, Pa.	11.	Miss Alice M. Atkinson.
483.	Albuquerque, New Mexico (A).	30.	Ernest D. Bowman.
484.	Old Town, Me. (A).	6.	Miss Mabel Waldron.
485.	Brooklyn Village, O. (A).	25.	Lewis B. Foote.
486.	Rutland, Vt. (A).	15.	S. W. Merrill.

Nearly 350 new members in a month! Dundee is our first Chapter in Scotland. Chapters A and C, of Cedar Rapids, Iowa, have united, retaining the letter and number of A, 64. Our thanks are due Wilkesbarre for an excellent group photograph of the Chapter. We wish one of each Chapter, if possible.

Chapter 131, Nevada, Cal., is again prepared to fill requests for exchange, and offers agatized wood, California flowers, *classified*, etc.—Maude M. Smith, Sec.

EXCHANGES.

Perfect spirifers and other fossils, for perfect trilobites. Correspondence in S. and W. on entomology and oölogy.—H. P. Taber, East Aurora, N. Y.

Bog ore, for tin, zinc, and nickel ore.—G. T. McGee, Jackson, Mich.

Petrified sycamore, for insects, and graphite, for rose quartz.—F. P. Stockbridge, Sec. Chap. 239.

H. L. Clark writes that he has not seen hair-snakes come out of a cricket, but has found them in a cricket, and his address is Amherst, Mass., instead of Providence, R. I.

Mockingbirds' eggs.—J. B. Russell, 95 Belleville av., Newark, N. J.

A vireo's nest and a sparrow's nest, for a tailor-bird's nest.—H. Montgomery, Saco, Maine.

Correspondence.—W. D. Shaw, Sec. 395, 34 St. Peter street, Montreal, Canada.

Cocoons.—Leo Austin, La Porte, Ind.

Labeled minerals and fossils, for fossil cephalopods.—W. R. Lighton, Ottumwa, Iowa.

Correspondence.—R. E. Coe, Durham, N. Y.

Sand from Gulf of Mexico, for feldspar, geodes, or quartz crystals.—J. C. Winne, Carthage, N. Y.

Minerals.—Geo. C. Baker, Comstocks, N. Y.

All sorts, for geological, botanical, or ornithological specimens.—Clarence O. Kimball, Sec. 466, Golconda, Ill.

Marine, land, or fresh-water shells.—Send list to Thomas Morgan, Somerville, N. J.

Calcare crystal, dogtooth spar, and named fossils of Lower and Upper Silurian for offers.—Elmer H. Fauver, 50 Hess street, Dayton, Ohio. (P. S.—I should like to correspond with some one acquainted with paleontology, especially if he lives among Devonian rocks.—E. H. F.)

AWARD OF THE PRIZE OFFERED IN DECEMBER.

In response to the offer of a prize for the best essay on the life of one of the world's famous naturalists, the competition has been unusually close, and the prize has been adjudged with unexpected difficulty. Indeed, between an essay on Louis Agassiz, by Miss Mary Rhoads Garrett, of the Bryn Mawr Chapter, No. 300, and one on John James Audubon, by Miss Josie Mulford, of Madison, N. J., there is so nearly an equality of merit that we have decided to give two prizes instead of one. Honorable mention must also be made of Miss Zoia Goodwin, of Waverly, Iowa; Richard D. Bancroft, of Philadelphia; C. L. Snowdon, Oskaloosa, Iowa; and E. B. Miller, A. C. Rudischhauser, A. B. Conrad, Wm. T. Frohwein, and A. Nehrbar, all of the Manhattan Chapter, of New York City; F. E. Cocks, Secretary of Brooklyn, E., and Miss Bessie Deland Williams, who is only eleven years old. We print one of the prize essays, which, from its subject, is of especial interest to members of the A. A.

ESSAY ON AGASSIZ.

"He prayeth best who loveth best all things both great and small;
For the dear God who loveth us He made and loveth all."
—Coleridge.

LOUIS JOHN RUDOLPH AGASSIZ was born at Motiers, near Neuchâtel, May 28, 1807, when Humboldt, Cuvier, and Napoleon were thirty-eight years old. His father was a Protestant minister; and his mother, an intelligent and cultivated woman, taught Louis till he was eleven years old, when he was sent to the gymnasium of Bienne. From thence he went to the college at Lausanne, where he spent his spare time in watching insects and fishing, and then studied medicine at Zurich, Heidelberg, and Munich. During his vacations he traveled in different parts of Europe in search of fossil and fresh-water fishes, and while an undergraduate described in Latin the Spix Collection of Brazil fish, which gave him distinction as a naturalist. He graduated at Munich when twenty-three years old, and staid for some time in the family of his friend M. Cuvier. At the request of the citizens of his native place, he accepted the Professorship of Natural History at Neuchâtel. About 1833, he

went to Paris and worked in the laboratory of the *Jardin des Plantes*. As he said afterward in America, he had no time to become rich; if he had a few spare pennies, he bought a book at some second-hand stall; but he copied, as closely as possible, many volumes which he needed but could not buy.

His glacial theory, published in "*Études sur les Glaciers*," and "*Systèmes Glacières*," was the result of long vacations spent among the Alps. He was noted, even by the Alpine guides, for his powers of walking, and still kept up this habit when he took the Harvard students on geological excursions.

In 1846, Agassiz came to America, on a visit; but he staid here because he liked a country where he could think and speak as he pleased, and where his activity would be appreciated. He was appointed Professor of Zoölogy and Geology at Harvard University, and his lectures in Boston gave an added interest to those studies on our continent. He became a master of English composition, and spoke the language with fluency and eloquence.

Professor Agassiz was an excellent and severe critic of a zoölogical drawing, and his quick brown eye detected the slightest fault. If the artist was careful, he would reward him with, "Try it once more." "Tis all wrong, but don't get out of patience." As a student said, "When the Professor took a class out walking, he saw more than all of us put together; for he looked, but we only stared."

A pupil, wishing to make a fish of the *Hæmulon* genus, without any instruments, and was told to keep the specimen wet. He soon grew disgusted with its "ancient fishy smell." The fish became dry, and he left for lunch. When he returned, he counted the scales for a variety, then took out a pencil and began to draw. The Professor came in and said: "That is right! The pencil is one of the best of eyes!" The next time he asked, "Well, what is it like?" The student told him. "You have not yet seen one of the most conspicuous features of the animal. Look again." It was now afternoon. Agassiz said, on returning: "Do you see it yet?" "I see how little I saw before." "Go home, now. Think it over; before you look at it in the morning, I'll examine you." After a restless night, he was greeted cordially by the Professor, who said, "Well, what is the conspicuous feature?" "Do you mean symmetrical sides with paired organs?" "Of course!" and the Professor was happy on that important point. "What next?" the student asked. "Oh, look at your fish! That's not all. Go on!" He did so for three days—looked at that fish! He says that the study of the *Hæmulon* for eight months, under Agassiz, was of greater value than years of later investigation in his favorite branch.

Agassiz had great powers of attraction. Old Valenciennes, at the *Jardin des Plantes*, called him "Ce cher Agassiz," and the Nahant fishermen would pull miles to bring him a rare fish, and see his delight on receiving it.

Since describing the Brazilian fish, it had been a desire of Louis Agassiz to see them in their native waters. Mr. Thayer, on hearing of his intended visit, said: "Take six assistants with you, and I will be responsible for their expenses, both personal and scientific." This offer was accepted and fully carried out till the last specimen was in the Museum. In 1868, Agassiz became non-resident Professor of Cornell University. His was a busy life: giving lectures, corresponding in three languages, superintending his assistants, and contributing to scientific literature. In his last summer school, Agassiz asked his pupils to join him in silent prayer for a blessing on their labors. He had no sympathy whatever with atheistic scientists, and his opposition to Darwinism was greatly owing to his fear that it would lead away from God. While holding to evolution in nature, he taught that types do not change. Darwin called him his most courteous opponent and most formidable.

His faith was strong in the hour of death, which came to him suddenly on December 14, 1873. He was buried at Cambridge from the chapel among the college elms. He was simple in his manners, not minding in the least carrying specimens in his handkerchief through the streets of London, and was not desirous of fame, refusing, at the height of Napoleon's power, a seat as Senator of the Empire and the Directorship of the *Jardin des Plantes*. While his was one of the most active and powerful minds, he was always glad to teach farmers and mechanics, and ready to learn himself as long as he lived.

[The following works were consulted by the author before writing the foregoing essay: *Lippincott's Biographical Dictionary*; *Recollections of Agassiz*, by Theodore Lyman, *Atlantic Monthly*; *Nature*, October, 1872; *The Net Result*, Work of U. S. Fish Commission, W. C. Wyckoff; *Character and Characteristic Men*, by Whipple; *Every Saturday*, April, 1874; *Popular Science Monthly*, vol. iv., 495; *Christian Union*; *Dr. Peabody's Funeral Sermon*; *Cruise through the Galapagos*, Agassiz; *Evolution and Permanency of Type*, by L. Agassiz (probably his last essay); *A Journey in Brazil*, by Prof. and Mrs. Agassiz; *Christian Weekly*, January, 1874.]

All who write to the scientific gentlemen who are assisting us, or to the President, will bear in mind the rules given in a late report—stamped envelope directed. The address of the President is:

HARLAN H. BALLARD,
Principal of Lenox Academy, Lenox, Mass.

THE RIDDLE-BOX.

MAZE.

TRACE a path to the flag in the center without entering any of the four circles.

S. A. R.

NOVEL ACROSTIC.

THE length of the words described varies from five to ten letters. When rightly guessed and placed one below the other, in the order here given, the second line of letters (reading downward) will spell the Christian name and the fourth line the surname of an American general upon whose tomb is inscribed, "He dared to lead where any dared to follow."

1. Not given to artifice.
2. The god of the healing art.
3. A mouth.
4. A species of clove-pink, having very beautiful flowers, and a rich, spicy scent.
5. A kind of evergreen remarkable for the durability of its wood, which has a fragrant odor.
6. A handsome feather, worn upon helmets.

H. B. S.

COMBINATION PUZZLE.

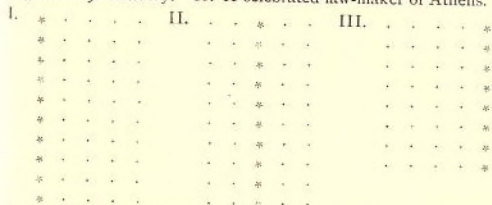


THE diagonals (reading downward) from left to right name a general famous in American history; the diagonals from right to left name a general who surrendered to him.

THE letters represented by the larger dots spell the name of the place of the surrender.

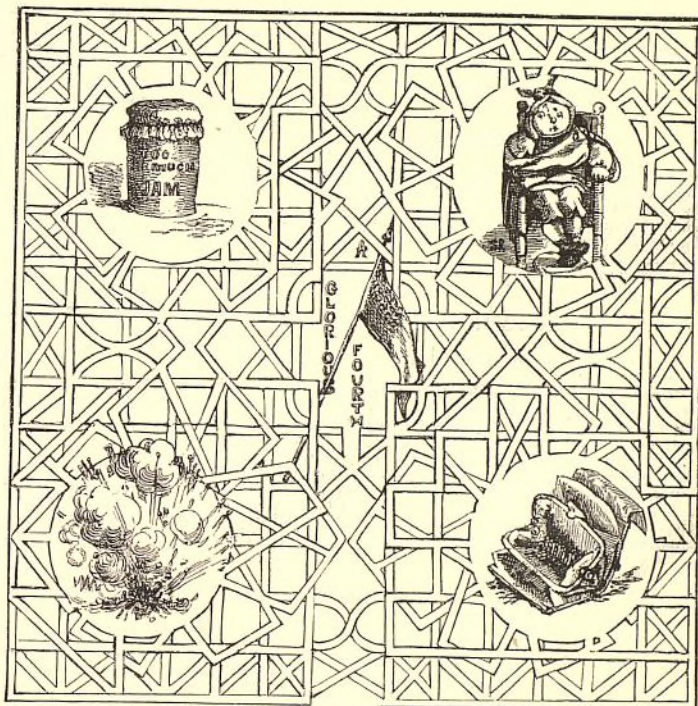
LEFT-HAND SIDE OF PERPENDICULAR LINE (words of five letters each): 1. Facetious. 2. A claw. 3. Homes of birds. 4. The people who invaded the Roman empire and defeated the Emperor Decius in 251 A. D. 5. A French word meaning listlessness. 6. A country residence. 7. Winds about. 8. Compact. 9. To compare. 10. A glossy fabric.

RIGHT-HAND SIDE OF PERPENDICULAR LINE (still reading from left to right): 1. A caper. 2. To bend. 3. Pertaining to a wall. 4. To strike. 5. Erroneous. 6. At no time. 7. A deputy. 8. A time-piece. 9. Bravery. 10. A celebrated law-maker of Athens.



I. 1. Behead inscribed, and leave mere repetition. 2. Behead to expiate, and leave a single sound. 3. Behead to upbraid, and leave frigid. 4. Behead a thicket of bushes, and leave margin. 5. Behead imaginary, and leave to distribute. 6. Behead a Latin word meaning "name," and leave an augury. 7. Behead to rub harshly, and leave a fixed price. 8. Behead to tantalize, and leave repose. 9. Behead to suppose, and leave to waste away. 10. Behead the present occasion, and leave at one time. The beheaded letters are the same as the diagonals reading from left to right.

II. 1. Syncopate a kind of nut, and leave a song of praise and triumph. 2. Syncopate to be buoyed up, and leave insipid. 3. Syncopate to tear into small pieces, and leave a rude hut. 4. Syncopate slender cords, and leave falsehoods. 5. Syncopate young animals, and leave articles much used in warm weather. 6. Syncopate locates, and leave assortments. 7. Syncopate skins of ani-



mals, and leave fondles. 8. Syncopate heaps, and leave a kind of pastry. 9. Syncopate to raise, and leave a multitude. 10. Syncopate to besiege, and leave a vegetable. The syncopated letters are the same as the diagonals reading from right to left.

III. 1. Curtail foolish, and leave the threshold. 2. Curtail a real or imaginary place of restraint, and leave a member. 3. Curtail one who is conveyed, and leave to drive. 4. Curtail a sharp, ringing sound, and leave a tribe. 5. Curtail weak, and leave disposed. 6. Curtail a peculiar language, and leave a marine fish, something like the cod. 7. Curtail to moisten with dew, and leave the surname of the hero of a novel by George Eliot. 8. Curtail increased in size, and leave to cultivate. The curtailed letters are the same as those represented by the heavier dots in the first diagram.

HARRY B. SPARKS.

TRIPLE ACROSTIC.

EACH of the words described contains five letters. The primals and the third row of letters (reading downward) each name a fine city; and the finals name the river on which they are located.

CROSS-WORDS: 1. Aspirations. 2. To lessen. 3. The name of the composer of "Ernani." 4. To govern. 5. To follow.

CUCHEE SMITH.

BEHEADINGS.

THE initials of the beheaded words will name what our forefathers struggled for.

1. Behead a story, and leave a beverage. 2. Behead "so be it," and leave what Dryden says are "but children of a larger growth." 3. Behead part of a ship, and leave a fish. 4. Behead a snare, and leave a knock. 5. Behead part of a wheel, and leave anger. 6. Behead a disfigurement, and leave a conveyance. 7. Behead to breathe hard, and leave an insect. 8. Behead to spring, and leave a short sleep. 9. Behead the product of a warm country, and leave the product of a cold country. 10. Behead the subject of many poems, and leave at once. 11. Behead a paradise, and leave a cave. 12. Behead a fruit, and leave part of the body. 13. Behead to revolve, and leave to fasten. 14. Behead to repair, and leave to finish. 15. Behead to cut, and leave to bite. 16. Behead a man's name, and leave an obstruction. 17. Behead part of a boat, and leave a tree. 18. Behead was aware of, and leave recent. 19. Behead to scrutinize, and leave a cup. 20. Behead an exploit, and leave to consume.

H. H. D.

