For the Boys and Girls

NED'S TRIP TO MINOT'S LIGHT.

BY EDWARD A. RAND.

"Hurrah! Three cheers for the flag!"

"Flag! Where, Ned?"

"Oh, that is only our way at school when anything pleases us. I mean the lighthouse. Don't you see it?" asked Ned, excitedly, standing in the bow of the boat and waving his hat.

Yes, Uncle Charlie could see it, and so did Mr. Handy, an old salt who was with them.

There was the lighthouse on Minot's Ledge, its gray, massive shaft of stone rising above the waters sweeping all about it. It was more than a generation ago when Minot's Light was considered one of the foremost on the coast.

As Ned turned in the direction of the shore, he saw the waves washing over a ledge, and it seemed as if they, too, were lifting their white caps and flourishing them as excitedly as he at the sight of the lighthouse.

"Uncle Charlie, how far is the light from the shore, please?"

"Well, Ned, it is about a mile and a half or so from the land. It is built on the extreme point of a dangerous ledge.

"I have been by Minot's Ledge many a howlin' night," said Mr. Handy, "and it is a tough place. Those rocks would chew up a boat in less than no time in bad weather."

They were now near the light.

"Handsome, is it not, uncle?"

"Yes; I think it is a noble column of stone."

"But how shall we get in? Water is all round it. Oh, I see! There is a ladder up the side. And look, uncle! See that door away up in the side of the lighthouse."

"How high up do you suppose that door is?"

"Oh, I don't know."

"Forty feet, and the entire height of the lighthouse is one hundred and fourteen feet. It would need a giant with very long legs to step from our level up to the threshold of that door."

"Do we climb the ladder, then? How funny it would be to climb up that ladder and then knock at the door and say, 'Can you let two shipwrecked sailors in?'"

"We can't go by the ladder to-day. We must be close up to the tower for that, and besides, it is delicate work for some landlubbers to climb that ladder."

"Then how do we get up? That puzzles me. Perhaps they will drop a hook and line and fish for us!"

Uncle Charlie laughed and lowered the sail of his boat.

There was a rope stretching from the lighthouse to a buoy in the water.

"We will tie our boat here, Ned."

"Just look up, Uncle Charlie!"

Uncle Charlie turned and looked up. In the doorway of stone stood a man. He was bareheaded and had a white coat on. He looked like a long-legged seabird with white wings that, flying over the water, had suddenly alighted on the step of stone.

From an upper window projected a beam, from which hung ropes that the man put to a good use for the lowering of a stout armchair.

There was a rope fastened at one end to the chair, and the other end the man threw to Skipper Handy, who caught it in his big, brown hands. This enabled the skipper to pull the chair into the boat.

"I see now, uncle. We go up in the chair."

"Yes. Frightened, Ned?"

"No, indeed! I could ride in a dozen," said Ned, valiantly.

"But you couldn't all at once. Let me see. Skipper Handy, I guess I will take my nephew in my lap. We are not heavy, you know, skipper!"

The old seaman liked that title.

"Aye, aye, sir!" he sung out proudly.

"You will look after the boat, skipper, while we are gone?"

"Aye, aye, sir! I have seen enough of the light. I don't want to go."

"All aboard," shouted Ned, gaily, "for Minot's Light!"

"Tie us in now, skipper, and tell them to hoist."

"H-i-s-t!" shouted Mr. Handy, having bound the passengers in.

There were two men above, and they began to pull up their load. Uncle Charlie and Ned were dangling over the dark seawater.

"It's a bit ticklish," thought Ned. "Glad uncle is with me. Guess I won't ride in the dozen chairs. One will do."

"Up, up, up, up," went the stout arm-chair, like a big sea-turtle rising out of the waters with a load on its back.

Ned heard the block in the beam creaking and rattling away, and knew he was near the end of his ride toward the sky.

"Good-day!" said a voice.

It was the long-legged sea-bird with white wings. This man had a pleasant voice, and we will call him Merry.

"Good-morning, Gentlemen!" said Uncle Charlie, addressing Merry and his companion. "So we are up in the sky at last!"

"You will be, soon as we pull you in," said Merry; and Uncle Charlie and Ned were drawn into the lighthouse like birds into a nest.

"Three cheers!" said Ned.

Merry grinned.

"What do you call this place?"

"This, young man" (he called Ned "young man" and Uncle Charlie "sir") "—this, young man," said Merry, "is our store-room. We keep our fuel here; provisions also."

"And this?" asked Ned, pounding with his foot on a round, black cover in the floor.

"This is our well. It's thirty-eight feet deep."

"How much water will it hold?" asked Uncle Charlie.

"Seventy-five barrels. Come up, now, and see our kitchen—the next room."

They followed Merry up the stairs, and entered a room where, the clock ticking on the wall, the shining cook-stove, the dining-table, the pantry, said plainly: "I'm the kitchen, gentlemen."

"What's that?" asked Ned, pointing to a stool with a cushion.

"Stool, isn't it, young man?"

"Yes; but it looks queer."

"That is a life-seat. In case we get blown away, we might find it handy in the water," said Merry.

The third room was a sleeping apartment. Everything was trim, as if the housekeeping had been feminine and not masculine.

The fourth room was also for sleeping. Then came a place where seven shining copper-butts ranged about the walls, and seven dippers dangling from the seven stop-cocks, said very politely, "I'm the oil-room, gentlemen."

"How much higher do we go," asked Uncle Charlie, "before we touch the roof of the clouds?"

"Oh, we are making good progress, sir. We are now going up into the watch-room."

This took interested Ned very much. There were spy-glasses, with which the man on the look-out could sweep the sea. There was the log-slate for recording each day the vessels that passed the light.

"We must put 'em all down," said Merry. "Thousands go by every month and more than one thousand each week."

"What's this? Why, you can step out here!"

"That, sir, is the parapet."

The parapet ran all about the light tower and was several feet wide. A strong iron railing girdled it.

"Quite breezy out here," said Ned.

"Young man, in a tough gale of wind it will blow every tooth out of your head, almost."

"I would like to try it," said the fearless Ned. "And what's this?"

"Fog-bell!"

It was screwed to the wall, its big mouth directed toward the sea.

"When fog, we toll this, sir."

"It must make cheerful music for folks on the water."

"Better hear that than nothin', sir."

Ned felt as if he were away up in a cloud, looking down upon the sea. What a far-reaching view. Behind him were the misty lines of the coast, and before them was the wide, rippling sea, stretching away till it met the sky, shutting down upon it like a blue bowl on a blue plate.

"One more place, Ned," said Uncle Charlie, and they followed the guide up into the lantern. "This, Ned, is the most important part. Everything else exists for this. The foundation, the walls of stone, the kitchen, the little chambers, the oil-room—all serve just to support the lantern-light and keep it in good order."

Ned wanted more than two eyes to see everything.

Outside of all were panes of very thick and very clear glass. In the centre was a curtained object.

"What is that, please?" asked Ned.

The guide lifted a curtain, and said:

"This is the lens. It is about ten feet high, kind of cone-like in shape, you see, and yet not zackly."

"Why, uncle, it looks as if it were made of wrinkles, one above another."

"That is a pretty good name for them, Ned. They are rings of glass succeeding one another, or annular (ring-like) lenses, as they are called. Great progress has been made in lighting up our coasts. Methods once were very different. No longer ago than the latter part of the eighteenth century, we are told that the search-lights of Great Britain were only open coal fires. When the famous Eddystone Lighthouse was built, its first light consisted of a few wax candles on a chandelier. Then they began to use reflectors that caught up the scattering rays and threw them in one beam upon the sea. Then Fresnel proposed the plan of illumination with lenses. The metallic reflectors can be arranged about a cylinder so as to light the whole horizon, but not all parts with like intensity. Then they have been found to absorb too much of the light.

"It is said that there is a gain of one-fourth by using glass lenses or prisms. These are ring like, one succeeding another, and they have this property of catching up the rays flying out in all directions, and as they strike these prisms, or lenses, they are refracted or bent in passing through the glass, and sent out in straight lines across the sea toward every point of the compass. You see, these wrinkles, as you call them, have sharp corners. They are prisms, or lenses. Looking along the edge of this lighthouse lens, up and down its sides, it is saw-like. These are the angles of the prisms. There are various kinds of lights, Ned. There is the fixed light, shining steadily; there is the revolving light, shining, then disappearing, then, shining again; there are sound lights, arranged to throw their beams mostly up and down the sound, rather than across, where the water is not so broad and less illumination is needed. To meet these varieties, there are special arrangements."

"But, uncle, you have been talking of what is about the light. Where is the light itself? It must be pretty big."

"The lamp-part, young man? Look in there," said Merry. "Go in, if you want to."

Ned went inside the lens. He saw the lamp in the centre. There were three concentric circles of wicking, and their diameters were one, two and three inches.

"Now, you see" said Merry—"you see that machinery under the lamp. I turn a crank and it sets the machinery to moving, and then the oil is pumped up into the wicks. I'll jest give you an idea."

Merry gave a turn to the crank, and up flowed the oil.

"And these three wicks give that big light folks see at night?"

"Yes, with the lens' help."

"Did you think it was a tar-barrel burning up here?" asked Uncle Charlie.

"Why, no! But that is funny to see how so small a lamp can make so big a light."

"It shows, Ned, how big a dazzle may be made by a little thing.

"With a little help," interposed Merry. "Could not get along without the lens."

"You must have some comfort, dark, stormy nights, thinking you are helping somebody on sea."

"I do, sir. I come up here and it may be howling fearfully, the night dark, and the spray flying. Then I say, 'Some poor fellow on the water is seeing our light' and I take a sight of comfort in thinking about it."

The party went down the stairs, through one little room after another, said good-bye to their kind friend, took a ride down in what Ned called the "sky-car," and soon Uncle Charlie's boat was dashing homeward through the waves.

Hair-Nets.

Peanuts and hair-nets are two important products of Shantung, China. Begun about 15 years ago, the hand manufacture of hair-nets has attained remarkable proportions. The hair originates in China, is shipped to Europe and America to be chemically treated for "decoloring," is sent back to merchants in treaty ports and redistributed for net making among homes of the interior. Only recently has an attempt been made to prepare the hair in the province. The number of hair-nets used annually is almost unbelievable.

At the age of 134 years, this Pole journeyed from Bielsk to Warsaw to recover the bells stolen from the village church by the Russians in their last retreat from Poland.

A Poem You Ought to Know.

The Sea.

Last year occurred the centenary of the death of Lord Byron, whose name, while Keats and Shelley were almost unknown, went like a strong wind throughout Europe. His poetic achievements will always remain one of the glories of our literature.

Roll on, thou deep and dark blue ocean—roll!
Ten thousand fleets sweep over thee in vain;
Man marks the earth with ruin—his control
Stops with the shore; upon the watery plain
The wrecks are all thy deed, nor doth remain
A shadow of man's ravage, save his own,
When, for a moment, like a drop of rain,
He sinks into thy depths with bubbling groan,
Without a grave, unknelled uncoffined, and unknown.

His steps are not upon thy paths—thy fields
Are not a spoil for him—thou dost arise
And shake him from thee; the vile strength he wields
For earth's destruction thou dost all despise,
Spurning him from thy bosom to the skies,
And send'st him, shivering in thy playful spray
And howling, to his Gods, where haply lies
His petty hope in some near port or bay,
And dashest him again to earth:—there let him lay.

Thou glorious mirror, where the Almighty's form
Glasses itself in tempests; in all time—
Calm or convulsed, in breeze, or gale, or storm,
Icing the pole, or in the torrid clime
Dark-heaving—boundless, endless, and sublime—
The image of eternity—the throne
Of the invisible; even from out thy slime
The monsters of the deep are made; each zone
Obeys thee; thou goest forth, dread, fathomless, alone.

Bobby's Request

The picnickers were obliged to cross a railroad track in reaching the place where they were to have lunch and little Bobby, going ahead, saw a train approaching.

Eagerly he shouted to his father, who was still on the track, "Hurry, Daddy, or else give me the lunch."

Sugar From Sunlight.

How sugar forms in the beetroot, sugar cane, or maple tree has long been a mystery. It is known that sunlight is necessary to enable plants to convert the gases of the atmosphere into starch and sugar, and recent successful experiments by Professor Baly, of Liverpool, who has produced sugar artificially, are likely to open the way to important developments.

Some time ago he noticed that when the strong light from an electric lamp, such as is used in cinema studios, was allowed to fall upon a stream of carbonic acid gas, a certain amount of well-known disinfectant gas was produced which turned into sugar when dissolved in water.

The quantity of sugar formed in this way was very small, and it was found that the violet rays given off by the lamp contained light for different wave-lengths, some of which assisted while others interefered with the formation of the sugar. Addition of ordinary powdered chalk to the water, however, neutralized this action and produced more sugar.

Experiments were now conducted on a larger scale in a rectangular glass tank fifteen inches square and eight inches deep, with small holes in each side. Having found that the imitation sunlight gave the disinfectant gas, Professor Baly omitted this step and filled the tank with a solution of the gas in water. In the middle of the tank an electrically driven fan was fitted so that the powdered chalk, which was then added, was stirred vigorously. Lamps were inserted into each of the holes in the tank and light allowed to play on the solution.

After fourteen days' continuous exposure to the artificial sunlight a yield of 8 per cent. of sugar was obtained, and after the liquid had been purified and concentrated a sweet syrup was left.

Although the process is expensive, it is expected that it will be cheapened in the near future.

Navigation By Sound.

An apparatus which automatically indicates the depth of water beneath a ship by means of an echo has been invented. The device, which has already been tried with success in naval vessels, consists of an oscillator fitted to the ship's side beneath the water line which produces a clear musical note.

This sound is echoed from the ocean bed and picked up by hydrophones or ear-pieces built into the ship's hull. It is then converted into an electrical current, which passes to an indicator in the vessels chart-room, and lights up a bulb behind a number on a graduated dial corresponding to the depth of water beneath the ship at the time.

The navigator of the ship fitted with this automatic sounder will merely press a button in order to obtain a continuous visual indication of the depth of water beneath him.

A Dunce.

Little Jimmy's father found him in the barn. He was shaking his pet rabbit and saying:

"Five and five. How much is five and five?"

The surprised father finally interrupted the proceedings.

"What is the meaning of all this, Jimmy?"

"Oh," said Jimmy, "teacher told us that rabbits multiply rapidly, but this fellow can't even add."

The Modern Touch.

The teacher in a London Sunday School had finished her lesson, and was, by way of recapitulation, questioning her class. "And who lived in the beautiful Garden of Eden?" she inquired. And a little girl replied—"The Aramses, teacher."

Stories About Well-Known People

What He Smokes.

"Although I'm probably the biggest smoker in the kingdom," Sir Thomas Lipton remarked to a friend of mine the other day, "I never smoke cigars."

"You prefer a pipe or cigarette, I presume," said my friend. "No, I never smoke either," answered Sir Thomas.

"Really! Then may I ask what you do smoke?"

"Bacon," was Sir Thomas's laconic retort.

In Cocoa-nut Land.

Growing cocoa-nuts in the West Indies is not a profession that has attracted many women. But Miss Nellie Hamel-Smith says it is "the ideal life." She employs sixty native laborers and operates over a hundred acres devoted to cocoa-nuts.

"Life out there," she says, "is anything but savage. There are no earthquakes, no bad storms, and no snakes—and we have got a telephone."

Miss Hamel-Smith made good use of the telephone, too, not very long ago, for a man broke into her store and cocoa-nuts and she was able to get the police on the scent in less than ten minutes.

Dandy of the Army.

With the appointment of Field Marshal Lord Plumer to the post of High Commissioner and Commander-in-Chief, Palestine comes under the rule of a man beloved by soldiers all over the empire.

"Plumer, as they have long called him, used to be the dandy of the army. He still wears the stock and monocle and affects the drawl that is the sarcasm of some of his War Office colleagues. They have learned to respect him, and now there are few more popular generals. Once, I remember, a grinning woman said to him: "Oh, General, do tell me—does one pronounce the 'a' in your name short or long?"

"Madam," replied Plumer, quietly, "my name rhymes with a certain garment said to be favored by your sex, and I hope——" But by his time the laughing one had fled!

He Struck Oil!

Sir Mount Bearsted, as the great oil magnate, formerly Sir Marcus Samuel, becomes, is Britain's Rockefeller—the other man who struck oil," as he is sometimes called in London. Few people know that his millions came by his own making, or that he began life with no advantages save a keen and perceptive brain. A member of a family of nine, he was born in the East-end of London, and at one time was a junior clerk. His father was a dealer, among other things, in goods adorned with shells; it is from this source that the name of a famous brand of petrol was obtained.

Why Sixty Minutes.

Even countries that have adopted the decimal system of weights and measures still cling to the old-fashioned method of dividing the hour into sixty minutes and the minute into sixty seconds. This division of time has survived through the changes and revolutions of thousands of years. It appears to have started in ancient Babylon. The Babylonians used the decimal system for business purposes, but counted time by sixties. The reason may be that no other number has so many divisions.

These people divided the sun's daily journey into twenty-four parts, a parasang being roughly the distance a good walker could cover in an hour, and divided each parasang into sixty minutes. The system was handed on to the Greeks and introduced into Europe in the second century B.C. When clocks began to be made, the dials were divided according to this system.

In the past thirty years several attempts have been made to adopt a decimal system for dividing time. The idea is to divide the day into a hundred units, each called a "run." Each run would be divided into 100 "cent run" or "mar." A "mar" would be 14.4 minutes and a "run" 14.4 hours, almost a quarter of an hour.

Half and Half With Vengeance.

There once lived somewhere in Vermont two farmers, who were famous for their thrift and their exactness of justice. Tradition says that on a line between the two farms grew a large butternut tree. Every autumn the two men met to gather and divide the crop. On one occasion a squirrel belonging to a third party and was clever enough to run off with the last butternut. Below the line fence he scampered and after him ran the two farmers, each on his own side of the fence, and each shouting loudly, "Drop it! Drop it!"

The uproar so confused the squirrel that he did drop the nut and it struck a near-by tree.

The men picked up the nut, cracked it and divided it in half, after which each man shouldered his sack and went home well satisfied.

Regarding the reflections of men in the tree top, history is silent.

The Kindly Critic.

With a jolt the car came to a sudden stop in the middle of a busy street. The self-starter refused to act and the driver was forced to dismount and to crank the engine with the handle at the starting handle. For fifteen minutes he twirled the handle furiously while a small crowd collected.

At last an old lady stepped forward and pressed a penny into the perspiring motorist's hand.

"My good man," she said, "I wish all hand organs were as easy to turn as yours."

Very Reserved.

"Mabel is so awfully reserved."

"Well, she's engaged to be married."

THE ATHABASCA BITUMINOUS SANDS

The Athabasca Bituminous Sands located in the Province of Alberta north of the city of Edmonton, and the terminus of the Alberta and Great Waterways Railroad. They cover an area generally estimated at [illegible] hundred thousand acres. Of this area, only about 20 per cent. is existing, from a development standpoint, due to the variation in the character of the sands and to the topography of the country. In other words, there are only a few locations where the level area of land is available for the location of the refining plant, where waste material and overburden can be disposed of at a minimum expense.

An examination of the entire area by engineers three places were found where all of the conditions governing development were favorable, these locations being light overburden, land lying below the level of the sands which permits the sand to be fed into the retorts by gravity, and provides ample space for the disposal of waste sand from the retorts and overburden. Having these conditions is very important, since the cost of all the material to be treated must prove an item of consideration in these after operations.

The three locations selected are at the junction of the Clearwater and Athabasca Rivers; the junction of the Athabasca River and Steepbank Creek; the junction of the Athabasca and Beaver Creek. The tar sands in these three places will distill from [illegible] gallons per ton of material treated, and also [illegible] per cent. of [illegible] sight in oil.

Composition of the Sand.

The tar sand is composed of a [illegible] impregnated with [illegible] with Devonian lime[illegible] two hundred feet [illegible] is covered by sand, gravel [illegible] in which is [illegible] with timber of little [illegible] value. This overburden [illegible] ness from two feet [illegible] feet, but, due to the [illegible] it can readily be removed by [illegible] allocating it to the [illegible] cost of this work [illegible] .7c. per cubic yard [illegible] obtained from a [illegible] the engineer who [illegible] on of the ground [illegible] tated by Dr. S. C. [illegible] of Mines Bureau of Mines [illegible] the Alberta deposit [illegible] largest known deposit [illegible] in the world, and [illegible] by inexhaustible supplies [illegible] material. A [illegible] developing this deposit [illegible] ear of running [illegible] hundreds of years [illegible] acreage is secure [illegible]

Transportation Facilities.

The Athabasca River [illegible] portable during [illegible] year. The river [illegible] but affords some [illegible] bottom barges [illegible] ers. Transportation [illegible] material during [illegible] be in barges from [illegible] railroad.

The Alberta and Great Waterway Railroad is owned [illegible] Alberta Government [illegible] gauge road, providing [illegible] freight and passenger service. The directors [illegible] road expressed their willingness to assist development [illegible] extension of the railroad, if in view [illegible] the freight offered by the refinery [illegible] ble. It is doubtful whether the construction of the railway beyond [illegible] way is necessary [illegible] a company [illegible] expensive pipe line would [illegible] the purpose of transporting [illegible] from the refinery [illegible] to the [illegible] railroad.

The sand offers a convenient [illegible] transportation from the refinery to the trans-continental railroads of Canada, joining the latter at Edmonton, capital of the province.

Paving Material.

The development of [illegible] means important [illegible] lies in the sale of the Alberta tar sands for road-building purposes. The sands, when mixed with dry sand or crushed rock in one to one proportion, form an excellent road-surfacing material at low cost. Streets in the City of Edmonton have been laid with this material and found entirely satisfactory. The popular use of the automobile is forcing an extensive road-building program everywhere. Canadian National Parks have used it with entire success.

REG'LAR FELLERS—By Gene Byrnes.

An Easy Way to Lose 'Em