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NELLIE IN THE LIGHT-HOUSE.

BY SUSAN ARCHER WEISS.

ON the lonely Carolina coast are many small islands, interspersed with sandy shoals and rocky reefs, which render it dangerous for vessels that approach too near. On this account light-houses are established at proper intervals, and it is about the dwellers in one of these that I have a little story to tell.

The name of the keeper of this light-house was John Lattie. His wife was dead, and he lived there with his two children, and a faithful and attached negro couple, whom the children called Mammy Sylvie and Uncle Brister. Sylvie had been their nurse, and both she and her husband loved them as though they had been their own.

You may think a light-house on a small island—where no one else lived except two fishermen's families—a lonely place for two children. Perhaps it was; but Jack and Nellie did not think so. In good weather they had splendid times on the beach, running up and down the firm white sand, hiding amid the rough rocks that at low tide stood above the water, or picking up pretty shells, and bits of many-colored sea-weed, thrown up by the waves. Sometimes they played with the waves themselves, as merrily as though they had been living playmates. They would go low down to the water's edge, and watch some swelling billow as it came rolling onward to the shore, and cry defiantly: "Come on! you can't catch us!" and then, as the white foam-crest curled threateningly over toward them, they would run up the beach, with the billow in full chase, until the foamy crest broke about their bare little feet, and went gently sliding

back into the sea, to give place to another. Sometimes the billow would overtake them, and give them a thorough drenching; but this only excited their mirth. For sea-water does not give chills and colds, and it soon dries; and as their dress was coarse and simple, there was no danger of that being hurt.

One day, by some accident, the glass of the light-house was broken, and Mr. Lattie found it necessary to go in his boat to the main-land, in order to procure materials for repairing it. The little town at which he made these purchases was some five or six miles inland; and he might not return until quite late.

"If I am not back before sunset, Brister," said he to his sable assistant, "be sure to light the lamp in time. You know it will be as necessary to me as to others."

He said this because between the light-house and the shore were many dangerous rocks, some lying beneath the surface of the water, and others above it, to run upon which in the dark would break a boat to pieces. But Mr. Lattie was familiar with the channel, and he knew that with the light for a guide he could steer so as to avoid the rocks.

Now, Mr. Lattie had not been long gone when there came to the light-house, in hot haste, a little ragged boy, begging that Aunt Sylvie would come to his mother, who had been taken suddenly and dangerously ill. There was no doctor on the island, and Sylvie was very clever as a nurse. So she hastened away with all speed to the fisherman's wife, who lived quite a mile distant, at the opposite



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extremity of the island—first, however, telling the children to be good and not stray away from the light-house, and warning her “ole man” to take good care of them, well knowing, at the same time, that such warning was not necessary, for Uncle Brister would have sacrificed his own life for the little ones, whom he had helped to carry in his arms almost from the day of their birth. They were gentle and obedient children, though it had always been observed that Nellie, who was only seven years old, possessed much more firmness and decision of character than Jack, nearly two years her senior. She was also more generous; and I am afraid that with all her decision she gave up too much to her brother, and helped to make him selfish. For instance: if they were sent to Jem Long’s for fish, generally it was Nellie who carried the basket, while Jack amused himself with playing by the way; or, if Sylvie made ginger-cakes or “puffs,” and gave the two first baked to the children, it was Jack who claimed the biggest or the nicest-looking, and not unfrequently got a taste of Nellie’s also.

The children played all this morning very happily together, building a fort of loose rocks, like the great stone fort which they could see in the distance, many miles away. In the afternoon they went in-doors, where they found Brister, standing at one of the windows, shading his eyes with his hand and looking anxiously toward the west.

“Do you see the boat, Uncle Brister?” inquired Jack, standing on tip-toe to look out.

“Please de Lord, I wish I could dat,” answered the old man, more as if speaking to himself than to them. “I don’t like de looks o’ dat ’ere sky, and dere aint never no good in dem switchy mare’s tails,” pointing to some long scattered clouds which were moving rapidly up from the west. “Ef I knows anything ’t all, I knows we’s gwine to have a squeelin’, squalin’ storm. Please de Lord Massa and Sylvie was safe home.”

The old man’s prediction was correct. In less than an hour the wind burst upon them, the waves were lashed into foam, and the storm roared around the light-house in all its fury. The children, sitting by the fire, listened to the roaring of the wind and the waves without, and felt the walls tremble with the force of the tempest. Old Brister had gone about and made all secure; and now, as it began to grow dusk, he started up the winding staircase that led to the top of the tower, in order to light the lamp. As he crossed the room the children noticed that he staggered a little, and caught hold of the door-post to steady himself. Then he put his hand to his forehead, and so stood still a moment; then began feebly to ascend the stairs. An instant after there was a heavy fall, and

to their horror the children saw the old man lying at the foot of the stairs motionless and apparently dead.

They started up with a cry and rushed toward him. He was not bleeding anywhere, but his breathing was thick and heavy, and though his eyes were open he did not appear to see them, or to know anything. The truth was, the old man had had a stroke of apoplexy.

“What shall we do? oh, what *shall* we do?” cried Nellie, bursting into an agony of tears.

“We can’t do anything,” sobbed Jack, hopelessly. “I wish, oh! I wish father and Mammy Sylvie were here.”

Nellie, kneeling by the side of Brister, seemed to make an effort at composure.

“Jack,” she said, more calmly, “don’t you think we might warm him, and rub him, and give him a little hot brandy to drink? That is the way they brought the drowned men to life again.”

“He aint drowned,” answered Jack, with a little expression of contempt for his sister’s suggestion.

“Yes; but it might do him good. Feel how cold his hands are, and rubbing might do him some good. Oh, Jack, let us try to pull him to the fire!”

With great difficulty they succeeded in drawing the old man in front of the great hearth, where Nellie placed pillows under his head, and covered him with a blanket. Then she heated a little brandy, and put a spoonful between Brister’s lips, and the two children then commenced rubbing him with all their little strength, though Nellie trembled and the tears rolled down Jack’s face. But, in truth, it was a trying situation for them, alone and helpless as they were.

Suddenly Nellie started up with a cry.

“The lamp, Jack! Oh, Jack, the lamp is n’t lighted!”

It was dark now, and the storm, though subsiding, still raged. How many fishing-vessels out at sea, and caught in that sudden storm, were now vainly looking out for the warning beacon that was to save them from danger and guide them into safety; and her father! Did she not remember his parting words to Brister:

“Be sure and light the lamp in good time. It is as necessary to me as to them.”

And the lamp was not lighted! In storm and darkness her father might be even now struggling amid those foaming waves and treacherous rocks; for the child felt instinctively that no danger could keep him back from the post of his duty and the loved ones dependent upon him. Eagerly, tremblingly, Nellie rose to her feet.

“Oh, Jack, *father!* We *must* light the lamp!”

“We can’t,” answered poor, frightened Jack, helplessly. “We don’t know how.”

She felt that it would be of no use to appeal farther to him,—not that Jack was heartless, but irresolute and vacillating when thrown upon his own resources. So Nellie—brave little heart—resolved to do the best she could.

"You can stay and take care of Uncle Brister, Jack," she said; "and rub him all you can. I will try to light the lamp."

"But you don't know anything about it, and I don't want to stay by myself," said Jack, blubbering; "I wish father was here."

Nellie went carefully up the narrow winding stair to the top of the light-house. She had seldom been here, and had never seen the lamp lighted, and, as Jack had said, knew nothing about it; and she now found to her dismay that she could not reach the lamp. The wind and the rain beat against the thick glass by which this little room in the top of the tower was surrounded, and swept in strong fitful gusts through the broken panes; and Nellie thought that even were she able to light the lamp, it must inevitably be put out again. What was to be done? If she could only keep a light of any kind burning, it might be of some use. There was a large lantern down-stairs, she knew; and hurrying down she got this, and lighting it, carried it up again, and hung it where she trusted it might be seen. But it shone so feebly, that she feared it would not be noticed, or might even be taken for the light of a fisherman's cottage, in which case it would serve only to lead astray instead of guiding safely.

Poor little Nellie wrung her hands in despair. Oh, if she only had somebody to help her! How futile, and forlorn, and miserable she felt! And just then—she never knew how it was—just then she seemed to hear, amid all the roar of the storm, the sweet words of the hymn her dead mother had been so fond of singing, "Jesus, lover of my soul." She knew it by heart, and now she stood involuntarily repeating fragments of it to herself, until she came to the words—

"Other refuge have I none;
Hangs my helpless soul on Thee.
Leave, oh leave me not alone,—
Still support and comfort me.
All my trust on Thee is stayed;
All my help from Thee I bring."

A strange feeling of peace and comfort stole into the heart of the child. "God is here: He can help me," was her thought; and instantly after, she recollected that in the wood-shed connected with the kitchen was a great pile of pine-knots. The wind could not blow out the flame of a pine-knot, but would rather serve to fan it. So down the steep, wearisome stairs the poor child again went, and presently returned to the top of the

tower with her arms full of the pine-knots. These she lighted and carefully disposed all around the little glass-covered room—wherever she could find a place in which to stick her torches—so that the brilliant, ruddy glare might be visible in all directions. And there, alone in the dreary summit of the tall light-house, shivering in the cold wind and rain that beat upon her slight figure, stood poor little Nellie, listening to the storm, straining her eyes through the darkness, and trembling with anxiety and excitement as she thought of her father in the storm, and of poor Brister, dying in the room below, perhaps. But still through it all seemed to sound the sweet words of the hymn, "Jesus, lover of my soul."

An hour passed, and poor Nellie, intently listening, thought that she heard sounds below, and then a faint echo of some one calling her name. Then came a strong hurried step on the stair, and in the red smoky glare of the pine torches she saw her father standing. Oh, with what a sharp cry of relief and joy she sprang forward to meet him, though at the very moment in which his arms were outstretched to receive her—overcome with cold, fatigue and anxiety—she tottered and fell almost insensible at his feet. Very tenderly, with tears in his eyes, the rough light-house keeper bore his little daughter below, and placed her in bed; and there, with a delicious consciousness of safety and rest, poor Nellie fell asleep. She never awoke until the bright sunlight of the next morning fell across her bed, when, opening her eyes, she saw Mammy Sylvie's kind, motherly face bending over her, with tears streaming down her sable cheeks.

"Bress de Lord, dar aint anoder child in all de Car'linas fit to hold a pine-knot to her," said the affectionate creature, proudly. "An' I heerd Jem Long say, when his boat come in las' night, dat ef it had n't been for de light-house lamp, he an' t' others would sartinly been lost."

"And so should I," said Mr. Lattie, fondly smoothing his little daughter's hair, and then he told her how he had watched in vain for the light, and not seeing it had attempted to cross in the storm and darkness, when suddenly a red glare had shone out, and revealed to him that he was drifting fast upon one of the most dangerous of the reefs. From this he had with difficulty extricated himself, and guided by the strange light had succeeded in reaching home in safety, and there had found old Brister as we have described, while Jack, worn out with rubbing and crying, lay asleep by the fire. Where was Nellie? and what could be the meaning of the red fitful glare in the light-house tower? Almost sinking with fear and apprehension, the father had mounted the stairs, and there, at the first glimpse of his little daughter,—pale and trem-

bling, yet standing firmly at her post,—he had read the whole story. And how proud he afterward was of his brave little girl, we can very well imagine.

Aunt Sylvie had been prevented returning home by both the storm and the illness of the fisherman's wife. She had felt no anxiety about the children, believing that their father must have returned.

The little family at the light-house live there still happy and contented. Nellie is a big girl now. Uncle Brister, who entirely recovered, is to this day very fond of telling this story to the people who sometimes in summer cross over to visit the light-house. "Guess it's de fust light-house was eber lighted up wid pine-knots," he says.



GUNPOWDER.

BY J. A. JUDSON.

I HAVE no doubt you all have seen some of that innocent-looking stuff, like black sand, which is called *gunpowder*; and I think you will be interested, as the Fourth of July draws near, in knowing something about it.

Though it appears to be, and really is, a very simple compound, yet to make it properly is an important art, and its invention and introduction have had quite as much influence as that of steam in shaping the destiny of nations.

The word *powder* is not sufficiently descriptive, since any pulverized substance may be so called. Usage, therefore, has given us the name *gunpowder*, because, among Europeans at least, it at first was chiefly employed to propel balls and bullets from rude guns and cannon, although now we make use of it for various other purposes, such as splitting rocks, throwing life-lines, and in charging fire-works and fire-crackers. I will tell you something about fire-crackers that perhaps some of you do not know. When you boys get your packs on "the Fourth" I have noticed that you separate the crackers and fire them off one by one. Now, this is a very good way to prolong the fun; it is

like nibbling one of your mother's cookies—the smaller the bites the longer it lasts. But it is not what is intended to be done with the crackers. The design is to touch off the whole pack at once by lighting the end of the braided fuses, or "wicks," as I heard a little boy call them. A pack touched off in this way is so arranged that the crackers explode one after another, with great rapidity, thus representing the sound of a regiment of soldiers firing as fast as they can. If the pack is thrown into an empty barrel, the effect is still more striking. I remember one Fourth of July, when I was a boy, that they were laying water or gas pipes in the town, and there were hundreds of these pipes piled along the sides of the streets. Into the ends of these we threw our fire-crackers, and the explosions made a fearful noise, to our great delight. The best part of it was that we had a deal of fun, and got the most out of our crackers, without harming the pipes in the least.

The materials required for making gunpowder are saltpeter, charcoal, and sulphur. The latter is sometimes called brimstone, or burnstone.

The first great principle is the saltpeter or niter,

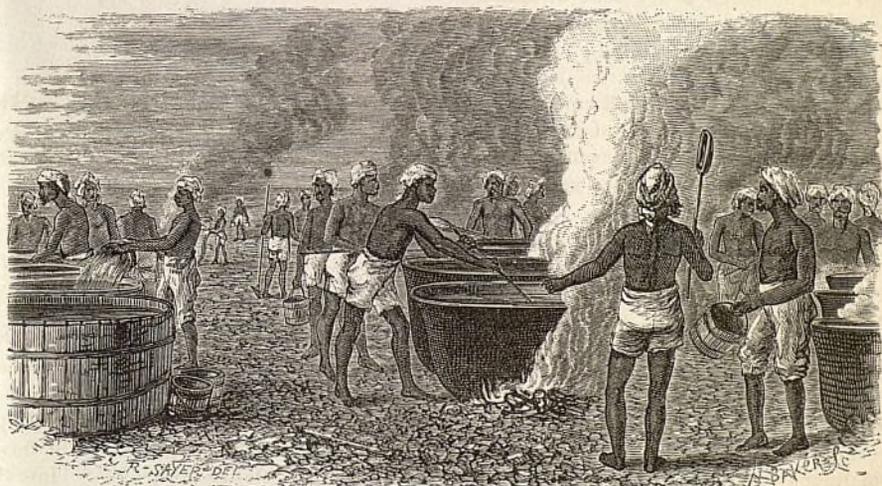
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which is found all over the world, occurring naturally in all sorts of places. In some warm countries it is found crystallized on the surface of the ground, or occurs as a salty crust on the rocky walls of caves, and from this circumstance it gets its name, for saltpeter comes from two Latin words meaning *rock salt* or *stone salt*. In other places it is found in veins, and is dug out by the miners as they dig coal and other minerals. Some plants also yield saltpeter, and it can be made artificially by decomposing animal and vegetable matter mixed with earth, wood-ashes and water. Immense quantities are made in this way in Europe, but the natural yield in India is so great, and labor is so cheap there, that nearly all used in this country, and much of what is needed in other parts of the world, is brought from there. The niter-fields of India are extensive plains barren of vegetation by reason of their saltiness. During the periodical rains these regions are overflowed, and the various salts in the surface soil are dissolved, when new combinations follow, and new salts result. After the water disappears, this salty matter is collected by the natives, who wash, filter and clean it as well as they can, and transfer it to other workmen, by whom it is put into great pots with a quantity of water and boiled, the surface being frequently skimmed while evaporation goes on. Next, the liquor is drawn off into deep tubs, where all the matter that will

it has to be refined. Its purity is of great importance, because the purer it is the better the powder and the safer its manufacture. To attain this, the crude saltpeter is again boiled and skimmed, the cook occasionally throwing in a little cold water to "settle" certain salts that are not as easily dissolved as the niter. After several hours, the bottom of the kettle contains a quantity of beautiful crystals. The remaining liquid is then pumped through canvas bags into a trough, where it is stirred until it is cold, when a large quantity of very small crystals is formed. These crystals are collected with a wooden hoe, and shoveled into a sieve, where the water drains off. The niter now looks like fine snow, but must have two or three more baths of clean water, and again be drained and dried, before it is ready for use.

The next thing is the charcoal. This may be made in the same simple manner as the charcoal sold for kitchen uses. A deep pit is dug in the forest, filled with pieces of wood in layers, and set on fire; or a stack is made of the wood, and covered on the outside with wet sod and clay, openings being left for the fire, and for the escape of steam, etc. The pit or stack is constantly attended, certain gases are thrown off, various changes take place in the appearance of the fire, until finally, by applying a torch over certain openings, a gas ignites that burns with a slight tinge of red, when the men



NATIVES OF INDIA BOILING AND SKIMMING THE SALTS.

not dissolve sinks to the bottom; it is then put into a shallow vat and left to evaporate, and in about three days the long-sought crystals are formed. This is the crude saltpeter of commerce, and the mode of preparing it is pretty much the same the world over. But it is by no means ready yet to take its part in the gunpowder, for

make haste to close up the holes with sods,—the burning wood smolders, the fire dies out, and the charcoal is done.

But another and more scientific method of preparation is required to produce the superior, uniformly fine quality of charcoal required by the powder-maker; and quite as much care is taken at

every step as with the saltpeter. In the first place, the wood, carefully selected,—willow or alder being preferred,—is cut in the spring while the sap is running, and having been stripped of its bark, is piled up loosely to dry. Only small branches are used, so that the willow plantations in the neighborhood of a powder-mill look very queer, not one of the hundreds of trees having a branch larger than your thumb, although their trunks may be a foot or more in diameter.

After the wood is thoroughly dried, it is cut up into pieces about as long as a lead pencil, and packed into a sheet-iron cylinder as tall as a door, and a little larger around than a flour barrel. When full, a cover is fitted on, and it is ready for the furnace, which consists of a long row of brick fire-places, over each of which is built-in a thick cast-iron cylinder larger than the one with the wood in it. Into these the wood-filled cylinders are placed, the doors closed, and all made air-tight by daubing with wet clay. Fires are lighted underneath, and in three or four hours the charcoal is made. There is a chimney for the discharge of smoke, and a pipe in one end leading to a cistern of water. Through this latter escape certain vapors and gases which are condensed in the water and form tar, and what is called *pyroligneous acid*. That long word comes from a Greek word meaning *fire*, and a Latin word meaning *wood*; which together signify fire-wood acid. This acid, although of no value in making gunpowder, has uses of its own: but for it the pretty patterns of calico would all fade away in the first washing, for the calico printer and the dyer mix it with their colors to "fix" them, or make them "fast colors." In some parts of Europe they purify this acid, and use it for vinegar, and very nice it is, too—only "a little goes a great way," for it is very strong.

Unlike the saltpeter that usually must be brought from a distance, the charcoal is made in the immediate neighborhood of the powder-mill, so there is no money spent in transporting it to the works. Indeed, the location of the mills is often determined, among other considerations, by the facility afforded for obtaining wood for making charcoal.

The third and last ingredient in gunpowder is sulphur. It is found alone and almost pure, or mixed with other minerals. The crater of the volcano of Etna, in the island of Sicily, furnishes immense quantities, as do other volcanoes in Europe, Asia and America. In the island of Java is an extinct volcano, where, at the bottom of the crater is said to be, in a single mass, enough sulphur to supply the whole world for many years to come; and it is a still more remarkable fact, stated on good authority, that in this crater "is a lake of sulphuric acid, from which flows, down the mount-

ain and through the country below, a river of the same acid." The crater of Etna furnishes the greater part of the sulphur used in the United States, but it can be obtained in many ways here. Some of our mineral springs deposit it, and it can be extracted from other minerals found throughout this country,—lead, for instance. This is the *crude sulphur*, which, like the crude saltpeter described, must undergo a refining process before it is ready for the powder-maker.

The crude sulphur is broken into small pieces, and put in a pot under which a fire is kept burning, and is constantly stirred with an oiled iron rod till the whole is melted. It is then skimmed of impurities, ladled into wooden molds oiled inside, and left to cool and crystallize. Sometimes it is refined in a more complicated way by distillation.

Before being ground for use, a little piece, which should be of a beautiful bright yellow color, is tested by being held over a lamp. If perfectly pure it will



A WILLOW PLANTATION.

all pass off in vapor, leaving no trace behind, except a horrible smell like that of a whole box of lighted matches.

Now we know what gunpowder is made of, and we see that, though the materials are few and simple, they are prepared with great care. To put them together requires even more skill and caution.

A powder-mill is not in the least like other mills. Instead of one great building, it is composed of many rough-looking little sheds,—sometimes as many as seventy or eighty. These are long distances apart, separated by dense woods and great mounds of earth, so that if one "house" is blown up, the others will escape a like fate. Of some the walls are built very strong, and the roofs very slight, in the hope that if an explosion happens, its force

will be expended upward only. Other houses have enormous roofs of masonry covered with earth; the roofs of others are tanks kept always full of water.

The constant danger inseparable from the work would be greatly increased were there not strict rules, always enforced. No cautious visitor can be more careful than the workmen themselves, for they know, if an explosion happens, it will be certain, instant death to them. So no lights or fires are ever allowed; no one lives nearer the mills than can be helped; some of the buildings are carpeted with skins, and the floors are kept always flooded with an inch or two of water; and in front of every door is a shallow tank of water. Before entering, every person must put on rubber shoes and walk through this water, for the nails in a boot-heel might strike a spark from a bit of sand or gravel, which might explode a single grain of gunpowder, and cause widespread disaster. So the rubber shoes worn in the mills are never worn elsewhere. Then, too, every one is expected to keep his wits about him; there is never any loud talking and laughter, and no one ever thinks of shouting. Yet, with all this extreme care, explosions sometimes occur, and then there is seldom any one left to tell how it happened.

The mode of making gunpowder is nowadays about the same everywhere. The saltpeter, the charcoal, and the sulphur all must be ground very finely. Among rude tribes in Asia, as in old times, the grinding is done by women and children, who pound the ingredients with wooden pestles in wooden mortars, and often finish by blowing up the entire family, house and all. In other places they pass a crank-shaft through a barrel and fix it in a frame. This barrel they partly fill with what they wish to pulverize, and also with a quantity of brass or wooden balls. By turning the crank rapidly the balls and the material are both rolled around from side to side, and finally the grinding is effected. Next they mix the three together in proper proportions, spreading it on a wooden table, turning it with wooden paddles, and rolling it with wooden rollers; then they put it back into the wooden mortar or tub and pound it again, any blow, just as likely as not, being the last they will live to give. If they and the powder survive this, they then spread it on a cloth in the sun to dry, and if it don't blow up before they can gather it together again, the husbands and fathers of these brave women and children soon have plenty of powder. I have been told of a lady, brought up in the East Indies, whose most vivid remembrance of her early life was the blowing-up of a "native" family by such means. But in the modern powder-mills there are deep, circular troughs of stone or iron, around and around in

which travel ponderous wheels. Men with wooden shovels keep the material under the rollers, where it is thoroughly crushed.

When enough of each ingredient is ready to make a batch of powder, they weigh it—about 75 parts of saltpeter, 15 of charcoal, and 10 of sulphur. These proportions, however, vary somewhat, depending upon what the powder is to be used for, and the strength required.

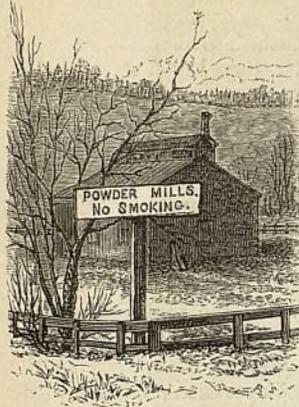
The weighed-out ingredients must now be mixed. Usually, the charcoal and sulphur are put together first in revolving barrels, in which are loose zinc, brass, or copper balls; and when this is completed, the saltpeter is added, and the rolling process is repeated until the whole is well intermingled. In some mills the three ingredients are put in the barrels and mixed in one operation; but this mode is attended with greater risk.

All this, however, is mere *stirring*. The real *mixing* must be done under great pressure.

Now begins the greatest danger. The weighed-out materials are taken to another shed, called the "incorporating mill," where there are more wheels and troughs; but, instead of men with shovels, there are wooden and copper scrapers attached to the machinery, that follow the wheels and keep the mixture in place. The ingredients are placed in the trough, the wheels started, and the men lock the doors and go away. Hour after hour, around and around in the dark, all alone rumble these mighty wheels. So long as the little scrapers attend to their business, evenly spreading the mixture three or four inches deep in the bottom of the trough, all will be well; but if anything goes wrong—*puff—bang!*—that is the end of that mill. If the crushing-wheels and the iron bottom of the trough should happen to touch, the chances are they would "strike fire;" but the cushion of powder between is supposed to prevent this.

The next process is called "pressing." The mixed powder is arranged in layers about two inches thick, separated by sheets of brass or copper, and dampened with water. Piles of these plates and layers are then put in a press, and squeezed so hard that the pressure on every square inch is equal to about six hundred tons. The powder is now powder no longer, but slabs as hard as marble, and of course completely mixed and compacted. So it must again be pulverized, and for this purpose the slabs are taken to the "granulating" or "corning house." This is another very dangerous part of the work, for this house has no water-floor, and the least carelessness would be fatal. The machinery here breaks it into grains by means of successive sets of brass-toothed rollers turning in opposite directions, that chew up the slabs as though they liked them. The powder is now reduced to

hard, sharp grains, and is ready for the "glazing," by which every grain is polished in order to



wear off the corners, which would produce much fine dust when the powder was carried about; and also to render the particles less liable to absorb moisture. This glazing generally is done in revolving barrels, where the powder is put with plumbago, or black-lead. Some manufacturers, however, trust

simply to the polish resulting from the rubbing of the grains together in the barrel. It is then dried by being spread out on sheets stretched on frames in a heated room, and afterward freed from dust by being sifted through hair sieves.

To turn all these crushing-wheels and barrels, and shake all these sieves, steam-engines of course cannot be used, since, with the single exception of hot air or steam needed for drying,—the furnace for which is as far off as possible, delivering its heat through long underground pipes,—fire is not used for any purpose; while, in hot climates, not even this risk is run, but the powder is dried in the sun. In Europe and America, then, the mills are usually driven by water-power; but in India, where immense quantities of powder are made by the British government, the mills generally are turned by either oxen or men. To avoid heat, or sparks from the friction of axles, or other parts, the machinery is generally so built that different kinds of metal work together, such as iron and zinc, iron and cop-

are employed, but I have told you enough to show that people who make gunpowder, as well as people who use it, must keep their wits about them.

You now understand pretty well how gunpowder is made, and that it is something else than the "black sand" it seems. Very much more might be said, and even then you would barely have been introduced to the explosive family. Captain Gunpowder has many cousins,—all much younger than himself, but more terrible,—and they are all of them busy making a noise in the world. Captain Gunpowder is the only one who goes to the wars. The others stay at home and dig tunnels, blow up rocks in the harbors, like the great reef called "Hell Gate" in the East River, near New York, and help mankind in various ways. So long as people use them carefully they are great helps; but they punish careless people fearfully. It is said that "fire is a good servant, but a bad master," and the saying is equally true of these agents that are mightier than any fire. Among these cousins are Nitro-Glycerine, Dynamite and Dualin, Vulcanite, Rend-Rock, Gun-Cotton, and more beside. All *look* equally innocent and harmless, while each one is, if possible, more powerful and terrible than the other. Yet some of them are put

to the most peaceful uses. For instance, certain enterprising grape-growers of Austria have lately used dynamite in the culture of grape-vines.



DESERTED.

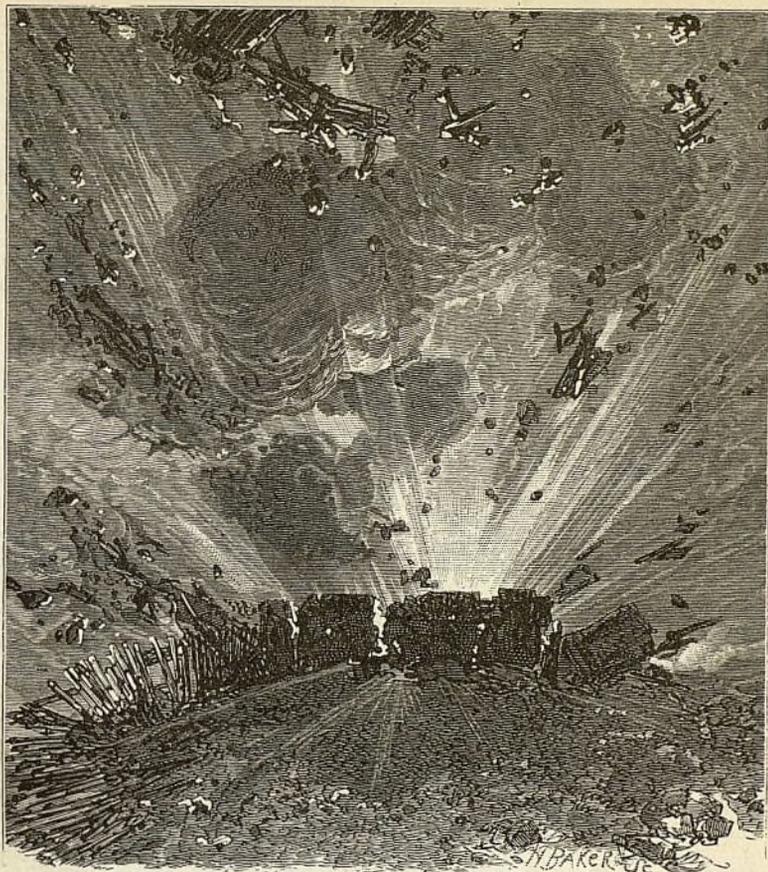


A POWDER-MILL—THE BUILDINGS AND DEFENSES.

per, steel and brass, but never iron and iron, or steel and steel. Many other ingenious precautions

Holes are made in the ground near the vines, and in them small quantities of dynamite are ex-

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AN EXPLOSION.

ploded, loosening the earth to the depth of seven or eight feet—thus letting in air and moisture to the roots.

Then there is another branch of the family called "fulminates." The powders for percussion-caps used on shot-guns are made of one of these. These explosives, properly directed, do so much more work than gunpowder that the world could hardly get on nowadays without them. There is, through the Alps, a railway tunnel over seven miles long, so that, in a journey from France to Italy, instead of undertaking a tedious climb over the mountains, we shoot through them in a railway train. This tunnel, and many others in different parts of the world, could scarcely have been pierced at all without the help of this mighty family. Engineers are even seriously considering the proposition to connect France and the British Isles by a tunnel. Even with gunpowder alone this would be possible; and, since the "cousins" have appeared, it is probable that you and I may live to ride in a palace-car twenty-two miles under the sea from Dover to Calais.

Who invented gunpowder? you may ask.

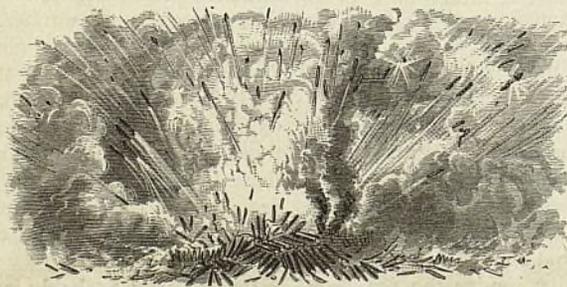
No one knows. All agree that its composition and properties were understood in remote antiquity. Authentic history extends but a short way into the past, and it is always difficult to draw the line separating the authentic from the fabulous. Like some other things, gunpowder, as ages rolled on, may have been invented, forgotten, and re-invented. Certainly in some form it was known and used for fire-works and incendiary material long before any one dreamed of a gun, or of using it to do more than create terror in warfare. And yet it is said that some of the ancients had means of using it to throw destructive missiles among their enemies—probably a species of rocket or bomb. Nor does it seem, in its infancy, to have been applied to industrial purposes, such as blasting and quarrying rock, for there is evidence that the people who used it for fire-works at their feasts, quarried immense blocks of stone by splitting them out of the quarries with hammers and wedges.

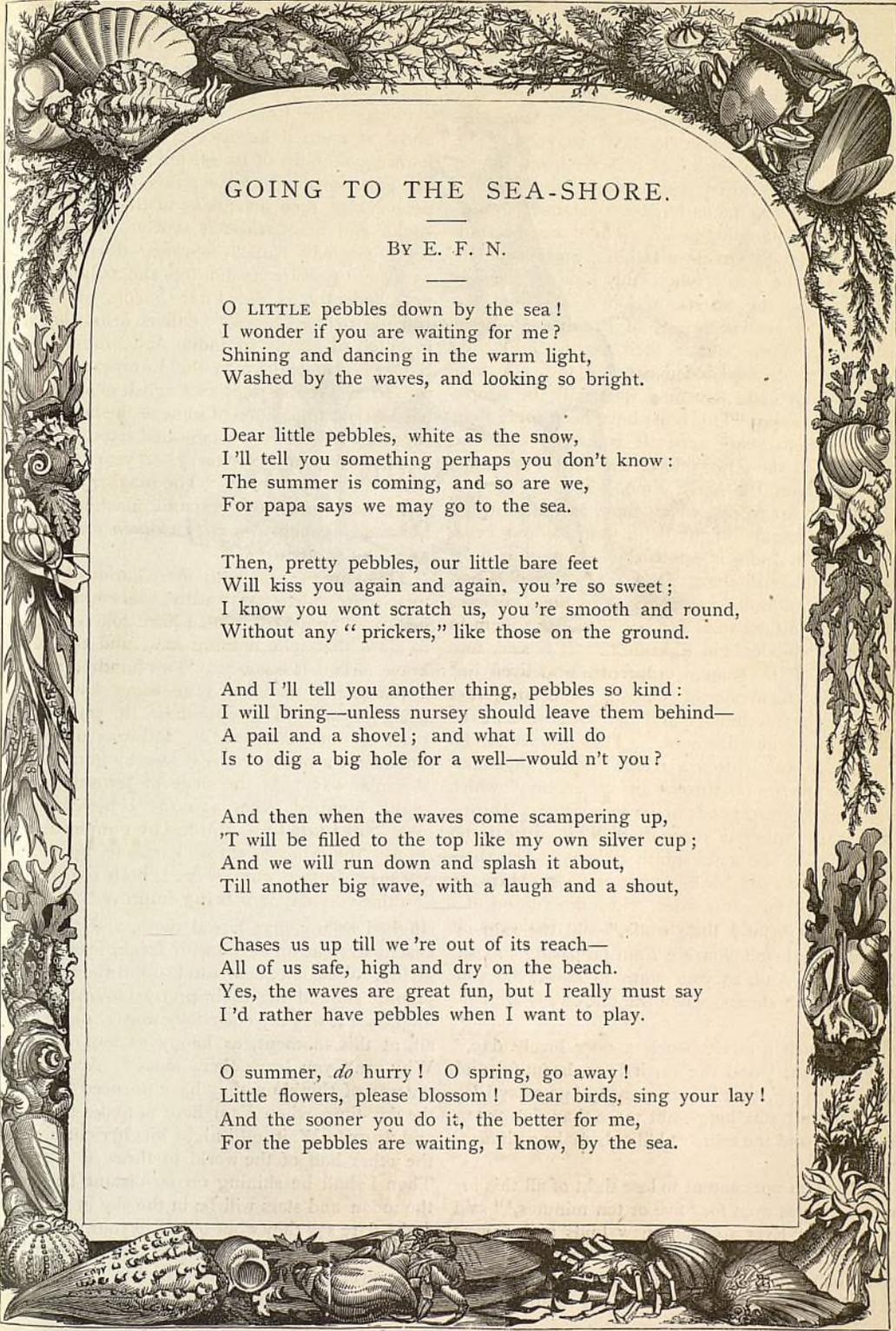
Its first uses probably were connected with the religious ceremonies of the pagan ancients. An

old tradition taught that those were the most powerful gods who answered their worshipers by fire. The priests, therefore, who practiced upon the credulity of the people, exercised their ingenuity in inventing ways of producing spontaneous fire, which they told the people was sent by the gods from heaven in answer to their prayers. The accounts of old writers still preserved and dating back to three hundred years before Christ, describe a "sulphurous and inflammable substance" unmistakably like our gunpowder. There was a certain place called the "Oracle of Delphi," once visited by Alexander the Great, where this kind of fire was produced by the priests, and it is said that the Druids, the ancient priests of Britain, also used something of this sort in their sacrifices, for they not only produced sudden fire, but they also imitated thunder and lightning, to terrify the people with their power. This must have been more than two thousand years ago. It is known that the Chinese, on the other side of the world, had gunpowder about the same time, but they used it chiefly for fire-works, which then, as now, formed the main feature of all their festivals and ceremonies. In India it was early used in war, for a writer who lived about A. D. 244 says: "When the towns of India are attacked by their enemies the people do not rush into battle, but put them to flight by thunder and lightning." It is said, too, that one of the Roman emperors, who lived just after the crucifixion of Christ, "had machines which imitated thunder and lightning, and at the same time emitted stones." Then, about A. D. 220, there was written a recipe "for an ingenious composition to be thrown on an enemy," which very nearly corresponds to our gunpowder. During the many hundred years that follow, little is recorded until about the ninth century, when there appears in an old book, now in a Paris library, an exact recipe for gunpowder, and a description of a rocket. It is said that in 1099 the Saracens, in

defending Jerusalem, "threw abundance of pots of fire and shot fire-darts,"—no doubt some kind of bombs and war-rockets. History affords accounts of other wars about this time, in which gunpowder was undoubtedly used in some form. But in 1216 a monk, Friar Roger Bacon, made gunpowder; and it is asserted he discovered it independently, knowing nothing of its existence elsewhere. It is not unreasonable to believe this, for in those days people kept their inventions to themselves if they could, and news traveled slowly. Some authors say a German named Schwartz discovered it in 1320, and perhaps he did, too, and as honestly and independently as did Friar Bacon, or the East Indians, or the Chinese. Others insist that it was invented originally in India, and brought by the Saracens from Africa to the Europeans, who improved it. At any rate, an English gentleman who has made a translation of some of the laws of India, supposed to have been established 1,500 years before the Christian era, or over 3,300 years ago, makes one of them read thus: "The magistrate shall not make war with any deceitful machine, or with poisoned weapons, *or with cannon and guns, or any kind of fire-arms.*"

There are ever so many more curious bits of history, more or less trustworthy, concerning the early history of gunpowder, but I have told you enough to show that it is nothing new, and that no one knows when it was new. Two hundred years ago a pump was made to raise water by exploding small charges of gunpowder. It proved to be more curious than useful, and was abandoned; but to-day a pile-driver is driven by gunpowder, in a similar way. At the siege of Jerusalem, nearly eight hundred years ago (as I mentioned just now), fire-darts were thrown by gunpowder; and to-day the whalers throw harpoons by the same means. In fact, gunpowder is both old and new. To this very day it is being improved and applied to new uses.





GOING TO THE SEA-SHORE.

—
 BY E. F. N.
 —

O LITTLE pebbles down by the sea!
 I wonder if you are waiting for me?
 Shining and dancing in the warm light,
 Washed by the waves, and looking so bright.

Dear little pebbles, white as the snow,
 I'll tell you something perhaps you don't know:
 The summer is coming, and so are we,
 For papa says we may go to the sea.

Then, pretty pebbles, our little bare feet
 Will kiss you again and again, you're so sweet;
 I know you wont scratch us, you're smooth and round,
 Without any "prickers," like those on the ground.

And I'll tell you another thing, pebbles so kind:
 I will bring—unless nurse should leave them behind—
 A pail and a shovel; and what I will do
 Is to dig a big hole for a well—would n't you?

And then when the waves come scampering up,
 'T will be filled to the top like my own silver cup;
 And we will run down and splash it about,
 Till another big wave, with a laugh and a shout,

Chases us up till we're out of its reach—
 All of us safe, high and dry on the beach.
 Yes, the waves are great fun, but I really must say
 I'd rather have pebbles when I want to play.

O summer, *do* hurry! O spring, go away!
 Little flowers, please blossom! Dear birds, sing your lay!
 And the sooner you do it, the better for me,
 For the pebbles are waiting, I know, by the sea.



WHITTINGTON LISTENING TO THE BOW BELLS OF LONDON,

(Drawn by Miss E. M. S. Scannell.)

AND THE SUN SMILED.

BY MARGARET EYTINGE.

"Go away, for a little while," said the rain to the sun. "Don't you see *I* am preparing to visit the earth? And, as you ought to know, the sun should n't be shining when the rain-drops are falling."

"It's such a lovely—such a *very* lovely day," said the sun, "and the earth is so beautiful and pleasant to see, that I don't want to 'go away.'"

"I sha'n't stay long—not more than five or ten minutes," said the rain. "I'll only make a shower-call."

"But I'm not content to lose sight of all this joy and loveliness even for 'five or ten minutes,'" said the sun. "Ever so many new buds and flowers came out to greet me this morning, and ever so many baby-birds sang to me their first twittering, tremulous songs, and the brooks dimpled and

laughed as my rays kissed them, and the daisies looked straight up at me with frank, fearless faces, saying, 'Welcome, dear sun!'—and the buttercups proudly showed me their pretty blossoms, that I might see it was my color they wore; and they are all, at this moment, as happy as happy can be. Why can't you leave them alone? According to *my* way of thinking, they have no need of you in the day-time, when *I* am here to make life bright and warm. Wait until night lifts her curtain from the other half of the world to throw it over this. Then I shall be shining on far-distant lands, and the moon and stars will be in the sky in my place, and I dare say they wont object to your clouds veiling their faces for an hour or two, for their light and power are nothing compared to mine, and the earth will be too sleepy to miss them, anyhow."

"My dear sun," said the rain, "I grant that you make life 'warm,' but, begging your pardon for speaking so frankly, sometimes you make it *too* warm. Even while we are talking, it is getting warmer and warmer, as it does every midsummer day from noon until two or three hours before night-fall; and soon the flowers you love so well will begin to droop and fade, and the grass to bend wearily toward the ground, and the birds to cease singing, and the brooks to stop dancing, unless I send my merry, sparkling little ones to cheer and refresh them. Hide behind a cloud for a few moments, and when you come forth again you will find the earth free from thirst, dust and stain, and a thousand times greener and more beautiful than now before my pure drops have fallen upon it."

But the sun was obstinate that July day, and refused to be hidden by the friendly cloud, and so kept on shining when the shower began to fall. And, looking down on the earth as the glittering drops reached it, he saw the sweet buds opening their dainty leaves, the flowers raising their languid heads, every blade of grass standing erect and firm, the little streams dancing gayly to a cooing song of their own, and everything, everywhere, wearing a look of radiant happiness.

And he said to the rain, "You were right," and, smiling upon her, his smile arched the heavens, and, bright with every lovely hue that ever glowed in gem or flower, shone there until the shower ceased, and children, beholding it, cried out joyfully, "A rainbow! a beautiful, beautiful rainbow!"

HEVI.

BY FRANK R. STOCKTON.

"I HOPE, my son," said Hevi's mother to him, one bright sunny morning when he had come in from play, "I hope you will never forget, no matter how long your life may be, that, if you want your friends to believe that you are in any way better than they are, you must show that you are superior, and not merely talk about it."

Hevi said nothing. He had been telling his mother of a conversation he had had with some of his young companions, in which he had boasted a good deal about himself and his relations; about what his father had done, and what he intended to do when he should get to be as big as his father. So he hung his head a little, as his mother gave him this piece of advice.

"But mother," said he, after a few moments, "father talks about what he has done, and about what he intends to do, too."

"Yes, my dear," said his mother, sadly, "I know that; and although I want you to imitate your father, and be as much like him as possible, I don't want you to get into a habit of boasting. And now run off, and take your bath."

Hevi was an elephant—a young fellow, not as high as a horse. He had a good disposition and high spirits, and was generally liked, though, as he was bigger and stronger than most of the young elephants he associated with, he sometimes showed himself their master in a way they did not fancy. He lived with his father and mother, and a large

herd of other elephants, in a great wood not far from the shore of the ocean. His father was the chief of the herd, and the largest and strongest elephant that had ever been seen in those parts.

"Mother," said Hevi, one day, as he was starting off to take his daily bath, "I saw a whale out at sea yesterday, and when I told father about it, it seemed to make him angry. Why was that?"

"My dear son," said his mother, anxiously, "I do wish you would try and never say anything about whales to your father. Nothing annoys him so much as an allusion to them. Now go along."

Hevi walked away, and his mother, turning to enter the woods, heaved a sigh. She was thinking of her husband. "I wish," she said to herself, "that he could get rid of that silly jealousy of whales. He hates to think that there is a creature on earth bigger than himself. And whales *are* bigger; I know that, for I have seen them."

In about half an hour from this time Hevi's father came home. It was nearly noon and he wanted his dinner. As he came up to his wife, who was standing by a great pile of fresh grass and tender young leaves which she had gathered together, she noticed that he looked out of humor.

"Has anything worried you, my dear?" she said, kindly.

"Worried me? Of course not. Why should I be worried? To be sure there were two strange elephants, from Tamburra, over there with the

herd to-day, and they were talking such ridiculous stuff, that I felt inclined to give them a pretty heavy hint to go home."

"What did they talk about?" asked his wife, as she turned over the pile of dinner to find some nice bits for her husband.

"Oh, all sorts of nonsense. It seems they have traveled a good deal, and they have entirely too much to say about what they have seen. I don't believe half of it. They have lost their respect for their own kind, and are full of talk about the great deeds of other creatures, especially men. To hear those fellows talk, you would think that a man could do anything he pleased. To be sure he can master most of the smaller animals, but so can I—there is not one of them that I cannot conquer. I can crush a lion or a tiger under my feet; I can dash a buffalo lifeless against a tree; I can even master the rhinoceros, and if I once get my tusks under him, I can push him headlong over a precipice. And as to a man, I have shown how I can treat him. You remember that fellow who came into these woods with a gun, and how he killed a great many deer and other animals, and even fired at some of us elephants. But when I caught sight of him, I quickly turned the tables. I rushed at the blood-thirsty rascal, and although he had his gun in his hand, he did not dare to shoot at me. He just turned and ran away at the top of his speed; and if he had not slipped in between two great rocks, where it was impossible for me to follow him, I would have broken every bone in his body. And then those two strangers had the impudence to talk about some whales they had seen, and their great size. Size indeed! As if a miserable whale could compare with an elephant!"

"But, my dear," said his wife, "I do wish you would try to get over your prejudices on this point. You know whales are bigger."

"They are not!" said he, sharply. "They are nothing of the kind. Let me hear no more such nonsense. Where's Hevi?"

"He is taking his bath," said his wife, very glad to change the subject; "I'll call him."

So saying, she went out to the edge of the wood; but when she looked toward the beach, she stopped, terror-stricken. There was Hevi far beyond the breakers, and apparently floating out to sea!

Without a word, the mother rushed down to the water's edge.

"Hevi! Hevi!" she cried, "come in. You are out too far. Come in, or you will be drowned!"

Hevi, who seemed to be tired and unable to direct his course, called back in a voice which sounded as if he had swallowed some salt water:

"I can't. The tide is too strong."

"Hello there! Hello!" cried Hevi's father, who

now came running to the beach, alarmed by the cries of his wife. "What are you doing out there? Come in, this instant!"

"He can't! He can't!" screamed the poor mother. "The tide is carrying him away! Oh! save him, my husband, or he will be drowned! Drowned before our eyes!"

Hevi's father did not hesitate. He dashed into the water and waded rapidly toward his son. But soon he stopped, his feet sank in the sand, and he found he could not proceed. At the spot where he was struggling to get forward, the sand was very soft, and his immense weight forced his legs down so deeply—sometimes on one side and sometimes on the other—that he could scarcely keep himself from falling over.

The water was always deep enough over this soft spot for Hevi to swim, but it was entirely too shallow to bear up his father; and so the great elephant, finding that matters were getting worse and worse the more he pressed forward, endeavored to turn back, so that he might find a firmer portion of the beach.

His distressed wife, seeing his sad plight, rushed to his assistance.

"Oh!" she cried, "you, too, will be lost!"

"My dear," said her husband, a little sharply, "will you let go my tail? I can never get out, if you keep pulling me that way. I want to turn around."

With a groan, she stopped pulling at his tail and stepped back to give him room to scramble out.

Casting her eyes seaward to poor Hevi, who was dismayed at seeing himself so far from shore, while his father was actually turning back and going away from him, she perceived something which made her heart jump with joy.

Out at sea, but not very far from poor Hevi, she saw a great spout of water rise into the air!

It was a whale! She plainly saw his great back and head above the water.

Without stopping to think, she shouted:

"O whale! whale! come here! Save my son! Hasten! He is drowning!"

The whale raised his head, and seeing the really dangerous situation of Hevi, who was nearly exhausted by his struggles, he swam rapidly toward the young elephant.

When he reached him, he put his head against Hevi and a little under him, and then, setting his great tail in motion, he swam steadily to the shore, pushing Hevi before him. He seemed to be swimming very slowly, but as he came near he sent Hevi shooting through the surf, and the little fellow actually turned over and over, two or three times, before he got on his feet in the shallow water. His mother rushed down to meet him.

"Oh, my dear Hevi! my sweet son!" she cried, as she tenderly twined her trunk around him. "You are saved. I have you again. But how did you dare to go out so far? You know how often you have been told never to go beyond your depth. How you have frightened us! Now run home and dry yourself;" and as Hevi shuffled away, his fond mother could not help giving him a slap with her trunk as he passed. The little rascal, he had scared them so!

Then Hevi's mother turned to the whale, who remained near the shore, and apparently was curious to see how things would turn out.

"My good whale," said she to him, "I cannot tell you how much I am obliged to you. You have saved my son, my only child. I can never forget it. I know we can never repay you; but if there is anything whatever, that we can do to show our gratitude, we shall be only too glad to do it. My husband, as well as myself——"

She then turned to call Hevi's father, but he was not to be seen. When he had scrambled out of the soft sand, hearing meantime his wife's frantic cries to the whale, he turned his head seaward just in time to see the whale pushing Hevi to shore. Perceiving that there was nothing for him to do, and filled with mortification and shame at his failure to save his drowning son, he hastened away to the woods to hide his wounded pride and regain his wonted composure.

"My husband is not here," said Hevi's mother. "He probably has hurried home to take care of the child. But he joins me, I know, in my thanks to you."

"Oh! don't mention it," said the whale, in a deep voice. "No trouble, I'm sure."

"I must now go," said the elephant, "and see that my poor child has something to revive him. I'm sorry I can't ask you up to the woods. But I shall never forget you. Good-bye!"

"Good-bye!" said the whale.

When Hevi's mother reached the woods, she found her son in a very wet and uncomfortable condition. She rubbed him dry with a bundle of hay, and gave him some nice roots to eat; and when he felt better, she sent him out to take a little walk in the sun, so that he might get well warmed and not take cold.

Hevi was very glad to go, for while his mother was attending to him she gave him a great deal of good advice and some scolding, too.

He had been gone but a few minutes, however, before he came running back, crying out:

"Oh, mother! That whale's there yet! And I believe he's stuck fast and can't get away!"

Hevi's mother rushed out, and as soon as she saw the whale, she felt sure that her son was right.

The great fish evidently had forgotten, or had not known, how shallow the water was where he came in, and in his kind effort to push Hevi as near dry land as possible, had run himself so far up on the beach that he had stranded himself. And, as the tide was running down, his condition was getting worse and worse. He was now more than half out of water, and although he worked his tail so vigorously that it made great waves on each side of him, and twisted himself about as hard as he could, he could not force himself into deep water.

"Mercy on us!" cried Hevi's mother. "The poor fellow has certainly stuck fast on the beach. Hevi! Run for your father."

Away ran Hevi, and his mother hurried down to the water's edge.

"My dear whale," she said, "I am afraid you have run aground."

"Yes," said the whale. "It certainly looks like it. I did n't intend to come so far. But if the tide was n't running out I think I could get off."

"Well, don't tire yourself," said the good elephant; "my husband will be here directly. He will help you."

A kind of smile came over the whale's face. "He can't do much," he thought to himself; but he did not say so, for fear of hurting the mother-elephant's feelings.

Hevi soon found his father walking about by himself in the forest. When the great elephant heard what his son had to tell him, he gave a grunt and seemed in a little better humor.

"Ho, ho!" said he, "I'll go and see about it."

When he got out on the beach he walked straight to the whale, paying no attention to his wife, who was endeavoring to explain the situation to him.

"Well," said he to the whale, "you seem to be pretty badly stranded."

"I am," replied the whale; "and I don't see how I am to get off unless I wait here until the tide rises. And that will be a long time to wait."

"Oh, I'll get you off," said the elephant.

"I don't believe you can do it," said the whale.

"I'll soon show you about that," said Hevi's father, and he walked down through the water, taking care to be sure that his way led over the firm portions of the beach. When he reached the whale, he put his head and one shoulder against the whale's head, and, bending himself up for the struggle, he pushed with all his enormous strength.

As the beach was hard and stony beneath his great feet, he could put his whole force into his efforts, and he pushed like a big steam-engine.

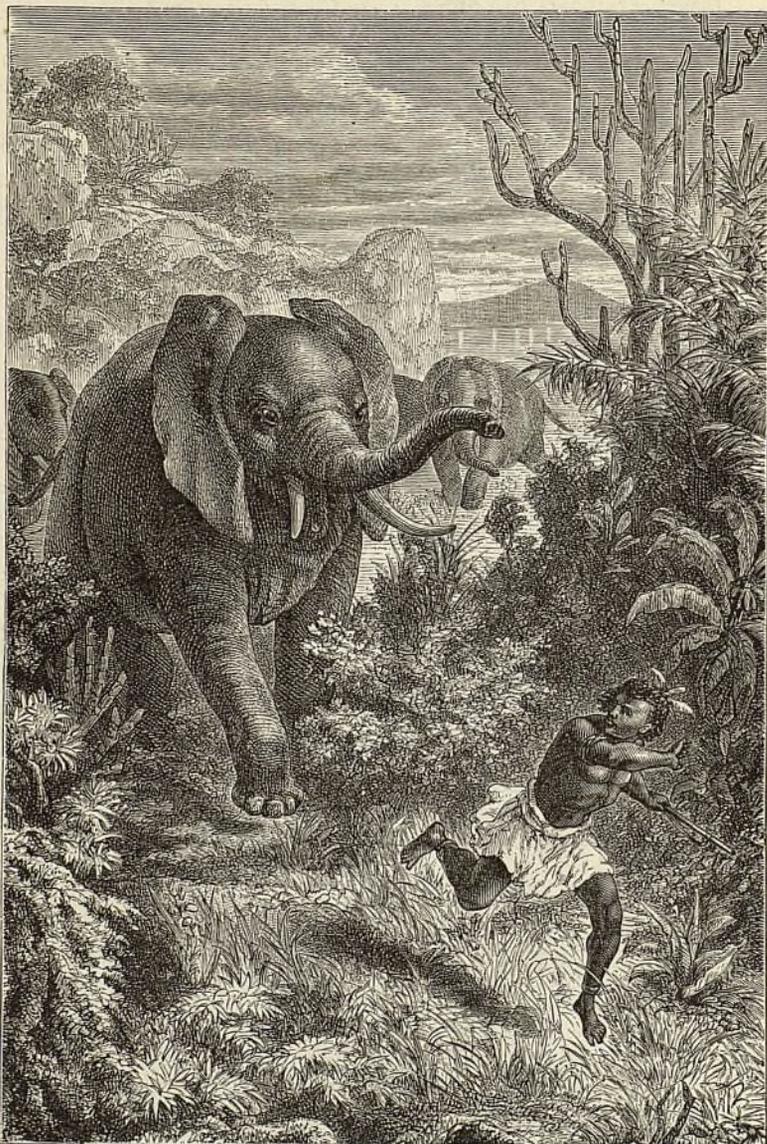
In a minute or two the whale began to move

slowly backward, and then, with a steady motion, like a ship sliding off the stocks, he glided into deep water.

"Hurrah!" shouted Hevi and Hevi's mother, and a dozen other elephants, who had now gathered on the beach. "Hurrah!" they cried again, wav-

Hevi's father came slowly out of the water, with a very good-humored expression on his face.

"Ha! ha!" he said to himself, "that was a good sort of a whale. A very good fellow indeed! But, dear me! he never could have got off that beach by himself. A whale is utterly helpless on



THE MAN WHO WENT TO SHOOT ELEPHANTS.

ing their trunks in the air, while the whale, after a joyful dive, came up to the surface and spouted a tremendous stream of water, high enough to put out a fire on top of the highest steeple you ever saw.

shore. I'm glad I happened to be about. Yes, he's a good fellow for a whale. And I believe he is a trifle bigger than I am—though, of course, a whale can never be compared to an elephant."

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VOL. I

HIS OWN MASTER.

BY J. T. TROWERIDGE.

CHAPTER XXVII.

SUPPER BY THE ROAD-SIDE.

FOR half an hour, Jacob wandered about the streets of Chillicothe and along by the canal, amusing himself as well as he could with the strange sights, and trying to make up his mind what to do.

But the thought of returning to Jackson called up two mightily disagreeable images in the boy's mind,—Friend David triumphantly smiling as he blocked up the Radkin door-way, and the casting-house of the iron-furnace filled with stifling steam.

"Likely as not," he thought, "the best Mr. Radkin can do for me will be to set me to work in that hot place, under that hateful foreman!"

And now once more Cincinnati rose in his imagination like a fair land of promise.

"I wish I had money enough to take me there," he said to himself.

He could not, of course, expect to overtake Mr. Radkin; but he might find his uncle. And why not continue his journey to Cincinnati, as well as go anywhere else? Still some of the rainbow hues of Pinkey's fancy picture of his fortunes in that great city floated before Jacob's eyes.

For ten cents he bought a pound of crackers at a grocery on the canal, and dined upon them as he wandered about. All the while he kept his eyes open for old Dorgan, intending to ask his advice as to what he would better do.

"If he says, 'Go back to my house and spend the night,' I'll do it, anyway," thought Jacob, so undecided was he as yet in his own mind, and so much did his future depend upon a slight chance.

Old Dorgan had said to him at parting, "I shall be on the street, I can hardly tell where, but you'll find me or my wagon easily enough, if you care to." But that was not so easy, as it proved; and Jacob was beginning to fear that the old man had done his errands and gone home, when he suddenly exclaimed: "There's the mule-team, now!"

The team he saw was driving on before him down one of the principal streets, a good deal faster than old Dorgan's usual rate of speed. Jacob ran after it, bag in hand, and soon came up, beckoning and shouting, behind the wagon. If he had not been a good deal excited, he would have made the discovery before, which he made when the driver pulled rein and turned to see what was wanted.

It was not old Dorgan's team, and the man was not old Dorgan.

"Want me for anything?" he said to Jacob as he came up. Jacob panted and apologized.

"Excuse me," he said. "I took you for another man—a man I was going to ride with."

The driver was about to whip up his mules again, when something in the boy's appearance seemed to attract his attention.

"Have you lost him?" he inquired.

"I'm afraid I have," replied Jacob.

"Well, you can get in and ride with me, if you are going the way I am."

"Which way are you going?"

"Out on Paint Creek, about six miles."

As they came down over the hills in the morning, the old man had pointed out Paint Creek winding down through the valley to its juncture with the Scioto below the city. He knew that it flowed in from the west, and he spoke up quickly: "That is in the direction of Cincinnati, is n't it?"

"Right on the road."

"How far is it?" asked Jacob.

"Nigh on to a hundred miles," said the man.

"Do you want to go to Cincinnati?"

"Yes!" cried Jacob.

For his mind was thus instantly made up. And he climbed into the wagon.

Jacob rode as far as his new friend could carry him, then continued his journey on foot.

He ate the last of his pound of crackers for supper, and slept that night under a hay-stack.

The next day was the weariest, dreariest, loneliest he had ever experienced; and at evening, hungry, dusty, foot-sore, disheartened, with but three cents in his pocket, he came to the outskirts of a village.

Unwilling to beg, he had made his money go as far as he could. But the last cent would soon be gone, and what should he do then?

He had relied on getting occasional jobs of work to help him through, and often that afternoon he had asked people he saw if they knew anybody who wanted to hire a boy. But boys did not seem to be in great demand in that part of the country. He found places where he could work for his board, but received no offer of wages. And so he had tramped on.

It was a pleasant evening. Children were playing in the street and in front yards, and through open doors he saw supper-tables set. At the side door of one house a woman rang a tea-bell, and called some boys playing in an orchard. They

were so intent on their sport that they did not care for supper. Poor Jacob marveled at them, and recalled the time when he, too, used sometimes to vex his aunt by coming late to his meals.

"Let anybody ring a tea-bell for me now, if they dare!" thought he. "I'll bet a million dollars I would n't wait for 'em to ring twice!"

He heard the boys scolding as they went in: "What's the use of having supper so early? Why could n't we stay out and play?" And he saw one fling his cap down under the porch with the air of an injured innocent.

"That boy should be his own master once, and see how he likes it!" thought Jacob. "Perhaps he is thinking of running away, so as to be free and have a good time. I'll swap myself for him, if he likes. I'll swap with anybody who has a home, and risk it. I tell ye," he muttered aloud, "boys that have good homes never know how well off they are! Shall I ever have one?"

Still he trudged on, wondering how he should manage to make the most of his three cents. It must do for his supper; for his lodging, he would once more trust to the fields.

As he was passing a cottage door, he saw three children coming out, bearing a kettle with some smoking contents, which they set down on the door-step. The oldest was a boy not more than ten; the other two were girls of six and eight; and there was another child still younger following them with three great iron spoons.

The happiness of these children attracted Jacob's attention, and he stopped and leaned over the fence to look at them. The oldest had a tin cup which he held in his lap, while he sat down on the door-step and the others gathered around him brandishing the spoons.

"What have you there?" said Jacob.

"Supper!" cried the boy, proudly, stirring the contents of the kettle.

"Scup?" said Jacob, wistfully.

"No; mush and molasses," said the oldest, while the youngest added, with a gleeful laugh, "Good!"

"Who cooked your mush for you?" Jacob asked.

"Cooked it myself," said the boy. "Always do. Father's away to work, and don't get home till dark, and I get our dinner and supper every day but Sunday."

"Where's your mother?" Jacob inquired.

"Haint got no mother!" And the boy tasted the mush, to see if it was cool enough to eat.

Finding it would do with a little blowing, he told the others to dip in. It was a moment of jubilee for the hungry tribe. They first touched their spoons to the molasses in the cup, taking up a little, then added to it a good deal of pudding,

which they blew and sipped, talking and laughing all the while with perfect happiness.

Jacob would never have thought that the time could possibly come when he would envy ragged children eating mush with iron spoons out of an iron kettle. But envy them he did. There was no selfish scrambling for quantity; but the elder one looked out that the younger ones had their share.

"How little it takes to make us happy in this world—if we only knew it!" thought Jacob. And, standing there, leaning over the fence, he learned a lesson of heroism and duty from that small boy-philosopher ten years old.

"Have you any more of that mush than you want?" he said, coming inside the gate and looking into the kettle. "I'll give you three cents for some."

"Three cents!" exclaimed the oldest, thinking he must be joking. They had never had so much money all at once; and when Jacob, by showing the change, convinced them that he was in earnest, it seemed to them that the millennium had come.

They shared their supper with him gladly. Sitting on the door-step, he had a spoon all to himself, and was allowed to dip as deep and as often as he liked into the molasses-cup. It was a feast, and even he was happy.

But all too soon the bottom of the kettle was reached, and scraped by competing spoons. Jacob left the little ones scraping, and looking at the money he had given them. Then, after having a drink from the well, he went his way.

CHAPTER XXVIII.

THE OLD MAN OF THE STAGE-WAGON.

HAVING stopped a while on the tavern steps, to rest his tired limbs, and to inquire of the loungers for a job, Jacob started on again, to look for his night's lodging in the fields.

He was weary enough to lie down under the fence, in the first retired spot; but the night was cool for the season, and he felt the necessity of seeking some sort of shelter from the heavy dews.

He was once more in the open country, looking to right and left in the deepening twilight, when he noticed a dark object and heard sounds of voices before him in the road. Nearing the spot, he found an open stage-wagon broken down in the ruts, and the driver and two or three passengers at work trying to extricate it.

Another passenger, alone in the wagon,—whom Jacob perceived to be a sharp-featured old man wrapped to the throat in a thick shawl,—was complaining of the mishap in a harsh and querulous voice.

"It will be the death of me, exposed to the night air in this way! Just after getting up from a fever! Merciful heavens, driver, you must do something! Ah, who's there? Help!"

It was nobody but Jacob, trudging along the road with his stick and bag.

"Hullo, boy!" cried the sick man, "how far is it to the hotel?"

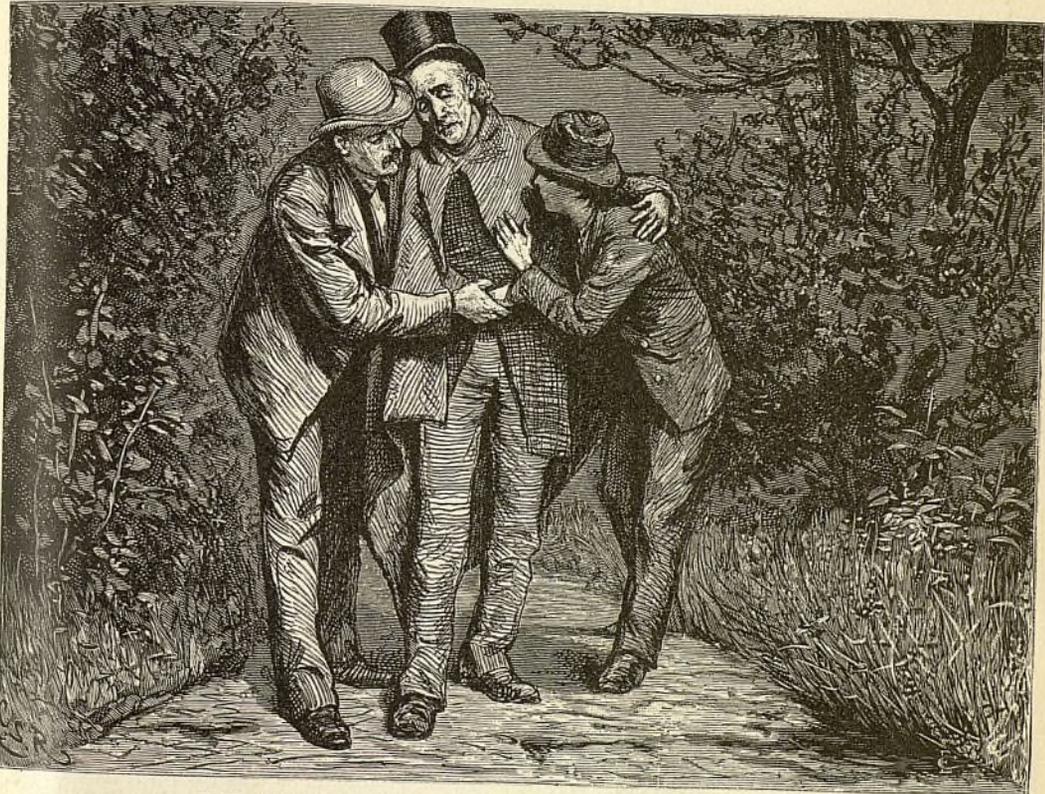
"Pretty near a mile," replied Jacob.

"In mercy, yes!" groaned the old man. And Jacob, who could not possibly have run for himself, ran for him.

In a few minutes he came back. He had found a kind woman and a kitchen fire, and he proposed to take the invalid to them at once.

"But I can't walk so far!" the old man objected, snappishly.

"We can put you on one of the horses."



JACOB AND THE PASSENGER ASSIST THE SICK GENTLEMAN TO THE HOUSE.

The invalid uttered a groan. "A mile! I shall die before we get there, at this rate. I am growing light-headed—my feet are cold as ice—I am sure to have a relapse!"

The voice, though harsh, was certainly that of a man in a bad way. Jacob stood beside the wagon.

"Can I do anything for you?" he asked.

"I don't know," said the old man, with an aguish shudder. "I feared I was n't able to travel. But the doctor said the journey might do me good, if I did n't get chilled, or too much fatigued. Now I am both. We should have reached the hotel two hours ago."

"There's a house a little way back, behind those trees," said Jacob. "Shall I go and see if they will take you in?"

"I can't ride a raw-boned stage-horse! I may as well die here!"

"You'd better let him," said another of the passengers, coming close to Jacob's side. "You would if you had had as much of his bearishness as we have."

"But he is really a sick man!" remonstrated Jacob.

"That's so," the passenger replied. "I only wish he was sicker! To hear him growl, you'd think everybody in the world but himself was to blame for his misfortunes."

"If you will take hold with me, I think we can help him walk to that house," said Jacob.

"You seem to take a great interest in the old curmudgeon!" said the passenger.

"He may be a curmudgeon; but you would n't leave the worst man in the world to die here, would you?"

"I rather think I would!"

"Oh, no you would n't!" said Jacob. "And he is n't the worst man. His suffering makes him cross." And so he argued and urged, until the passenger consented to help the old man.

Now, the invalid had stopped scolding and groaning long enough to hear almost every word of this conversation; and when it was finally proposed to him to walk with the help of the two, he consented with a better grace than he had shown at any time since his fellow-passengers made his uncomfortable acquaintance.

Getting painfully down to the ground, and leaning heavily upon the shoulders of his assistants, he found he could walk better than he had at first supposed. Still, when they reached the house with him, he was very much exhausted, and his pinched old face looked ghastly enough, as they laid him on the kitchen lounge. He did not, however, lose consciousness, but took notice of everything.

Thanks to much experience in taking care of his sick aunt, Jacob, boy as he was, knew better than anybody else present what to do.

"Can you make him some warm drink?—a cup of tea? As quick as you can!" he said to the woman. Then to the stage-passenger who had helped him bring the old man in: "Don't go, sir, if you please! We must warm his feet the first thing. Take that one; I will take this."

The old man's boots were off in a moment, followed by his stockings. Then his death-cold feet, seized and rubbed, began to recover warmth from two pairs of active hands.

"Ah, that's it!—that's what I wanted!" were the first faint words he spoke. "It relieves my head; it brings back my life!"

A cup of tea was soon ready, and he sat up and sipped it. Then the woman put some freshly toasted slices of bread before him, and a dish of jelly; and his appetite came. When, in about an hour, the stage-driver returned for him with another vehicle brought from the village, the invalid declared that he felt like a new man.

"But where's that youngster?" he asked sharply, looking around.

"After he had warmed your boots and put them on, and got you to the table," replied the woman, "he went off."

"Went off!" he exclaimed. "Without giving me a chance to thank him!"

"He spoke to you, but you were eating your toast and did n't seem to mind him. Then he came and thanked me for what I had done for you, and went away."

"That's a shame!" cried the old man, with an appearance of anger. "I heard him say something about having left his bag out-doors, and going out to get it; but I thought he was coming back. I want to see that youngster. I have n't met one for many a day I like so well. I want just such a boy to travel with me. He knows what to do for a sick man. I was going to give him a dollar, anyway. Can't somebody bring him back?"

"Wagon's waiting!" shouted the driver, impatiently, at the gate.

Jacob, who had had no thought of doing a good action for a reward, had also no idea of what he had missed.

Had the dollar been presented to him, he would have taken it, no doubt, under the circumstances, out of pure necessity. Nor do I think he would have ventured to decline anything that looked so providential as the offer of a situation to travel with the old man. But, expecting nothing, he had gone off contentedly with nothing.

He would have liked an invitation to eat some of the good woman's toast—it must be owned that he thought of that; for mush, though it serves for the moment to allay the pangs of hunger, does not afford permanent satisfaction to toiling mortals. But he who had been so ready to ask of strangers what was needful for another, never thought of asking anything for himself. And, his simple duty done, remembering what he had for a while forgotten,—namely, his own weariness and wants,—he had gone off, picked up his bag and stick, and found a lonely lodging in an old barn.

CHAPTER XXIX.

JACOB MAKES NEW ACQUAINTANCES, AND MEETS AN OLD ONE.

THE next morning he was awakened by the violent barking of a dog close to his nose; and looking up from his couch of straw in the corner, he saw a frightened cur bristling at him, and an astonished farmer standing in the open barn-door.

Jacob sat up, and made a clutch at his stick, to defend himself.

"What are you doing here?" cried the farmer.

"Call off your dog, and I'll tell you," replied Jacob, a good deal alarmed, it must be confessed, but not quite losing his self-possession.

After the dog, he expected abuse from the man. He got upon his feet, and as soon as the yelping was silenced, and he could be heard, told briefly his story,—standing humble and confused, but frank and honest, and with a touch of simple pathos in his tones.

"I came in here to sleep; I did n't know it would do any harm. I should have gone to some

house, if I had had any money. I have slept outdoors two nights; but last night was too cool."

"Where did you come from?"

"From Chillicothe last. I went there to find a man, but missed him. Now I am going to Cincinnati, where I have an uncle."

"How will you get to Cincinnati without money?"

"I can walk, and I hope to get work enough to do to pay my way."

"And what are you going to do for breakfast?"

"I don't know, but I think I can find a few berries somewhere; and, if I can't do any better, I can go to some stack of wheat, shell a little in my hand, and eat that. It won't be the first time."

The man was evidently interested in this homeless boy and his story.

"Come along with me to the house," he said.

"I've no work for you; but I'll give ye some breakfast."

Jacob followed gratefully.

"Is it *that* house?" he presently inquired.

"Yes; why not?" said the farmer.

"I believe," said Jacob, "that is the house where I—where we—took the sick man last night."

"Ah!" The farmer turned and looked quickly at Jacob. "I heard something about that when I got home. Are you the boy? I thought from my wife's account of what you said and did that you must have been older,—how you warmed the old fellow's feet, and all that."

"I suppose I am the boy," replied Jacob, with a fine blush in the rosy morning light. "I hope the old gentleman was better after I left him."

"He was well enough to go on to the hotel. He had gone when I got home. My wife can tell you more about him; and she will be glad to see you."

Indeed, Jacob received a cordial welcome at the house, and there learned from the good woman herself what the sick man had said about him. He mused for a moment, then spoke.

"I am almost glad I was gone, for I am afraid I should have taken his dollar—I need it badly enough!"

"And why not have taken it?"

"Because, if it was to pay for what I had done, I never should have felt right about it. But I am sorry I missed the chance of traveling with him. Perhaps he would have paid me good wages, and brought me around to Cincinnati after a while."

"You might find him at the village, before the morning stage goes out, if you hurry," said the farmer.

Jacob mused again, but shook his head.

"It might look as if I was trying to make something out of him, on account of last night. Besides, he might not have been in earnest. And he's a

grouty old fellow; hard for anybody to get along with, I'm sure."

"So you wont go after him?"

"No," said Jacob, with quiet decision in his look and tone.

After breakfast, the farmer told him that he might stay with them a day or two, if he liked, and do chores to pay for his board. But as nothing was said of wages, he thought he would better go on at once. So, rested and refreshed, with a grateful heart, and in his bag a sandwich which the good woman had given him for his dinner, he resumed his journey.

"There are plenty of good folks in the world, after all!" he exclaimed, winking the quick tears from his eyes, after parting from the farmer and his wife. "I'll remember that when I see other folks mean and dishonest,—I *will* remember it!"

There was some need of this good resolution; for more than once, on that rough journey, Jacob was tempted to declare in his heart that the world was made up mostly of people without sympathy or good-will, who cared only for themselves.

Late in the afternoon of that day, as Jacob was tramping wearily along a lonely road, he was overtaken by a young farmer in a rattling wagon, singing merrily to himself and shouting to his team.

The boy stood on the road-side, and called out to him as he drove past: "Give me a ride?"

"Catch on!" said the man, laughing, and at the same time touching up his horses. "Let's see how smart you are!"

Jacob took him at his word, made a dart at the hind-board, flung his bag and stick over it, and presently, by scrambling and kicking, tumbled himself over after them.

Finding a good bed of straw and a heap of empty bags in the bottom of the wagon-box, he was contented to remain there. But the jolly driver, seeing that he had got on, in spite of the little joke he had attempted to play upon him, now slackened speed, and sat over on one end of the cross-board that served as a seat, to make room for him.

"Get up here!" he said. "If a fellow rides with me, I want his company."

"How far are you going?" Jacob asked, as he took the proffered place.

"About eight miles farther. Hosses are good for it."

Making the young fellow's acquaintance, Jacob learned that his name was Boone, and that he had been to market to sell his father's grain. Having got a good price for that, he had broken the temperance pledge, and was now ripe for any adventure. He invited Jacob to go home with him; but pulled up at the first tavern.

"Oh, you need n't be afraid," said Boone, when Jacob begged him not to go in. "The animals want to breathe; and I'm only going to take some old cheese, with a bite of crackers."

In the tavern, however, he fell in with some cronies; and Jacob was watching him anxiously, when a tall black-whiskered man stepped forward and offered to shake hands with him. The boy was astonished—where had he seen that face before? In a moment he remembered it, and stammered out, "Colonel Corkright!"

"The same," said the Kentuckian, with one of those smiles which Jacob never liked. "I don't recall your name, but I remember seeing you on the steamer with our mutual friend, Mr. Pinkey. And where is Pinkey? Charming fellow! It's enough for me to know that you are his friend."

Jacob overcame his natural repugnance enough to talk with him about Alphonse. But finding that Corkright knew nothing—or pretended to know nothing—of the professor, he turned away to look after his new acquaintance.

Boone was making merry with his friends, and refused to leave them.

"I tell you what you do," he said to Jacob. "Go and give my team the oats in that bag; better water them first—they are cool enough now; then they'll be ready for a brisk trot home."

Jacob went out, slipped the horses' bridles back on their necks, tied them at the manger under the open shed, and after carrying them a couple of pails of water, gave them the oats. Then he began to think of himself.

"What's the use of waiting around? I might go to sleep in his wagon; then if he starts before morning, I shall be sure to start too."

With this happy thought, he got in upon the straw, and, using the empty grain-sacks for coverlet and pillow, soon fell asleep.

CHAPTER XXX.

A STRANGE RIDE.

HE must have slept several hours very soundly, when he was awakened by a movement of the wagon. He started up, not remembering at first where he was. Then recollection came to him.

"It is Boone, backing his horses out from under the shed. I'm glad he is sober enough to do that. They'll know the way home."

With this reflection he sank back upon his pillow of grain-sacks. His limbs were sore and stiff with weariness, his head was heavy with sleep; and having satisfied himself that Boone was starting for home, he yielded to drowsiness, and was asleep almost before the wagon had left the yard.

The team started off at a slow walk, and the

gentleness of the movement favored Jacob's inclination to repose. But soon the clumsy wagon-box began to jolt a little. The horses were quickening their pace. Jacob's head was jounced off the pillow, and he was rudely tossed about. The sleep was before long shaken out of him; his position in the springless vehicle became painful, in spite of the grain-sacks and the straw, and he sat up.

"Wonder if he knows I am in the wagon?" thought he; and, rubbing his eyes open, he questioned with himself whether he should make his presence known. His very thoughts seemed jolted by the movements of the wagon. "What—is—the—fellow—driving—so—fast—for?"

The moon had but lately risen, and by its light he soon became aware of something strange in the appearance of the driver on the seat before him. Boone was rather short and stout; this man was rather tall. Boone wore a common straw hat; that of the present driver was black, with the brim broad and picturesquely slouched.

With a shudder, he recognized the hat. It belonged to the tall Kentuckian, Colonel Corkright.

All the courage Jacob ever possessed forsook him at this discovery.

Much as he disliked and dreaded Corkright, he might still have faced him by daylight in a good cause, without quite melting down and dissolving in fear. But now the suddenness of the recognition, the strangeness of the situation, the ghostly moonlight, the lonely road,—everything combined to develop the coward in his nature.

His first thought was to creep over the hind-board and drop himself out of the wagon as quietly as possible. But he was afraid to move. So there he sat, staring at the tall dark figure before him, until by degrees his reason and courage returned.

He had no doubt that Corkright had stolen Boone's horses and wagon; and now the wish rose in his heart that he might baffle the villain.

But that he could not do by leaping from the wagon.

His resolution rallying more and more, he bethought him of lying down again and covering himself with the grain-bags, until the right moment should arrive to start up and show himself.

"Just as he is going to sell the horses; then up I jump and say, 'This team belongs to another man!'"

I suppose he had not been more than five minutes fully awake, and sitting up there, before he came to this determination, although it seemed a much longer time to him.

The clattering of the vehicle over the rough road prevented the colonel from hearing any movements on the boards behind him; and when he looked around, there was nothing to attract his attention

in the shadowy wagon-box, but what seemed a heap of grain-sacks and straw.

Luckily, Jacob had had time to conceal himself. But he had left a breathing-place under the sack that covered his head, and, anxiously watching through that loophole, he saw the dreaded colonel turn and gaze. What if he had turned a minute before? What if he should detect something suspicious in the straw there now?

"He has n't seen me yet!" thought the boy, with a feeling of relief, as the driver once more faced the other way and touched up the team.

It was a terrible ride to the shaken and jolted Jacob. He suffered less in body than in mind. He was in constant fear lest Corkright should discover him. It seemed as if the sacks were all the time getting off and exposing him. And the moon, rising higher and higher, was shining more and more into the wagon, and beginning to light up the spot where he lay.

And now the moonshine, fading, gave place to a greater danger. The stars had paled; a soft, rosy glow was spreading up the sky. Day had dawned, and it was soon so light that Jacob, peeping from under the sacks, could see the buttons on the back of the Kentuckian's coat.

"How am I going to get out of this?" he thought. "He'll be sure to see me. I can't do Boone any good. I wish I was out of the wagon!"

The little stratagem he had so hastily resolved upon did not seem at all practicable by daylight.

"Never mind," he said to himself; "I have got over a few miles, though it has been rough."

The wagon was now going more slowly. Corkright was approaching a large town, and he had suffered the horses to drop into a walk. All at once Corkright turned, and looked straight down into the wagon.

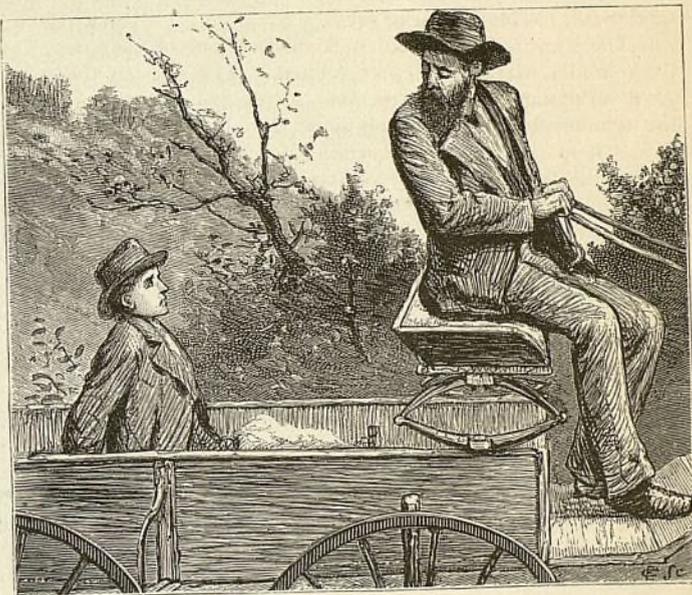
Something attracted his attention. Out of the curious heap behind him protruded an object which strangely resembled a human leg and foot. He reached over, and was about to grasp it, when up started a lithe figure from under the sacks, with astonishing suddenness, like a Jack-in-the-box.

Even the cool Kentuckian was startled by this apparition. He withdrew his hand quickly, and stopped the horses. Again Jacob thought to jump over the hind-board and escape. But he changed

his mind in the very act. And there he sat, looking up straight at the colonel, while the colonel looked down squarely at him.

"What are you here for?" said the colonel.

Jacob was one of those lads who, though not without the excitability which often makes cowards, possess something of the resolution which inspires the hero. When a danger was left to his imagination, he saw it in all sorts of dreadful shapes; but when the necessity for action came,



"CORKRIGHT TURNED AND LOOKED STRAIGHT DOWN INTO THE WAGON."

his spirit rose to meet it. When Corkright spoke to him, he was surprisingly calm, considering the circumstances.

"You brought me here," he said, in a clear but slightly tremulous voice.

"I did n't put you in the wagon!"

"I got in here to sleep. I had no other place, and no money to pay for a bed."

"So you made a bed of the wagon! A rather rough one, I reckon you found it! Slept well, I suppose?"

Corkright spoke in a sarcastic tone; evidently he did not believe a word that Jacob said.

"The wagon was under the tavern shed, and I slept well enough till you carried me off."

"Then why did n't you get out?"

"Because you happened to be going my way, and it is n't often I get a ride."

"What business had you in the wagon?"

"The owner asked me to go home with him."

"I am the owner of this team," said Corkright.

"I don't see how that can be," replied Jacob.

"I bought it. Have you any objections?"

Jacob found courage to say: "I suppose you bought it just as you bought Mr. Pinkey's violin?"

"Exactly. I paid cash for that, and I paid cash for this."

Jacob was surprised that the colonel should deign to explain matters to him in this way. But they were now approaching the town where Corkright meant to dispose of the team, and he thought it politic to win over the lad to his purposes.

"If you'll go with me," said he, "and do what I say, you'll have a chance of earning ten or fifteen dollars."

"What do you want me to do?" asked Jacob.

"I can't tell yet; to hold the horses, or may be just to hold your tongue; anything I require."

"If you require only what I can do," said Jacob, thinking it safe to put his promise in that way; resolved, nevertheless, to slip out of the wagon and escape as soon as it should be well in motion and Corkright's back was turned.

Perhaps the colonel suspected as much.

"Well, get up here on the seat with me. I want to talk to you."

Jacob could not refuse. But, as the horses moved on, he felt bound to speak an earnest word for the young farmer.

"I don't see how Boone could have sold you the team," he said. "He told me himself it did n't belong to him, but to his father."

"That's his lookout," replied Corkright. "You don't understand business."

(To be continued.)

WILD MICE AND THEIR WAYS.

[CONCLUDED.]

BY ERNEST INGERSOLL.

THE English field-mouse, which is very much like our own, has "a sweet tooth," and searches for the nests of the bumble-bees in order to get the comb and honey.

The *Arvicola* and *Jaculus* seem to be the greatest diggers, while the *Hesperomys* prefers a home above-ground, and constructs its dwelling much like the squirrel's. Sometimes it takes up its abode in deserted birds' nests, such as those of the cat-bird, red-winged black-bird, wood-thrush, and red-eyed vireo. The cradle-nest of the last-named bird (*Vireo olivaceous*), which had been used by a white-footed mouse, was found toward the end of August, 1875, on the border of a thick forest in the Blue-Ridge

Mountains, by Mr. Trotter. The nest, which—second tenant and all—is shown in the picture on the next page, hung from the extremity of a young

tree a few feet from the ground; and the mouse had completely filled the inside with dry grass, leaving only enough room to squeeze into a comfortable bed in the bottom. The mouse was asleep when found, as is its habit in the daytime, and moved away rather sluggishly.

Not long ago, I received a pleasant letter from Mr. John Burroughs, in which he said: "The other day I found the nest of the white-footed



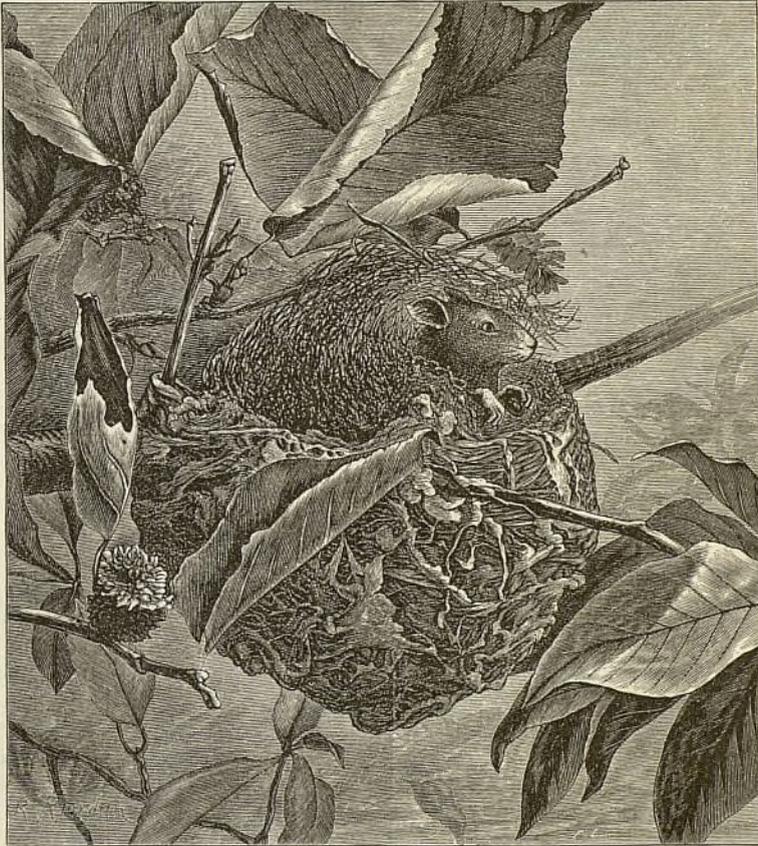
LEAVING HOME.

mouse. Going through the woods, I paused by a red cedar, the top of which had been broken

mouse. Going through the woods, I paused by a red cedar, the top of which had been broken

off and lopped over till it touched the ground. It was dry and formed a very dense mass. I touched a match to it to see it burn, when, just as the flames were creeping up into it, out jumped or tumbled two white-footed mice, and made off in opposite directions. I was just in time to see the nest before the flames caught it—a mass of fine dry

of the grasses on each side arching over, conceal the scampering travelers from the prying eyes of owls, hawks, and butcher-birds, ever on the watch for them. The mice seem to fully understand their danger, cautiously going under a tuft of grass or a large leaf instead of over it, and avoiding bare places. In winter their paths are tunneled under



THE MOUSE IN THE BIRD'S NEST.

grass, about five feet from the ground, in the thickest part of the cedar top."

From their tunnels, nests and granaries, innumerable runways, such as I spoke of before, traverse the neighborhood, crossing those from other burrows, and forming a complete net-work all over the region. The mice do not flock together like the prairie dogs, but, where food is plenty, many nests will often be found close together. They are sociable little folk, and no doubt greatly enjoy visiting and gossiping with one another. The little paths are their roadways from one burrow to another, and from the places where the tenderest grasses grow to their store-houses. These tiny roads are formed by gnawing clean away the grass-stubble, and treading the earth down smooth; while the heads

the snow, so that they are out of sight; and they always have several means of escape from their burrows. You know the old song says—

"The mouse that always trusts to one poor hole,
Can never be a mouse of any soul."

A trotting, gliding motion is the gait of the *Arvicola*, but the white-foot gallops along, jumping small objects, and leaping from one hillock to another, while the kangaroo-mouse springs off his hind feet, and progresses in a series of long leaps, which carry him over the ground like a race-horse.

But the life of one of our favorites is not all frisking about under the fragrant flowers, or digging channels through shining sand and crystal snow. He has his labor and trials and trouble like the rest

of us. If "a man mun be eäther a man or a mouse," it would be hard choosing between them, so far as an easy time is concerned! The gathering of his food, and the building of his house, costs him "mony a weary nibble," and he must constantly be on the alert, for dangers haunt him on every side. One of his enemies is the snake, all the larger sorts of which pounce upon him in the grass, lie in wait for him in his highway, or steal into his burrow and seize his helpless young, in spite of the

Probably our snakes depend more upon catching mice than upon any other resource for their daily food, and they hunt for them incessantly. Most of the mice have the bad habit of being abroad mainly at night; so have the snakes; and the mice thus encounter more foes, and fall an easier prey, than if they deferred their ramblings until daylight. Being out nights is a bad practice! The prairie rattlesnakes are especially fond of mice; minks, weasels, skunks and badgers, eat as many as they



A FIGHT WITH A SNAKE.

frantic fighting of the father, and the stout attempts of the mother to drag her little ones away into safety. A gentleman in Illinois once saw a garter-snake pass rapidly by with a young meadow-mouse in its mouth. Presently, an old meadow-mouse came out of the tall grass in pursuit of the snake, which she finally overtook and instantly attacked. The snake stopped, disgorged its prey, and defended itself by striking at its assailant, which appeared to be beating it, when both animals were killed by the gentleman watching. I am sorry the incident ended so tragically. The courage and affection of the little mother deserved a better reward, and even the garter-snake is entitled to some sympathy.

can catch, and this probably is not a few; domestic cats hunt them eagerly, seeming to prefer them to house-mice,—no doubt they are more sweet and delicate; foxes also enjoy them, dogs and wolves dig them out of their burrows and devour them; prairie fires burn multitudes of them, and farmer-boys trap them. But, after all, perhaps their chief foes are the flesh-eating birds. I hardly ever take a walk without finding the remains of an owl's or hawk's dinner where our little subject has been the main dish.

We have in this country two black, white and gray birds called shrikes, or butcher-birds, which are only about the size of robins, but are very

strong, brave, and noble in appearance. These shrikes have the curious habit of killing more game than they need, and hanging it up on thorns, or lodging it in a crack in the fence or the crotch of a tree. They seem to hunt just for the fun of it, and kill for the sake of killing. Now their chief game is the unhappy field-mouse, and in Illinois they are known as "mouse-birds." They never seem to eat much of the flesh of their victims, generally only pecking their brains out, but murder an enormous number, and keep up the slaughter through the whole year; for when the loggerhead shrike retreats southward in the autumn, the great northern shrike comes from British America to supply his place through the winter. Then all the hawks, from the nimble little sharp-shinned to the great swooping buzzards, prey upon them, and in winter hover day after day over knolls where the mice have been driven by floods in the surrounding lowlands, and pounce upon every one that is imprudent enough to show his black eyes above ground. As for the marsh-hawk, it regularly quarters the low fields like a harrier, and eats little but mice. The owls, too, are constantly after them, hunting them day and night, on the prairies and in the woods, esteeming them fine food for the four owlets in the hollow tree hard by; while the sand-hill crane, and some of the herons, make a regular business of seeking the underground homes, and digging out the timorous fugitives with their pick-ax beaks. In addition to all the rest, the farmer everywhere persecutes the mouse, as a pest to his orchards and crops.

Has the poor little animal, then, no friends whatever? Very few, except his own endurance and cunning; yet he is already so numerous, and increases so rapidly, that all his enemies have not been able to rid the earth of him, but only to keep him in check, and thus preserve that nice balance of nature in which consists the welfare of all.

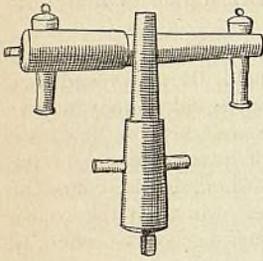
It may not be of much interest to the lively readers of ST. NICHOLAS to hear how destructive these pretty wild mice are to the farmer's grain and fruit, but an important part of their history would be untold if I were to say nothing about their mischief. From the story I have related of the little "thieves in the night" who stole my friend's rye, and of their underground stores, you may guess how they make the grain fields suffer. It is done so quietly and adroitly, too, that few are ever caught at it, and much of the blame is put on the moles, squirrels and woodchucks, that have enough sins of their own to answer for. The meadow-mouse of Europe, which is very like our own, forty or fifty years ago came near causing a famine in parts of England, ruining the crops before they

could get fairly started, and killing almost all the young trees in the orchards and woods. More than 30,000 of the little rascals were trapped in one month in a single piece of forest, beside all those killed by animals. Only last spring, again, a similar disaster was threatened in Scotland, where millions of mice appeared, and gnawed off the young grass at the root just when it should have been in prime condition for the sheep; and when that was all gone they attacked the garden vegetables. The people lost vast numbers of sheep and lambs from starvation, and thousands of dollars' worth of growing food; but, finally, by all together waging war upon them, the pests were partially killed off. The mice did not in either case come suddenly, but had been increasing steadily for years previous, because the gamekeepers had killed so many of the "vermin" (as owls, hawks, weasels, snakes, etc., are wrongly called) which are the natural enemies of the mice, and keep their numbers down. Farmers are slow to learn that it does not pay to kill the birds or rob their nests; but the boys and girls ought to understand this truth and remember it. In this country, the greatest mischief done by the field-mice is the gnawing of bark from the fruit-trees, so that in some of the Western States this is the most serious difficulty the orchardist has to contend with. Whole rows of young trees in nurseries are stripped of their bark, and of course die; and where apple-seeds are planted, the mice are sure to dig half of them up to eat the kernels. This mischief is mainly done in the winter, when the trees are packed away from the frost; or, if they are growing, because then the mice can move about concealed under the snow, and nibble all the bark away up to the surface. Rabbits get much of the credit of this naughty work, for they do a good deal of it on their own account. The gardener has the same trouble, often finding, when he uncovers a rare and costly plant in the spring, that the mice have enjoyed good winter quarters in his straw covering, and have been gnawing to death his choice roses. Millions of dollars, perhaps, would not pay for all the damage these small creatures thus accomplish each year in the United States, and I fear they will become more and more of a plague if we continue to kill off the harmless hawks, owls, butcher-birds and snakes, which are the policemen appointed by Nature to look after the mice, and protect us against them.

In captivity the wild mice, especially the white-footed *Hesperomys*, make very pretty pets, and one can easily study all their ways by giving them earth in which to burrow, and the various sorts of food in which they delight.

THE PETERKINS CELEBRATE THE FOURTH OF JULY.

BY LUCRETIA P. HALE.



HE day began early.

A compact had been made with the little boys the evening before.

They were to be allowed to usher in the glorious day by the blowing of horns exactly at sunrise. But they were to blow them

for precisely five minutes only, and no sound of the horns should be heard afterward till the family were down-stairs.

It was thought that a peace might thus be bought by a short though crowded period of noise.

The morning came. Even before the morning, at half-past three o'clock, a terrible blast of the horns aroused the whole family.

Mrs. Peterkin clasped her hands to her head and exclaimed: "I am thankful the lady from Philadelphia is not here!" For she had been invited to stay a week, but had declined to come before the Fourth of July, as she was not well, and her doctor had prescribed quiet.

And the number of the horns was most remarkable! It was as though every cow in the place had arisen and was blowing through both her own horns!

"How many little boys are there? How many have we?" exclaimed Mr. Peterkin, going over their names one by one mechanically, thinking he would do it, as he might count imaginary sheep jumping over a fence, to put himself to sleep. Alas! the counting could not put him to sleep now in such a din.

And how unexpectedly long the five minutes seemed! Elizabeth Eliza was to take out her watch and give the signal for the end of the five minutes and the ceasing of the horns. Why did not the signal come? Why did not Elizabeth Eliza stop them?

And certainly it was long before sunrise; there was no dawn to be seen!

"We will not try this plan again," said Mrs. Peterkin.

"If we live to another Fourth," added Mr. Peterkin, hastening to the door, to inquire into the state of affairs.

Alas! Amanda, by mistake, had waked up the little boys an hour too early. And by another mis-

take the little boys had invited three or four of their friends to spend the night with them. Mrs. Peterkin had given them permission to have the boys for the whole day, and they understood the day as beginning when they went to bed the night before. This accounted for the number of horns.

It would have been impossible to hear any explanation; but the five minutes were over, and the horns had ceased, and there remained only the noise of a singular leaping of feet, explained perhaps by a possible pillow-fight, that kept the family below partially awake until the bells and cannon made known the dawning of the glorious day—the sunrise, or "the rising of the sons," as Mr. Peterkin jocosely called it when they heard the little boys and their friends clattering down the stairs to begin the outside festivities.

They were bound first for the swamp, for Elizabeth Eliza, at the suggestion of the lady from Philadelphia, had advised them to hang some flags around the pillars of the piazza. Now the little boys knew of a place in the swamp where they had been in the habit of digging for "flag-root," and where they might find plenty of flag flowers. They did bring away all they could, but they were a little out of bloom. The boys were in the midst of nailing up all they had on the pillars of the piazza, when the procession of the Antiques and Horribles passed along. As the procession saw the festive arrangements on the piazza, and the crowd of boys, who cheered them loudly, it stopped to salute the house with some especial strains of greeting.

Poor Mrs. Peterkin! They were directly under her windows! In the few moments of quiet during the boys' absence from the house on their visit to the swamp, she had been trying to find out whether she had a sick-headache, or whether it was all the noise, and she was just deciding it was the sick-headache, but was falling into a light slumber, when the fresh noise outside began.

There were the imitations of the crowing of cocks and braying of donkeys, and the sound of horns, encored and increased by the cheers of the boys. Then began the torpedoes, and the Antiques and Horribles had Chinese crackers also!

And, in despair of sleep, the family came down to breakfast.

Mrs. Peterkin had always been much afraid of fire-works, and had never allowed the boys to bring gunpowder into the house. She was even afraid of

torpedoes; they looked so much like sugar-plums, she was sure some of the children would swallow them, and explode before anybody knew it.

She was very timid about other things. She was not sure even about pea-nuts. Everybody exclaimed over this: "Surely there was no danger in pea-nuts!" But Mrs. Peterkin declared she had been very much alarmed at the Exhibition, and in the crowded corners of the streets in Boston, at the pea-nut stands, where they had machines to roast the pea-nuts. She did not think it was safe. They might go off any time, in the midst of a crowd of people, too!

Mr. Peterkin thought there actually was no danger, and he should be sorry to give up the pea-nut. He thought it an American institution, something really belonging to the Fourth of July. He even confessed to a quiet pleasure in crushing the empty shells with his feet on the sidewalks as he went along the streets.

Agamemnon thought it a simple joy.

In consideration, however, of the fact that they had had no real celebration of the Fourth the last year, Mrs. Peterkin had consented to give over the day, this year, to the amusement of the family as a Centennial celebration. She would prepare herself for a terrible noise—only she did not want any gunpowder brought into the house.

The little boys had begun by firing some torpedoes a few days beforehand, that their mother might be used to the sound, and had selected their horns some weeks before.

Solomon John had been very busy in inventing some fire-works. As Mrs. Peterkin objected to the use of gunpowder, he found out from the dictionary what the different parts of gunpowder are—saltpeter, charcoal, and sulphur. Charcoal he discovered they had in the wood-house; saltpeter they would find in the cellar, in the beef-barrel; and sulphur they could buy at the apothecary's. He explained to his mother that these materials had never yet exploded in the house, and she was quieted.

Agamemnon, meanwhile, remembered a recipe he had read somewhere for making a "fulminating paste" of iron filings and powder of brimstone. He had it written down on a piece of paper in his pocket-book. But the iron filings must be finely powdered. This they began upon a day or two before, and, the very afternoon before, laid out some of the paste on the piazza.

Pin-wheels and rockets were contributed by Mr. Peterkin for the evening. According to a programme drawn up by Agamemnon and Solomon John, the reading of the Declaration of Independence was to take place in the morning on the piazza under the flags.

The Bromwiches brought over their flag to hang over the door.

"That is what the lady from Philadelphia meant," explained Elizabeth Eliza.

"She said flags of our country," said the little boys. "We thought she meant 'in the country.'"

Quite a company assembled; but it seemed nobody had a copy of the Declaration of Independence.

Elizabeth Eliza said she could say one line, if they each could add as much. But it proved they all knew the same line that she did, as they began:

"When, in the course of—when, in the course of—when, in the course of human—when, in the course of human events—when, in the course of human events, it becomes—when, in the course of human events, it becomes necessary—when, in the course of human events, it becomes necessary for one people —"

They could not get any farther. Some of the party decided that "one people" was a good place to stop, and the little boys sent off some fresh torpedoes in honor of the people. But Mr. Peterkin was not satisfied. He invited the assembled party to stay until sunset, and meanwhile he would find a copy, and torpedoes were to be saved to be fired off at the close of every sentence.

And now the noon bells rang and the noon bells ceased.

Mrs. Peterkin wanted to ask everybody to dinner. She should have some cold beef. She had let Amanda go, because it was the Fourth, and everybody ought to be free that one day, so she could not have much of a dinner. But when she went to cut her beef, she found Solomon John had taken it to soak, on account of the saltpeter for the fire-works!

Well, they had a pig, so she took a ham, and the boys had bought tamarinds and buns and a cocoa-nut. So the company stayed on, and when the Antiques and Horribles passed again, they were treated to pea-nuts and lemonade.

They sang patriotic songs, they told stories; they fired torpedoes, they frightened the cats with them. It was a warm afternoon; the red poppies were out wide, and the hot sun poured down on the alleys in the garden. There was a seething sound of a hot day in the buzzing of insects, in the steaming heat that came up from the ground. Some neighboring boys were firing a toy cannon. Every time it went off, Mrs. Peterkin started, and looked to see if one of the little boys was gone. Mr. Peterkin had set out to find a copy of the "Declaration." Agamemnon had disappeared. She had not a moment to decide about her headache. She asked Ann Maria if she were not anxious about the fire-works, and if rockets were not dangerous.

They went up, but you were never sure where they came down.

And then came a fresh tumult! All the fire-engines in town rushed toward them, clanging with bells, men and boys yelling! They were out for a practice, and for a Fourth of July show.

Mrs. Peterkin thought the house was on fire, and so did some of the guests. There was great rushing hither and thither. Some thought they would better go home, some thought they would better stay. Mrs. Peterkin hastened into the house to save herself, or see what she could save. Elizabeth Eliza followed her, first proceeding to collect all the pokers and tongs she could find, because they could be thrown out of the window without breaking. She had read of people who had flung looking-glasses out of window by mistake, in the excitement of the house being on fire, and had carried the pokers and tongs carefully into the garden. There was nothing like being prepared. She always had determined to do the reverse. So with calmness she told Solomon John to take down the looking-glasses. But she met with a difficulty,—there were no pokers and tongs, as they did not use them. They had no open fires; Mrs. Peterkin had been afraid of them. So Elizabeth Eliza took all the pots and kettles up to the upper windows, ready to be thrown out.

But where was Mrs. Peterkin? Solomon John found she had fled to the attic in terror. He persuaded her to come down, assuring her it was the most unsafe place; but she insisted upon stopping to collect some bags of old pieces, that nobody would think of saving from the general wreck, she said, unless she did. Alas! this was the result of fire-works on Fourth of July! As they came downstairs, they heard the voices of all the company declaring there was no fire—the danger was past. It was long before Mrs. Peterkin could believe it. They told her the fire company was only out for show, and to celebrate the Fourth of July. She thought it already too much celebrated.

Elizabeth Eliza's kettles and pans had come down through the windows with a crash, that had only added to the festivities, the little boys thought.

Mr. Peterkin had been about all this time in search of a copy of the Declaration of Independence. The public library was shut, and he had to go from house to house; but now as the sunset bells and cannon began, he returned with a copy, and read it, to the pealing of the bells and sounding of the cannon. Torpedoes and crackers were fired at every pause. Some sweet-marjoram pots, tin cans filled with crackers which were lighted, went off with great explosions.

At the most exciting moment, near the close of the reading, Agamemnon, with an expression of terror, pulled Solomon John aside.

"I have suddenly remembered where I read about the 'fulminating paste' we made. It was in the preface to 'Woodstock,' and I have been around to borrow the book, to read the directions over again, because I was afraid about the 'paste' going off. READ THIS QUICKLY! and tell me, *Where is the fulminating paste?*"

Solomon John was busy winding some covers of paper over a little parcel. It contained chlorate of potash and sulphur mixed. A friend had told him of the composition. The more thicknesses of paper you put around it, the louder it would go off. You must pound it with a hammer. Solomon John felt it must be perfectly safe, as his mother had taken potash for a medicine.

He still held the parcel as he read from Agamemnon's book: "This paste, when it has lain together about twenty-six hours, will *of itself* take fire, and burn all the sulphur away with a blue flame and a bad smell."

"Where is the paste?" repeated Solomon John, in terror.

"We made it just twenty-six hours ago," said Agamemnon.

"We put it on the piazza," exclaimed Solomon John, rapidly recalling the facts, "and it is in front of mother's feet!"

He hastened to snatch the paste away before it should take fire, flinging aside the packet in his hurry. Agamemnon, jumping upon the piazza at the same moment, trod upon the paper parcel, which exploded at once with the shock, and he fell to the ground, while at the same moment the paste "fulminated" into a blue flame directly in front of Mrs. Peterkin!

It was a moment of great confusion. There were cries and screams. The bells were still ringing, the cannon firing, and Mr. Peterkin had just reached the closing words: "Our lives, our fortune, and our sacred honor."

"We are all blown up, as I feared we should be," Mrs. Peterkin at length ventured to say, finding herself in a lilac-bush by the side of the piazza. She scarcely dared to open her eyes to see the scattered limbs about her.

It was so with all. Even Ann Maria Bromwich clutched a pillar of the piazza, with closed eyes.

At length, Mr. Peterkin said, calmly: "Is anybody killed?"

There was no reply. Nobody could tell whether it was because everybody was killed, or because they were too wounded to answer. It was a great while before Mrs. Peterkin ventured to move.

But the little boys soon shouted with joy and cheered the success of Solomon John's fire-works, and hoped he had some more. One of them had his face blackened by an unexpected cracker, and

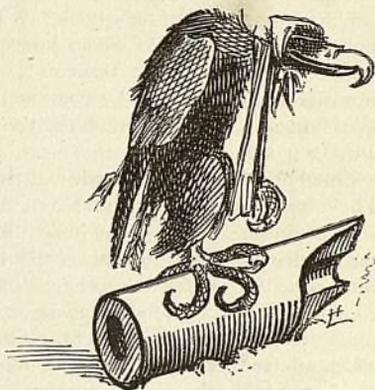
Elizabeth Eliza's muslin dress was burned here and there. But no one was hurt; no one had lost any limbs, though Mrs. Peterkin was sure she had seen some flying in the air. Nobody could understand how, as she had kept her eyes firmly shut.

No greater accident had occurred than the singeing of the tip of Solomon John's nose. But there was an unpleasant and terrible odor from the "fulminating paste."

Mrs. Peterkin was extricated from the lilac-bush. No one knew how she got there. Indeed, the thundering noise had stunned everybody. It had roused the neighborhood even more than before. Answering explosions came on every side, and though the sunset light had not faded away, the

little boys hastened to send off rockets under cover of the confusion. Solomon John's other fire-works would not go. But all felt he had done enough.

Mrs. Peterkin retreated into the parlor, deciding she really did have a headache. At times she had to come out when a rocket went off, to see if it was one of the little boys. She was exhausted by the adventures of the day, and almost thought it could not have been worse if the boys had been allowed gunpowder. The distracted lady was thankful there was likely to be but one Centennial Fourth in her life-time, and declared she should never more keep anything in the house as dangerous as saltpetered beef, and she should never venture to take another spoonful of potash.



A TALK ABOUT SWIMMING.

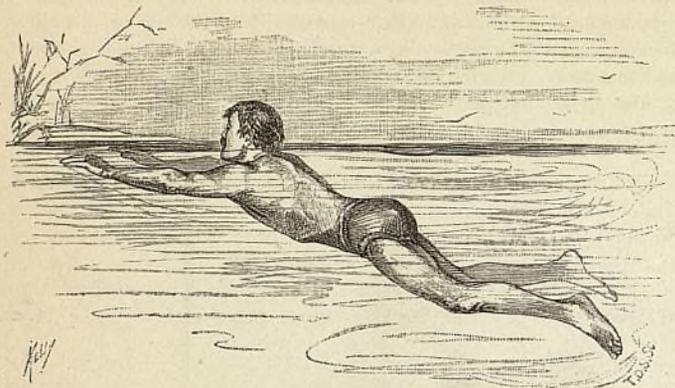
BY SANFORD B. HUNT.

HANGING in the shrouds of a sinking ship on a wild November afternoon, the engine-room flooded from the leak, the steam-pumps not able to work, my back tortured beyond endurance with hard labor at the levers of the hand-pump, the deck swept by the bursting seas, a wild and angry sky above, the lee shore perfectly horrible in the tempest of its waves and the thunder of the surf that went rolling and charging by squadrons of billows over a half mile of low sandy bottom, I asked myself whether, if the ship broke up, I could manage the under-tow,—that merciless drag backward of the sea, the topmost wave washing the swimmer illusively toward the shore, the undermost sucking him down and out. I said to myself an emphatic "Yes!" But the experiment was spared me, and I got ashore next morning in a life-boat. Ever since that awful hour and night, I have had a

sincere respect for the science and art of swimming, in which, next to God, then rested all my hope and trust.

But before we talk about fighting an under-tow in a wicked sea-way, let us discuss the principles and methods of swimming. To drown in a river, with the shore only a few yards away, when any dog or donkey would reach the land, must involve a feeling of personal humiliation as well as despair. To be self-trustworthy is the first thing in moments of danger; but the art of swimming has a high value in the saving of other lives, and is, besides, a luxury and accomplishment worth the having, for the mere fun of the thing. In our civilization, swimming is an acquired accomplishment. It is understood to be a natural function with nearly all kinds of animals, hogs and humanity being the leading exceptions. The in-

ability to swim is in all cases a defect of education. If we do not know already, let us learn how.



THE PROPER POSITION.

To an expert swimmer, sinking is impossible, except from cramp or exhaustion. The weight of a human body is just about that of the water it displaces; but the body weight is unevenly distributed, the lungs being the bladder and the head the sinker,—so that the first rule in swimming is to keep the head well back on the shoulders, where it will rest immediately above the lungs. But before this, the beginner should observe a few rules of safety.

Get accustomed to the shock of water. Wade slowly into a smooth shallow place, turn and face toward the shore, duck under in water deep enough to cover the body, get your head wet, hold your breath when under, snort as you come to the air again, resisting the inclination to breathe in first; and then, in a depth of a foot or two, lie down, face downward, and touch the tips of your fingers on the bed of the stream. You will find that a very slight lift, hardly two ounces, will keep your head afloat, but not your heels. Use them as oars. Drop out backward into deeper water, walking on your finger-tips, and you will find that the more of your body is under water the less weight you have to carry. The only parts to keep in the air are your lips and nostrils. Make these the only exposed surface; hollow your loins, and carry your head well back, so as to have it perpendicular to the lungs.

All this is mere paddling; but you will soon find that keeping afloat is no trouble, unless you keep too high and try to swim as much in the air as in the water. You must remember that you have to displace as much weight of water as the weight of your own body. You cannot walk upon the waves or climb out of them without a support. In

swimming you must lie low. The legs should be well under, and so should the hands. The attitude should be as in the first illustration,—the chin in the water, the legs at an angle of thirty-three degrees. The theory is that you should use the feet as a counterpoise to the head,—the chest, the buoyant part of the body, being the fulcrum of the lever. If your heels go up, your head will go down. Now stop paddling, abandon the grip of your hands on the bottom, keep your head toward the shore, and strike out. The first illustration will show the attitude. Two feet depth of water is enough for the lesson.

Keep both hands well under water. You can't swim in the air. Hold your fingers together, the palms of the hands slightly hollowed, the head well back, the chest inflated, and strike with all four limbs in unison of movement. The hands and the feet will act as propellers, the hands moving backward and downward as low as the hips, and well outside of the body, the feet drawing together and pushing down at the same moment. Give full spread to your hands and feet. Their resistance to the water is your propelling force. Then gather, frog fashion, and repeat the motion. You rid yourself of the

sense of danger by keeping in shallow water and striking toward shore.

Work in that way a while, and the temptation will be irresistible to swim *from* shore; but it should be carefully indulged until you feel sure of yourself.

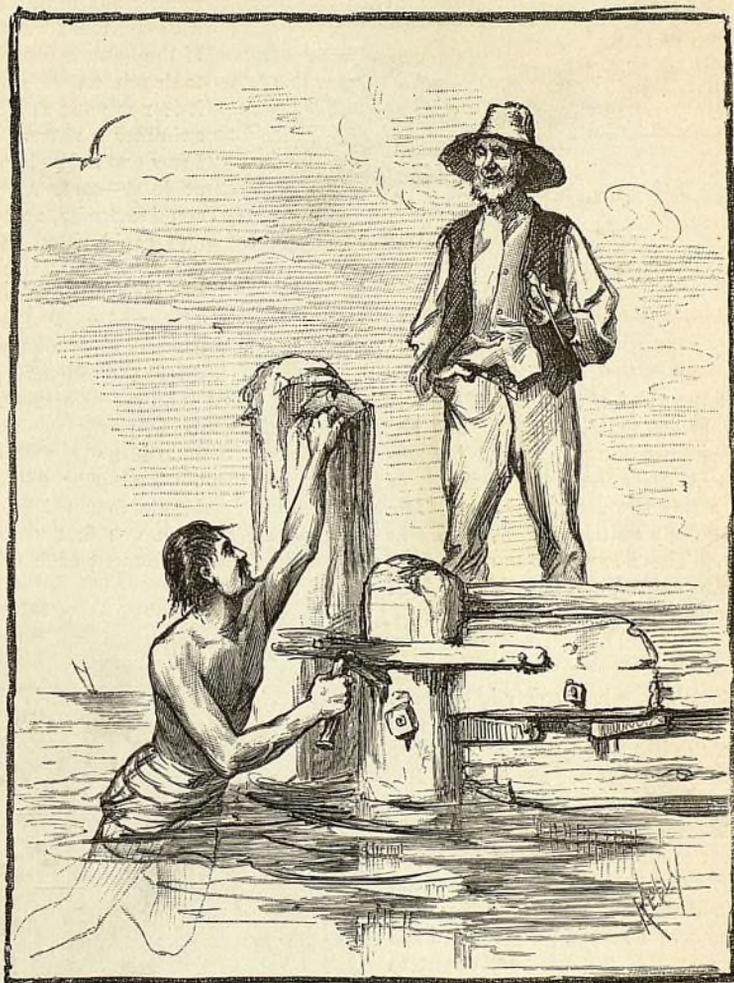
When you have thus learned to swim a half-dozen strokes, all the rest is mere practice in a delightful school, where there is more fun than work. Water frolics are high sport, and the best frolic of all is a good dive.



The fun of a good dive is fun indeed. I have often "fetched bottom" at fifteen feet, and brought up a big stone to prove to my comrades that I had been "clean down." But once, in water like crystal, in the Upper Lakes, where the pebbles could be seen at the bottom, I came rushing up with my head cracking, and saw an old fellow grinning at

lecture of the same length were too much to pay for that one dizzy, sidewise rush through the air. If I had taken my leaden head for a plummet, I should have been spared the blisters on my body. I ought to have dived.

"Floating" is the best illustration of the real buoyancy of the human body. It needs only self-



"HE INFORMED ME THAT THE WATER WAS TWENTY-SIX FEET DEEP."

me. I hung breathless to a wharf-pile, and he casually informed me that the water was twenty-six feet deep, "thar or tharabouts."

Jumping from a height is a doubtful job. Recollect that in everything connected with swimming you are top-heavy, and that water is incompressible. If you get off your balance while dropping, and fall on your side, either you will be drowned or your mother will need, next day, all the cold cream in the neighborhood. I have painful recollections on that subject. Two days in bed and a maternal

possession and still water. There are two attitudes, one of which seems the more scientific, but which I never worked with any considerable success. It is accurately shown in the first illustration on the following page, in which the position pictured is theoretically correct. I have seen such floating done with not the motion of a muscle, except as the lungs were kept inflated. Only the mouth and nostrils are out of water, and the arms, extended backward, balance the legs, the lungs being at the fulcrum. But as a personal habit I float better



with my legs deeper in the water, and my hands wrapped under the small of my back, the body in a semi-perpendicular position. You have plenty of time to breathe if you are only self-confident.

In "treading water" there is a nice illustration of buoyancy. It is a great rest sometimes. The



FLOATING.

propulsive force of the tread of the soles of the feet against the water below them, with the buoyant power of the lungs supporting the head perpendicularly above them, carry the head clear out of water, and make a lazy but secure support. The hands should rest quietly on the hips, as shown in the picture below. There are a dozen other feats in swimming, such as swimming on the back, which is lazier than any other method.

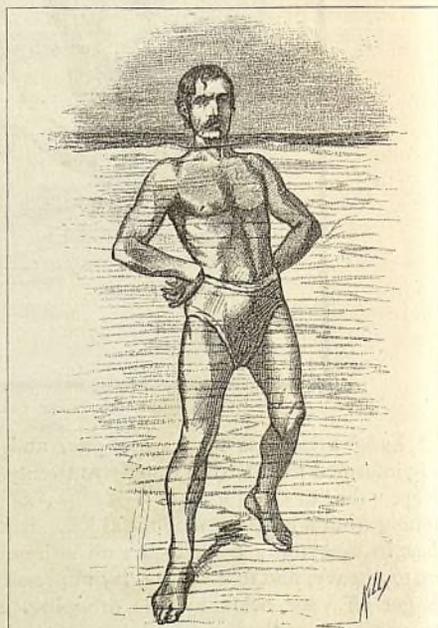
LIFE RESCUE.

The true plan to follow, when safety is the call, is to swim with everything below the chin well down under water, the head well back and resting centrally on the floating power of the lungs. But what will you do when your comrade is tired out and drowning? That depends. If he is cool and reliable, get in front of him, let him place his hands on your hips (not your shoulders), and you can carry him quite a distance. That supposes that both parties, rescued and rescuer, understand fair play. The weaker party is the one that ought to drown, if he shows any disposition to drown his friend by a miserable, cowardly death-clutch at the only floating thing around him. In the case of the death-clutch, go to the bottom with your man and leave him there. There may be an unpleasant wrestle, but the real drowning man is ready to quit his prey when he strikes bottom. The better man has his right to come to the surface and swim ashore.

But in a considerable swimming experience, and some rescues, there comes one absolute rule: Never face a drowning man. He welcomes rescue so eagerly that he will hug you around the neck and take you down. The safest and best thing to

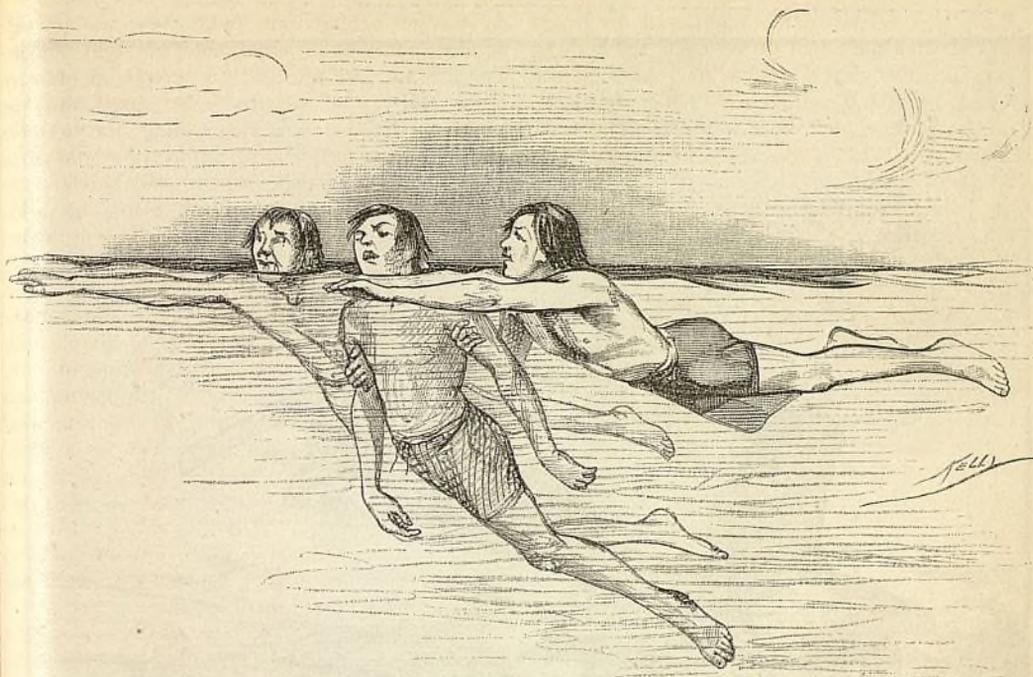
do is to get behind him, and, unless you are left-handed, put your left hand under his right arm-pit. The lift you give him will be enough in ordinary water. He can be coaxed to help himself, and if he is a reasonable being you can bring him to shore. If he is insane with fright, recollect that you are to be both prudent and heroic. Get away from him, clutch his ankle with one hand and tow him ashore. If the bank is near, he is not likely to drown on the way. If he does, it is not your fault. But a brave swimmer is master of his element. I saw two lads—I saw one of them, at least—carry a companion, who could not swim, across a deep, broad and rapid river, just for a frolic. It was a reckless thing to do, and the three were used up when they staggered to the shore. They recrossed from a point up the river, where they found a good light pine slab, and towed John across on that.

But those same two young scamps once rescued a drowning comrade in a way that was remarkable for its neatness. The poor fellow was in mid-stream, cramped and exhausted, and barely able to keep afloat. Which was first was never decided, but in the critical moment each was behind him,



TREADING WATER.

each with a hand under an arm-pit; he was almost a dead-weight on their hands, and they swam him



SAVING A COMRADE.

ashore, more dead than alive. It was a struggle, but they were the masters of the situation.

THE UNDER-TOW.

I began this gossip first with a mention of the "under-tow." It is by no means a "phenomenon," but something to be read up and studied. Either on the sea-beach or at the great lakes, all the water that is tumbled ashore in heavy waves must go back again. The top-sea rolls in and the under-sea rolls out. Trust to the former. Keep clear afloat and as high as you can. Abandon the rule I have given you about deep swimming. Secure the friendship of the shoreward wave. Otherwise, if, when you are within ten feet of shore and safety, you drop your legs to the angle of thirty-three degrees, which is the deep-swimming position, you will find that the "under-tow"—the under water that flows out

to replace the waves that run in—will grab you by the ankles and pull you out and down again. Keep clear afloat, your head well down, your heels feeling the topmost of the impelling wave; keep your lungs well filled, and wash ashore. You are not safe until you can easily fasten your hands in the sand or gravel and pull yourself to land. But in shallow water, with a long surf rolling in behind you, the drag of the under-tow can only be avoided by swimming high and letting the waves "buck" you in. The rules for still water and rapid river currents, in which deep swimming is safety, do not apply to mastering an under-tow. Swim shallow

and trust the topmost wave.

Perhaps I ought to add a word about ice rescue, where a fellow skating on thin ice breaks through, and, heading toward shore with a pair of skates on his heels, cracks off successive chunks of ice until he is surrounded by



THE UNDERTOW.



"WELL, FELLOWS, YOU DID THAT NICELY!"

them. It is the coldest kind of a baptism, and the hardest kind of a rescue. I was an actor in one when a college chum "slumped" through. The ice was unsafe, and we fished him out by knocking off fence-boards, sliding them out, lying face-downward on the boards, other fence-boards

being slid out to us. He got hold of one, climbed to the surface of the ice with the ready skill of a practiced swimmer, and said, with rattling teeth in the zero atmosphere: "Well, fellows, you did that nicely!" The remark was rather impathetic, but it was literally true.

THE LITTLE BROWN SEED IN THE FURROW.

BY IDA W. BENHAM.

A LITTLE brown seed in the furrow
Lay still in its gloomy bed,
While violets blue and lilies white
Were whispering overhead.
They whispered of glories strange and rare,
Of glittering dew, and floating air,
Of beauty and rapture everywhere,—
And the seed heard all they said.

Poor little brown seed in the furrow!
So close to the lilies' feet,
So far away from the great, glad day,
Where life seemed all complete!
In her heart she treasured every word,
And she longed for the blessing of which she heard,
For the light that shone, and the airs that stirred
In that land, so wondrous sweet!

The little brown seed in the furrow
 Was thrilled with a strange unrest;
 A warm new hope beat tremblingly
 In the tiny, heaving breast;
 With her two small hands clasped close in prayer,
 She lifted them up in the darkness there;
 Up, up through the sod, toward sun and air,
 Her folded hands she pressed.

O little brown seed in the furrow,
 At last you have pierced the mould!
 And, quivering with a life intense,
 Your beautiful leaves unfold,
 Like wings outspread for upward flight;
 And slowly, slowly, in dew and light,
 A sweet bud opens—till, in God's sight,
 You wear a crown of gold!

THE STARS IN JULY.

BY RICHARD A. PROCTOR.

THE northern sky below the pole is now chiefly remarkable for the absence of large stars. It has always seemed to me that this large, desolate region of the sky is full of meaning, and that when the architecture of the heavens comes to be rightly understood, we shall find why it is that this region is thus barren. That the feature is not accidental I am satisfied, from a number of experiments I have made on the random scattering of points.

The head of the Dragon is now almost exactly above the pole. Not far from the point overhead shines the beautiful steel-blue star Vega.

Although the map shows a part of Auriga (the Charioteer), and notably the bright star Capella, yet only the star δ of this constellation can be seen in America at the hours named below the map; nor can even this star be seen from places south of the latitude of Nashville (Tenn.), or thereabouts.

Turning to the south a splendid star is seen, far outshining all his fellows. This star, as I mentioned last month, is the planet, Jupiter. He is not shown in our southern map for this month, simply because that map is not meant for this year, 1877, alone; but for 1878-'79-'80, and onward. It will, indeed, present the aspect of the southern skies at the hours named for many years after you, and I, and our children, and grandchildren, are dead and (let us hope) buried. But in order that Jupiter's present visit to this region may not confuse the learner, I have given elsewhere in this number a picture of his path, and a sketch of the planet himself, which will, I hope, be interesting to you.

The ruling constellation of the zodiac this month is Sagittarius (the Archer). In the second figure for last month, his bow-arm, bow, and arrow appear. I do not think it is necessary to give a full picture of

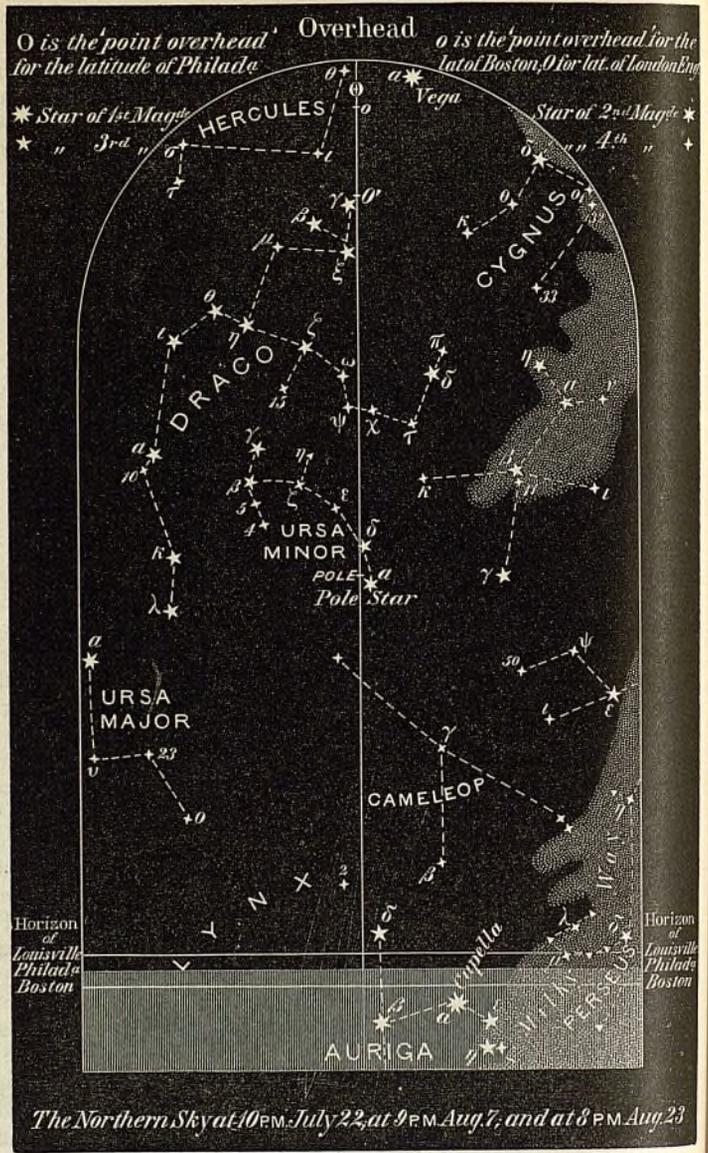
this worthy. He is commonly presented as a centaur, though it is not easy to imagine the figure of a centaur among the stars of this constellation. The bow, however, is fairly well marked.

Admiral Smyth tells us that, in the days of Eratosthenes, the constellation Sagittarius was pictured as a satyr; and so it appears on the Farnese globe.

From places in the latitude of New Orleans, the constellation Ara, or the Altar, can be partly seen. In England, as you can see by the position of the horizon of London, we not only see no part of this constellation, but a large part of the curved tail of Scorpio is hidden from our view. We see more, low down toward the north, than you do at the same time in America. But, on the whole, you have the advantage. For, while all the northern stars which we see in England at hours when they are invisible to you are at other times well seen by you, we never see the southern stars which are shown in the southern maps of this series as lying below the horizon of London. Thus, comparing London with New Orleans, a zone of the stars, about twenty-one degrees and a half in width (extending, in fact, from $38^{\circ} 26'$ south of the equator to $60^{\circ} 3'$ south) is visible from New Orleans beyond the portion of the heavens visible from London. This zone is equal in extent to more than a sixth part of the entire celestial sphere.

The constellation Ara, though now so far south that it cannot be seen from the latitude of Philadelphia, nor *entirely* from any latitude north of 29° S., belongs to the 48 of Ptolemy's time, and was formerly well raised above the horizon of places in latitude 40° S. That reeling of the earth, like a top, of which I have already spoken,—a movement having for its period nearly 25,900 years,—

has, within the last 4,000 years or so (the probable age of the old constellations), so shifted the position of the earth's axis in space,* that this constellation has been thrown out of view from places whence, at the beginning of these 4,000 years, it could be well seen. Probably it was some later astronomer, who had never seen this constellation, who first made the mistake of drawing it upside down. As the constellation was never seen except when due south, just above the horizon, it is certain that it must have been imagined, by those who formed it, as standing an upright altar in the south. But modern pictures draw it so that, at the only time when it was visible, it would have had to be imagined as having its top with the flaming wood upon it just touching the horizon, while its base would have been above. This is so absurd that I ventured, some eleven years ago, in a set of drawings of the constellation figures, to set the altar on its base again. I was confirmed in my opinion that this was right, by the fact that on the Farnese globe, and in a chart by Geruvigus (Harleian MS., '64) the altar is represented in this upright position. Besides, the old astronomical poet, Aratus, describes the Centaur as laying on the altar (not applying to its inverted base) the body of some beast unnamed,—the modern Lupus; while Manilius, a Latin poet (who wrote probably in the reign of Tiberius), speaks of the altar as "bear-



The Northern Sky at 10 P.M. July 22, at 9 P.M. Aug. 7, and at 8 P.M. Aug. 23

* The young reader must not here fall into the mistake of supposing that the position of the axis in the earth itself has changed in this way. This mistake is commonly made, and not by young learners, who may well be excused for falling into it, but by persons who suppose themselves in a position to teach. For instance: In Jules Verne's entertaining story, "Captain Hatteras," the following passage occurs, in which this error is introduced: "I told you," resumed the doctor, who took as much pleasure in giving as the others did in receiving instruction,— "I told you that the pole was motionless in comparison with the rest of the globe. Well, that is not quite true!" "What!" said Bell, "has that got to be taken back?" "Yes, Bell, the pole is not always exactly in the same place; formerly the North Star was farther from the celestial pole than it is now. So our pole has a certain motion; it describes a circle in about 26,000 years. This comes from the precession of the equinoxes, of which I shall speak soon." The actual effect of the precession of the equinoxes may be thus illustrated. Imagine a top shaped like a ball, spinning rapidly on its axis, and very slowly reeling, its axis being inclined about 23½ degrees from the vertical, or toward a point rather more than one fourth of the way from the point overhead toward the horizon. Let this spinning and reeling ball be carried around a much larger globe, glowing with light and heat, to represent the sun. Then, if the ball turns 365¼ times on its axis while it is going once around the large globe, and reels so slowly that it could be carried 25,868 times around the large globe in making a single complete reel, it would illustrate the earth's motion of rotating (or spinning) once a day, of revolution (or of being carried around the sun) once a year, and of precession (or reeling) once in 25,868 years. The poles of the earth no more change than the position of the axis of a top within the wood; but the pole of the heavens (that is, the point toward which the axis is directed) makes a circuit once in 25,868 years, just as the point of the sky toward which the axis of a top is directed circuits once around the point overhead in each reel of the top.

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can see how the smoke of the fire really is pictured by the Milky Way, when once the top of the altar is set toward α , or upward.

Overhead are the Lyre and Hercules; but neither is well placed for observation.

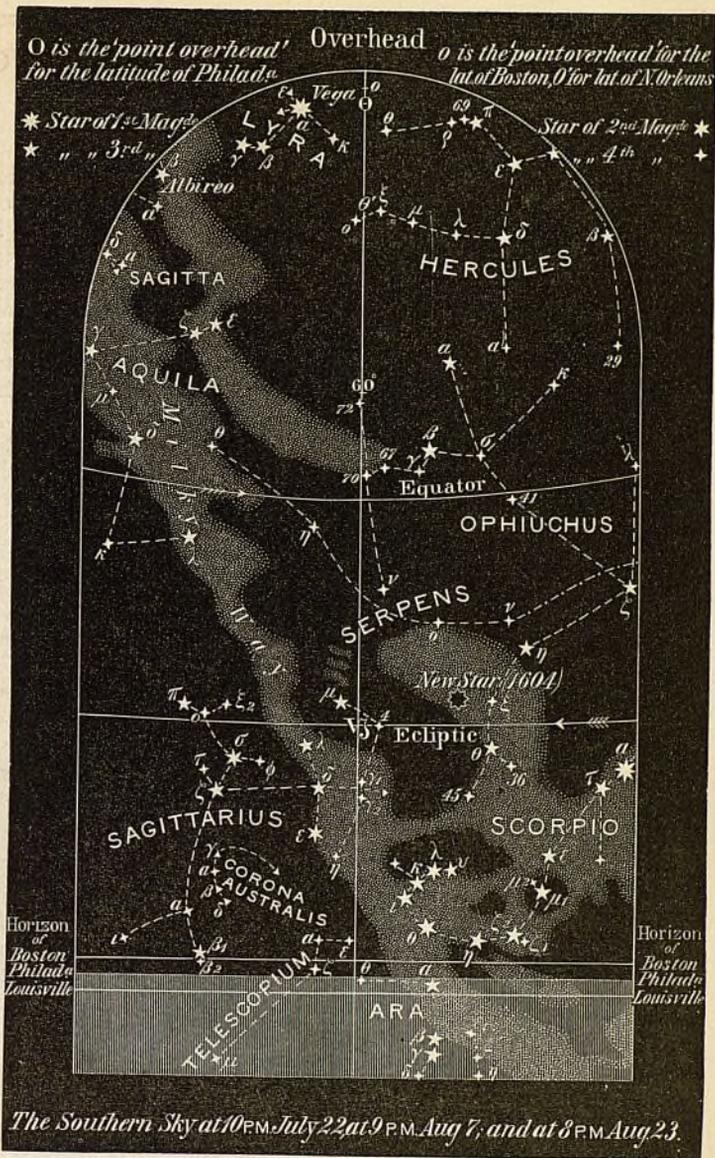
We have now reached the most southerly part of the ecliptic, marked by the symbol \cap , which indicates the point where the sun, moving in the direction shown by the arrow, enters the sign Capricornus, which he does on or about December 20.

The Milky Way toward the south at this season is well worth studying. It is strange when we look at those complex branches, loops, and curdling masses, to find most of our books of astronomy still asserting that the Milky Way is a faint stream of misty light circling the celestial sphere, and divided into two along half its length. Remembering, too, that the Milky Way is entirely made up of clustering stars, as sands on the sea-shore for multitude, each star being a sun glowing with its own inherent light and heat, startling thoughts are suggested respecting the immensity of the universe when we find *clouds* of these stars strewn through space.

Not far from the star ξ of Ophiuchus is shown the place where, in 1604, a new star appeared, which shone for a while more brightly than any of the fixed stars. "It was exactly," says the account, "like one of the

stars, except that, in the vividness of its luster and the quickness of its sparkling, it exceeded anything Kepler had ever seen before. It was every moment changing into some of the colors of the rainbow, as yellow, orange, purple, and red, though it was generally white when it was at some distance from the vapors of the horizon." These changes

of color were, of course, due entirely to our own air. Similar changes can always be seen in the color of a star shining near the horizon, as you can see by observing Antares. Kepler's star only preserved its full luster for about three weeks, after which it gradually grew fainter, until toward the end of 1605 it disappeared.



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A BOY'S LIFE ON A MAN-OF-WAR.

BY A NAVAL OFFICER.

A MAN-OF-WAR is a world of wonder and romance to a boy. Everything about it has a charm for him. The imposing hull, hundreds of feet long; the mazy net-work of rigging; the frowning battery; the officers, in trim, flashing uniforms, pacing the decks and giving orders to the active men,—these bring his curiosity and admiration to the highest pitch. In looking upon it all he feels that he would like to go with it to the ends of the earth.

It was a rare event in the life of the boy about whom I am to write, when he came to live on board such a ship. Unlike most boys in naval vessels, he was under no restraint, having no drudgery and but little work to do. His father, a captain in the navy, when ordered to command the ship, brought his little son with him to teach him the ways of sailor life. The boy was named after Admiral Porter, and he loved the sea.

The ship to which he came lay, at the time of this writing, in one of New England's most beautiful harbors. From the shore, she presented a fine appearance. Her freshly painted hull shone like enamel in the bright sunlight, and her yards and spars glistened almost like marble shafts. Sixty massive guns projected from her ports, and hundreds of officers and men filled her decks and rigging with life and movement. The American navy could boast of no more stanch and handsome frigate. Besides, she had a history. She was one of the ships present at the capture of Fort Fisher during the late war, when her bows were badly shattered. That she had been in battle, covered her with glory in the eyes of our young friend, and he stepped on board proudly and reverently.

Before many days, Porter had gained a good knowledge of the ship and of the routine of life on board, and had made many warm friends among the men. They explained the use of everything he saw, and told him such sea "yarns" as only old man-of-war's men can "spin." He followed the sailors aloft, and with the machinists and firemen visited strange depths, where he spent much time wondering at the huge machines and furnaces.

Dressed in woolen from head to foot, with not even a penknife in his pocket, he went into the magazine. In entering such a store-room of gunpowder, not even cotton clothes may be worn, and no metal in any shape is allowed about the person. The magazine was lighted from without by a lantern shining through thick glass. The powder was stowed in little closets on either side, so made that

in case of fire they could be flooded in a moment. Air-tight tanks contained in other tanks, with the spaces between lined with packing, held the powder. Had one of the tanks fallen into a moderate fire, it could have been easily gotten out before the flames should have reached the powder. The need of all this precaution was explained to Porter, and after this visit to the magazine he had but little wish to play with gunpowder.

It was not long before Porter could describe the different parts of a ship as easily as he could the



ON GUARD.

rooms of his father's house, and then he turned his attention to the men. On a man-of-war, the crew is arranged into divisions, watches, and messes, each man knowing to which he belongs, as well as a boy knows his classes in a school. It took Porter some time to learn these; but at length he became familiar with them all, and even knew the duties of the petty officers, from "Jack-of-the-dust" to the captain of the main-top.

So well were the men drilled that in the least possible time each one could be at his post. They had been trained so as to be ready for all sorts of

events. Sometimes, at night, the cry of fire would ring through the ship, and in a few moments every pump would be hard at work, and every pipe spouting water furiously. This was done to prepare the men for prompt action should a fire really break out. At other times the men would be aroused, at dead of night, to fight sham battles, and then volley after volley would shake the sea, and to vessels sailing near, a terrible sea-fight would seem to be taking place. Of course Porter joined in these occasions with the utmost enthusiasm.

Every war-vessel of any size has a marine-guard. The men making up this guard are sea-soldiers. They wear the uniform of United States' soldiers, but do duty in the navy. They are a dread to would-be mutineers; for in all their history marines have never been known to join in a mutiny. The showy appearance of these men, in full uniform, under the command of a dashing officer, captivated Porter's fancy, and he longed to join the guard. His father let him do this, had a little uniform made for him, and gave him a small rifle and a knapsack. Thus equipped, Porter proudly took his place in the ranks, as much according to regulation, as he thought, as any man of the company. No one ever told him that he was not regularly enlisted and actually in the United States' service.

In a few weeks, Porter could drill, and did well on parade. He insisted, from the first, upon being assigned to the usual duties of marines; and while at his post he was as grim as the oldest veteran, permitting no familiarity from any one—not even from lady friends who might come to visit the ship. Porter shirked no duty on account of its hardship. Indeed, he seemed rather proud of being called on to do hard or unpleasant work. On cold days he

would stand and drill, with only thin gloves to hold his rifle, and he would patrol the decks with his hands so numb that he could scarcely handle the weapon. Only when on the sick-list would he yield his place to a fellow-marine.

At times, some of the guard would come on board tipsy from "leave" ashore, and would have to sober off in the "brig"—the ship's prison. So, on one occasion, Porter feigned to be tipsy, claimed his right to be put in the brig, and was led to prison by the master-at-arms, while the crew pretended to be awfully shocked! On pay-days Porter would appear with the men to receive his month's "salary,"—ten silver dimes, which, in his eyes, counted as ten dollars. Part of his money went to pay his "mess-bill," and what remained went anyhow.

In one thing Porter greatly excelled,—true courage, and what always goes with it,—fortitude. Like other boys, he was always meeting with accidents. Once he fell overboard, and was rescued with difficulty; another time, he fell and broke his arm. Afterward, by exposure, he became very sick, so that his life was almost despaired of. Yet not a word of fear or complaint did he utter. One day, he cut three of his fingers so badly that the ship's surgeon at first thought they would have to be amputated. His mother and sister were much frightened, which seemed to move the boy a good deal, and, looking up to his father, he said, "This is no place for women, is it, papa?" And while the surgeon sewed up the wounds Porter did not even whimper.

For good conduct, Porter was promoted time after time, until now he is sergeant of marines and still actively employed on one of the finest ships in the American navy.

WHAT MADE MR. TOMPKINS LAUGH.

BY ABBY MORTON DIAZ.

ONE afternoon, when those funny little twins, the Jimmyjohns, were playing in the back yard, Mr. Doty—the funny man, as we sometimes call him—came jogging along. When he saw the little boys, he stopped and began to push his hat up on one side and to scratch his head, and to twinkle the corners of his eyes. Then he began:

"Oh! You're out here. So you are. What are you doing?"

"Making a flow," they answered, looking up from the mud and water in which they stood.

"Hem!—well—why don't you go somewhere?"

"Ma wont let us."

"Wont she? Oh! No she wont, will she? Well! Hem! Why don't you have a party?"

"'T is n't our birthday yet," cried Johnny, hopping up and down with the pump-handle.

"Well! Why not have a cocoa-nut party?"

"We have n't got any cocoa-nut."

"Oh, I'll find a cocoa-nut" (holding up one).

"See here! Where you going so fast?"

"To ask ma!" they shouted, running indoors.

The funny man's eyes twinkled, and up went his hand to scratch his head again. Presently they popped their heads out and asked:

"When shall we have it?"

"Have it now," said Mr. Doty.

"Have it now," they told their mother.

"Where?" asked Mrs. Plummer.

"She says, 'where?'" shouted the Jimmies.

"Out here on the grass," said Mr. Doty.

"Out here on the grass," the Jimmies repeated.

"Who's to be invited?" asked Mrs. Plummer.

"Who's to be invited?" asked the Jimmies.

"Invited? Well! Hem! Invite—anybody," said Mr. Doty. "I'll come; that makes one."

"And I'll make two!" cried Annetta, looking out of the window.

"What is it?—a party?" asked Hiram, stepping down from a high wood-pile with his long legs. "Oh, I'll come! I'll make three and a half! What kind of a party is it? A birthday party?"

"Oh no, indeed!" said Mr. Doty. "Nothing of that sort. 'T is a cocoa-nut party."

Just then, little Effie came trotting along with her arm-basket. Effie always carries her arm-basket. At meal-times it hangs on her chair; at night it is hung on a post of her crib.

"Can you come to our party?" asked Mr. Doty.

"No, I tant tum," said Effie, very soberly.

"What! Not come to a cocoa-nut party?" cried Hiram.

"No, I tant, tause my tittens' eyes have n't tum opened 'et," said Effie.

"Ask the Jimmyjohns to wait till your kittens' eyes come open," said Hiram.

Little Effie went close to the Jimmies, looked up in their faces, and said: "Dimmydons, will ou wait till my tittens' eyes tum opened?"

The Jimmies laughed; and so did another little fellow who was then coming out of the house. This was Clarence, a poor boy who came every day with his basket to get anything in the shape of food. Some people called him "the little gentleman," because he had very good manners.

"Do you want to stay to the party?" Mr. Doty asked Clarence.

"If the Jimmyjohns will let me," he said.

"Yes! yes! You may come!" they shouted.

"Can't cousin Floy be invited?" asked Annetta.

"She's here playing with me."

"By all means," said Hiram. "And there's Mr. Tompkins—may be he'll come to the party."

Mr. Tompkins, the lobster man, had dropped his wheelbarrow and come to look over the fence.

"Mr. Tompkins can't leave his lobsters," said Mr. Doty.

"Party? Yes, yes. Always go to parties. Boy'll

mind wheelbarrow," said Mr. Tompkins, in his short, quick way. "When is it going to begin?"

"Right off," said Mr. Doty.

"What do you do first?" asked Hiram.

"Set the table," said Mr. Doty.

"The girls must set the table," said Hiram.

"Where is it?" asked cousin Floy.

"There it is. Don't you see it?" Hiram was pointing to a wagon body which lay there without its wheels. He turned it upside down. "There's your table!" said he.

After the pieces of cocoa-nut were placed on the table, Mr. Doty told the Jimmyjohns to ask their ma if she did n't want to come to their party.

"I am longing to come," cried Mrs. Plummer, appearing at the door. "I have thought of nothing else ever since it was first mentioned. Would baby disturb the party, do you think?"

"Not at all," said Hiram. "Pray invite Josephus!" While waiting for a name to be given him, the baby was called "Josephus." He was a big, bouncing baby, with a big, round face.

"I wish some of you would be kind enough to bring him out," said Mrs. Plummer. "He is fastened in his straw chair."

"I will," said Hiram; "and I'll bring chairs."

Hiram brought out Josephus, then a rocking-chair, and then some common chairs for Mr. Doty and Mr. Tompkins. The children ran in for crickets. Caper capered after the Jimmies every step they took, and came near being trodden on.

There were seventeen sat down to table—twelve that were in plain sight, and five that could not be seen very plainly. The twelve who were in plain sight were Mr. Doty, Mr. Tompkins, Mrs. Plummer, Josephus, Hiram, cousin Floy, Annetta, Effie, Clarence, Jimmy, Johnny, and Caper. The five who could not be seen very plainly were the cat and her four kittens. These were invited on Effie's account, and came in their own private box.

Just as the cocoa-nut was being passed around, Mr. Plummer appeared. He was coming from the orchard, and asked what was going on.

"A party!" shouted the children.

"Well," said Mr. Plummer, "I must say that it is rather strange my not being invited!"

"Wont you come?" "Oh, do come!" the children called out.

"In my own yard, too! Very strange indeed!" said Mr. Plummer.

"But *wont* you come?"

"I have n't had any invitation."

"Take one!" "Do come!" they shouted.

Mr. Plummer laughed and went and sat down on a roller cart close by Josephus.

"Will the party be done right away after supper?" asked Hiram, as they all nibbled cocoa-nut.

"Oh, not so soon!" cried Annetta.

"It has n't lasted five minutes," said Mrs. Plummer.

"Play charades! Do! Please do!" cried Floy. "I went to a real party last night, and they played charades. One charade was 'Mother Goose.'"

"How do you play it?" asked Annetta.

"Oh, easy enough! Somebody has to be 'Mother,' and then somebody has to be 'Goose,' and then somebody has to be 'Mother Goose' and say, 'Sing song a sixpence, pocketful of rye.'"

"I speak not to be the 'Goose,'" cried Hiram.

"Who'll be 'Mother?'" asked cousin Floy.

"You be 'Mother,'" said Annetta.

"Well, I'll be 'Mother,'" said cousin Floy. "Who'll be my little girl? There must be a little girl to keep coming in and saying 'Mother,' and asking me for things."

"I'll be little girl!" said Hiram.

"Hoo, hoo! He, he! You don't know how! You're too tall!" shouted the children.

"Oh yes, I know how. Come, Floy, let's get ready." And away they went into the house.

In about three minutes, cousin Floy came out, dressed in Mrs. Plummer's things,—shawl, bonnet, and skirt,—and, with a serious face, took her seat in a chair which had been placed upon the wagon. Then came Hiram, with Floy's hat on—the elastic under his chin. For a sack he had turned his coat, which was lined with red, wrong side out; and he had pinned a shawl around his waist in a way which made it look like a dress-skirt.

Floy told him he must keep coming in to ask her something, and must call her "mother" every time. He did just as she had told him. He kept trotting out of the house and back, taking little, short steps, asking a question each time, and imitating the voice of a small child.

"Mother, may I have a cent?" "Mother, may I go out to play?" "Mother, may I wear my new shoes?" "Mother, may I make corn-balls?" "Mother, may I have a doughnut?"

At each question, the "Mother" would shake her head very soberly and say: "No, my daughter," or, "Not at present, my daughter."

"Good!" cried Mr. Tompkins. "Very good for 'Mother!' Now who's going to be 'Goose?'"

"I will," said Clarence.

"Come, then," said Floy. "If cousin Hiram will help me, I'll dress you up for 'Goose' the way they dressed up their 'Goose' last night."

Then they took an old light-colored calico dress of Mrs. Plummer's, and held it bottom up, and told Clarence to put his legs through the sleeves. Next they gathered the skirt around his neck, keeping his arms inside. Then they tied a thin pocket-handkerchief over his head, covering

face and all. Then they fastened a tin tunnel to the front side of his head, and called that the "bill of the goose;" and then pinned on two feather fans, for wings. Floy told him he must stoop over, and go waddling around, pecking with his bill like a goose.

The instant the "Goose" appeared, all the people began to laugh; and when they saw it waddling around in the grass, pecking with its bill as if it were pecking at little bugs, they fairly shouted: "Oh, what a goose! Oh, what a goose!" Josephus shouted, too, and made his feet fly, and his hands fly, and patted cakes enough for his supper. Caper barked, and ran this way and that way, keeping away from the "goose," though.

The next thing was to put the two words together, and act "Mother Goose."

"Mr. Tompkins," said Mr. Doty, "why don't you be 'Mother Goose?'"

"I don't believe Mr. Tompkins could keep from laughing," said Hiram.

"Oh yes, I could; I could keep from laughing," said Mr. Tompkins, "but my nose is too short."

"That Mother Goose's nose last night," said Floy, "had wax on it, to make it long."

"Nice way that," said Hiram. "But, Mr. Tompkins, are you sure you can keep from laughing?"

Hiram had a reason for asking this question.

"Oh yes, perfectly! Perfectly sure," said Mr. Tompkins. "Make me laugh, I'll pay forfeit."

Mr. Tompkins was so eager to show that he could keep from laughing, that he agreed to pay any kind of forfeit, and to dress in any kind of way.

Hiram dressed him. First, he lengthened out his nose with a piece of warm wax. Then he tied a handkerchief over his head for a cap. For a cap-border he pinned on some strips of newspaper, in great clumsy plaits; and then he put a large, round cape over his shoulders. A black shawl served for a skirt. When all this was done, he told Mr. Tompkins that he might sit down and wait a few moments. He had a reason for telling him that.

Cousin Floy, a little while before, when the "Goose" was being dressed, told Hiram of a way by which one of the actors was made to laugh at the "real party" she went to; and Hiram thought it would be fun to try it with Mr. Tompkins.

So, while Mr. Tompkins was sitting down to wait a few moments, they got a pillow and dressed it up to look like an old woman. First, they tied a string around the pillow, near one end, to make a head. On one side of this head they marked eyes, nose and mouth with a piece of charcoal. Then they took a waterproof, stuffed out the sleeves, for arms, and put that on. Then they went up into grandma Plummer's room and borrowed an old cap, black bonnet, and spectacles, and put those on.

When the pillow-woman was ready, Floy ran and told them all to be sure and not laugh loudly when they saw what was coming, for fear Mr. Tompkins might hear them. The pillow-woman was then taken out by Hiram, and seated in a chair among the other people. He introduced her to them as "Mrs. Mulligachunk." He pinned together the wrists of her stuffed arms, and let them drop in her lap, and placed a bundle on them, to cover the place where there should have been hands. The bundle was tied up in a handkerchief. Then he stood an umbrella by her side, and tipped her head back just a little, so that when Mr. Tompkins should be standing on the wagon, she would appear to be looking him in the face.

"Come, Mother Goose!" cried Hiram; and Mr. Tompkins, in his funny rig, walked from the house, took his stand upon the wagon, and, with a very sober face, began:

"Sing song a sixpence, pocketful of rye,
Four and twenty blackbirds baked into a pie.
When the pie was opened, the birds be—"

At that moment his eye fell upon "Mrs. Mulligachunk." There she sat, in a row with the others, and seemed to be listening just the same as anybody. Mr. Tompkins stopped. The people, who were all on the watch, burst out laughing, and he had to laugh, too, in spite of all he could do.

Hiram sprang up. "Mother Goose," cried he, "let me introduce you to Mrs. Mulligachunk!"

Mother Goose replied by taking off her things and throwing them at Mrs. Mulligachunk.

Then Hiram asked the Jimmies if they did not want to take Mrs. Mulligachunk to ride.

"Yes, yes!" "Yes, yes!" they shouted.

Hiram then put Mrs. Mulligachunk into the roller cart—bundle, umbrella, and all. The Jimmies caught hold of the handle, and away they ran, like two smart little ponies, Caper barking behind with all his might.

Mr. Tompkins was about to follow, when Annetta and cousin Floy suddenly called out, "Forfeit! forfeit! You'll have to be judged!"

Mr. Tompkins gave his penknife for a forfeit.

"Then judge me quick!" said Mr. Tompkins. "I've been here 'most half an hour, now!"

"To dance a jig!" cried Hiram.

"To tell a story!" cried cousin Floy.

"Yes, yes! That's it!" cried Annetta.

"Oh no! No, no! Take too long!" said Mr. Tompkins.

But Mr. Plummer and Mrs. Plummer, and all the rest, kept shouting, "Story! story! story!"

"Well, well; story 't is!" said Mr. Tompkins. "But a small one, though."

And then Mr. Tompkins began to tell a small story about a hen named Tudleroodlum, who lived in a far-away country, the name of which country was so strange that not one of the people could remember it five minutes afterward. Next month you shall have Mr. Tompkins's story.

GOING A-GYPSYING.

BY JOHN H. PEEL.

AT some time in his boy-life, everybody who has the true boy-spirit yearns to go on a tramp—or, as the newspapers say, to "undertake a pedestrian excursion." The free, airy, changeful life, with its risks, its joys, and its hardships, has a wonderful charm. If wisely set about, it will bring rest, health, good temper, and a wider mental outlook, and teach one the luxury of doing for one's self and standing alone.

But, of course, one can blunder in this as in most other matters that at first sight seem simple. So ST. NICHOLAS would offer a few hints about walking-tours, suggesting how to make them most easy and profitable.

The first thing to be done in planning a gypsy trip is to choose the kind of country and the season

you can enjoy most. Then decide whether to tramp with your baggage on your own back or to be drawn in a horse-wagon; whether to camp in one spot, or move from place to place; and whether to spend much money or little. If the party is large, or contains ladies and little ones, the very best thing to be done is to study Mr. Gould's new book, "How to Camp Out."* This will give you all the hints, advice and caution you are likely to need. We now can treat only the question of walking-tours for parties of six or seven young men, about twenty years of age or younger.

It must be taken for granted that the company is made up of good-humored persons, that maps of the route have been studied thoroughly, that the leader's word is law, and that each comrade will

* How to Camp Out. By John M. Gould. Scribner, Armstrong & Co., N. Y.

give up his own wishes and comfort for the good of all. The captain will try to set each man at the work he can do best. At first, things may not run smoothly; but, in a day or two, everybody will have found his place, and will have learned to do his own "chores" first and then help, rather than find fault with, his comrades. So much in a general way.

It will be safer on a first tramp to choose a country fairly well settled, and, in any case, a company setting out to cook its own meals and do its own work must be sure that food can be brought along the route.

CLOTHING.

This is a rare chance to wear out old outer clothes before throwing them away. Long, loose woolen shirts, with collar-bands of silesia on which separate woolen collars can be buttoned, are the best; wear one, and carry one or two more, for change and to wear double in cold spells. Use loose woolen drawers, worn inside out to keep the seams from chafing you, and shoes that lace up well above the ankles and have been thoroughly treated with neat's-foot oil. Let them have iron, not steel, nails. Use false soles, if you like, and wear socks or stockings of wool or merino rather than of cotton. Pantaloon should be loose, high at the waist, and of rather heavy cloth. If you have been in the habit of wearing suspenders, don't leave them off now; you can hide them very well by passing them through holes cut low down in the outside shirt. Wear what you please, if it be comfortable and will last, and do not be worried at what "people" say.

THE PACK.

Don't try to carry more than twenty pounds apiece, or to go more than ten miles a day on foot. This is fully hard enough work if you wish to enjoy yourself without risk of illness. You will find the "roll" better than the knapsack in the long run, and it is lighter by at least two pounds and a half. To make the roll, lay out the blanket flat, and roll it as tightly as possible without folding it, putting in the other baggage as you roll; tie it in several places, to prevent unrolling and the shifting of the things inside, and tie or strap the ends together. Wear the ring thus made as shown in



THE PACK.

the picture. You may find it better to fold the rubber blanket about the roll, or roll it by itself so as to carry it linked in the other roll; you may need it before camping, and will thus save undoing the big roll.

The roll is easier to carry than is the knapsack, and is readily shifted from shoulder to shoulder or taken off; then, too, you can ease the burden a little with your hand. Beside this, you save carrying the weight of the knapsack. But, if you take a knapsack, let it have broad straps. A haversack of course you must have.

Beside a rubber blanket, half a shelter tent, and ropes, you must have a good stout woolen blanket, with a lining sewed to it along one side but buttoned on at the ends and other side. You can dry it, when wet, better than if it were sewed all around.

The items of personal baggage are as follows:

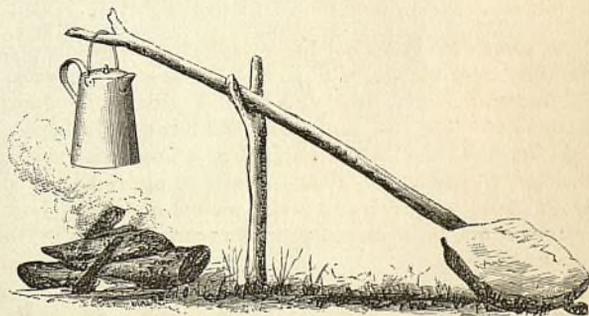
Rubber Blanket	2½	pounds
Woolen Blanket and lining	4½	"
Haversack and Canteen	1½	"
Drawers, spare Shirt, Socks and Collars	2	"
Half a Shelter-tent, and ropes	2	"
Towel, Soap, Comb, Tooth-brush, Salve, } air-tight Match-safe, Knife, Fork, Spoon, } Dipper, Stationery, a good Book, etc. }	2½	"
Food for one day	3	"
	18	"

Beside these, each must carry his share of the company baggage:

Frying-pan, Coffee-pot, and Pail	3	pounds
Hatchet, Tent-pins, Sheath-knife, case and belt ..	4	"
Clothes-brush, Mosquito-netting, Strings, Maps, } Guide-books, Compass, Song-book	2	"
	10	"

COOKING.

You can do a great deal of good cooking with a frying-pan and a coffee-pot, after a little experience. Have a coffee-pot with a bail as well as a handle, and with a lip rather than with a spout. Of course you will know enough not to put your pot or pan on the burning wood, and not to use pitchy fuel or



THE MODE OF BOILING THE COFFEE.

let the handles get hot or smutty. Study a good cook-book, and practice well at home as long as you can before starting, or you may have to go hungry when you least expect it.

You will have to guard the food you carry, from rain, fog, dew, cats, dogs, and insects; and you will find it best to clean your cooking utensils at once after every use you make of them.

THE MARCH.

Start a short time after breakfast, while the day is yet young and cool, but don't hurry or work hard at it. On the march, it is well to rest often for short spells, say ten minutes out of every hour. Drink good water as often as you feel thirsty, only don't take large draughts of *cold* water when you are heated, and bear in mind that often you can stop thirst by merely rinsing the mouth.

Bathing while upon the march is not good if you are tired or have much farther to go. Oil or salve, before starting, the parts of the skin reached by sun and air; and, to prevent foot-soreness, treat the feet plentifully in the same way, and keep them thoroughly clean. Eat laxative foods the first few days, but don't dose with medicine. Take time, be cheerful, "take it easy," and you will keep well. Alcoholic liquors will leave you in bad condition, if used; you will find coffee or tea far better.

Let each comrade end his morning nap. Avoid nonsensical waste of strength and gymnastic feats, before and during the march; and play no practical jokes that will make the day's work more burdensome.

THE CAMP.

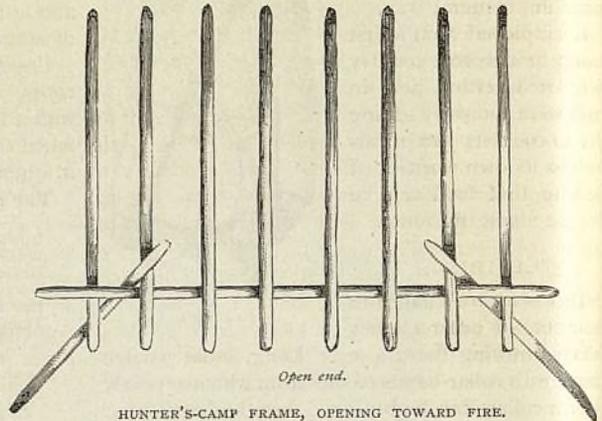
Camp in a dry spot near wood and water. If you have a good axe-man in the party, he will know how to use the hint given in the sketch of a simple hunter's-camp frame. The easiest tent to carry, and perhaps the best in the long run, is the army shelter-tent shown in the engraving. Each man carries half the tent; the pieces are joined with holes and buttons along two corresponding sides, and the tent, when set up as sketched, is five feet and two inches long, by six to seven feet wide. A third man could button his piece across one of the open ends; four men could join two tents at the ends; and a fifth man could

add an end piece. The sharper the angle at which the sides are pitched, the better will the tent shed rain.

GENERAL NOTES.

Never sit still when wet; in changing, rub the body dry; and off with muddy boots and sodden socks at once. Don't bathe after a full meal, or when very warm; and in drinking at a brook on

Ends of stakes that are thrust in earth.

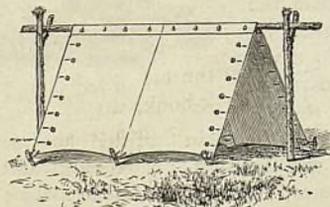


HUNTER'S-CAMP FRAME, OPENING TOWARD FIRE.

the march, wet the face and hands, and taste the water, before taking a full draught. In walking under a hot sun, put green leaves or grass in the hat; wet them if you like, but not so that the water will drop about the ears. At the first sign of dizziness, stop; get into the shade, if possible; bathe the head, face, chest, neck and hands, and rest until the cool of the day. Always have something to eat in your haversack, and never risk starvation on any account.

Be polite to all you meet; don't let any one cheat you at a bargain, and don't take undue advantage yourself. There is no reason why a party of young fellows on a gypsying trip should not be manly and courteous.

The foregoing hints are as full as space allows; but any reader who wishes ampler advice, can readily find it in Mr. Gould's book, already referred to, from which we have been permitted to borrow freely in the present article.



SHELTER-TENT.

GEORGE THE THIRD.

BY NOAH BROOKS.

ONE fine October morning, in the year 1760, a young English prince set out for a horseback ride near Kew. Presently a messenger came riding after him bringing a note from a German valet who was employed in the palace of the king. The young prince checked his horse, opened the note, read it without showing any sign of emotion, and rode on for a space. Then, declaring that his horse was lame, he turned and rode back to Kew. Dismounting, he said to his groom, who had appeared to doubt the lameness of the steed: "I have said this horse is lame; I forbid you to say to the contrary."

This was George, Prince of Wales. The note brought to him was about an affair of no moment, but it bore a private mark, previously agreed upon, which told him that the king, his grandfather, was dead. So, George, Prince of Wales, was now George III., King of England. His father, son of George II., was long since dead. The young prince had been brought up very strictly by his mother; a hard, cold, and ambitious woman, who had taught him that princes must not show themselves moved by the same emotions which sway other people. So, when he learned in this irregular way that he was King of England, he doubtless enjoyed secretly his early knowledge of that great fact, but gave no sign of his thoughts to those about him. And when due proclamation of the death of George II. came to him, he was, if possible, more than ever princely in his outward indifference to the sudden, but not unexpected, change in his state and condition.

At this time George was twenty-two years old. He had a pleasant and genial countenance, and his portrait, taken about that period, herewith printed for the readers of ST. NICHOLAS, gives one rather a favorable impression of the young king. In spite of his big cocked hat, comical wig, and gold lace, he looks like a very pleasant fellow. It was said of him by "a noble lord of high degree," who knew him well, that he was "strictly honest, but wanting in that frank and open behavior which makes honesty appear amiable." The same authority says that he had "great command of his passions, and seldom did wrong except when he mistook wrong for right." The bright readers of this page will see that Lord Waldegrave did not over-praise the young king. Indeed, these few words of his give us a key to the character of George III.,

whom our forefathers so cordially detested as an obstinate and wrong-headed tyrant.

George desired to be married before his coronation. So a confidential agent was sent about among the Protestant courts of Europe seeking for a suitable princess. It was forbidden that he should take to wife any but a Protestant; accordingly, the choice of eligible young princesses was, as now, somewhat limited. In the list of names brought back to the king was that of the Princess Charlotte of Mecklenburg-Strelitz. This young lady once had written a letter to Frederick of Prussia, complaining of the ravages which his troops were committing in the territory of her cousin, the Duke of Mecklenburg-Schwerin. The letter, which depicted the horrors of war and the blessings of peace, with all the ardor of a girl of sixteen, mightily tickled Frederick. He sent it to George II., grandfather of the young prince who afterward succeeded him. The letter then fell into the hands of George, and made such an impression on him that when he found Charlotte's name in the list recommended to him, he declared that her only would he wed.

It is related that the Princess Charlotte was one day amusing herself in the palace garden at Mecklenburg-Strelitz with her young companions. Singularly enough, these girls were talking about marriage. Charlotte said: "But who would take such a poor little princess as I?" Just then the postman's horn was sounded, and Ida von Bulow said: "Princess, there is the sweetheart!" Sure enough, it was a letter from the handsome young King of England, saying to Charlotte that because she had written such a beautiful composition the king must have her for his wife. It was like a fairy tale. We can imagine how joyfully the little maid packed up her wardrobe and sailed away to England in the royal yacht, surrounded by a grand fleet of ships-of-war. Her voyage was a great event for England, as well as for her; and so much anxiety was felt about it, that the king desired a notable physician to compound such remedies for sea-sickness as were deemed of high merit. For it is recorded that the future queen-consort was deathly sick when on salt water. One of these recipes was printed not long ago. If Charlotte's attendants followed directions, she must have dieted on cardamom seeds, cloves, anise, ambergris, and a great variety of high-flavored things. Historical gossips



GEORGE THE THIRD.

insist that King George winced a little when he saw his bride. She was small and very plain. He beheld her first when she arrived at St. James's Palace, September 8th, 1761. They were married that afternoon, and on the 22d of the same month they were crowned with great pomp and ceremony. The "poor little princess" lived to be a very precise, exacting, and ceremonious queen. For fifty-seven years was she queen-consort, and, during her after-life, she demanded all the homage and

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strict etiquette due to one born to the throne. Once, on the occasion of a royal christening, word was brought to her that an aged and titled lady, who held the babe, was so fatigued with standing that she desired to be allowed to be relieved. "Let her stand," said the rigid little queen, who, herself, would have died rather than abate one jot or tittle of the royal rules.

Nevertheless, the family life of this couple was plain and simple. We get some edifying glimpses of it in the diary of Miss Burney. This young lady, who was the friend of Dr. Johnson, Mrs. Thrale, and other famous people of those times, made for herself much reputation by writing several novels. Stupid reading we should now consider them; but London was wild over her "Evelina" and "Cecilia." So it was thought a good thing to honor such genius by giving her a place in the royal household. To her fond father this was like calling her into a sort of heaven. The poor little girl found it a tiresome and dull captivity. She tells us of the early hours and punctual habits of the king and queen. They had their little country dances, card-parties and tea-drinkings, to which a few favored mortals were invited. It was tragically whispered about that the queen was of a frugal mind, and sometimes the guests grumbled because they had no supper. But the king enjoyed himself, and he and Charlotte used to go about among the neighboring villages, when they lived at Kew or Weymouth, and behave very much like common people, for all their royal state. On one occasion they met a youthful son of one of the royal retainers.

"Whose little boy are you?" asked the king.

"I am the king's beefeater's little boy," said the lad, who doubtless thought himself a much more important personage than the strange gentleman before himself.

"Then kneel down and kiss the queen's hand," was the royal command.

"No," stoutly said the candid infant beefeater, "I wont kneel, for if I do I shall spoil my new breeches."

At another time, the king took refuge from the rain in the cottage of an old woman. She, darkly ignorant of his high quality, left him to turn a piece of meat which hung by a string before the fire. When she returned, the king was gone, but he had left some money inclosed in a note in which he had scribbled, "Five guineas to buy a jack," that useful article of domestic furniture being in his opinion a more labor-saving contrivance than a string. In the same fashion he poked his nose into the cottage kitchens; asked how the apple could possibly get inside the dumpling; and inquired about the prices of turnips, beef, and hay, and the rates of rent. There was nothing too

small to interest him. He knew all the common folk about Windsor; all the family history of the nobility and gentry; all the traits of the bishops and clergy; how many buttons and how much braid each officer in his army and navy was allowed, and what was the pay of the highest functionary or the lowest servant in the royal establishment.

For one, I love to think of the pure and simple life of George III. As kings go, he was decent, reputable, and well disposed. His palace life must have been dreary and humdrum to the last degree; but it was clean and wholesome, which cannot be said of the life of some of the kings and princes who came before him, or who have lived in England since his day. His daughters were handsome and accomplished: that is to say, they played the piano, worked elegantly in floss silks, painted impossible flowers on white satin, and furnished whole suites of rooms with their own needlework. The sons were big, rough, unmannerly, and much given to rude sports. Of these the king loved Frederick, the Duke of York, the best; and when York visited Weymouth, where the king was living for a while, a portable house was built for him close by his father's. The fond father clung to the arm of his dear Frederick, but the boisterous young prince was stupefied by the dullness of the little court circle: he broke away and fled, after staying only one night in the house which his father had been at such pains to provide. The Princess Amelia was her father's darling, and in all the history of George there is no more pathetic picture than that of her sickness and early death. When her father was old and blind, she was attacked by a lingering illness. The poor, sightless monarch spent hours by her bedside, passing his fingers, from time to time, over her face, as if to assure himself that she was there. She loved him with unalterable affection when he was deserted by others, and on her death-bed he was more than ever assured that she loved him for himself alone. A touching sight it was when the king, one gloomy day, told of the death of Amelia, threw up his clasped hands and cried: "It is too much. This was caused by poor Amelia;" and so parted in agony from his reason.

This is a dark picture. We like better to think of the charming little princess in her father's arms, prattling and smiling as he walked up and down the grand saloons at Windsor. Or we may fancy her at the head of a royal procession, which Fanny Burney describes, when the family took an after-dinner walk on Windsor terrace,—"the little princess, just turned of three years old, in a robe-coat covered with fine muslin, a dressed close cap, white gloves and fan," as says Miss Burney. "She walked on alone and first, highly delighted with the parade, and turning from side to side to see

everybody as she passed; for all the terracers stand up against the wall to make a clear passage for the royal family the moment they come in sight. Then followed the king and queen, no less delighted with the joy of their little darling." This is a bright glimpse into the life of the king who, years before, sent what seemed a fairy postman to ask the hand of the "poor little princess" in the garden of Mecklenburg-Strelitz.

To set forth, in the briefest possible space, the chief events of the reign of George III., would be to write out, as it were, the headings of many important chapters of English history. During his time the star of Napoleon flashed like a baleful meteor in the skies of Europe, wavered, and went out in darkness. During his time the royal power of England had a sharp contest with the aristocracy; and during his time, too, the peace of England was put in danger by a persistent refusal of the Catholic claim for emancipation. To us Americans the reign of George III. is forever memorable as that during which we gained our independence. The king steadfastly refused to change the policy which wrought so much wretchedness in the American colonies. He would hear no counsel from those who believed that his system of taxation was oppressive, and sure to result in rebellion. He firmly believed that only worthless people sympathized with the American colonists. He was a fine illustration of the truth of the saying of Thackeray, that nine-tenths of the tyranny of this world is perpetrated by people who believe themselves to be in the right.

In his earlier years George had so commended himself to the people of New York that they set up in his honor a leaden equestrian statue of him in the Bowling Green, near the foot of Broadway. When the king's obstinacy finally provoked the colonists to wrath, they overturned this statue with great derision. Man and horse were cut up and melted into bullets; and these were fired into the king's troops in the hot struggle which soon came thereafter. You will find, however, a portion of the king's leaden saddle in the museum of the New York Historical Society; and it is said that one of the royal ears was carried off by a bold rebel lad who lived in New Jersey. So King George disappeared utterly from this country. In 1812-15, while the king was in his dotage, England had a second war with America, during which a disgraceful

attack was made on Washington. Later, the battle of New Orleans was fought. So we have abundant reason to remember obstinate King George III. and his ministers, Bute, North, Liverpool, and Castlereagh.

But we like far better to recall the crowd of illustrious names adorning the long reign of King George III., and in whose fame all English-speaking people have some share. Of the poets of that period we must remember Cowper, Crabbe, Burns, Wordsworth, Southey, Coleridge, Scott, Byron, Shelley, Keats, Campbell, Leigh Hunt, Rogers, and Moore. Then, too, flourished such novelists as Godwin, Burney, and Scott—the long-mysterious "Wizard of the North." Of other famous men there were Herschell, Davy, Wollaston, Johnson, Flaxman, Charles Lamb, Hazlitt, Chantrey, Benjamin West, Copley, Wilkie, Haydon, Bewick, and a host of others eminent in art, literature, science, and war.

The life of George III. was clouded with insanity. He was first attacked by this terrible malady when he was twenty-seven years old. This soon passed away; but, in 1788, when he was about fifty years of age, he was again prostrated. It is sorrowful to read of the madness of a king; it is pathetic to look at the few pictures of this portion of the life of George III. which history gives us. He barked and howled like a dog, attempted to throw himself from the windows of the palace, and was so violent that it was necessary to put him in confinement. He recovered his reason, and was again and again smitten with madness. At last he became a confirmed maniac, and during the last ten years of his life, his son George, Prince of Wales—afterward George IV.—was regent, or temporary king. Confined in a padded room in Windsor Castle, the old king passed his years, blind, deaf, deprived of reason, and shut out from all the pleasures of this beautiful world. Charlotte, his queen, and big Frederick of York, his beloved son, died without his knowing it; and still he lived on until January 29, 1820, when the great bell of St. Paul's, booming out on the air of the winter night, told the awe-struck people of London that George III., after a reign of nearly sixty years, was dead. The handsome young prince, who came to the throne when just turned of twenty-two, endured through nearly four ordinary generations of men, and passed away in his eighty-second year.

DUMB ORATOR.

BY C. P. CRANCH.

SOME people are so hard to take
A joke, I should n't wonder
If every jest and pun you made
Appeared a sort of blunder.

At Farmer Brewster's once I met
A party of grave people,
Each sitting stiffly in a chair,
As prim as a church steeple.

All seemed to be afraid to smile,
Much more be caught a-laughing.
Their faces made me think, "What fun
To do their photographing!"

"Agreed," said I. "But I would speak
'Marco Bozzaris' rather.
They'd think your gestures ridiculed
The pious Pilgrim Father."

So 't was agreed, and so announced.
We took our corner station.
He sat behind, I stood in front,
And made my peroration.

His hands beneath my shoulders peeped,
Queer as a spirit-rapper's,
And moved as if they were a sort
Of human penguin-flappers.



"I DID MY PRETTIEST TO DECLAIM."

The evening grew so long, so dull,—
No music, song, or talking,—
I whispered Spriggs, who came with me:
"I say, Ned, let's be walking!"

Said Spriggs, "Don't go; we'll have some fun
Better than 'crops and weather,'
For I'll propose that we shall act
Dumb-Orator together.

"You'll make the speech, the gestures I,
Up in this corner standing;
They'll surely laugh to see my hands.
Give them 'The Pilgrims' Landing.'"

"At midnight, in his guarded tent,"
And so forth—you all know it.
I did my prettiest to declaim
The verses of the poet.

Meanwhile Spriggs, underneath the cloak,
His funniest gestures showing,—
I scarce could keep my countenance
To see those fingers going.

But not a laugh in all the crowd;
They stared and smiled in pity.
'T was plain we had not made a hit,—
We fellows from the city.

And when we left our corner there,
Perspiring with exertion,
Our unappreciated fun
Received a cold immersion.

Then Spriggs and I together laid
Our heads in some confusion,
Quite disappointed and abashed,
And came to this conclusion:

That I should speak again—*alone*,
With gestures gravely suited.
And so I did. And as I closed,
Applause my ears saluted.

Then some one said, "Miss Sarah Jane,
D'ye think them speeches clever?"

"The first," says she, "I did n't like.
Such gestures! No, I *never*!

"All up and down, and fingers spread,
And playin' with his collar!
Fumblin' his handkerchief and watch!
Does that become a scholar?"

"It did n't suit the speech at all.
The second one was better.
He fitted, as the deacon says,
The spirit to the letter."

So when you joke, there will be folks
Suspect the craft you sail in.
They *will* not feel the point, although
You drive it like a nail in.

THE GIANT PLANET JUPITER.

BY RICHARD A. PROCTOR.

WE have been rather fortunate, so far, in our monthly observation of the stars, in having had no planets (at least none of any brightness) in the parts of the heavens which we have been examining. Even the eastern and western skies, toward which we have not specially turned our gaze, have been free, at the hours chosen for our survey, from conspicuous planets. So that none of my young friends have had occasion to ask why some bright orb in the sky has been left out, apparently, from the monthly maps and descriptions of the heavens. This month, and hereafter for several months, the planets will come more into our field of vision; and I think it will be well for me, when this happens, to show where they are. My readers will thus not only learn the stars, and the seeming daily and yearly motions of the stars, but also the planets and those strange movements from which the planets derive their names,—the word planet being derived from a Greek verb, signifying "to wander."

In passing, I may notice the strange mistake, often made in works of fiction, of describing the sky at night as though the planets could always be seen. Mr. Hepworth Dixon has recently written a novel,—his first, I believe,—in which the hero and heroine count the planets and watch the planets at all sorts of times and seasons, as though it were

the business of all the planets to shine all night and every night, whereas one seldom sees more than two or three planets at a time; and often no planet can be seen. I may remark, also, that we owe to Pope, and not to Homer, the errors in that most incorrect description of night in Pope's "Homer's Iliad":

"As when the moon, refulgent lamp of night!
O'er heaven's clear azure spreads her sacred light,
When not a breath disturbs the deep serene,
And not a cloud o'ercasts the solemn scene;
Around her throne the vivid planets roll,
And stars unnumber'd gild the glowing pole;
O'er the dark trees a yellower verdure shed,
And tip with silver every mountain's shed.
Then shine the vales, the rocks in prospect rise,
A flood of glory bursts from all the skies."

There is not a word in the original about the planets; nor, assuredly, did Homer cause the stars either to gild the pole, or to silver the mountains' heads. Tennyson's translation is far more correct, and (naturally) far more beautiful:

"As when in heaven the stars about the moon
Look beautiful, when all the winds are laid,
And every height comes out, and jutting peak
And valley, and the immeasurable heavens
Break open to their highest, and all the stars
Shine —"

The planet which adds at present to the glories of the southern skies, and (as mentioned last month)

has for some few weeks past been conspicuous in the heavens, is Jupiter. His path during the year is shown in the accompanying map (Fig. 1). Only, as you will easily understand if you consider that the part of the heavens shown in the map, now nearly *opposite* the sun, was in January, and will again be in December, *close by* the sun, the planet could not be seen as it traversed the parts of its path on the right and left of the map. He was lost in the greater glory of the sun. Jupiter began to be visible as a morning star in the spring, traveling onward over the starry sky to the place marked for April 20. That was what is called his stationary point (or sometimes it is called the *first station*). Since

19, when he was exactly opposite the sun, and came to the south at midnight. I will not here explain how these peculiarities of his motion, and his changes of seeming brightness, are brought about,—because, to do so, I should want more space than could well be spared. Nor will I show in a picture the size of Jupiter's path; because I think the nature of the planets' paths would best be shown in a picture giving all the paths; and for this, with the necessary explanation, there is not room here. I may perhaps mention, that in a little book of mine called "Elementary Lessons in Astronomy," written specially for young learners of astronomy, the scale of the planets' paths is

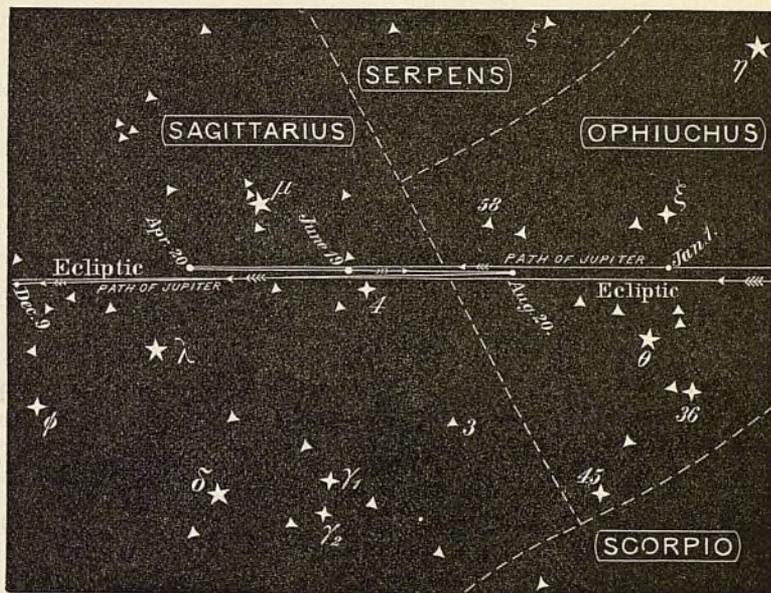


FIG. 1.—THE PATH OF JUPITER.

then, he has been traveling toward the place marked for August 20, where he will again be stationary, that being his second station. During this part of his course he is traveling backward, the arrows on the ecliptic showing the direction of the sun's advance along that track, and the *general* direction of the planets' motion. Only, they do not, like the sun and moon, advance constantly, but, as you see illustrated this year in Jupiter's case, they alternately advance, retreat (over a short arc), then advance again,—or, as Milton poetically expresses all the peculiarities of planetary motion, they pursue

"Their wand'ring course, now high, now low, then hid,
Progressive, retrograde, or standing still."*

Jupiter was at his brightest on the night of June

shown and described. Let us turn to the planet itself.

Jupiter is the fifth of the great planets in order of distance from the sun; our earth being the third. Mercury is the first, traveling nearest to the sun. Venus, which I described a few months ago, is the second, and travels inside the earth's path. Next outside the earth's path is that of Mars. Outside his track there come the paths of a number of very small planets traveling in a ring around the sun. More than 170 of these have already been discovered; but all these together (besides hundreds more of the family not yet discovered) do not weigh so much as the tenth of our earth. Outside this family of many congregated planets, all together scarcely enough to make a single

* Milton adds, that "in six" planets these motions are seen,—"what if seventh to these,—the planet Earth, etc.?" But the description is only true of five bodies known in his time, viz: Mercury, Venus, Mars, Jupiter, and Saturn. The moon, the sixth planet of the Copernican system, is always progressive, never retrograde or standing still.

respectable planet, comes Jupiter, outweighing not only all these,—not only these with our earth, Mars, Venus, and Mercury thrown in,—but all the other planets taken together, no less than two and a half times. Yes; if Venus and Mars, Terra and Mer-

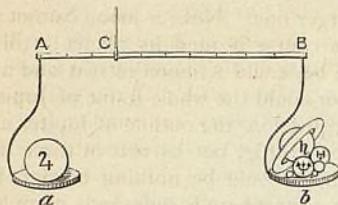


FIG. 2.

cury, Saturn, Uranus, and Neptune, could all be put in the scale *b* of a mighty balance, as in Fig. 2, and Jupiter in the other scale, *a*, the arm *C B*, carrying the scale *b*, would have to be two and a half times as long as the arm *A C*, carrying the scale *a*, in order that the weights should balance each other. (I do not know where the experiment could be tried, unless on the sun; but without trying it, you may rest assured that the fact is so; for there are few things about which astronomers are more exactly informed than about the relative weights of all the chief planets.)

Jupiter exceeds our earth 300 times in mass or quantity of matter. But, enormous though this excess of mass may seem, it is small compared with his excess of size; for he exceeds the earth 1,233 times in volume. It is only because he travels so much farther away than either Venus or Mars, that he appears less bright than Venus, and not many times brighter than Mars. For these two planets are utterly insignificant compared with him, both in size and mass. But he travels more than five times farther from the sun than the earth goes, so that even at his nearest and brightest, his distance from us exceeds four times our distance from the sun; whereas, when Mars is at his nearest, his distance from us is not much more than one-third of our distance from the sun.

It was formerly thought, or rather it was formerly said in the books, that Jupiter is a planet like our earth; but when we think about all that has become known to us respecting this giant planet, we find strong reasons for believing that he is in quite a different state.

In the first place, it is now known almost certainly that every planet, including our own earth, has in long-past ages been intensely hot, and has cooled down after millions of years to its present condition. Now, large bodies take a much longer time in cooling than small ones; and Jupiter is many times larger than our earth. Therefore, he is not likely to have cooled to the same degree, unless he was made many millions of years earlier,

which is not probable. There are reasons for thinking that he is nearer thousands of millions than tens of millions of years behind the earth in cooling; whence it would follow that he is still very warm indeed. Probably his real surface is as hot as red-hot iron.

This will explain—and I know no other way of explaining—his seeming to be so much larger than he ought to be by rights. I am not now speaking of his actual bulk or mass. I know no reason why a planet should not be ten, or twenty, or a hundred, or a thousand times larger than our earth. But Jupiter is swollen, one may say, much beyond the size we should expect from his mass. It is as though he were made of lighter material than our earth. But we have every reason to believe that all the planets are made of similar materials. Jupiter's mighty mass attracts every portion of his substance toward the center, tending to make his whole frame very compact and dense; yet his frame is not compact or dense, but much more swollen than that of our earth. If our earth swelled to four times its present volume, it would, in this respect be in the same condition as Jupiter. Only, he is so much mightier in attractive energy, that the same heat which would thus expand or swell our earth would not suffice to expand Jupiter to the same degree. It so chances that our sun *is* expanded (no doubt by intense heat) to about the same degree. In his case, a tremendous heat is of course wanted. In the case of our earth, a considerable heat would (*we know*) be required. In Jupiter's case, we may safely infer a very great heat is required, and exists.

Only, instead of supposing that the solid mass of Jupiter is swollen in this degree, I think we may conclude that owing to the intense heat of his solid mass, enormous quantities of gas and vapor are generated, and form a very deep atmosphere all around him, in which float great masses of cloud. It is this atmosphere, laden with immense layers of cloud, that the astronomer sees and measures, not the real body of the planet, which can no more be seen than a peach-stone inside the perfect fruit.

In Fig. 3, you have a picture of Jupiter (as seen on February 11, 1872). Does not the planet as thus seen *show* itself to be inwrapped in a very deep atmosphere, laden with mighty cloud-masses? For my own part, I have long believed that those rounded clouds, which you see floating along the planet's equator, are not only rounded, but globular; have not only length and breadth, but depth also; and not only so, but I believe that these rounded masses of cloud have been thrown up from a great depth below their present position. Now, if you remember that on the scale of the picture the white disc in the corner represents our earth,

nearly 8,000 miles in diameter, you will see that if these views of mine are correct,—and there is a great mass of evidence in favor of them,—the atmosphere in which these great rounded masses of cloud are floating, and into which they are driven by mighty currents carrying them from yet lower levels, must be at least eight or ten thousand miles in depth.

A curious thing happened on June 26, 1828, which can easily be explained if the atmosphere of Jupiter is thus deep and kept in constant turmoil

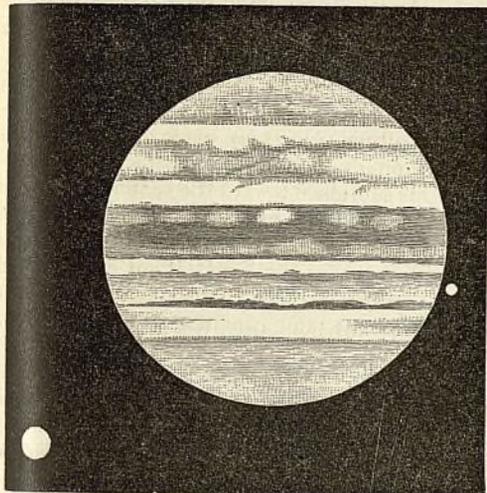


FIG. 3.—JUPITER AS SEEN FEB. 11, 1872.

through the intense heat of the planet within, but cannot possibly be explained if Jupiter is supposed to be in the same state as our earth. Admiral Smyth was observing one of Jupiter's moons, placed as shown in the picture (to which, however, this satellite does not properly belong). It was about to cross the planet's face, traveling toward the left. He saw it make its entry on the disc, and went to record the time in his note-book. Observe that at this moment the planet's outline was entirely outside that of the satellite, which in fact could no longer be seen. Returning a few

minutes after to the telescope, Smyth saw the satellite outside again, or to all seeming just as it had been before the entry, when he had pictured it as in Fig. 3. The same strange thing was seen by Mr. Maclear at Biggleswade, with a rather smaller telescope, and by Dr. Pearson at South Kilworth, with a much larger one. Now, a moon cannot possibly stop in its course around its planet; still less, if less could be, could a moon retreat and anon advance. Nor could the whole frame of Jupiter shift. Out of all question, the outline of Jupiter changed, and not by a little, but by two or three thousand miles. There would be nothing beyond belief in this if the atmosphere is thousands of miles deep, and the outermost cloud-layers eight or ten thousand miles above the true surface. For a cloud-layer might easily be dissolved into the invisible form by the warm breath of some current of Jovian air. But that the surface of a planet like our earth should change in level even by ten miles, is utterly incredible, far more that there should be an alternate swelling and shrinking through two or three thousand miles. Such a disturbance of the crust would turn all that part of Jupiter into vapor, so intense would be the heat produced by the movement.

The great belt shown dark in the picture is often, perhaps generally, of a creamy-white color. But of late it has often shone with a ruddy color, as though lit up by the fiery heat of the hidden surface below.

The spectroscope, the instrument mentioned in my paper on Venus, shows that the deep atmosphere of Jupiter contains enormous quantities of the vapor of water. It seems to me not improbable that all the water of the planet, its future seas and oceans, now hang suspended in the form of cloud and vapor in the planet's atmosphere. Jupiter, in fact, may fairly be regarded as a young though gigantic planet,—not young in years, but young in development,—a baby planet, the fullness of whose growth will not be attained for hundreds of millions of years, when our earth perhaps will have been for ages a decrepit or even a dead world.

JAMIE'S RABBITS.

THESE rabbits belong to little Jamie, who lives in the city almost all the year. A year ago last winter he was very sick, and, when spring came, his mamma took him to the country on a farm, so that he might grow well and strong.

The old farmer was very fond of Jamie, and one day brought home a large basket with a handle at the middle and a lid at each side of the handle.

All the folks soon came around to see what was in the basket, but the farmer said that Jamie must have the first look. Then he set the basket down on the floor, and told Jamie to lift up the lids, and what he should see he could have for his very own! Jamie took a peep with great care, and what do you think he saw? Why, two lovely bunnies,—one all black and the other all white, and the white one had pink eyes! Jamie was so glad that he let fall the lids at once and gave a cry of joy. Then he jumped up and down and clapped his hands, and put his arms about the old farmer's neck, and gave him a good hug and a kiss. After that he took the bunnies to show them to his mamma, and she was glad too, and kissed him, and said he must take great care of them and be kind to them.

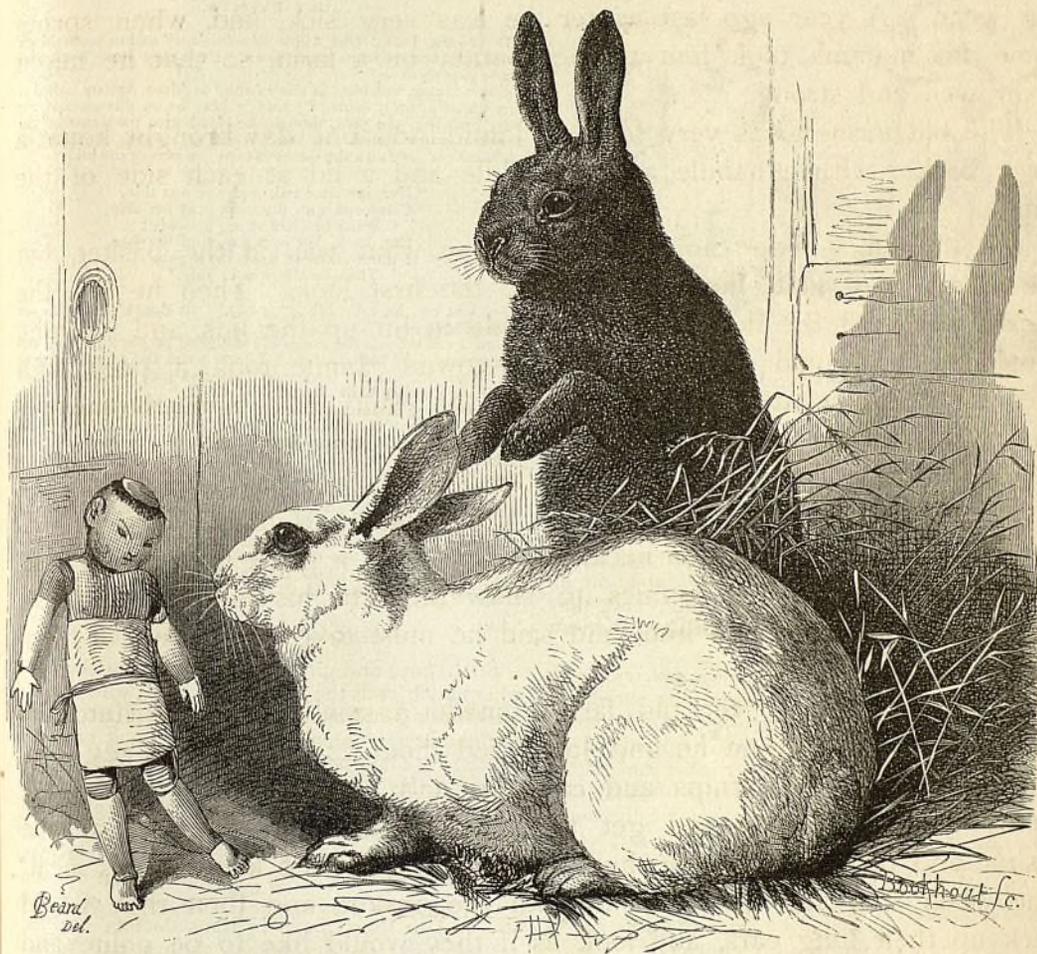
Before very long, the old farmer made a small house or hutch to keep the rabbits in, and he and Jamie fed them day by day. They were fond of carrots and turnips and cabbage, and Jamie would go with the farmer into the garden and get these things, and put them in a little basket, and take them to the hutch. Soon the rabbits knew it was meal-time when they saw Jamie come with the basket, and then they would prick up their long ears, and look as if they would like to be polite and say, "Thank you!"

One day, Jamie found them just as you see them in the picture. There was a strange doll with them in the hutch, but he did not know who had put it there. The rabbits did not feel quite safe with the doll. Blackie feared it might hurt, so he kept behind his friend, out of harm's way. Whitey eyed the doll a long time, as if he hoped it might at last prove to be good to eat.

The doll was bald, but he did not look old or worn by care. He did not seem to mind the rabbits at all. If he had known how hungry

they were, he might have wished to run off, and not stay there and smile, and hang his head and arms and legs in that loose way.

Jamie loved his little bunnies very much, and when the time came for him to leave them and go back to the city, he was very, very sorry.



JAMIE'S RABBITS.

But his mamma said her little boy could go to them again next summer, and the old farmer said he would do his best for them through the winter.

So Jamie tried not to fret. He is a good boy, and deserves to have pretty bunnies, for he takes fine care of them.

And—what do you think? Three weeks ago, Jamie was taken to the country to see his bunnies, and he will stay with them till cold weather comes again.



JACK-IN-THE-PULPIT.

OH, my poor birds! Little they think of what is coming. But their Jack knows it and trembles for them in secret.

Yes, the Fourth of July in this part of the world is a hard day for the birds. You see, the poor little creatures know very little, if anything, about American history, and even if they did know all about it, the July racket is dreadful, and they have n't the firmness and majesty of the American eagle to enable them to bear it.

Never believe that your Jack does not rejoice in the thought of this great and glorious nation, or that he would have you overlook its honorable birthdays, or fail to keep them in grand, joyful ways. No, no. But gunpowder is for war, not for peace. If you wished to honor the birthday of a noble and revered grandparent, you hardly would do so by exploding a fire-cracker in his ear, would you?

Ah, well! may be Jack does n't quite understand these things.

AN UNDERGROUND FOREST.

DEAR, dear, what queer things folks dig up in these days! Why, it was only a little while before school closed that the Little Schoolma'am was telling the children about a real buried city, a part of which some person with a German name had unearthed after it had lain under the ground for hundreds and hundreds of years.

And yesterday I heard a fussy lot of sparrows quarreling over news that an ocean gull had brought to them from the home of their forefathers in England. It was about a buried forest, ever so many thousands of years old, that had been discovered lately in Hampshire.

Beside beech, oak, elm and laurel trees, like those to be seen growing in England to-day, there

were found in this forest such plants as the palm, the cactus and the aroids, that now belong only to tropical lands. As the aroids are akin to the Jack-in-the-Pulpit family, I tried to learn from the sparrows how this news was to be explained. But they made such a chatter, I could n't. So, I'll thank some of my chicks to inquire into the matter.

JULY EVENTS.

DEAR MR. JACK: Our "little schoolma'am" told us some things about July, and we wrote them down. Here they are. Wont you please pass them on?

Julius Caesar was born in this month, so Marc Antony called it after Caesar's family name, "Julius." May be on this account, Sir John Suckling, the poet, thought he could give the name of the month a similar sound. In his "Wedding" poem, of which our schoolma'am gave us some verses to copy, he says of the bride:

"Her lips were red, and one was thin,
Compared with that was next her chin,
Some bee had stung it newly;
But, Dick, her eyes so guard her face,
I durst no more upon them gaze
Than on the sun in July."

So, you see, he calls July, "Jew-ly." It does n't seem to me much of a rhyme.

Now I will tell you the names of some great people who died, and of some who were born, in July. I know when and where, but wont you please ask the ST. NICHOLAS boys and girls to write and tell you, for me, if they know, too?

Petrarch died in July, and so did the Admirable Crichton, Charlotte Corday, Jean Jacques Rousseau, Robert Burns, Richard Brinsley Sheridan, John Adams, Madame de Staël, Thomas Jefferson, Hahnemann, Zachary Taylor, Béranger the French poet, and Margaret Fuller Ossoli.

John Calvin and the famous Marie de Medici were born in July; so were Blackstone the great lawyer, and Flaxman the sculptor. I don't know any more.

Learning dates by themselves must be dry work, but our schoolma'am tells us about the things and people also, and we like that ever so much. I hope all the boys and girls will have a good time this Fourth.—Yours truly,
BEATRICE B.

THE COST OF WET FEET.

SOME boys and girls were playing near the pond where my friends the water-lilies grow, when an old New York gentleman came along and cried out to the children: "Don't wet your feet,—it costs too much!" Then he went on, reaching out so vigorously for the lilies, that at first he did not seem to hear the cries of the children for an explanation. At last it came, when they ran to him with their hands full of the beautiful flowers. He told them that in New York City, in winter, when the uncleaned streets are covered with pools of water, the cost to the citizens in time, doctors' and surgeons' bills, physic, boots, clothes and funeral expenses, would amount in one day to two millions seven hundred and fifty-four thousand two hundred and twenty-five dollars (\$2,754,225)!! Think of that, my youngsters! In my opinion, this water-soaked old gentleman from New York was rather shaky in his facts, though he certainly was strong enough in his statements.

FOUR-LEAVED CLOVERS.

Dyersburg, May 11, 1877.

DEAR JACK-IN-THE-PULPIT: Did the fairies ever whisper in your ear, that a four-leaf clover brought good luck to the finder? I was a little girl when I heard it, and having strong belief in fairies and good luck, I was determined to find one. Two years ago, on one bright sunny morning,—the very best day of the year to me, for it was my tenth birthday,—I was playing on the deep grass, and laid my hand directly on a four-leaf clover, and—oh, joy of joys!—it was followed by a five-leaf one. The fifth leaf proved to be a beautiful

green chalice, just to hold my good luck, as I thought. And, dear Mr. Jack, if you could see my little blue-eyed sister, that came soon after, you would think with me that the fairies were right. I send you the identical clover found on that day, and a cluster of four-leaved clovers found about a week ago, thinking that, perhaps, such things might be new to some of the readers of the ST. NICHOLAS, and that you would like to tell them about these.—Yours truly,
MADGE CHILD.

Jack is very glad to see these beautiful specimens, Madge, and he hopes you may live to enjoy many and many happy birthdays.

So far, so good. Now, who can find Jack two blades of ribbon-grass exactly alike?

FIRE-CRACKERS.

San Francisco, May 2, 1877.

DEAR JACK: The other day I did wish I lived in China. Father was reading out of the paper. As near as I can remember this was what he read:

"In Canton, and other Chinese cities, one hears fire-crackers on all days and at various hours of the night, not fired singly, but by hundreds and thousands at a time. It is a part of their religious observances, and they expect that the din will drive off evil spirits."

Father said he wished they would drive the evil spirit of mischief out of us boys; and I told him if he would buy us a lot of crackers we would try. But he has not yet.

There is a Chinese boy comes to school with us, and he is right smart at learning. He said those smashed-up letters on the packages of crackers mean all manner of things. I said, so they might, but I knew about them, because ST. NICHOLAS told me. Then he looked scared and said, "Is that an evil spirit?" I told him no, it was a book. Next day I showed it to him, and how it translated the funny red labels, and he said, "That's so!" Please tell the ST. NICHOLAS boys.—Yours truly,
ROBERT W. HALL.
P. S.—It was in the ST. NICHOLAS for July, 1874.

SPARROWS AND HORSES.

SPARROWS are good-hearted little creatures after all, though they *do* wrangle a little among them-



selves. I heard two or three of them holding a joy-meeting over the good deeds done by some of their fellows in New York—how they make a habit of going to the great town stables where the car horses are kept, and comforting the tired beasts with their cheery voices and nimble, playful ways. Some of these horses, it seems, have to jog back and forth every day along their rail-tracks for nearly the length of the great city, touching the Battery at one end of the route and Central Park at the other, without ever once being allowed to go into either. Now, that must be pretty hard. Never to run over soft grass or rest under the green trees! But the sparrows make up for the privation as well as they

can. They hop into the stables, hop, hop along the stalls to the horses' ears, tell them all about the grass, the trees, and the cool, sweet shade; then they hop, hop to the floor, and the pails, eat their little "fill," and hop, hop out again. Bless the little sparrows!

ALL THE ALPHABET.

DEAR JACK: Did the Little Schoolma'am ever see a verse that contains all the letters of the alphabet? Here is one, which I did not make, but a girl gave it to me in school. I think it contains every letter.—Yours truly,
LIZZIE GREEN.

"God gives the grazing ox his meat,
He quickly hears the sheep's low cry;
But man, who takes His finest wheat,
Should lift His joyful praises high."

CAN A DOG THINK?

Stratford, Ontario, April 3, 1877.

MY DEAR JACK: I send you a couple of true anecdotes of "Buff," a four-footed friend of mine, which may interest your young folks. Good-bye, Jack! May your shadow never grow less!—Yours truly,
C. W. Y.

CAN A DOG THINK?—Of course not, you will say; but just wait till you hear about Buff. Buff is a heavy-mastiff, and a great pet. On Sundays, and when there are visitors, his toilet consists of a stiff white collar and a black neck-tie, which are quite becoming, and of which he feels very proud. One night, a gentleman came to the house, and inquired for his brother Clarence, who was stopping with us. He had never seen Buff, so he was formally introduced as Clarence's brother. Buff accepted the acquaintanceship, and immediately became very friendly. It so happened that Clarence was spending the evening at a friend's house, "Atholecot," that evening; and as the gentleman wished very much to see him, he decided to go there. But how to find the way? It was pitch dark, there were no street-lamps, and the road was very winding. As soon as "Atholecot" was mentioned, Buff pricked up his ears,—probably visions of good things flitted through his mind,—and when told that the gentleman wanted to go there, he could hardly be kept in the house. "Follow Buff," I said, "and he will take you there." And so he did, and by the straightest road.

Buff's "bump of benevolence" is largely developed. When he has more provisions than he cares for, he hides them away, and when he sees a poor, miserable, half-starved dog-tramp, he brings him into the garden, digs a bone out of the snow, and tells him, in dog-talk, to "pitch in." When he thinks the stranger has had enough, he tells him so; and if he does n't accept the hint and leave, he gives him a good shaking and sends him about his business.

If Buff can't think, he does something very like it.

BLACKSMITHS IN AFRICA.

DEAR JACK: In reading Dr. Livingstone's "Last Journal," the part about native blacksmiths in Africa interested me very much.

Imagine a big negro, with no other clothing than a waist-cloth, squatting before the large, earth-imbedded stone which forms his anvil. Two pieces of stout green bark form the tongs by which he holds the bit of iron that his companion—the master blacksmith—is hammering into shape. The hammer which this master smith is wielding with all his might, is a large stone, bound around with bands made of the strong inner bark of a tree. Of this bark are formed the loops which serve as handles. The hammer thus made bears a rude resemblance to a traveling-valise. The bellows, which is worked by still another assistant, is made of two goat-skins with sticks at the open ends.

With so few tools, and those of the rudest sort, the African blacksmiths hardly could be expected to produce articles of fine workmanship; yet Dr. Livingstone says they have made articles of excellent quality that would have been very creditable to even the best English or American smiths, with all the latter's advantages in the way of fine tools and workshops.—Yours truly,
E. G.

MISS LOUISE'S MOUTH.

(Translation of French Story in May Number.)

By A. R. T.

MISS LOUISE'S mouth is very large. When one sees it, one always has a desire to say, "What an enormous mouth!"

Well, it is not a misfortune. A large mouth is very convenient. This was the opinion of the wolf who so well crunched up Little Red Riding-Hood, and it is also the opinion of Miss Louise. She always has a very good appetite, and she does not find her mouth too big for all that she has need to put into it.

A big mouth is also very convenient for prattling. This one is never tired of talking and saying droll things. And when it has prattled enough, it sings: it is then that it opens well!

And for screaming, too! It is no longer a mouth—it is an oven, a cavern, a resounding gulf. When

it is open, like that, the best thing its hearers can do is to stop up their ears and make their escape.

The cries do not last forever. Laughing comes again—a good laugh, which shows pretty little very white teeth; they are not all there yet, for Miss Louise is hardly more than a baby.

And when it has laughed well, what good big kisses it knows how to give—that mouth!

Mamma does not find it at all too big, and loves it as it is.

And later, when Miss Louise will be older, when she will have become very reasonable, very witty and very good, her mouth will say things so sensible, so pretty and so amiable, that everybody will love it, and no one will have an idea of thinking it too big.

Good translations of "La Bouche de Mademoiselle Louise" were received before May 18th from: Arnold Guyot Cameron, Amy H. Reynolds, Annie Rider, W. F. Dana, Milton Hopkins, Fannie Freeman, A. B. W., Grace M. Hall, E. W. B. P., "Helen of Troy," Hattie K. Chase, "Cupid hereof of his Chow-chow," Adèle Grant, James E. Whitney, George B. McClellan, Jr., Nellie Emerson, Ada Soll, A. Wayland Cutting, Wm. Weightman Walker, Thos. Hunt, Louisa B., Caroline Chase, Harold Steele MacKaye, Lucy S. Birrell, Maude E. Boswell, J. Lilian Doty, Kitty Stebbins, Hallie P. Adams, Seelye Bryant, William L. Smith, A. Jennie McNeil, Louise H. King, B. Rizer, Harriet A. Clark, Madge Wilson, Francis Irving, Angie Courts, William L. Smith, A. Jennie McNeil, Louise H. King, Bella Robinson, Mabel Curtis Wright, Leslie W. Hopkinson, Nellie Chandler, Marian Otis, Frances M. Woodward, Mac Fiske, Katharine Spalding, Eleanor N. Hughes, Bessie Van Rensselaer, Frederick Eastman, Constance Grand-Pierre, "Bob White," Edith R. Smith, Maud Richardson, Emma Disoway, Jennie E. Beal, Fannie F. Hunt, Mary Hawley, Fannie P. Blake, Mary H. Sharpe, Lois L. Howe, Sallie P. Macallister, G. Frederick Harwood, Grace Foster Sewall, Kate E. Dimock, Louise W. Ford, Frank A. Eaton, May Parker, Lodice E. Porter, Arthur W. Underwood, Wm. H. Parker, Fannie R. Safford, L. E. P., Bessie L. Barnes, Lillie L. Preston, Julia H. George, Lulu A. Wilkinson, Alice Ashmore Walker, Agnes Frances Walker, G. C. W., Hattie G. Merrill, "Vulcan," Harriet Langdon Pruyn, "Louise," Alice S. Moody, B. M. P., Ella L. True, and May Harwood.

THE LETTER-BOX.

OUR readers will remember that, in the June number of ST. NICHOLAS, Mr. Ingersoll told them about three species of our native American wild mice, namely, the white-footed mouse, called scientifically *Hesperomys leucopus*; the meadow-mouse, *Arvicola riparius*; and the jumping or deer-mouse, *Jaculus hudsonius*. They will remember also that he told them these mice were not uncommon throughout the United States; lived in open fields and prairies for the most part, rather than in the woods, where they dug burrows or built nests, ate seeds, roots and bark, and were themselves eaten by many animals and birds of prey. Having been reminded of these particulars, it will be easy to study more carefully some further points in the life of these entertaining little creatures, as given by Mr. Ingersoll this month.

Covington, Ky., April 2, 1877.

DEAR ST. NICHOLAS: I am a little boy ten years old, and am one of a family of five children. We have taken you ever since you were first published, and we like you very much. We also have three nice bound volumes in regular order. December 9th last we organized a society to save and make the proper use of our money. The officers are as follows: Papa, President; Mamma, Vice-President; Del, my elder sister, Secretary; J. Wade, Treasurer; Kate, another sister, Mag, another, and John, my baby brother, are members. In the society, or in another apartment, we have a mission-box, and out of the society money we give it fifteen cents a week. Good-by.

Yours truly and respectfully,

WADE HAMPTON.

By order of the society.

San Francisco, 1877.

DEAR ST. NICHOLAS: I am ten years old, and of course am not expected to write as well as an old girl. I often see letters in your columns from little boys and girls, so I thought you might like to hear about a pet goose I had.

A little while before Christmas my uncle Charles gave my grandmother a goose. When he was brought to us his legs were tied up, and it hurt him very much. My cousin Ernest made a cage for him and he slept very nicely. In the morning when he woke up, he made such a racket that it woke us all up. For a while he was quite lonesome, and would call after everybody who passed his cage; but by-and-by he got over it and seemed quite contented. There being no pond for him to swim in, we gave him a bath in a tub as often as we could. I think you will laugh at his name. It was "Misery," because he loved company so much. The rats came in such numbers after his food that it became necessary to set a trap. My cousin Olive and I used to put him on a box and sit on each side of him and feed him, or we would sing to him. He was very fond of biting the buttons on our dresses, and one day he bit one off, and nearly swallowed it. We were very careful to protect our buttons after that.

But "Misery" grew thinner and thinner, and seemed so unhappy in spite of all we did for him, that my grandmother thought it would be best to kill him. So one morning before we were up she had him killed. We had him for dinner, but he was very tough. We are going to have a little dog soon, and perhaps I will tell you about him.

I like the ST. NICHOLAS better than any other magazine I ever read.—Yours truly,

PEARL HOBART.

P. S.—I did not eat any of the goose.

Cleveland, O.
 DEAR ST. NICHOLAS: I am a little girl eight years old. Having read some about birds in my ST. NICHOLAS, I thought I would tell you about a little canary that I have. Missing its sweet notes the other day, I looked into the cage, and found it lying at the bottom, dead, as we supposed; but papa took it in his hands and said it was not quite dead; he then mixed some red pepper with milk; then he opened its little bill with a pen-knife and made it take some. I then got a piece of flannel and put it into a collar-box. Then papa put in the birdie. Mamma said it probably would be dead before morning, but when I got up the next morning and peeped into the box, my birdie had its eyes open, and I am now happy to tell you that at this moment it is singing again as sweetly as ever. I thought this simple remedy might save the birdie of some other little girl or boy.—I am, your little reader,
 IRENE L. COREY.

GRACE JOHNSON, a little girl, ten years old, sends us this verse about her poll parrot:

POLLY.

We have a funny polly,
 He's 'most as smart as you,
 If you stoop down under his cage,
 He'll call out, "Peek-a-boo."
 If you should come and see me,
 He'd say, "How do you do?"
 And sing "Pretty Polly Hopkins"
 In a cheerful voice for you.

Fort McKavett, Menard Co., Texas, May 2, 1877.

DEAR ST. NICHOLAS: My letter in the March number of your magazine has been the means of giving me two kind little friends in the State of New York. They rather felt for my lonely situation, I suppose, and I thank them for their kind-heartedness. They are anxious to know about my army home, so I will tell them, and the rest of your young folks, as best I can, how we live in the army:

We have no grand, fine houses like you town and city girls and boys have; but our houses are built of rough stone one story high, and contain but three or four rooms, sitting-room, bedroom, dining-room, and kitchen. No matter how large a family an officer may have, he is limited to this number of rooms; in fact, we are entitled only to one room and a kitchen; but this is seldom strictly adhered to, as in that case we should have to live more like pigs than human beings. Army officers, too, are generally supposed to live like gentlemen; but I am sure it would not look very gentlemanly or lady-like to sleep, eat, and sit in the same room.

The officers' and soldiers' quarters are all built in line and around a "square;" we have a little plot of ground in front and at the side of our quarters; we have vines trained over our porches, making them look pretty. Fort McKavett is situated on a hill, and is surrounded on all sides by hills; the scenery is varied and pretty. A lovely stream called the San Saba runs near the post; it is full of beautiful, clear springs; from one or two in particular is obtained all the water used in the garrison, brought up in large water-wagons, each drawn by eight mules; the work about the garrison is done by the soldier prisoners. There is a fine hospital building for the sick, and two doctors to attend them. It would seem strange to you, no doubt, to see scarcely any one but soldiers about; but I am used to it, never having seen anything else, for I was not quite two years old when I first knew anything about army life; we were then living so near Mexico that mamma and papa often took me across the Rio Grande river to Matamoras, we could get so many nice things over there; but may be I will tell you about that place another time.

We have a delightful band here belonging to the Tenth Infantry which plays in the open air three times a week, in the evening, in the band stand, and every morning at guard-mounting, and on Sunday evenings at dress parade, which is the soldiers' church; for we have no chaplain. I have not been inside a church for four years; is not that dreadful? Some foolish persons think army people live in ease and luxury, and do not sacrifice anything; but just think of not having a school, or a church, or anything of that kind to go to, seeing the same faces every day and the same things—nothing to amuse us. We get tired of playing the same games even. The only things I enjoy without tiring of are riding on horseback, and that I do love heartily, and taking care of my numerous pets. I study every day, but it is not like going to school; I am afraid I am dreadfully behind other girls of my age. But I fear, dear ST. NICHOLAS, you will be tired of reading so much; so my letter shall stop right here. I believe I think more of you every year, and just long for the end of the month to come.—Your affectionate little reader,
 JANET G. LARKE.

DEAR ST. NICHOLAS: My little boy, Bertie, just three years old, has had ST. NICHOLAS sent him by his dear grandma, for his birthday gift, and we are perfectly charmed with it. We are in the "backwoods" now, so it is a double pleasure. The last number came yesterday, and Bertie went to bed hugging it in his arms at night. Of

course I intend he shall take good care of the numbers and have them bound, and I hope he will be a subscriber for years to come.

He thinks "Cluck-a-Luck's Strange Children" very funny, and I have to read it over and over to him. Last summer I took him to the country for a day, and he slipped away from nurse, and when she found him in the poultry-yard, the little fellow, in his delight, had killed three of the loveliest little white chickens just hatched, and was in the act of "hugging" another when nurse found him. He said he "just loved 'em up tight." He knows better now, and if I had time, I would tell you about his pet canary and red-bird, which love him so much.

He never saw a pig until we came here a few months ago, and when he saw the great black fellow, he came running to me, saying: "Oh! mamma, I s'pect it is a bear." Do you think any of your little folks would make such a mistake? Bertie sends love, and says I must tell you about "the three piggies;" but I'm afraid our letter is too long now for the Letter-Box.—Yours truly,
 "M."

AGNES FRANCES W., Alice Ashmore W., and G. C. W., three little sisters, of Winchester, Virginia, send us three capital translations of "La Bouche de Mademoiselle Louise," published in our May number, and beg us to give them "something a little more difficult in French, and also a German story for translation." It is very evident that they are new readers of ST. NICHOLAS, or they would know that our back numbers have anticipated their request. But we welcome them heartily, and hope in future to give them a goodly share of pleasant work.

Richmond House, Reading, England, May 5, 1877.

DEAR ST. NICHOLAS: I am very glad my dear papa lets me take your magazine. I like it very much, and I read some of it almost every day. I am reading now "Pattikin's House," and think it a very pretty story.

I went to Southsea the other day, and found such a lot of shells and sea-weed and little crabs on the beach. And I saw the "Victory," the ship on which Lord Nelson was killed many years ago.

I shall be eight years old in a few days.—Your friend,
 ALBIN WHITE.

The long article on "Gunpowder" in this number, written by an ex-officer of the U. S. army, cannot, we think, fail to interest our boy-readers, and give them a useful hint or two.

Philadelphia, 1877.

DEAR ST. NICHOLAS: Will you please tell me in your next number who is Saxe Holm, who wrote the story, "The First Time," in the May ST. NICHOLAS? I looked in Drake's "Dictionary of American Biography," and in Alibone's "Dictionary of Authors," but they did not say anything about the person.—Your little reader,
 JENNIE MARCH.

The real name of "Saxe Holm" is not known, nor is it likely to be.

1877.

DEAR ST. NICHOLAS: Last summer, about the first of August, Ed and I had planned to camp out for a few days. I was to furnish the necessary articles, which were bread, tea, butter, plates, knives, spoons, towels, blankets, a tent, and cooking utensils.

While, on the other hand, Ed, who did not like tea, brought chocolate, crackers and herring. I also borrowed of my grandmother a large, heavy, buffalo robe, on which we were to sleep. The next morning we got up early, and got the things ready for our trip. At half-past nine we were ready, and proceeded to the boat-house. Our tools were a spade and an ax, which we took along in case of emergencies. We also took some money to buy milk with.

Once fairly started we put up the sail, for we did not fancy the idea of rowing sixteen miles in the hot sun. A good wind favored us, and we reached our destination about four o'clock.

We encamped on a beautiful beach facing the north-east. After we had pitched our tent, we went to look after the baggage. The provisions were packed in a large basket, which we put in the tent.

I then brought the butter can, and dug a hole in the gravel, two feet deep, and about four feet from the water, so as to keep it cool.

After that we got supper, which consisted of tea, chocolate, crackers, and herring.

After supper we got boughs and laid them on the ground under the tent—over these we spread the buffalo robe. This was our bed. We were then ready for night. After gathering up the things, and putting them in the tent, we got into the boat and rowed a mile farther on, where we met some friends, with whom we spent the evening. After rowing back, and shutting the flaps of the tent, we went to bed. We had some trouble getting to sleep; a bug bit Ed and stung him very badly. The next morning we got up early, built our fire, and had breakfast, which we ate with a good relish. After washing the dishes

and setting things to rights, we took a row. When we got back there were some boys around the tent. They were the friends we had visited the previous evening, and as they had brought potatoes and other things, we were glad that they had come. So we invited them to stay to dinner, after which we took a sail, and saw some more of our friends. Supper over, and we could not get to sleep. Mosquitoes were very thick, and about twelve o'clock we made up our minds to get up, tear down our tent, pack up, and start for home. When we had got everything ready we pushed off. After rowing about two miles we put to shore, and set up the sail, and then steered for the middle of the lake. We had a fair wind at first, but after a while it died down. As we sat waiting for a breeze to spring up, the sky began to get very dark, and with it came what we wanted, a good wind; but before long we found we had got ourselves in a fix, for the wind began to blow harder and harder, and the waves were so high that they splashed into the boat. As quickly as we could we seized the oars, and pulled for the nearest shore. The motion of the waves had made me rather faint, so Ed made me lie down on the blankets. We then took turns in rowing till we had rowed about five miles, when I again lay down. This time I fell asleep. Ed did not wake me, as he should have done, but let me sleep on. At last I awoke of my own accord, and I was surprised to find we had gone so far. I tried to take my turn at the oars, but the more I moved the sicker I got. In half an hour we reached the boat-house, and a happier pair of boys could not be found. When we reached the house I found it to be five o'clock, so that it had taken us just five hours to row eighteen miles.

Having told you the event of the summer, I will bid you good-by.
—Yours truly, R. R. B.

Venice, April, 1877.

DEAR OLD ST. NICHOLAS: I will tell you some things about this Italian city. It has no horse-cars or stages, so we have to go around in boats called gondolas, because nearly all the streets are water, like canals, but without tow-paths. The only good place for walking is the great square in front of the cathedral of St. Mark, where the bronze lions are. You will think boys can't run about much or have many games here, but there are lots of boats and plenty of water, to get fun out of.

We shall stay here for a whole year, and papa says you shall come to us every month just the same.

I must tell you the carpenters here pull their planes toward them, like the Japanese carpenters that we see in pictures, instead of pushing them as our carpenters do at home, in America. I saw this in a workshop, and there was a hollow at each side of the plane, to give a good hold. Please tell this to the ST. NICHOLAS boys.—Your true friend, WILLIE S.

THE following startling and original fairy-tale—an awful warning to kings—comes to us with this note from the author:

Syracuse, 1877.

DEAR ST. NICHOLAS: I am going to write a story, and would like it very much if you would publish it in the St. Nicholas. If you think it worth while printing. I am only eight years old.

THE MAGIC CARPET.

(A fairy tale.)

Once upon a time there lived a king. One day he was walking in his garden, looking at the flowers, he thought how rich he was, and how poor some people were. Suddenly it became very dark, at last he distinguished three figures, on the ground. He asked them what they were. They said they were three fairies. Each of them gave him a wish. The first one said he would find ten dollars every time he put his hand in his pocket. The second one said when ever he was in trouble to call for them they would come. The third one said she would give him a magic carpet, she would not tell him what good it was, they went away, in a second he found himself in his palace with all the people around him. He could not find out what good it was. He had it put on his floor. One day he was walking on the carpet he wished himself in Cincinnati he found himself in Cincinnati. He called for the fairies they came he said what shall I do, they told him to be contented with what he had, they vanished, he felt in his pocket, and got one hundred dollars. He spent it for whisky, and got drunk. At last he found that he had to work for his living, every cent he got he spent for whisky, after a while he got so drunk that he was put in prison, and he died there.

A. T. E.

Birmingham, Ct., April 22, 1877.

DEAR MRS. DODGE: I had a little kitty that looked something like the picture in the new (May) ST. NICHOLAS, and played just like it. I think the poetry by it is awful pretty. I think the fairy story is nice too, especially the funny old giant, Dundernose.

This is a beautiful ST. NICHOLAS. All the stories are nice. I like them every one. I can read them all. I can't write nor print well, my mamma writes letters for me. I am 'most eight years old. Good-by. That's all I'm going to say.

PAULINE P.

San Francisco, April 5, 1877.

DEAR EDITOR OF THE ST. NICHOLAS: The other day I went to a silver wedding, where a Russian nobleman, named Baron von Osten-saken, gave the following riddles in French:

First: Mon premier est le premier de son espèce; mon second le seul de son espèce, et mon tout est ce que je ne veux pas vous dire.

Second: Mon premier est un animal domestique; mon second est ce que les dames n'aiment pas découvrir en elles-mêmes, et mon tout est une union.

Third: Pourquoi l'Impératrice a-t-elle quitté Paris avec un dentiste?

These are all I can remember.—Yours truly, JULIA H. GEORGE.

The answers to these riddles will be given in the next number of ST. NICHOLAS.

Pittsfield, May 23d, 1877.

DEAR ST. NICHOLAS: I was very glad to see my name in the "Letter-Box" for translating the French story in the April number. Last week I went out every clear night to find the different constellations, with the help of Professor Proctor's maps. "His Own Master" is very exciting, I think, in this number. I am sorry "Pattikin's House" ends so soon; I was so interested in it.—Your reader, NELLIE EMERSON.

H. STARKWEATHER's problem in arithmetical-algebra (for it is not properly an algebraic problem) in the June number of ST. NICHOLAS, page 574, may be easily explained by the accurate use of a rule which he used inaccurately. We shall refer to the first example given, the explanation being equally true for the others.

The solution is correct until the last equation, which should be $\pm(7 - \frac{1}{2}) = \pm(2 - \frac{1}{2})$

or, as it is usually written,

$$7 - \frac{1}{2} = \pm(2 - \frac{1}{2}),$$

according to the rule that the square root of any quantity is "ambiguous," as the books say; we would say it is either + or -; not both + and -; nor yet, + or -, just as you choose; but + or -, according to the conditions of the problem.

In this case we must take the - sign for the second member of the equation, and we then have

$$7 - \frac{1}{2} = -(2 - \frac{1}{2}), \text{ or,}$$

$$7 - \frac{1}{2} = -2 + \frac{1}{2}, \text{ or,}$$

$$\frac{13}{2} = \frac{1}{2},$$

which is correct.

The example, then, does not prove that $7 = 2$, but that $\frac{13}{2} = \frac{1}{2}$.

To illustrate the necessity for a choice between the + and - values of a square root:

Given the algebraic equation $x + \sqrt{x} = 6$. By solution $x = 9$; $\therefore \sqrt{x}$, we might say, $= \pm 3$. But it cannot $= +3$, for $9 + 3 = 12$, and not 6; it does $= -3$, for $9 + (-3)$ or $9 - 3 = 6$, as in the original equation. This we should not have discovered by squaring the members of the given equation, and then finding x ; but if we had solved the equation as it stands, we should have found the value of \sqrt{x} , $= -3$, first, and then $x = 9$; which explains the reason why, though $x = 9$, yet, in this equation, \sqrt{x} cannot $= 3$.

It may be noticed of the "other examples" in the last ST. NICHOLAS: If it were proved that $2 = 1$, of course $4 = 3$ without further proof.

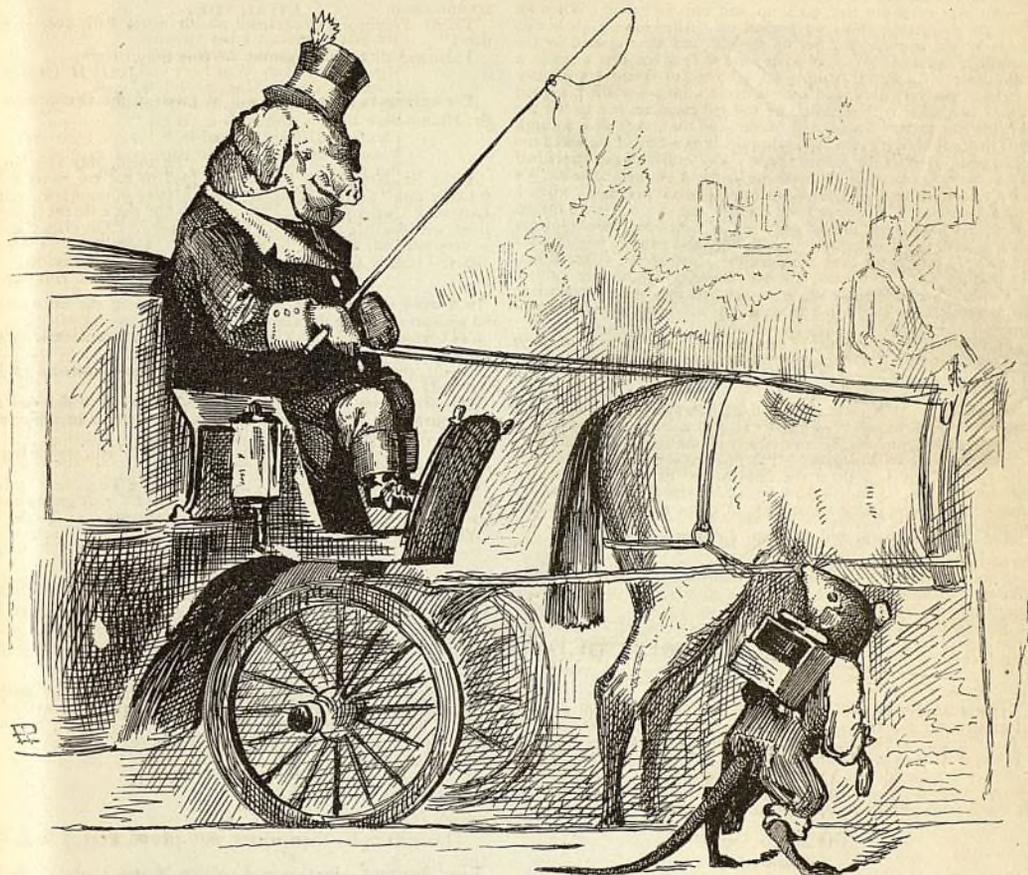
We would commend to our young readers a variation of Davy Crockett's advice: "Be sure you're right, then go ahead." Be sure you are right (particularly in mathematics), then stand by your results.

MARTHA L. COX sends the only correct solution to this problem received up to present date (May 25th).

R. W. M. is mistaken in saying that each member of the 5th equation is negative. He will see, by examining the problem, that each of them is positive.

THE RIDDLE-BOX.

PICTORIAL PUZZLE.



FIND in the picture: 1. The Etrich Shepherd. 2. The plant "Equisetum arvense." 3. A nickname for Boston. 4. A part of a church and a rascal. 5. A member of a society. 6. A military command. 7. A story. 8. An arrow. 9. A colloquial name for an English servant. 10. Wrath. 11. A fine yellow wood. 12. A period. 13. Storms. 14. A verb meaning "to weary." 15. A verb meaning "said." 16. Chickweed. 17. Over sixty gallons. 18. Something under every eye. 19. Blows with a hatchet. 20. A kind of wine.

NUMERICAL ENIGMA.

COMPOSED of sixteen letters. The 1, 7, 14, 9, is a company. The 3, 12, 8, 11, is a girl's name. The 10, 15, 4, 13, is a number. The 16, 2, 5, 6, is an examination. The whole is good advice from Shakspeare. ISOLA.

EASY RIDDLE.

My first is in cat, but not in dog;
My second is in plank, but not in log;
My third is in rat, but not in mice;
My fourth is in pleasant, but not in nice;
My fifth is in Edith, but not in Mary;
My last is in light, but not in airy;
My whole is a very useful thing,
Found with the poor man, found with the king.

K. U.

DIAMOND PUZZLE.

My 1 is a consonant. My 2 is a verb in the present tense. My 3 is one who acts for another. My 4 our forefathers fought for. My 5 is to bestow. My 6 is obtained from flax. My 7 is a consonant. C. G. T.

ABBREVIATIONS.

1. BEHEAD and curtail a division of a poem and get an insect. 2. Behead and curtail a very small piece and get a liquor. 3. Behead and curtail a sign of grief and get a knock. 4. Behead and curtail a place of justice and get a pronoun. 5. Behead and curtail a fool and get abject. 6. Behead and curtail disgrace and get an article of food. 7. Behead and curtail a line and get a journey. 8. Behead and curtail a beggar and get an animal. 9. Behead and curtail some animals and get to gain. 10. Behead and curtail to look intently and get a thick substance. 11. Behead and curtail a kind of meal and get a girl's nickname. 12. Behead and curtail an account book and get a border. A. B.

PREFIX PUZZLE.

PREFIX the same syllable to—1. A contemptible dog, and make to agree. 2. A kind of beetle, and make one of the largest of birds. 3. Strong, and make to ratify. 4. A fish, and make to comfort. 5. A region, and make an agreement. 6. Worn out, and make penitent. 7. An edge, and make to incline together. 8. A shelter, and make satisfaction. 9. A searching trial, and make a dispute. STALLKNECHT.

DOUBLE ACROSTIC.

THE initials and finals name one of Dickens's characters.
 1. A soft metal. 2. A Shakspearian character. 3. A deity, for whom a day of the week was named. 4. A ferocious wild animal. 5. A man's name. 6. A young bird of prey.

ISOLA.

EASY PICTURE-PUZZLE.



A PAIR of hoppers gay are we;
 Look sharp, and soon our forms you'll see.

HIDDEN FRENCH PROVERB.

FIND in the following sentence a French proverb—a warning to persons making secret communications:
 Walking among brakes and thistles, I saw some odd-looking birds: a large emu, rail (less than the emu—don't despise the procession), and two or three more ill-esteemed birds, marching toward the shore.

B.

CHARADE.

My first in radiant robes arrayed,
 Or draped in gloom, or drowned in tears;
 My next, as Holy Writ hath said,
 Dwells in the sunlight, moonlight, stars.
 My whole, a flaunting beauty bright,
 Born for the morning's festal ray;
 Floating in colors, bathed in light,
 Dancing the gayest of the gay.
 But when dark hours come stealing on,
 My airy graces all are gone;
 The frail, brief vision of delight
 Shrinks fainting, fainting out of sight,
 Phantom of beauty, quenched in night.

M. O'B.

OMNIBUS WORD.

IN a word of five letters find, without repeating the same word, and without repeating the same letter in a word, the following:

- I.—A word-square: 1. The juice of a plant. 2. A verb. 3. A plant.
- II.—Another word-square: 1. A small venomous serpent. 2. A large body of water. 3. A nickname.
- III.—One diamond puzzle, the central letters of which form a word-square: 1. A consonant. 2. A monkey. 3. An implement of war. 4. A part of the body. 5. A consonant.
- IV.—A word meaning to fight with fists, and which, spelled backward, means quick, smart blows.
- V.—Ten words: 1. A fruit. 2. To peel. 3. To gather. 4. To scorch. 5. Lean. 6. To level with the ground. 7. A grammatical term. 8. An epoch. 9. A term used by merchants. 10. To file.

What is the word?

N. T. M.

ANSWERS TO PUZZLES IN JUNE NUMBER.

- NUMERICAL ENIGMA.—Dromedary.
 INCOMPLETE SENTENCES.—1. Waver, aver. 2. Mother, other.
 3. Jaunt, aunt. 4. Bother, other. 5. Maid, aid. 6. Cover, over.

DOUBLE ACROSTIC.—Genius, Talent.

G—arne—T
 E—nigm—A
 N—icke—L
 I—r—E
 U—nicor—N
 S—carle—T

CHARADE.—Dolphin.

A NAME PUZZLE.—Charlotte, Orinda, Rosabelle, Adelaide.

DIAMOND REMAINDERS.—

S—O—T
 F—A—T—E—S
 M—O—T—H—E—R—S
 R—E—E—L—S
 D—R—Y

GEOGRAPHICAL DOUBLE DIAGONAL PUZZLE.—Holland, England.

H O L Y O K E
 C O L O G N E
 B O L O G N A
 N A N L I N G
 A L A B A M A
 I N D I A N A
 D E T M O L D

- ABBREVIATIONS.—1. Bevel, eel. 2. Maple, ape. 3. Towel, owl.
 4. Eagle, ale. 5. Ebony, boy. 6. Abbey, Bey. 7. Chart, hat. 8. Farce, ace. 9. Prune, rue. 10. Thumb, hub.

HALF-SQUARE.—

C R A D L E S
 R E P A I D
 A P P L E
 D A L L E
 L I E
 E D
 S

EASY REBUS.—Bethoven, Landseer, Millais.

SQUARE REMAINDERS.—

S—T—E—A—L
 L—E—A—S—E
 C—A—S—K—S
 B—L—E—S—T

RHOMBOID PUZZLE.—

S L I P S
 O V I N E
 Y E A S T
 R I P E N
 L Y N C H

PUZZLE.—Alone.

- ANAGRAMS.—1. Kerosene. 2. Troopers (there was a mistake in this anagram; the words contained an extra "s"). 3. Expenses.
 4. Panoramas. 5. Lectures. 6. Procrastination.

REBUS.—"Full many a flower is born to blush unseen,
 And waste its sweetness on the desert air."

Mary Seymour, Cora M. Wesley, Marion Abbott, and "A. B. C.," answered correctly ALL the puzzles in the May number.
 ANSWERS TO SPECIAL PUZZLES IN THE SAME NUMBER were received previous to May 18th from Arnold Guyot Cameron, Carrie L. Bigelow, Henry C. Lee, Louie E. Hill, Edith Wilkinson, "Bob White," Nettie C. Howell, Bessie T. B. Benedict, "White Rose," C. Lora Nicholson, Florence E. Hyde, Lester Woodbridge, Alice T. Booth, N. Dalrymple, Maude Calkins, Minnie E. Hobart, Geo. H. Faxon, Florence Wilcox, Edwin E. Slosson, E. R. Platt, A. Carter, Dee L. Lodge, George Moffett, Mary C. Warren, C. V. K., L. Ford, Arthur C. Smith, Nellie Chase, M. E. Adams, Emma Elliott, "Alex.," James J. Ormsbee, H. B. and E. Hall, Mabel H., M. S. H., Pauline Schloss, Harry Richards, Martie and Aggie Irwin, Rachel E. Hutchins, Jennie B. Rizer, Alice Reising, Nessie E. Stevens, W. Creighton Spencer, Harriet A. Clark, E. H. Hoerber, Clarence Hoffman Young, Ella G. Condie, George W. White, "Telemachus," Katie Earl, Robert M. Webb, Herbert P. Robinson, Nellie Emerson, Fannie E. Cushing, B. P. Emery, Arthur Stuart Walcott, Jennie Platt, Henry O. Fetter, S. Decatur Smith, Jr., Willie Wright, Bessie W. Frothingham, Maxwell W. Turner, Howard S. Rodgers, Fred. M. Pease, Hugh T. Carney, Blanche Moulton, Edith Lowry, O. T. Farnum, Eddie Vultee, "Vulcan," Bessie MacLaren, Helen Green, Elinor Louise Smith.
 "Dorkin," "Minerva," "Alma," and Angie Courts, sent correct answers to some of the puzzles, and also to the charade by Maddie H. in "Letter-Box" of May number.