THE RAGING CYCLONE.

FACTS FROM PROFESSIONAL DEALERS IN HIGH WINDS.

What Is a Tornado, Anyway?—Points by Which the Devastating Aerial Monster May Be Distinguished from a Cyclone—Some Extraordinary Effects the Wind May Produce.

PEOPLE who have never seen a tornado or a cyclone have very little idea what wind can do. It is hard to conceive the amount of force that is expended, and the manner in which it acts is little understood.

There are two varieties of powerful wind storms, the cyclone and the tornado. The former is a revolving storm, traveling about a center of low barometer, where there is absolute calm, the greatest force of the wind being found at the edge of this circle of quiet. The area of influence may be from one hundred to seven hundred miles in diameter, and as a rule the smaller the diameter the greater the wind's velocity.

The tornado is a local disturbance, often accompanying in the interior the progress of a cyclone. Sometimes the track of the tornado is limited to a few hundred feet, and it rarely has a width of half a mile.

The cyclone carries with it a velocity of as much as 100 to 140 miles an hour. It sends a certain amount of warning ahead of its track, and the acceleration of the wind's speed at any given point is gradual.

The tornado falls almost without notice, or rather the indications are often so similar to those of an ordinary thunderstorm that only a skilled and careful observer can detect the difference.

"The circular motion of a tornado is believed to produce an extremely low pressure in the center," said Prof. Beall, of the United States Signal Service, in a recent lecture before the Chicago Academy of Sciences. "For instance, where the barometer registers thirty inches on the outer edge of a tornado, it is probably not over twenty inches in the center. With the barometer

PATH OF A TORNADO THROUGH A FOREST.

at thirty inches the pressure is about 2,000 pounds to the square foot; where the barometer is at twenty inches the pressure is 1,333 pounds to the square foot. The difference between the atmospheric pressure in the center and the outer edge of a tornado is, therefore, 666 pounds to the square foot, so that when one of these atmospheric terrors passes over a house there is an effort of the air inside the house to equalize the pressure. The consequence is that there is a pressure something like six hundred pounds to every square foot of the house, and it goes to pieces with a crash."

It is on this theory of different pressures that observers account for such phenomena as finding sticks driven through trees, houses turned upside down, and teams lifted into the air. "There have been cases," said Lieut. Beall, "where a tornado has literally picked every feather from chickens, peeled the wool from sheep, and plucked geese."

It is no little satisfaction to learn that Chicago is not likely to suffer from tornadoes. The reason for this is that few cases are known where a great tornado has been destructive to cities situated on the west bank of a large body of water, as the World's Fair city is.

The phenomena and effects of cyclones in the West Indies have long been subjects of study and observation. As the center approaches a ship she is assaulted by wind of a terrible force and a sea that is almost indescribable. The water no longer runs in waves of regular onward motion, but leaps up in pyramids and peaks. The wind swirls

A TORNADO PASSING THROUGH A TOWN.

and strikes until wherever there is a chance for vibration or flutter, even in tightly furled sails, the fabric soon gives way.

One of the most remarkable effects of a cyclone was recorded at Matanzas, Cuba, where the center passed directly over the city. As the vortex arrived the air pressure outside was so suddenly diminished that the air inside the houses forced the window panes out, and then as soon as the calm center had passed the violent wind, having an inflating and lifting effect through the open apertures, lifted many of the roofs off.

The local tornado that so frequently plays havoc with property and life in the West is, like the cyclone, a revolving force, but it carries with it a variety of phenomena wholly distinct from those that accompany the larger storm. Many of the effects of one tornado are wholly absent in others, and the indications that in one case have been followed by a terrible disaster are not infrequently found at other times to presage merely a heavy thunder shower.

The freaks of a tornado are wholly unaccountable. In some cases not an object in its track will fail to feel its power for long distances; in other instances it will seem to act like a cannon-ball that ploughs up the earth on striking, then rises and strikes again, leaving the space between untouched. Sometimes it will go through a forest leveling the trees as though a gang of axmen had plied their tools on lines laid out by surveyors, nothing outside the track being touched; but again in similar windfalls there will be found occasional pockets scored in the forest growth jutting off the right line, like small lagoons opening into a flowing stream. These seem to have been caused by a sort of attendant whirlwind—a baby offspring from the main monster which, having sprung away from the chief disturbance, scoops a hole in the woods and then expires or rejoins the original movement.

I have seen one of the most violent, and, so to speak, compressed of these storms, cut a road through thick woods so that at a distance the edges stood out as clear and sharp against the sky as would those of a railway cutting through earth. Trees standing at the edge of the track had their branches clean-swept on one side, while on the other there was no perceptible disturbance of the foliage.

Sometimes the tornado acts like an enormous scoop, catching up every movable thing and sweeping it miles away; and again it becomes a depositor, as if, tired of carrying so much dead weight, it dumped it upon the earth preparatory to grabbing up a new cargo. These effects are particularly noticeable in the tornado that goes by jumps. When it strikes and absorbs a mass of debris it seems to spring up again like a projectile that grazes the surface. For a space there will be very high wind and some damage, but no such disaster as the tornado has previously wrought. Out of the clouds will come occasional heavy missiles and deluges of water. Then down goes the tornado again, crashing and scattering by its own force and adding to its destructive power by a battery of timbers and other objects brought along from its previous impact. Relieved of these masses, it again gathers up miscellaneous movables and repeats its previous operation.

The force with which these objects strike is best seen when they fall outside of the tornado's path, since the work done by the missile is not then disturbed by the general destructive force of the storm. Thus, near Racine, Wis., I have known an ordinary fence rail, slightly sharpened on one end, to be driven against a young tree like a spear and pierce it several feet. The velocity of the rail must have been something enormous, or otherwise the rail would have glanced from such a round and elastic object.

Many of the settlers in the tornado districts of Southern Minnesota, Iowa, Kansas, and Nebraska, excavate a deep cellar beneath their houses and cover it with heavy timbers as a place of refuge for their families when a tornado threatens to strike them. While these dugouts are usually effective, they are not always so. There have been instances where families having only time to descend, and not time enough to close the trap-door, have been exposed to the storm's full fury by the tornado getting into the opening and lifting off the whole roof, after having first swept away the house above. Another pathetic case resulted in the death of a whole family by an extraordinary freak of the tornado. The storm first struck a large pond and swept up all the water in it. Its next plunge deposited this water on one of these dugouts, the house above which had been destroyed. The family were drowned like chipmunks in a hole.

Some of the Western tornadoes are accompanied by electrical manifestations to an extent that has originated a belief in electricity as their cause. These disturbances are very marked in some cases, while in others they have not been noticed. In one tornado in Central Illinois electricity played very peculiar antics, not only in the tornado's track, but also at some distance from it. In the ruined houses all the iron work was found to have been strongly

TREE PIERCED BY A FENCE RAIL.

magnetized, so that pokers, flatirons and other metal objects were found adhering to each other. Just off the tornado's track the same effects were noticed, and several persons experienced sharp electrical shocks during the passage of the storm. Afterward it was found that the magnetic influence was so strong that clocks and watches were stopped and rendered wholly useless.

The scooping action of the tornado sometimes makes considerable changes in the topography of the country, as when it gathers up the water of a large pond or water course and makes a new pond or opens a new chanel. At Wallingford, Conn., the water in a pond of very large size was taken bodily from its bed, carried up a hill and dropped nearly in one mass, so that gullies and ravines were cut in every direction.

Many are the stories told of the way in which objects are carried away by the wind and left in strange places. In one Illinois tornado two children and an infant were caught up. The dead bodies of the two children were found only a few hundred feet distant, but the infant was picked up alive more than a mile away from the spot where the tornado swept the child up. An accordion that must have come a long distance—for it was never claimed—was found so entangled in the branches of a tree that it was alternately pulled apart and pressed together by the wind, creating such weird and uncanny music during a whole night that an already sufficiently scared settlement of negroes were kept in a state of frantic dismay until daylight revealed the cause.

In another case a farmer who followed the tornado's track in search of missing cattle was astonished to discover one of his cows standing about twenty feet above the ground in the branches of a half felled maple.

"I allers knew that was an active heifer," he remarked, as he came in sight of her, standing erect on the slanting trunk, "but I never allowed she could climb a tree."

Where a tornado passes over a considerable body of water it takes the familiar form known as a waterspout. That is, it sweeps up a mass of water that goes whirling over the surface with tremendous writhings and gyrations. Just after the close of the war I was lying in the Chesapeake in a sloop-of-war. A boat heavily laden with a swimming party had been allowed to go ashore, and just as it was returning a terrible cloud came down one of the small creeks at a bel lit apparently of only a few hundred feet. As it reached the open bay a leaden-colored, snake-like column sprang up to meet the cloud, and came twisting and squirming straight for the boat. The latter was so crowded that only a few oars could be pulled, and there seemed no escape for the men unless they could reach the ship.

Unfortunately not a gun in the battery was loaded, and we could not open the magazine and load one before the waterspout would be upon us. It was, of course, questionable what would be the fate of the ship itself if the water-pout struck us, but I don't think that idea occurred to any one, so engrossed were we in the fate of our shipmates in the boat. Two boats' crews were called away to be ready to lower their boats the instant the spout should pass, in order to pick up the men who were not swept on aloft. The men at the oars pulled with the energy of despair, but loaded deeply and closely crowded they made slow progress.

Just before reaching the boat the waterspout made a peculiar whirl outward toward the ship, as if to make certain of cutting off their escape, and then they were shut out of sight. Instantly down went both cutters into the water, and their crews were in them and giving way toward the center of the stream before the thick mist had cleared off. Then, to our great relief and surprise, the boat with the swimming party emerged from the gloom, every man drenched and exhausted by the nervous strain, but otherwise safe. The waterspout, by its sudden gyration toward the ship, had just missed the boat, and though nearly swamped by the agitation in its wake they had escaped.

A somewhat remarkable incident happened at the terrible Louisville tornado of last April. A frame building had been demolished by the fierce blast. A party searching for the dead and wounded, in passing, heard faint sounds coming from the very center of the pile of boards and shingles. As they went to work the sounds became more distinct. Several bodies were quickly recovered, being those of the owner of the cabin and his wife—a poor shoemaker.

Presently there was a shout of exultation. In one corner of the ruin, completely sheltered by the beams and boarding, which had formed an arch above it, sat a chubby 18-months-old baby. It was covered with dust and hemmed in on every side, but not a hair of its little head was injured. When the searchers uncovered it the pudgy face broke into a merry laugh, and the little hands dropped the chips of timber they had been playing with and were extended to the rescuers.

A meteorologist in the employ of the United States Signal Service was asked recently if a cyclone had ever been photographed.

"Never, I believe," he replied, "although it possibly could be done. With a tornado the case is different. The latter is a comparatively limited affair, although it has tremendous power compressed in its narrow tunnel. A tornado's track will sometimes be not more than a quarter of a mile wide, while a cyclone takes in a much larger territory, frequently many miles. Both are generated by the intermingling of cold and warm air currents, and both have the same rotary motion. The gyrations of the tornado may be distinguished a considerable distance off from the actual scene of disturbance. Tornadoes almost invariably follow in the track of a severe storm, and go in a northeasterly direction. Their velocity varies from 50 to possibly as high as 150 miles an hour.

Such is the speed of a tornado that its duration at any one point is rarely more than a minute or two. Sometimes, however, it makes a detour, and returns to wreak fresh havoc. In this country the tendency of all inland storms is northeast or north-northeast. The great spiral column of the tornado as it rushes along sways backward and forward, and any objects that lie in its path are sucked up in the vortex and whirled through the central funnel to be ejected with terrific force at the top, generally in fragments.

The premonitions of a cyclone are a fresh breeze setting in from the south, with a sultry atmosphere and banking clouds to the north or northwest. These indications are accompanied by a gradual fall of the barometer, much more decided, but less sudden, than in the case of a tornado. When fairly started the cyclone will travel

A RACE WITH A TORNADO.

REMARKABLE ESCAPE OF AN INFANT.

immense distances, sometimes over 1,000 miles. Its rotary motion is similar to that of the tornado, but less concentrated, owing to its wider expanse. Its line of progress is marked by curves, showing a swaying movement where it has encountered conflicting conditions and either overcome or avoided them. A peculiarity of all great cyclonic storms is that, while the storm itself may be traveling at the slow rate of ten or twelve miles an hour, the wind may be rushing ahead at a velocity of 100 miles an hour.

No cyclone or tornado ever begins earlier than 2 o'clock in the afternoon. The atmospheric conditions are never present before that hour. Nor will a cyclone ever originate later than sundown. Should one come after that you may set it down as a visitor that has traveled ever since afternoon, and which will keep on traveling until the supply of material is exhausted. In the Southwest we can tell by the appearance of the sky whether there is any likelihood of a tornado. If, during the afternoon, there is a warm, southwest wind and the sky is full of cirrhus clouds, and if at the same time there is a bank of dark clouds gradually rising in the northwest, these signs mean infallibly that when the cold storm from the northwest encounters the hot wind, the two, rushing together, will start a tornado spinning on its travels. By day, the color of the tornado as it is seen approaching is almost brassy; by night it presents a coppery hue, and can be quickly detected by experienced eyes. The only thing to do at such times is to make for the cellar unless one is confident he is already in a place of safety.

"I NEVER ALLOWED SHE COULD CLIMB A TREE."

Enjoyment at Home.

Don't shut up your house, lest the sun should fade your carpets; and your hearts, lest a merry laugh should shake down some of the musty old cobwebs there. If you want to ruin your sons, let them think that all mirth and social enjoyment must be left on the threshold without when they come home at night. When once a home is regarded as only a place to eat, drink, and sleep in, the work is begun that ends in endless degradation. Young people must have fun and relaxation somewhere; if they don't have it at their own hearthstones it will be sought at other and perhaps less profitable places. Therefore, let the fire burn brightly at night, and make the homestead delightful with all those little arts that parents so perfectly understand.

Don't repress the buoyant spirit of your children; half an hour of merriment around the lamp and firelight of a home blots out many a care and annoyance during the day, and the best safeguard they can take with them into the world is the unseen influence of a bright little domestic circle. Put home first and foremost, for there will come a time when the home circle will be broken; when you will "long for the touch of a vanished hand and the sound of a voice that is still," and when your greatest pleasure will be in remembering that you did all in your power to put a song under every burden to make each other happy.—*Albany Journal.*

A Fresh Agent.

"When much younger than I am now," said an old newspaper man, "I sold sewing machines. You may rest assured I was a trifle fresh, and suffered therefor, as the following adventure will show: Near the close of a hot August day I was driving through the little village of G—— to the town where I made my headquarters. Suddenly a big black cloud appeared in the sky, and when my played-out horse had covered half a mile the rain came dancing down. I had two machines on and no blanket. To save myself and machines from getting drenched, I drove for the only house within a radius of a mile. I was a sorry sight when I reached that old country mansion half hidden by tall maples. Jumping out, I knocked at the door and explained that I would like to leave my machines temporarily, in order to save them from the storm. Before I made the request I discovered that the young lady who responded to my knock was one with whom, much against her will, I had left a machine on trial a month or two before, and had only taken it back after repeated protestations on her part that she did not want it. You understand, we used to get a machine into a house by representing that we would leave it on trial. But once we got it into the house we insisted on its being bought, and used every persuasive art to accomplish that result. Frequently this was very embarrassing to the lady of the house, and she never forgave us for the annoyance of leaving the machine for weeks, and asking her every other day if she wouldn't buy, when she had emphatically declared she would not. Now was the turn of the young lady in the old-fashioned house to get square. And although the rain had nearly washed the machine out of the wagon, she slammed the door in my face, and then sat by the window enjoying my discomfiture to her heart's content. As I prepared to drive away, I turned my head, and beheld her pretty face bubbling over with smiles. When I reached N—— I was a sight to behold. But the experience cured my freshness."—*Boston Globe.*

A Narrow Escape.

Somebody has been trying to prove that war is not so dangerous, on the whole, as some other agents of destruction; however that may be, its perils are not confined to those in action, as the following anecdote demonstrates: There were some narrow escapes among those who were off duty in camp. One day a solid shot, with unmannerly rudeness, came bounding into camp, passing through a group of soldiers who had just collected for their warm rations. At the same instant it prostrated the cook, demolished the messkettle, and irreverently baptized the best flag with bean porridge. The cook proved to be only "temporarily killed" by the gravel which the shot had thrown against him, and was soon able to resume his work. About the same time a sick soldier was lying in his tent, with his knapsack for a pillow. He was supposed to be quite out of harm's way, but a solid shot, styled by the boys a "pickle" from its resemblance in size and shape to a cucumber, struck the knapsack and carried it clean away. The only inconvenience to the invalid was the loss of the knapsack and the sudden letting down of his head. As the pillow was scarcely thicker than the missile, this might be called literally a hair-breadth escape

SUGAR-CANE, according to Mr. D. Morris, is nowhere found wild, and it has been supposed to have lost its power of producing seed. In specimens received at Kew Gardens, however, seeds have been found. This discovery is important, as it is anticipated that cross-fertilization and selections of seedlings may greatly improve the plant.

THE CZAR AND FAMILY.

A PLEASANT PICTURE OF THEIR HOME LIFE.

Alexander of Russia, His Wife, and His Children—Strange Contradiction in the Character of the Emperor—Endowed with Plenty of Personal Courage—Examples of His Bravery.

THE present autocrat of all the Russias came to the throne under circumstances specially calculated to impress him with the fact that the most powerful monarch is helpless against the consequences of serious discontent among even a fraction of his people. The lesson was not lost, and internal difficulties of various kinds have often given warning reminders of its significance. Alexander III. undoubtedly endeavors more frequently than his predecessors to take into account the sentiments and aspirations of his people.

Though the word "foreigner" is in the mind of the Czar equivalent to a term of reproach, he is himself, little as he supposes it, very like a foreigner in his own country. Thanks to the complete suppression of everything approaching an expression of public opinion, he has little means of ascertaining the drift of national feeling, and from personal experience he knows nothing of any class but the higher officials of the state. It must not be supposed that his consideration for the wants of his people is due only to selfish motives. Far from it. The present Emperor of Russia is a man of truly noble character, thoroughly honest in purpose, sincerely religious, kind in heart, and most disinterestedly solicitious for the welfare of his country. There is, however, one strange apparent contradiction in his character which may yet have sinister results. The Czar is not gifted with the extraordinary intelligence which would be desirable in his position; no man is more modest as to his personal merits and ability, but there is no man in this world so impressed with his own importance, in the peculiar light in which he views himself, as the divinely appointed head of the only true faith and of a specially chosen people.

The most devoted of husbands, he is yet ever conscious that his wife, born a foreigner, of alien faith, remains outside the pale, and consequently the Empress has as little influence in his counsels as if she were a stranger to him. The office of Czar is, he considers, a holy office; no other mortal than the holder of that office is on anything approaching the same exalted level. Any real or supposed slight or injury to the chosen people, the Russians—to their semi-divine head, the Czar—or to the only true faith, the orthodox Greek faith—will immediately rouse all that is stubborn in the character of Alexander III., and will be promptly avenged. A true lover of peace, he will nevertheless, without a moment's hesitation, plunge his country into disastrous war, against any odds, to fulfill what he considers his sacred duty.

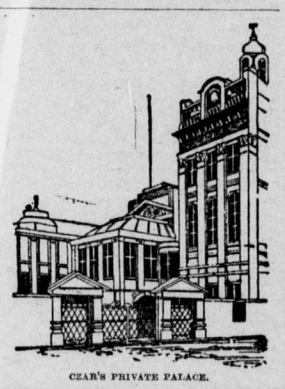
This is the real and great danger which threatens the world through Alexander III.'s belief in the sanctity of his own person; and this belief has been extraordinarily strengthened, and the consequent danger greatly aggravated, by the marvelous escape of the imperial family in the Borki accident—an escape which is confidently attributed to the special interposition of the divinity on behalf of His chosen and favored servant.

THE CZARINA. THE CZAROWITZ. GRAND DUCHESS XENIA.
GRAND DUKE MICHAEL. THE EMPEROR. GRAND DUCHESS OLGA. GRAND DUKE GEORGE.

The Czar was married in 1867 to the Princess Dagmar of Denmark, then in her twentieth year, writes William E. Curtis, in his book on Russia. They have four children living and have buried one. The eldest, the Czarowitz, or Crown Prince, is Nicholas, aged 20; the second is the Grand Duchess Georgia, aged 15; the third is the Grand Duchess Xenia, aged 12; the fourth is the Grand Duke Michael, aged 9; and the youngest is the Grand Duchess Olga, aged 4. The Czarina is three years younger than her sister, the Princess of Wales. The Crown Prince Nicholas is Colonel of a regiment of the Horse Guards, which is always commanded by the Crown Prince from the minute he is born till the crown of Russia is placed upon his head. Then he is supposed to take command not only of the entire armies and the navy, and become the head of the church as well as the state, but is Captain of a company of bombardiers and Colonel of the Regiment of the Transfiguration, whose duty is to guard the Winter Palace—the finest body of troops in the service.

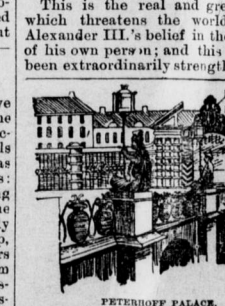
Alexander earned distinction as a soldier during the last war between Russia and Turkey, and any one who is familiar with his military career need not be told that he has plenty of personal courage. I saw him several times; once at a station of the railway where he had driven from the palace to meet the Crown Prince of Greece. He had driven a pair of horses through a public highway four miles or more, sitting on the front seat of a basket phaeton, and he drives about the country daily in the same manner. I saw him again at the fete given in the park that surrounds the palace, on the birthday of the Empress. He sat upon the front seat of a high wagon, in full uniform, with the Empress beside him, and the remainder of the imperial family on the back seats, and drove slowly through the illuminated grounds, which were brilliant with flames and crowded with almost the entire population of Petersburg.

The imperial party was preceded by a squad of mounted Cossacks who cleared the way, and was followed by a number of carriages containing royal visitors and ladies and gentlemen of the court. There was a roar of cheers from the immense crowds who pushed back into the shrubbery to give room for the horses and wheels, and both the Czar and Czarina were kept busy bowing to the throng, who shouted and waved their hats and handkerchiefs as they passed. He was a fine mark for a nihilist as he sat upon the high perch,



CZAR'S PRIVATE PALACE.

and the police were fearful lest a shot should be fired; but the Czar was determined to show himself to the people, and rode through the park for two hours.



PETERHOFF PALACE.

Sufficient.

"Have you a family?" asked a Western judge of a man who was making final proof in a United States land office.

"Yes, sir," replied the man.

"Of what does it consist?"

"Well," said the man, evidently confused, and looking up toward the ceiling, as if to refresh his memory, "it consists of my wife, ten children, two hired men, a gang plow, a seeder, a Bain wagon and a span of mules. I believe that's all."

"That is enough," replied the judge, with a smile, and the settler got his papers without further questioning.

Where Billiards Originated.

"I am satisfied now," spoke the funny man as he awoke, "that the heathen Chinee is the originator of the game of billiards."

"How do you make that?" asked one of the party.

"Because they handle the queue so well," responded the funny man, as he dodged the just stroke of the injured party.

Why They Are Called Church Widows.

"What would the churches do if it wasn't for the women?" inquired one citizen of another as the two met in a reading-room.

"They are very successful in church work, that's certain," answered his friend carelessly, adding "Give me a light, Charlie."

"Do you know what they call those excellent women who go to church alone every Sunday?" asked the first speaker.

"No. It must be some saintly title, I'm sure."

"They are known as church widows, because their husbands are never seen with them. It will be a little hard on some husbands if after all they can't get into heaven, by proxy, won't it?"

Saloon or Mine.

Wicks—I don't think I know Senator Striker. Where is his saloon situated?

Hicks—Oh, he is not an Eastern Senator. He represents a Western State.

Wicks—A Western man, eh? Where is his silver mine?—*Boston Transcript.*

PETROLINE has antiseptic properties, and is said to be valuable as a food preservative.

HOW TOMMY GOT AN EDUCATION.

BY HELEN A STEINHAUER.

JUMP up, quick, Helen, and see what Solomon has brought you in from the woods."

These were the works that wakened me, a happy, care-free little girl in seagirt Jamaica, my island home, on the morning of my sixth birthday.

Need I say that I "jumped," and soon was standing, all unabashed, a tiny, white-robed figure, before good, kind Solomon, our colored serving-man, eager to see what he could possibly have brought me from the woods on this beautiful, bright birthday of mine.

He once had gotten me a big, round-eyed owl that winked and blinked curiously, and gulped down chunks of raw meat and fish, and caught and ate rats and mice and other small game; but one unhappy day he also caught and killed my wee kitten, which had not got its eyes open yet, and as that was an unforgivable crime he was summarily banished, in dire disgrace, to his native forests, and never heard from more.

Another time Solomon had brought me a pet lizard—with lovely glistening scales!—which he had tamed for me. He often brought mamma brilliant many-hued flowers from the cool depths of the thick woods, which white ladies were afraid to venture into because of the poisonous snakes and troublesome insects with which they were infested. He had also from time to time made valuable additions to papa's herbarium of rare plants, which he alone knew where to find. But what could he now have brought to me?

"Something for little missy," he said, exposing two rows of even, white teeth as he smiled. And then he held out his right hand, over which a white cloth was loosely wrapped.

Something moved underneath it, and I fancied I heard a faint chirp or twitter, so I was not much astonished when, on removing it, he showed me two bright-green parrots.

I named them Tommy and Lizzie, and they flourished finely and grew apace. Pretty soon papa said that we must begin to teach them.

But Lizzie wouldn't take an education. She was an incorrigible cross-patch, and not only refused to try to talk herself but did all in her power to hinder Tommy. She squawked, and squawked, or else chattered at him, just as if she were scolding him.

He was a gentle, affectionate, and very teachable little fellow; but he had a hard time learning to talk, for it made Lizzie so mad to have him try that she would fly at him and tear out his feathers till he was a sorry-looking sight.

We had another large parrot named The Queen, which belonged to our house-keeper, Mrs. Dawson. She had a variety of colors in her plumage and was very accomplished, for she was an old bird and had been accumulating knowledge for many years. She evidently looked down on the little newcomers, and when Lizzie squawked would cry:

"Hush! hush! you'll wake the baby," although there wasn't any child in the house but me; but when Tommy tried to practice his lesson she always said, fiercely:

"Stop that right off!" Which so frightened him that he would cower into a little round, green puff-ball, and not try again for quite a while.

So we began to fear that Tommy never would get an education, but just grow up an ignorant, worthless parrot, unable either to talk or to sing.

But he was quite a smart little bird, after all, as he proved to us one morning. He was so tame and gentle that we let his wings grow, as there was no danger of his wanting to fly away and leave us; but Lizzie's wings were kept well clipped, for she was of a restless, discontented disposition and a great rover, and if able to fly might have tempted Tommy away.

Well, where do you think we found him one morning when we came out from breakfast? Sitting on the window-sill, across a very wide stair-well over the broad stairs that led into the back yard. There Lizzie could not possible reach him, so there he sat and practiced the little song we had been trying to teach him.

"Tommy — Tommy — Tommy set— Tommy set—Tommy," etc.

The Queen always went to meals with us, consequently she was as much surprised to see him there as we were. But when she saw that he really meant business, she gracefully yielded and let him alone in his pursuit of knowledge. So every little while he retreated to his study for practice, till, after several days' effort, he mastered the whole, and could sing, clearly, distinctly, and in very good time:

"Tommy, set the kettle on,
We all want tea."

Then he felt that he had earned a place in society, and went boldly about the house singing his little couplet.

To The Queen's credit, be it said, she no longer snubbed him, but ever after let him learn what he pleased and where he pleased. Lizzie simply submitted to the inevitable; but I think that beneath her feathers she was rather proud of having so learned a bird for her mate.

BATTLE CREEK, Mich.

COMPOUND locomotives are to be the railway engines of the future, in the opinion of Mr. T. Urquhart, of the London Institution of Mechanical Engineers. In competitive trials a compound locomotive consumed 22 per cent. less fuel than an ordinary locomotive running under exactly the same conditions.

IN fancy work women frequently get worsted.

A NEW phonograph, said to be much simpler than any other so far introduced, has lately appeared in Milan. It can reproduce music and the human voice in a most marvelous manner, and one of its features is its cheapness, the wax cylinders used costing only twenty-five centimes.

BEFORE people should expose their ignorance they should examine their education, and separate what was taught from books from what was taught by themselves.

THE old toper always has a gin phiz.